

Town of Port Hedland

Local Planning Strategy



Endorsed by the
Western Australian Planning Commission

13th May 2021

Disclaimer

This is a copy of the Local Planning Strategy at the date of endorsement produced from an electronic version of the Strategy held by the Department of Planning, Lands and Heritage. Whilst all care has been taken to accurately portray the current Strategy provisions, no responsibility shall be taken for any omissions or errors in this documentation.

Consultation with the respective Local Government Authority should be made to view a current legal version of the Strategy.

Please advise the Department of Planning, Lands and Heritage of any errors or omissions in this document.

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Local Planning Strategy

April 2021



Town of
Port Hedland



The Town of Port Hedland would like to acknowledge the Kariyarra, Ngarla and Nyamal people as the traditional Custodians of the Town of Port Hedland lands.

We recognise their strength and resilience and pay our respects to their Elders past and present.

We extend that respect to all Aboriginal & Torres Strait Islander people of the local community and recognise their rich cultures and their continuing connection to land and waters.

TOWN OF PORT HEDLAND
LOCAL PLANNING STRATEGY

CERTIFICATION FOR ADVERTISING

Certified for advertising by the Western Australian Planning Commission on **19 February 2020**



COUNCIL RECOMMENDED/SUBMITTED FOR APPROVAL

Supported for submission to the Western Australian Planning Commission for endorsement by resolution of the Town of Port Hedland at the Meeting of Council held on **23 September 2020**



MAYOR



CHIEF EXECUTIVE OFFICER

ENDORSEMENT OF LOCAL PLANNING STRATEGY

Signed for and on behalf of the Western Australian Planning Commission



an officer of the Commission duly authorised by the Commission pursuant to Section 16 of the *Planning and Development Act 2005* for that purpose

Mayor Message

Peter Carter



On behalf of Council, I am pleased to present the Town of Port Hedland's new Local Planning Strategy to the community.

The Strategy applies to the Town of Port Hedland local government area and is the guiding document to realise our vision of Hedland becoming Australia's leading Port town. The Strategy informs the Town's Local Planning Scheme and a range of other planning instruments, ensuring that land use and development within the Town contributes to the realisation of the Strategy's objectives.

The Strategy is timely with Hedland positioned for significant growth, the result of a robust resources industry; resilience in the face of the global Covid-19 pandemic; record investment in public infrastructure; and a renewed policy focus on attracting skilled workers and families to live locally. It provides a coordinated approach to land use and infrastructure planning, balancing the social, cultural, economic and environmental needs of the community, industry and other stakeholders to meet current and forecast growth and development.

The Strategy's objectives support our identity through inclusive facilities, improved amenity and the celebration of our rich cultural heritage; our prosperity through dedicated commercial and industrial centres and diversification; and our built and natural environment to ensure it responds effectively to economic, population and climate change. Through detailed policy and data analysis and drawing on key community insights from the 2019 Shaping Hedland's Future campaign, the Strategy provides a roadmap for the next 15 years, establishing strategies and actions to guide land use planning and development.

The delivery of this strategy will not be without challenges. While many strategies and actions can be delivered directly by the Town, a number are part of the broader planning and policy landscape; and rely on the actions and resourcing of Government, industry, and other stakeholders. Planning, cross-sectoral partnerships and ongoing targeted consultation will be key to their achievement. This will be an inclusive process, one that ensures that local Aboriginal people's rights and interests are considered in strategic and statutory planning processes and decision-making.

The delivery of many strategies and actions are underway with large-scale projects such as the Spoilbank Marina, and JD Hardie Youth and Community Hub under development, structure plans completed for residential land in Port and South Hedland, and funding for the entrance road to Boodarie Strategic Industrial Estate committed.

I would like to thank the community for participating in this process and ensuring that local input provides a solid foundation for this strategy. Strategies and actions are integrated within the Town's planning and reporting framework, so going forward and together, we can celebrate progress.

CEO Message

Carl Askew



I am proud to present this Local Planning Strategy to our community and valued stakeholders.

The release of this strategy is a significant achievement. It establishes the objectives of local strategic planning for the next 15 years, provides protections for our natural and built environment, guides the efficient and effective use of resources, and the delivery of key land, services and infrastructure. This will realise significant and lasting benefits for our community.

As the Mayor noted, the Strategy's actions are founded on extensive community and stakeholder engagement and contextual analysis which ensures they are responsive to identified opportunities and constraints to sustainable urban growth and development under different growth scenarios. While one of the key objectives of the Strategy is economic diversification, this approach acknowledges the Pilbara's susceptibility to economic and population fluctuations.

The Strategy will inform strategic planning at the local, regional and State level, setting the context for local planning and development and facilitating cross-sectoral partnerships. This will ensure that a coordinated, timely, balanced and integrated approach to managing key strategic issues within the Town is adopted and that the Strategy's objectives are achieved.

The Strategy will see the Town evolve going forward to meet identified opportunities by addressing a breadth of issues that will change the Town's landscape, deliver improved amenity, celebrate culture, enhance community inclusion, and support prosperity. More welcoming spaces for Aboriginal people, activation of public spaces, quality recreation and childcare facilities, and land use that is responsive to the housing and infrastructure needs of the community and industry and which accommodates Climate change and protects our biodiversity and heritage values.

The Strategy will be implemented through application of the Town's Local Planning Scheme and other planning instruments, targeted strategies, advocacy on planning issues and key stakeholder partnerships.

I would like to take the opportunity to thank the community for participating in the *2019 Shaping Hedland's Future* campaign which informed the Strategy and the Town's Planning and Development Team for their significant and committed effort to its delivery. The Executive Team and staff at the Town of Port Hedland look forward to working with Council, the community and stakeholders on delivery of the Strategy.

Part 1 – Strategy

1. Introduction.....1	4. Strategic Plan31
1.1 Why the Strategy is important..... 1	4.1 Our Identity31
1.2 Purpose of the Local Planning Strategy..... 1	4.2 Our Prosperity34
1.3 Content and Structure 1	4.3 Our Natural Environment38
1.4 Integrated Planning and Reporting Framework.....2	4.4 Our Built Environment.....47
1.5 Relationship to Local Planning Scheme2	4.5 Precincts52
1.6 Strategy Area2	4.6 Our Infrastructure..... 87
1.7 Stakeholder and community engagement.....2	
2. Vision and Objectives5	5. Implementation.....93
2.1 Vision 5	5.1 Review of the Local Planning Scheme and amendments 93
2.2 Objectives..... 5	5.2 Local Planning Policies..... 93
	5.3 Structure Plans 93
3. Key Issues7	5.4 Local Plans..... 93
3.1 Community Considerations..... 7	5.5 Preparation of further targeted strategies 94
3.2 Economic Considerations 9	5.6 Advocacy / Promotions 94
3.3 Environmental Considerations13	5.7 Collaboration / Partnerships..... 95
3.4 Built Form and Infrastructure Considerations21	
	6. Strategy Maps.....97

Part 2 – Background Information and Analysis

7. Background	105	10. Regional Planning Context	137
7.1 Study Area	105	10.1 Pilbara Planning and Infrastructure Framework 2012	137
7.2 Overview	105	10.2 Pilbara Regional Investment Blueprint (2016)	138
8. Statutory Context	109	10.3 The New Pilbara (2016)	138
8.1 Planning and Development Act 2005	109	10.4 Port Development Strategy 2030 ..	139
8.2 Planning and Development (Local Planning Schemes) Regulations 2015	109	10.5 Pilbara Conservation Strategy (2016)	141
8.3 Mining Act 1978	109	10.6 Pilbara Tourism Product Development Plan (2014)	141
8.4 Port Authorities Act 1999	110	10.7 Draft Port Hedland Regional Land Supply Assessment (2019)....	142
8.5 Native Title	110	10.8 Port Hedland International Airport Master Plan 2018-2038	143
8.6 Aboriginal Heritage Act 1972	112	11. Local Planning Context.....	147
8.7 Heritage Act 2018	112	11.1 Integrated Planning and Reporting Framework.....	147
8.8 Land Administration Act 1997.....	112	11.2 Strategic Planning Framework	150
8.9 Rights in Water and Irrigation Act 1914	113	11.3 Statutory Planning Framework	152
8.10 Improvement Plan No. 50 – Port Hedland West End	113	11.4 Studies	159
8.11 Port Hedland West End Improvement Scheme No.1.....	114	12. Local Profile.....	173
8.12 State Agreement legislation	114	12.1 Community Profile	173
9. State Planning Context.....	117	12.2 Economic Profile.....	177
9.1 State Planning Strategy 2050	117	12.3 Environmental Profile	188
9.2 State Planning Policies.....	118	12.4 Servicing and Infrastructure	199
9.3 Operational Policies and Guidelines.....	132	12.5 Transport	203
		13. References	211
		Online References.....	215
		Acronyms.....	217

INDEX OF MAPS, FIGURES AND TABLES

STRATEGY MAPS

Map 01	Port Hedland Townsite
Map 02	Airport, Wedgefield and Redbank
Map 03	South Hedland
Map 04	Townsite Surrounds
Map 05	Town of Port Hedland

TABLES

Table 1	Industry Opportunities for Port Hedland
Table 2	Servicing Infrastructure Considerations
Table 3	Transport Infrastructure Considerations
Table 4	Native Title determinations
Table 5	Contemplated Uses for PHIA Master Plan Precincts
Table 6	Town Strategic Community Plan themes and desired outcomes
Table 7	Key Issues arising from SCP engagement
Table 8	Summary of status of Structure Plans
Table 9	Summary of Local Development Plans
Table 10	Port Hedland CHRMAP adaptation recommendations
Table 11	POS Audit
Table 12	POS Strategy Recommendations
Table 13	Household / Family Composition, Port Hedland
Table 14	Historical and Projected Households, Port Hedland
Table 15	Dwelling Structure, Port Hedland
Table 16	Major Projects, Port Hedland
Table 17	IBRA regions within Town of Port Hedland
Table 18	Traffic Data
Table 19	Intersections currently prequalified for Black Spot Consideration

FIGURES

Figure 1	Integrated Planning and Reporting Framework
Figure 2	Location and Strategy Area
Figure 3	Port Hedland townsite CHRMAP mapping
Figure 4	Proposed CHRMAP Special Control Area boundary
Figure 5	Precinct Location Plan
Figure 6	West End Precinct
Figure 7	Spinifex Hill Precinct
Figure 8	East End Urban Village Precinct
Figure 9	Port Authority and Finucane Island Precinct
Figure 10	Redbank Precinct
Figure 11	Dampier Salt and Surrounds Precinct
Figure 12	Wedgefield Industry and Logistics Precinct
Figure 13	Airport and Surrounds Precinct
Figure 14	Pippingarra Precinct
Figure 15	South Hedland Precinct
Figure 16	South Hedland City Centre Precinct
Figure 17	Boudarie Precinct
Figure 18	Town of Port Hedland Municipal Boundary
Figure 19	Port Hedland Improvement Scheme No.1
Figure 20	Historical and Projected Resident Population, Port Hedland
Figure 21	Age and Gender Distribution, Port Hedland
Figure 22	Historical Population, Comparison Regions, 2008 – 2018
Figure 23	Proportion of Industry, Value Add, Port Hedland, 2012-13 and 2017-18
Figure 24	Proportion of Industry Value Add, Comparison Regions, 2017-18
Figure 25	Visitation, Port Hedland, 2008 to 2018
Figure 26	Average wind direction and speed at 9am for the wet season
Figure 27	Average wind direction and speed at 9am for the dry season
Figure 28	Average wind direction and speed at 3pm for the wet season

Figure 29	Average wind direction and speed at 3pm for the dry season
Figure 30	Priority Flora Locations
Figure 31	Threatened and Priority Fauna Locations
Figure 32	Major Waterways
Figure 33	Public Drinking Water Source Areas
Figure 34	Water Infrastructure



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Part 1 – Strategy



1. Introduction

1.1 Why the Strategy is important

The Local Planning Strategy (the ‘Strategy’) provides a plan to guide the development of the Town of Port Hedland (the ‘Town’) towards its vision to be Australia’s leading Port town.

The Town continues to play an important role in supporting the Nation’s economy, with the Port being the world’s largest bulk commodities export port, facilitating trade for the resource sector and other industries. The Town also has an important role to play within the Pilbara, providing services, transport and infrastructure which support the region, including the Port Hedland International Airport which provides a critical role in servicing the resource sector.

The Strategy recognises the primacy of the Port and the need to protect strategic infrastructure corridors that service the port. The Strategy also recognises the importance of community, culture and the environment and seeks to provide a coordinated approach to the delivery of future urban land with access to an appropriate level of amenity and services.

1.2 Purpose of the Local Planning Strategy

The Strategy sets out the long-term planning directions for the Town. In applying relevant State and regional planning policies to the local level, the Strategy provides the rationale for zoning or classification of land under the local planning scheme (the ‘Scheme’) and the means to address economic, social and environmental matters.

The purpose of the Local Planning Strategy is to:

- Establish a vision for the future of the district;
- Provide direction for growth and development within the Town over the next 15 years;

- Establish strategies and actions in response to identified opportunities and constraints;
- Provide a rationale for land release to support sustainable urban growth; and
- Identify the need for further studies and investigations to respond to issues within the district.

1.3 Content and Structure

This Strategy comprises two parts:

Part 1: Strategy

Part 1 sets out the vision, objectives, strategies and actions for the long-term planning and development of the Town of Port Hedland. It provides the basis for detailed planning provisions within the local planning scheme and a means to assess planning proposals from strategic perspective. The Strategy includes a strategic spatial plan that summarises the approach to addressing community, economic and built and natural environment issues.

Part 2: Background Information and Analysis

Part 2 provides the relevant background to the Strategy, including analysis of the key issues and the rationale for the Strategy. It includes the State, regional and local planning context within which this Strategy has been prepared, the method of its preparation, and analysis of community, economic and environmental profiles that form the basis for the recommended strategies and actions in Part 1.

1.4 Integrated Planning and Reporting Framework

The Town's Integrated Planning and Reporting Framework (the 'Framework') aims to ensure integration of the community's vision, outcomes and priorities into strategic planning. The role of the Strategy will be to guide the community's vision embodied in the Framework through land use planning outcomes.

The diagram below illustrates how all of the elements of the Framework, including this Strategy, fit together to deliver those priorities.

Refer to Figure 1 - Integrated Planning and Reporting Framework.

1.5 Relationship to Local Planning Scheme

The Strategy is the guiding document for the preparation and review of the Scheme. The Scheme is the legal basis for governing land use and development within the local government area. For planning proposals located within the Town of Port Hedland, the Scheme is the primary means by which the Town can ensure that new land uses, and development, contribute towards fulfilling the aims of the Strategy.

1.6 Strategy Area

The Town of Port Hedland is located in the Pilbara region of Western Australia and covers an area of approximately 18,700 square kilometres, extending from the coast to approximately 180 kilometres inland. The Strategy applies to the whole of the Town as shown in Figure 2.

Refer to Figure 2 – Location and Strategy Area.

1.7 Stakeholder and community engagement

This Strategy builds on the comprehensive engagement undertaken by the Town through the *Live It Tell It!* engagement process used to inform the preparation of its Strategic Community Plan 2018-2028.

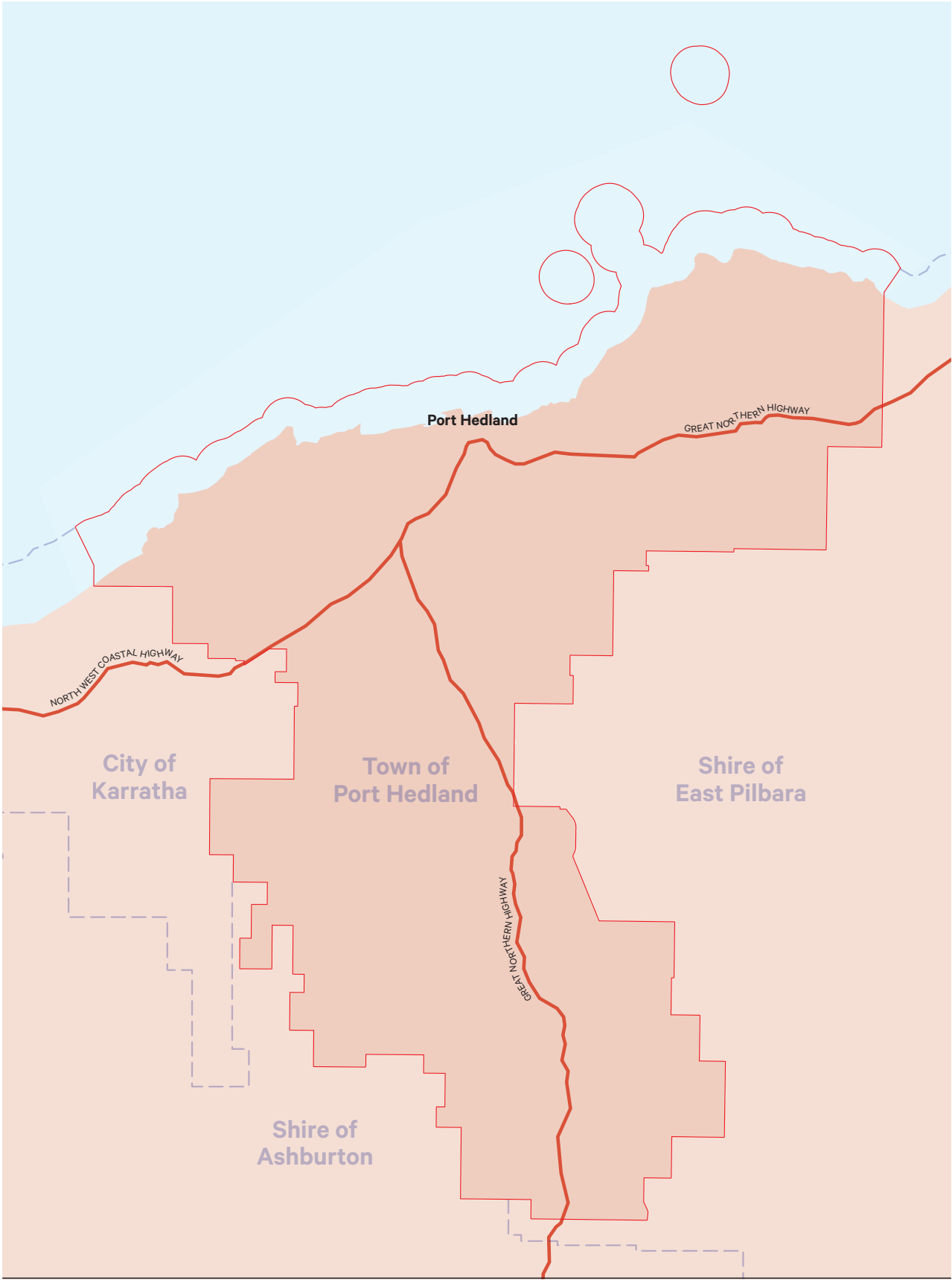
Early engagement with the community and stakeholders was identified as a priority for the development of this Strategy, to ensure a well-informed strategic planning framework for the Town; one that is responsive to the needs of all stakeholders.

The preliminary engagement methods used to inform the preparation of this Strategy included individual meetings with key stakeholders, meetings with identified stakeholder groups, Perth and Port Hedland based roundtables, popup interactive displays within shopping centres, online surveys and provision of information sheets on the Town's webpage.

A separate Community and Stakeholder Engagement Outcomes report (Appendix A – Shaping Hedland's Future) documents the findings and inputs, which have informed the preparation of this Strategy.



Figure 1. Integrated Planning and Reporting Framework



Locality Plan

Figure 2. Location and Strategy Area

2. Vision and Objectives

2.1 Vision

“To be Australia’s leading Port town embracing community, culture and the environment”.

2.2 Objectives

The Strategy’s objectives are drawn from a comprehensive context analysis which identified issues, challenges and opportunities for the Town. The objectives, outlined below, support the Town’s vision to be Australia’s leading Port Town.

Our Identity	<ul style="list-style-type: none"> • Provide a range of community facilities that are inclusive for the whole community, both now and into the future • Provide a hierarchy of open space to meet the diverse needs of the community • Strive to improve amenity across the local government area • Promote development that respects our cultural heritage
Our Prosperity	<ul style="list-style-type: none"> • Protect strategic industry from sensitive and incompatible land uses • Establish a clear hierarchy of commercial centres that meet the needs of the community • Actively pursue opportunities to diversify the economy • Rationalise dedicated industrial areas required to service industry and the community • Promote our unique offerings to attract visitors and tourists
Our Built and Natural Environment	<ul style="list-style-type: none"> • Facilitate consolidated urban form that maximises efficient use of existing and planned infrastructure • Plan for development areas that can effectively respond to fluctuations in the economy and population change while being resilient to climate change and natural systems • Enhance and conserve our natural environment for the social, cultural, spiritual and economic wellbeing of the community • Plan for a diverse range of housing typologies • Provide services and infrastructure that meet urban growth requirements



3. Key Issues

3.1 Community Considerations

3.1.1 Overview of key issues

1. It is acknowledged that the Aboriginal and Torres Strait Islanders need to be engaged with and have input into decision making. It is also recognised that there needs to be specific focus on providing spaces and activities that are welcoming to the Aboriginal community.
2. Health services are seen as a fundamental priority and the challenges of addressing the needs of the ageing and the chronically ill were highlighted as areas requiring particular focus.
3. Recognition that Port Hedland and South Hedland will be well-serviced by community facilities following development of Hedland Recreation Hubs masterplans and Spoilbank Marina and the focus should now be on provision of more services and programs to foster a more connected and lively culture in order to bridge the gap between townships and communities.
4. There are long waiting lists for childcare and the literature review has identified the community's desire to see more childcare options established to meet demand.
5. Town's Public Open Strategy (POS) Strategy recognises an overall shortfall of POS across the district with a significant shortfall of POS in South Hedland (4.6% of gross subdividable area) which does not meet the WAPC's long standing requirement to provide 10% of the gross subdividable area as POS. The Town has recently adopted a number of strategies and master plans to stage the delivery of community and recreation infrastructure to cater for regional, district and local recreation requirements.
6. Some Aboriginal representatives have identified the desire to establish a substantial community garden and / or micro-agriculture venture to grow Indigenous

produce and traditional food sources of the traditional owners of the land.

7. Some Aboriginal representatives have identified the need to provide a short stay camping area to meet the needs of Aboriginal groups visiting relatives and friends in the area.
8. Stakeholders generally agree that South Hedland should be the focus for commercial, civic and community services and facilities in Hedland.

3.1.2 Public Open Space

The Town's POS Strategy (2019) establishes a hierarchical approach to the distribution of POS, the key recommendations of which have been incorporated into this local planning strategy. The key recommendations arising out of this strategy for the localities of Port Hedland and South Hedland are provided below:

Port Hedland

Quality

Only improvements to the quality of open space are necessary for the Port Hedland locality. The following actions are identified to improve the quality of open space in Port Hedland.

- Install additional shade trees in all parks;
- Install dog litter bags at all parks;
- Remove toilets, barbecues and seating from some smaller parks.
- Install environmental education boards and other features to Cemetery Beach Park to educate the community on the turtle nesting areas;
- Design and install protection measures for coastal parks in anticipation of future weather events.
- Remove ageing infrastructure at end of life, including gazebos. The planting of shade trees in the short term will allow adequate shade in the longer term and can replace gazebos at their end of life.

South Hedland

Both quality and quantity of open space need to be improved in South Hedland.

Quality

- Install additional shade trees to all parks;
- Install dog litter bags at all parks;
- Install shade for South Hedland skate park;
- Remove toilets, barbecues and seating from some smaller parks;
- Replace soft floor matting in playground areas.

Quantity

- Design and develop an off leash enclosed dog park in central location;
- Plan and develop additional parks at Murdoch Drive, JD Hardie centre and Buzzard Street;
- Future structure plan areas to address POS deficiencies.

Cash-in-lieu

Development Control Policy 2.3 issued by the Western Australian Planning Commission (WAPC) generally requires the provision of 10% POS within residential estates. POS is typically given up free of cost at the subdivision stage, however does not apply to subdivisions creating less than five lots.

Section 20C of the previous *Town Planning and Development Act 1928* outlined how cash-in-lieu of Public Open Space may be expended and Section 4.3 of DC 2.3 outlines what is considered acceptable for expenditure of cash in lieu funds. Generally, 8% public open space and 2% cash in lieu is acceptable, however the land area may be less, particularly if the local government can demonstrate sufficient POS already exists in the locality. Reference to Liveable Neighbourhoods Community Design Code is relevant and provides additional support and information.

The *Planning and Development Act 2005* (the Act) introduced provisions for payment of cash-in-lieu of POS which were similar in some respects, but in some other respects significantly different to the provisions contained in Section 20C. The most significant differences are:

- Cash-in-lieu of POS will be payable by the subdivider if the WAPC so requires after consultation with the local government, or if the WAPC, the local government, and the owner of the land so agree. The difference is that cash-in-lieu may be payable if the WAPC so requires even if the local government or the owner do not agree. That does not apply, however, in the case of subdivisions creating less than five lots.
- The cash-in-lieu value of the POS land is to be determined as at the date on which the valuation is made. The date on which the valuation is made could be any date up to, or even after the date of endorsement of approval on a deposited plan, but in any event will necessarily be a date after the date of conditional approval, which was the date of valuation under section 20C of the 1928 Planning Act. The WAPC may also require the provision of open space in industrial, commercial or rural subdivisions where there is a need to provide passive and active recreation areas and protect environmental features as part of the subdivision design.

The Town will seek a regional variation to the 10% POS provision in new structure plans where the following circumstances apply:

- Residential land is within 800m walkable distance to an existing or proposed school oval; and
- When residential land is within 800m walkable distance to existing parks, including but not limited to regional open space.

Extended maintenance period for POS to 5 years

The WAPC will generally require POS to be developed by a subdivider to a minimum standard, and then maintain it for two summers. The development should be in accordance with an approved landscaping plan or landscape guidelines by the local government, which sets the minimum standards relating to earthworks, reticulation, grassed areas, planting and pathways. The maintenance of these parks poses financial and time constraints to the Town, largely due to the climate of the Pilbara region. Infrastructure and flora are exposed to harsh elements, which results in the quality of assets declining at a more rapid rate. In many instances, the two year developer maintenance period required by the WAPC is not long enough to ascertain whether the landscaping and plantings by the developer have been successful.

The POS Strategy proposes the developer to be responsible for POS maintenance for five years. This will ensure that if landscaping does not survive the initial years, the developer will be required to review the plant species and reticulated infrastructure, and replace accordingly. This will encourage developers to consider appropriate plant species and reticulation from the outset, and will also encourage the use of higher quality materials in the development of assets and infrastructure associated with the POS. The extended maintenance period will also allow the Town to effectively budget for the maintenance costs of new parks and facilities following the maintenance period.

3.2 Economic Considerations

3.2.1 Industry Opportunities

Industry opportunities identified through the competitive assessment are outlined in the table below. Key factors considered in the identification of industry opportunities include:

- Industries with low labour specialisation but high growth, as these industries may have areas which are underrepresented and have sufficient demand for growth;
- Industries with high labour specialisation and high growth, as these industries may have areas that can be further expanded to optimise the economic contribution of the industry;
- Prominent imports into a region, where skills and labour can be easily sourced, as this can provide opportunities for import replacement; and
- Macro-economic trends.
- It is recommended that an Economic Development Strategy is prepared to identify strategies and actions to leverage local economic opportunities and key focus areas.

Table 1. Industry Opportunities for Port Hedland

Industry	Opportunity
Mining Support Services	<ul style="list-style-type: none"> Currently mining support services are a key import into Port Hedland (\$158 million in 2015-16), presenting an opportunity for import replacement. Growth is anticipated to trend in line with growth in the mining industry, which is expected to increase significantly with the number of new mining projects as well as the approval of the Eliwana project and replacement of the Yandi mine with South Flank
Construction	<ul style="list-style-type: none"> Currently Port Hedland has low labour specialisations and high growth expectations at the State level for non-residential building construction and other construction works, which provides opportunities which will prove essential for industry diversification and town development/ enhancement. Construction services are a prominent import into Port Hedland (including the areas of land development and site preparation, building structure, building installation, building completion and other construction services), which provides opportunities for import replacement. There are a number of construction projects planned and underway in residential construction, non-residential construction etc., which will grow demand for this industry.
Manufacturing (Machinery and Equipment & Primary Metal Product)	<ul style="list-style-type: none"> Currently Port Hedland has low labour specialisation and moderate growth expectations at the state level in this industry, which presents an opportunity for expansion. Manufacturing, is a prominent import into Port Hedland, providing opportunities for import replacement. Particularly, Port Hedland has the potential to support greater advanced manufacturing in terms of metal product, machinery and equipment, which would enhance the mining and construction supply chains locally. Growth is anticipated to trend in line with construction and mining activity and consequent demand.
Rental and Hiring Services (except real estate)	<ul style="list-style-type: none"> Currently Port Hedland has low labour specialisation and moderate growth expectations at the State level in this industry, which presents an opportunity for expansion. Rental and hiring services are a large import into Port Hedland, which provides opportunities for import replacement. Particular opportunities exist in motor vehicle and transport equipment rental and hiring and other goods and equipment rental and hiring, which are anticipated to grow with increased construction activity and hence could be expanded.
Healthcare and Social Assistance	<ul style="list-style-type: none"> Currently Port Hedland has low labour specialisation and moderate growth expectations at the State level in this industry, which presents an opportunity for expansion. As the population in Port Hedland continues to grow, health care and social assistance will continue to become more prominent. Particular opportunities exist in residential care services and medical and other health care services, both of which are vital to service community needs. This industry is currently under-represented in Port Hedland, with just: <ul style="list-style-type: none"> One hospital servicing Port Hedland (Hedland Health Campus) One residential care facility in Port Hedland (Karlarra House Aged Care Facility) This industry is anticipated to be the fastest growing in Australia by 2023, with 34% growth in regional areas (Regional Australia Institute, 2019). Regional hubs (like Port Hedland) will prove essential in servicing the healthcare demand from their catchments.



3.2.2 Tourism

1. The following local tourism opportunities and areas of focus were identified through the review of background documentation contained in Part 2 of this Strategy:
 - a. Development of regional and local tourism trails;
 - b. Strategies to diversify tourism accommodation;
 - c. Strategies to market existing tourism offers (i.e. turtle nesting tours, Seafarers tour, mining tours);
 - d. Local arts and culture;
 - e. Pastoral tourism opportunities;
 - f. Industrial/ mining based tourism;
 - g. Identification of coastal tourism nodes on the Strategy maps to support coastal based tourism activities and infrastructure; and
 - h. Promote region to cruise ship industry.
2. It is recommended that a Local Tourism Strategy be prepared to identify strategies and actions to leverage local tourism opportunities i.e. cruise ship industry.
 - Extensive capital investment (activating heavy industrial land, road construction, State-of-the-art TAFE training centres; sports and community facilities) and facility upgrades;
 - Expanding WA's footprint in renewable energies and introducing new manufacturing capabilities;
 - Reskilling and targeting the State's workforce to industries of high demand;
 - Small business support packages and buy-local procurement initiatives;
 - An investment focus on regional WA incorporating a number of the approaches outlined above;
 - Expanding agriculture and aquaculture footprints;
 - Improving biodiversity outcomes;
 - Investing in tourism and culture and the arts;
 - Critical initiatives targeting vulnerable persons and patient care; and
 - Improving health, social and economic outcomes in Aboriginal communities and pathways for women and young people.

3.2.3 Coronavirus (Covid-19) recovery

The global Covid-19 pandemic declared by the World Health Organisation in early March 2020 has caused a global recession. Quarantine measures, border controls, extended periods of lockdown, and unprecedented levels of financial stimulus measures, relief packages and a costly health response, have resulted in significant deficits in Federal and State budgets.

As at September 2020 and given the currency of the global Covid-19 health crisis, Australian Federal and State Treasurers and economists caution against the reliability of economic forecasts.

The Western Australian Government's \$5.5 billion WA Recovery Plan which was released in July 2020, in brief evidences a strong focus on:

- Industry development (regional ports), mining exploration (encouraging and kickstarting new projects) and streamlining mining and business approvals processes;
- Local manufacturing (supported by skilled technical workers and enhanced procurement and contracting activities);

While the Covid-19 pandemic has affected commodities in a variety of ways, the resources sector has remained strong with iron ore and gold prices helping outweigh falling prices for energy commodities.

Despite the lack of surety regarding economic forecasts associated with the Covid-19 pandemic, the Federal and State Government recognise the importance of supportive policies to sustain and maximise the capacity of the resource sector for the national economy.

The information outlined at 3.2.1 'Industry Opportunities' details competitive advantages identified pre-pandemic for Port Hedland. These remain relevant in the context of the State's WA Recovery Plan. The Town will need to continue to assess and analyse emerging economic forecasts and opportunities to maximise recovery and growth in Port Hedland.

In response to the pandemic, the State government introduced a number of regulatory changes to the *Planning and Development (Local Planning Schemes) Regulations 2015* to support the Government's response to the State of Emergency.

Such regulatory changes included a Notice of Exemption to remove barriers within the planning system to enable flexible and timely responses to support business in the changing environment. Some of these exemptions from development approval related to the following:

- Medical or health-related facilities required in response to the COVID-19 pandemic;
- Truck and logistic companies needing to deliver goods but currently restricted with loading / unloading times;
- Restaurants and cafes required to sell takeaway in contravention of current planning conditions;
- A blanket two-year extension for all current development approvals; and
- Temporary workers accommodation.

3.3 Environmental Considerations

3.3.1 Climate Change

Research from the CSIRO indicates that the climate is changing at a rate significantly faster than that experienced throughout geological history and that while climate varies naturally in location and time, the changes currently being experienced, and that are expected over the next 100 years, are occurring at a rate more rapidly than previously adapted to. The term 'climate' applies to average weather conditions over longer time periods and includes consideration of temperature, rainfall, sea level, ocean acidity and salinity, solar radiation and water vapour in the atmosphere, while 'weather' is the brief, rapidly changing condition of the atmosphere influenced by the movement of air masses.

As the climate changes, the Town is likely to experience:

- Increased rates of evaporation, between 3 to 6.5%.
- Annual rainfall decline by 1 to 2%, with reduced rainfall in the western Pilbara.
- Increased extreme summer storms, including cyclones, resulting in a higher incidence of flash flooding.
- Prolonged dry periods, likely to reduce vegetated groundcover and increase the risk of water and wind erosion.
- Increased risk of bushfires, between a 27 to 31% increase in severe fire days, dependent on the rate of greenhouse gas emissions (DAFWA 2016).

These changes are likely to result in:

- Increased vulnerability of coastal infrastructure due to sea level rise, including port facilities.
- Increased degradation of infrastructure and material due to higher temperatures, altered soil moisture and extreme events (i.e. flash flooding).
- Increased detrimental health impacts due to higher temperatures, increase in insect-borne and water-borne diseases and extreme weather events (such as flash flooding).
- Reduction in groundwater resources, increased soil erosion and loss of vegetation.
- Reduction in livestock productivity due to heat stress.

Recommendations / strategies

- Support the development of appropriate building design to improve heating and cooling through solar passive design, ventilation and use of appropriate materials in line with the recommendations of the Pilbara Vernacular Handbook prepared by DevelopmentWA
- Ensure infrastructure is designed to minimise the need to replace it regularly as a result of increased temperatures and extreme weather events. This will require consideration of the type of material and the appropriate placement of infrastructure
- Ensure appropriate planning controls are implemented, such as restriction of new development behind the 100-year erosion line, to ensure that future sea level rises are accounted for
- Bushfire planning is interrelated with climate change and is a risk that warrants a strategic approach across the Town
- Global warming has the potential to influence and impact on agricultural practices which may alter practices on pastoral land

3.3.2 Coast and foreshores

The coastline is a significant asset to the Town, and forms an important community asset, through social, economic and environmental benefits. However, the narrow headland where the Port Hedland townsite is located is exposed to erosion hazards, with low-lying areas subject to coastal erosion and inundation (as a result of tidal influences and storm surges). These hazards pose a threat to ongoing social and economic activities, particularly the operation of the port, which is the largest port (by tonnage) in Australia. A Coastal Vulnerability Study was prepared by Cardno (2011) to inform future planning. Additionally, a CHRMAP was prepared by GHD (2019) to assist with coastal management decision making, with recommended adaptation actions to address inundation and erosion risks.

The coastal vulnerability study and CHRMAP identified that coastal erosion and flooding present an immediate level of risk to assets and values, particularly to:

- Coastal residential properties in an area identified as 'East Port Hedland', which includes the race track, the old WWTP area and the area to the west of Pretty Pool, which includes areas zoned as 'Urban Development' in the scheme (at risk of inundation in the immediate term) (Cardno 2011).
- Coastal residential properties in the West End (vulnerable to erosion in a possible and rare event) (GHD 2019).
- Public infrastructure (playgrounds) within the Cemetery Beach foreshore (vulnerable to erosion in a rare event) (GHD 2019).
- Public beaches, roads, and residential properties at the western end of Sutherland Street (vulnerable to erosion in the rare event) (GHD 2019).
- Public beaches, roads, and residential properties on Barker Court, near Goode Street (vulnerable to erosion in the rare event) (GHD 2019).
- The existing Port Hedland town centre within the West End (vulnerable to coastal flooding in all events) (GHD 2019).

A number of different adaptation responses to coastal erosion and flooding were assessed in the CHRMAP, from partial groyne and sand replenishment, complete groyne and sand replenishment, intertidal rock platform and sand replenishment through to managed retreat.

Managed retreat was marginally considered the preferred option as this is the policy preference of State Planning Policy 2.6, however would require the acquisition of privately owned land to allow for expansion of the coastal foreshore reserve. The current foreshore reserve in Port Hedland, with the exception of Pretty Pool, is insufficient in width to maintain the social and environmental functions of the reserve once erosion risk has been allowed for (GHD 2019). Therefore, managed retreat cannot occur in Port Hedland without impacting on land use outside the current foreshore reserve.

The retreat zone, as identified by GHD, nominally recommends a long-term (100-year) erosion hazard area plus an additional 20 metres as a future foreshore reserve. This takes into account that there is adaptive capacity within the foreshore for restabilisation following a rare event to maintain environmental values, and 20 metres is generally sufficient for public facilities, including playgrounds, access and parking outside of the hazard area (GHD 2019). Any future managed retreat option would need to be supported by a detailed managed retreat plan.

The coastal erosion hazard line and inundation levels are identified in Figure 3.

If interim protection is implemented in the current planning horizon, then immediate expansion of the coastal foreshore will not be required with interim land use and development managed in accordance with the recommended Special Control Area. However, when following the design life of interim protection if design life is not extended, risk again becomes intolerable, and the coastal foreshore reserve would need to be reviewed in line with the WAPC's CHRMAP Guidelines. Following acquisition of land within the foreshore reserve, capital investment will be required for decommissioning assets and re-establishing the area for coastal foreshore purposes (GHD 2019).

Port Hedland's coastal foreshore reserve is currently a 'Parks and Recreation' reserve in the local planning scheme. Future iterations of the Town's local planning scheme will be required to be consistent with model scheme provisions set out in the *Planning and Development (Local Planning Schemes) Regulations 2015* which will likely include rezoning the coastal foreshore reserve to 'Environmental Conservation'.

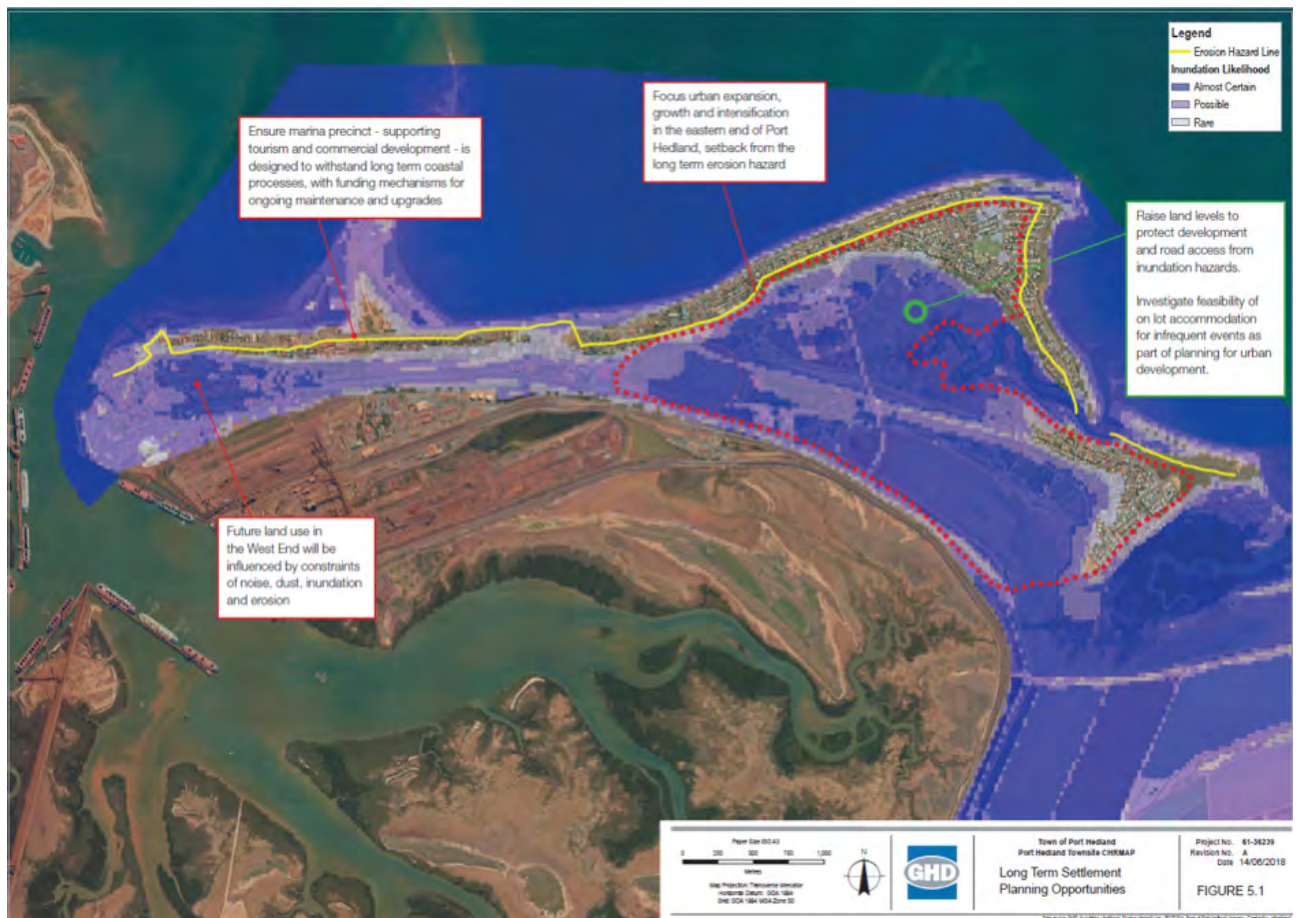


Figure 3. Port Hedland townsite CHRMAP mapping (GHD 2019)

Recommendations / strategies

- The recommendations and strategies below are based on the CHRMAP prepared for Port Hedland (GHD 2019).
- Define the exact area that the retreat zone will include. The CHRMAP nominally identifies this as the zone that should be calculated based on the allowance for physical processes (e.g. erosion), with 20 metres to provide space for additional facilities.
- Introduce policy measures that require strategic planning and rezoning proposals to be assessed against State Planning Policy 2.6 Coastal Planning as if it were new development, including ceding of coastal foreshore reserve (i.e. avoiding any new development within the retreat zone, with the exception of temporary development).
- Avoid density increases or intensification of land uses (including subdivision) within the retreat zone.
- Consider sites of high density in the retreat zone that might be appropriate for a reduction in density and development potential.
- Plan for infrastructure provision in a way that avoids placing future infrastructure within, or immediately adjacent to, the physical processes allowance, and avoid permanent linear servicing infrastructure (including roads) parallel to the coast, which may potentially become threatened assets in longer-term planning horizons.
- Consider implications for future development for land identified as being prone to coastal processes by the recently completed CHRMAP.
- Identify funding mechanisms / processes for the acquisition of land within the managed retreat zone over the longer term.
- Prepare a Coastal Foreshore Management Plan (CFMP) that highlights where interim protection is achievable and details short, medium and long term coastal reserve asset management.



3.3.3 Environmental Assets

A large proportion of the coastline within the Port Hedland region is reserved for 'Conservation Recreation and Natural Landscapes' within the current scheme. Within the scheme, there is limited information pertaining to land uses that may be precluded or allowed within these areas. This is a consideration for the strategy, as some of these reserved areas of the coast are identified in the Port City Growth Plan as investigation areas for tourism and recreation (including camping and fishing opportunities).

The key environmental assets within the Town include mangroves, nesting beaches for green and flatback turtles, several threatened ecological communities, a range of threatened and priority flora and fauna, and several rivers, including two that contribute to potable water, the De Grey and Yule Rivers. Protection of these environmental assets can be included through the Town scheme, in addition to State Government planning tools. Future development should consider the Semeniuk report prior to any development occurring in areas identified as significant wetlands, as significance ranges from regional importance to international importance.

Recommendations / Strategies

- Provide greater definition and clear aims and objectives in the scheme text for the 'Conservation Recreation and Natural Landscapes' reservation. There is currently no defined terminology within the scheme, with no explanation as to what land uses are permitted within these areas. Providing greater definition of, and aims and objectives for, these areas will allow for better determination of the protection afforded to the environmental assets within these areas, including mangroves, and whether further protection is required.
- Protection of the known turtle nesting areas within the Port Hedland townsite area. This includes around Cemetery Beach and Pretty Pool Beach, to ensure that nesting turtles are not impacted by light pollution. This may include a buffer area surrounding known nesting sites to ensure that future development in these buffer areas are limited to low-light impacts. This will require a methodology to easily update buffer zones; however, as new nesting locations may occur outside of the identified ones (due to the time it takes to amend a scheme, this may be unviable). Care for Hedland has a close working relationship with the Town and has promoted reduced streetlights during nesting season (Town 2017).
- Undertake assessment of wetlands identified by Semeniuk as significant, to provide an up-to-date assessment of these areas to guide future development and to afford appropriate protection for these areas.

3.3.4 Stormwater Management

Currently there is no overarching framework (such as a Regional Water Management Strategy) for new development to consider when preparing supporting documents for structure plans/subdivisions/developments. As the climate changes and different processes impact on water availability and runoff, it is important to have an overarching guidance document for new development and industries that considers the requirements of the Town.

Recommendations / Strategies

- Prepare a Regional Water Management Strategy, to assist in ensuring planned drainage outcomes are applied across precincts

3.3.5 Water Supply

Groundwater is an important source of water for potable and non-potable water within the Town. The quality of groundwater varies according to the underlying soil and geology and can have high salinity but can also be detrimentally affected by contamination from minerals, chemicals, erosion and harmful microorganisms.

Two Public Drinking Water Source Areas (PDWSAs) are located within the Town, the De Grey Water Reserve and the Yule River Water Reserve. In general, PDWSAs are sensitive to contamination, which can originate from a range of activities, including urban development, fuel handling and storage, chemical spills, inappropriate management and treatment of effluent and grazing.

The Town does not support activities associated with mining tenements that could negatively impact on the public drinking water source areas, such as the storage of fuels, chemicals, explosives or dangerous goods, dewatering, unnecessary clearing of vegetation, waste disposal or other such activities that could adversely impact groundwater quality.

Recommendations / Strategies

- All priority source protection areas in Public Drinking Water Source Areas should be shown as Special Control Areas in the local planning scheme in accordance with the recommendations of any relevant land use and water management strategy published by the WAPC, or any water source protection plan approved by Department of Water and Environmental Regulation (DWER). The purpose of these Special Control Areas should be to:
 - o Identify the proclaimed PDWSAs. Priority 1 areas are defined to ensure the risk avoidance of pollution of the water source, Priority 2 areas are defined to ensure that there is no increased risk of pollution of the water source and Priority 3 areas are defined to manage the risk of pollution to the water source.
 - o Ensure that land use and development within each Priority area is compatible with the protection and long-term management of water resources for public water supply.
- Land uses and developments in all priority source protection areas that have the potential to impact detrimentally on the quality and quantity of public drinking water supplies should not be permitted unless it can be demonstrated that such impacts can be satisfactorily managed. In determining land uses and development proposals, the Local Government will have due regard to relevant State Government policies and the most recent DWER Land Use Compatibility Tables for Public Drinking Water Supply Areas (DoW 2016).

3.3.6 Air Quality

Air quality, particularly the health effects of dust on Port Hedland residents has been a public issue of considerable concern, particularly in the West End as a result of Port and Port-related industrial activities, resulting in the establishment of the Port Hedland Dust Management Taskforce (Dust Taskforce) in 2009; establishment of an air quality monitoring network; conduct of a detailed health assessment of particulate matter by the Department of Health in 2016; and the introduction of various land use planning responses.

The Department of Health's *Port Hedland Air Quality Health Risk Assessment for Particulate Matter* report found sufficient evidence of negative health effects of dust in human health warranted dust management controls and planning measures to reduce community dust exposure. Following consideration of the report, the Dust Taskforce recommended the introduction of land use planning controls to prohibit sensitive land uses and restrict population growth in the West End.

The WAPC subsequently prepared an Improvement Plan for the West End which triggered the preparation and implementation of an Improvement Scheme for the West End, introducing land use and planning controls under the authority of the WAPC, over the Improvement Scheme area. The State Government has also introduced a voluntary buy-back scheme for residential properties.

Recommendations / Strategies

- Clearly define future requirements and limitations on land use and development in the West End, on the basis of an Air Quality Risk Assessment. The Air Quality Risk Assessment advocates a land use and development strategy based on a managed retreat from that area which needs to be reflected in the updated local planning strategy.
- A strategy must be introduced to manage and restrict future population growth in the dust-affected areas of Port Hedland (the closer to the port and Nelson Point, the tighter the restrictions) (DSD 2016). A long-term land use planning strategy may offer a tool for gradually moving the residential areas away from the operations area.
- Current regulatory controls for managing dust from operations at Nelson Point and Finucane Island may be aided by declaring a buffer between the port and residential areas further to the east. Air quality modelling can help define this area but should not be the sole decision-making tool used for determining the buffer boundary.
- Appropriate planning controls should be implemented to prohibit sensitive land uses and restrict population growth in the West End of Port Hedland, over land west of Lukis and McGregor Streets to the port. To give effect to this, the WAPC has prepared an Improvement Plan and Improvement Scheme designed to achieve the land use outcomes described in Recommendation 5 of the Port Hedland Dust Management Taskforce Report (detailing the location of Special Control Areas (to restrict the development of new residential and sensitive land uses) and identifying areas of future low density residential development).
- Improvement Plan No.50 (Improvement Plan) was prepared and adopted, to facilitate the implementation of the Port Hedland West End Improvement Scheme No.1 (Improvement Scheme).

3.3.7 Other land uses

There are a number of emissions that are generated by industrial, commercial, rural activities and infrastructure that may exceed amenity levels considered acceptable to residential areas and other sensitive land uses (such as schools, hospitals, motels, etc.). These emissions include noise, dust, gaseous and particulate emissions and odour. Guidance of the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005) outlines the Environmental Protection Authority's position with regard to the management of emissions.

This includes:

- Avoidance of impacts.
- Minimisation of the creation and discharge of waste by industry implementing best practice.
- Ensure environmental impacts from industrial emissions are acceptable and meet the relevant regulations and health criteria beyond the boundary of the site, industrial estate or buffer area.
- The protection of sensitive land uses from industrial emissions is assisted by the identification of suitable separation distances at the strategic and structure planning stages of the land use planning process, and in the early project formulation stages in the case of individual projects.
- Where site-specific technical investigations are completed, this will provide the most appropriate guide to the separation distance that should be maintained between a particular industry and sensitive land uses, or between industrial precincts and sensitive land uses, to avoid or minimise land use conflicts.

State Planning Policy 4.1 State Industrial Buffer Policy with regards to Guidance of the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005) provides the recommended generic separation distances between sensitive land uses and industrial land uses (such as the wastewater treatment facility) in order to avoid potential conflicts between these land uses.

Recommendations / Strategies

- Identify industrial, commercial, rural activities and infrastructure that have the potential to generate emissions that may exceed acceptable amenity levels.
- Where development is proposed to be expanded within the Port Hedland International Airport lease boundary, ensure that future land uses are compatible with the existing zoning, and that future development will not exacerbate existing contamination issues within the lease area. Any remediation action that is taken within the lease area should be in accordance with the previously commissioned site investigations, as identified within the Port Hedland International Airport Masterplan.
- Maintain separation distances in accordance with State Planning Policy 4.1 Industrial Buffer Policy and Guidance of the Assessment of Environmental Factors Separation Distances between Industrial and Sensitive Land Uses No. 3 (EPA 2005), or as identified via detailed site-specific technical investigations.

3.4 Built Form and Infrastructure Considerations

3.4.1 A new approach to urban growth

The Pilbara's Port City Growth Plan (the 'Growth Plan') was a Pilbara Cities initiative and adopted by the Town of Port Hedland as its Local Planning Strategy in 2012, when mining construction projects were in a growth and delivery phase, driven by strong global demand and economic returns for iron ore. The Growth Plan strongly emphasised accommodating projected economic growth by aspiring to accommodate a total population of at least 50,000 people by 2035. The Growth Plan identified large areas of land to accommodate this growth, much of which had significant environmental constraints, tenure limitations and/or a lack of service provision.

Subsequent to the preparation of the Growth Plan, the mining industry transitioned from a construction phase to an operational and delivery phase. The target population of 50,000 people by 2035 proved overly optimistic and now necessitates the preparation of a strategy that sets out a plan for urban growth, based on more realistic population growth scenarios.

3.4.2 Population forecasting

Population forecasting provides a sound basis on which to develop strategies and actions to inform growth and development within a local government area. The Town's approach to the development of this Strategy is to ensure a balance is achieved between a conservative (or 'baseline') population forecast versus an aspirational population forecast. This approach will ensure that the Strategy is resilient, capable of addressing baseline growth patterns by providing sufficient land for urban growth and necessary services and infrastructure while being able to respond effectively to more rapid fluctuations in growth, should certain economic and policy factors come into play.

The following outlines the conservative and aspirational forecasts for the Town, as well as factors that could facilitate a high growth scenario:

Conservative forecast

The conservative forecast developed by the Town, identifies a population forecast of **18,500 people** for the Town by **2041**. This population forecast is based on the historical long-term average population growth rate of 0.9% per annum. While it is a conservative growth rate, this Strategy acknowledges the non-linear 'boom and bust' nature of growth and decline in Port Hedland and therefore this scenario has its limitations as growth does not follow a linear trajectory.

Aspirational forecast

The aspirational forecast is based on Forecast.id modelling which identifies a population of **27,085 people** for the Town by **2041**. The Forecast.id population forecast takes into account a range of factors such as demographic changes (births, deaths, migration) and accounts for urban development drivers (residential development opportunities, land availability, diversity of housing stock, regional competition, vacancy rates).

A concerted effort across government and industry would be required for the Town to realise population growth in accordance with the high growth scenario. Some factors that may drive this growth could include the following:

- Improvement in community infrastructure including schools, health care facilities and the amenity of parks and the public realm, making Hedland a more attractive place to live;
- The delivery of community projects such as the McGregor Street sporting precinct, South Hedland Integrated Sporting precinct and the JD Hardie Masterplan;
- Corporate social responsibility by industry and business to encourage and promote a local workforce over fly-in, fly-out workforces;
- A commitment by the State Government toward Hedland becoming a prosperous regional economy through its decision making on regional services, mining infrastructure and workforce accommodation camps;
- A potential State government policy stance on FIFO employment such as observed in Queensland with the Mining Safe to Work (2019) policy; and
- Collaboration and partnerships with industry to support diversification of the local economy.

3.4.3 Housing demand and supply

At the 2016 census, a total of 7,432 dwellings were recorded within the Port Hedland local government area. Of these, 66 percent were occupied, leaving approximately 2,450 dwellings vacant. The average household size of Port Hedland is currently 2.56 persons per dwelling. Based on the population forecasts for the Town growing from 14,975 people to between 18,500 (conservative forecast) and 27,085 (aspirational forecast) people by 2041, a total of 1,377 and 4,638 new dwellings respectively will be required.

The Department of Planning, Lands and Heritage (DPLH) has undertaken a land supply assessment which identified the capacity to deliver new dwellings as follows:

Locality	Port Hedland	South Hedland	Total
Short-term (0-5 years)	0	320	320
Medium-term (6-10 years)	0	2,750	2,750
Long-term (10+ years)	382	1,485	1,867
Total	382	4,555	4,937

Source: Department of Planning, Lands and Heritage (2018)

The land supply assessment demonstrates that there is sufficient land zoned for residential purposes to accommodate the aspirational population growth scenario. This is additional to a high vacancy rate in existing residential stock. On this basis, it is considered necessary to prioritise residential growth in a way that makes efficient use of infrastructure and services and which responds to identified need for new housing.

There is limited suitable vacant land within Port Hedland to accommodate new housing, with much of the vacant land (not subject to freehold) being environmentally constrained or limited by tenure. Priority shall be directed to land free from environmental constraints, being typically higher lying land not prone to coastal inundation and located away from mangrove habitats. Sites include the former recreation centre and detention centre sites, the Telstra tower site and the former wastewater treatment plant site. Land on Athol Street, The Stables precinct, Pretty Pool Stage 3a and a portion of the McGregor Street sporting precinct are

all identified as 'Development Investigation Areas' which require further site investigations to determine if this land may be suitable for development.

South Hedland includes substantial areas of vacant land that is suitable for residential development. Priority shall be directed to existing vacant infill sites and vacant land within 400m walkable catchment of the City Centre. The consolidation of urban development is supported around the City Centre to improve the viability and performance of the centre long term.

The Western Edge and Osprey Rural Village Structure Plan areas have previously been approved and provide substantial housing yield to meet the medium to long term projected demand for dwellings.

Given the extent of land zoned 'Urban Development' in South Hedland, there will be a general presumption against rezoning of further rural land for urban purposes.

Housing Snapshot

1. The Land Demand Assessment undertaken for this Strategy has identified a significant surplus of vacant zoned land to accommodate future housing within the planning horizon of an LPS (15 years). Much of the vacant zoned residential land within the Port Hedland townsite is substantially constrained and may be cost prohibitive to develop in the current market.
2. A number of sites within Port Hedland have been identified as being suitable for short to medium term residential development. These sites include the former Recreation and Detention Centres, the Telstra Tower Site, the former Wastewater Treatment Plant site and the Athol Street Urban Development area. These sites will be important to address the anticipated demand for new dwellings within Port Hedland, arising from additional residential development being prohibited in the West End under the WAPC's Improvement Scheme for the West End.
3. The Stables Precinct and Pretty Pool Stage 3a have been identified as longer term prospects to accommodate residential land and would be subject to further investigations to inform any rezoning and structure planning of these sites.

4. Coastal inundation within Port Hedland will require appropriate adaptation responses to new residential development at risk. Such responses may include raising development above the inundation levels.
5. South Hedland contains a substantial amount of unconstrained land suitable to accommodate residential growth. It is therefore necessary to identify a logical staged approach to the development of this land to ensure the efficient use of existing infrastructure and services and to prioritise land in proximity to existing amenity (i.e. the City Centre). Vacant infill development sites and land in proximity of the City Centre should be prioritised over other land located on the edge of the established urban area of South Hedland.
6. Crisis care housing and accommodation for aged persons have been identified anecdotally as being required to service current and future community needs.

3.4.4 Commercial and Retail Land Supply

Port Hedland and South Hedland are two distinct urban areas and each require a level of services and facilities to meet the needs of residents.

South Hedland contains the 'City Centre', which will be the focus of future retail and commercial growth in the district and will continue to provide regional level retailing services. It is intended that ultimately this centre will grow to support the growth of the Town into a City. The existing neighbourhood centre in Port Hedland will continue to meet the daily and weekly shopping needs of Port Hedland residents.

Further local centres may be considered within structure planning areas; however, any new centres should be in accordance with an endorsed Activity Centres' Strategy for the district.

Commercial and Retail Land Supply Snapshot

1. The review of various land demand assessment reports prepared in relation to the Town identifies that there is sufficient zoned land to meet retail and commercial land use needs through to 2041.
2. While there is currently an oversupply of built floorspace for retail uses, this floorspace is expected to be extinguished by 2041 (RFF, 2020). The Land Demand Assessment undertaken within this report identifies sufficient zoned land to accommodate future retail and commercial needs within the planning horizon of an LPS (15 years).
3. There is a current shortage of commercial tenancy floorspace. Many commercial uses have taken over traditional retail tenancies as a consequence. The shortfall of commercial tenancy floorspace is projected to increase to 5,500sqm by 2041 if new floorspace is not constructed within this timeframe (RFF, 2020).

3.4.5 Industrial Land Supply

Industrial land use and development has been established in a number of areas within the district over time. The Wedgefield Industrial Estate ('Wedgefield') is the largest of the Town's existing industrial estates. Smaller industrial areas include the West End of Port Hedland, along Bell Street, airport and specialised industry on the Explosives Reserve in Pippingarra. The granting of Crown leases to industrial uses on an unplanned basis has also contributed to the distribution of industrial uses beyond Wedgefield. This Strategy identifies Wedgefield as the primary industrial estate to accommodate future general industry. The Strategy seeks to address existing land use conflicts within the older part of Wedgefield by zoning this area 'Light Industry' to curtail further proliferation of incompatible uses. In doing this, the Strategy aims to transition heavy industrial uses currently located in the older part of Wedgefield to the newer Hedland Junction estate in Wedgefield, which has road and drainage infrastructure to support general and transport logistics for industrial uses.

Industry that has synergies with the International Airport operations may be accommodated on the airport site as leasehold tenancies as opposed to the permanent freehold industrial land within Wedgefield.

Strategic, heavy and noxious industry associated with the port operations is planned to be accommodated within the Boodarie Strategic Industrial Area ('Boodarie'), which is protected via a significant buffer to sensitive land uses.

Applications for industrial land uses on Crown land outside of these precincts will not be supported by the Town.

Industrial Land Supply Snapshot

1. A review of various land demand assessment reports prepared in relation to the Town identifies that there is a total of 5,950ha of land zoned for industrial purposes (industrial, light industry, strategic industry and transport development) with only 190 ha of this land considered developed. A majority of this land relates to the Boodarie Strategic Industry precinct.
2. Approximately 200 ha of land is available within Wedgefield east of the established industrial estate. This land can cater for a range of light, general and transport industrial uses.
3. In addition to Wedgefield, the Port Hedland International Airport (PHIA) has the ability to accommodate industrial land uses that are compatible with and /or reliant on proximity to the airport. This land would need to be developed by the PHIA and offered on a leasehold basis to industrial tenancies.
4. The existing Kingsford Smith Business Park can accommodate service industry and bulky goods' uses; however, it is not proposed to expand this precinct beyond that already developed for this purpose.
5. The 'Old Wedgefield' and industrial land located within the West End of Port Hedland are considered fully developed.
6. The Boodarie Strategic Industrial Precinct and associated buffer is set aside to accommodate large-scale strategic industry associated with the Port, noxious and other heavy industry. There will be significant infrastructure costs associated with the development of the Boodarie Precinct.



3.4.6 Servicing Infrastructure

Refer to Table 2 for key considerations relating to servicing infrastructure.

Table 2. – Servicing Infrastructure Considerations

Category	Comments
Wastewater Infrastructure	<ul style="list-style-type: none"> The Water Corporation provided wastewater planning for the Town of Port Hedland townsite and South Hedland. Further planning needs to be requested for Wedgefield and Boodarie. Review potential areas for expansion of residential and industrial development expansion and overlay contours to determine if new expansion areas can be serviced by gravity, require a network of pumping stations and pressure mains or need to be serviced by a combination of gravity and pressure systems. Review potential areas for expansion of residential and industrial development and determine if new major headworks are required (i.e. expansion of overall system capacities). Discuss with the Water Corporation recent (2017 to 2019) rates of development in Port Hedland and determine if earlier studies and the timelines of expansion of development are still on-track or if the development rate is faster or slower than that predicted and the likely impact on future infrastructure requirements.
Water Infrastructure	<ul style="list-style-type: none"> DWER has undertaken a groundwater investigation of the West Canning Basin to cover the gap between the potential 20.5 GL/yr maximum drawdown and the anticipated required drawdown of 29 GL/yr. Further environmental assessment should be completed to determine if alternative sources of water exist (i.e. not to utilise potable water) for dust suppression purposes in Port Hedland. Review potential areas for expansion of residential and industrial development expansion and overlay contours to determine if new expansion areas can be serviced by the existing network or if major headworks are required to existing water tanks, or if new water tanks are required to maintain head pressures and service qualities. Review potential areas for expansion of residential and industrial development and determine if new major headworks are required (i.e. expansion of overall system capacities). Discuss with the Water Corporation recent (2017 to 2019) rates of development in Port Hedland and determine if earlier studies and the timelines of expansion of development are still on-track or if the development rate is faster or slower than that predicted and the likely impact on future infrastructure requirements. Discuss with the Water Corporation if there has been further progress in studies on the usage of alternative sources (non-potable water) for dust suppression purposes at the Port of Port Hedland.
Power Infrastructure	<ul style="list-style-type: none"> Review potential areas for expansion of residential and industrial development and determine if new major headworks are required (i.e. expansion of overall system capacities). Discuss with Horizon Power recent (2017 to 2019) rates of development in Port Hedland and determine if earlier studies and the timelines of expansion of development are still on-track or if the development rate is faster or slower than that predicted and the likely impact on future infrastructure requirements.

Category	Comments
Stormwater Infrastructure	<ul style="list-style-type: none"> Consider how to incorporate WSUD measures while acknowledging the different climatic and geotechnical conditions to those in the Perth metropolitan region and generally in the southwest; Confirm with the Town of Port Hedland if the recommendations relating to removal of sediment and debris from culverts and grates throughout South Hedland have been acted upon; Determine whether actions have been taken by the Town of Port Hedland on inundation issues due to storm events and the potential for future ocean-borne storm surges in the West End of town; Confirm if any reviews of the Wilson Street drainage pumping system have been undertaken to determine the systems' capacity and whether any likely issues in its maintenance are envisaged; Determine whether actions have been taken as above on potential issues with erosion along the east end coastal interfaces at Pretty Pool, East End, Cooke Point and Spinifex Hill; Determine how much of the future proposed expansion area in the east end is impacted by inundation issues and to what level the landholdings need to be raised to ensure suitable clearances to flooding; Determine the zone of impact on both the West End and the east end should the Wilson Street drainage pumping system either operate with limited capacity or cease to function; Confirm if storm surge walls / barriers / protective measures are required in the Port Hedland Town Centre; Confirm that there are no plans to close existing drainage reserves in South Hedland, or where there are such plans, to confirm that appropriate studies have been / are being completed to model the impact of such closures cumulatively on the upstream and downstream environments; Review all known locations in South Hedland and Wedgefield where photographic evidence has been compiled showing accumulation of sedimentation and debris impacting the capacities of existing stormwater drainage open drains, culverts, bridge structures and in particular where grills / trash racks have been provided over the face of culverts for safety purposes (preventing access / egress by persons and / or animals).
Telecommunications	<ul style="list-style-type: none"> Internet and mobile connectivity issues have been reported in Port Hedland. Three yearly public reviews of regional telecommunications are conducted under Part 9B of the <i>Telecommunications (Consumer Protection and Service Standards) Act 1999</i>. The Australian Government Black Spot funding program is aimed at improving mobile coverage and community. At present, data on the extent and root cause of telecommunications connectivity issues (i.e. distribution network infrastructure, under allocation of data, etc.) is insufficient.

3.4.7 Transport Infrastructure

Refer to Table 3 for key considerations relating to Transport Infrastructure.

Table 3 – Transport Infrastructure Considerations

Category	Comments
Base data	<ul style="list-style-type: none"> • There are significant gaps in data documenting utilisation of the existing infrastructure. • Town database of vehicular traffic counts on the existing roads is limited. A significant portion of data collected is outdated (older than 3 years). • Town does not have any data on use of the existing bicycle and shared paths network. • At present, data on road condition and use is not collected, as confirmed in the Draft Strategic Resource Plan. • Existing data on cycling infrastructure, public parking, walking trails, accessible buildings etc is not publicly available.
Relationship between regulatory documents and strategies	<ul style="list-style-type: none"> • Some of the later strategies and documents do not take into account earlier strategies and findings. • For most strategic documents, clear action plans are lacking as well as progress reporting to track implementation. • Design guidelines published for various industrial estates do not deal with public realm (design of roads and crossovers to the development). • Key documents such as the local planning strategy are now outdated and not aligned with Federal and State regulatory documents.
Cycling	<ul style="list-style-type: none"> • The most recent cycling plan was prepared in 2008, therefore the relevant guiding document is not in accordance with current design standards, path classification and general regulations. • A 4-year action plan proposed in 2008 was implemented up to approximately 50% as at today (based on the register of footpaths and cycle paths provided by the Town). Items flagged as important were generally implemented in Port Hedland while South Hedland and Wedgefield on-the-whole still have many outstanding “major proposed upgrades”. • The plan provides suggestions on where bicycle racks should be installed; however, it does not provide guidance on bicycle parking requirements for non-residential use to be incorporated in the local planning scheme. • Design standards for cycling and shared paths have changed since the Cycling Plan was prepared and technically many of the proposed (and constructed) shared paths do not satisfy current minimum design requirements to be considered a “shared path”. • Austroads have published a number of design guides for cycling and shared paths which should be taken into account. • Department of Transport developed a classification of cycling corridors which should be reflected in any future documentation. • The Department of Transport Pilbara Cycling Strategy 2050 identifies regional and local cycling priorities developed collaboratively with the Town. It is recommended the Town progresses detailed design and construction of shared path infrastructure identified in the plan for the next 5-10 years.
Public Transport	<ul style="list-style-type: none"> • Strategic documents advocate expansion of public transport routes and frequency of services connecting various parts of the Port Hedland area (Port Hedland, South Hedland, Wedgefield, etc) • Current availability of public transport is limited to privately operated lines, generally focused on employees of major companies such as BHP and school services. • The Public Transport Authority confirmed via email they held a trial for a regular bus service in Port Hedland in 2018-19. This trial was discontinued due to regular poor patronage.

Category	Comments
Road Network	<ul style="list-style-type: none"> • The road network has been constructed to cater predominantly for motor vehicles. • Although new structure plans stipulate obligatory infrastructure for pedestrians first and foremost, it appears this intention is not followed through completely in implementation phases. • Given the volume of large and oversized vehicles on the road network, safety on roads is not discussed in detail in any of the documents. The impact of road trains making turning manoeuvres at intersections is generally not analysed. • Similarly, rail crossings at grade locations were not mentioned in any of the supporting documents. • It appears that many structure plans and studies fail to account for all proposed concurrent development in the area and tend to focus only on the subject area. • One of the key recommendations in the Port City Implementation Plan was preparing a Town-wide transport model which can be used to assess cumulative impacts of proposed and approved developments. There is no evidence this was implemented. However, it would be prudent to implement this in order to avoid reliance on dated documents. • The above issues have been addressed through preparation of a Heavy Vehicle Access Strategy (HVAS).
Freight	<ul style="list-style-type: none"> • Freight is generally rarely mentioned unless a Structure Plan or a Transport Impact Assessment (TIA) deals specifically with freight-dependent land-use. • Even under these conditions, freight is always considered in isolation rather than in conjunction with other transportation modes. • Limited analysis is done to determine the impact of rail freight, sea freight and air freight on road freight – documents for expansion of port capacity and airport freight cargo do not discuss implications of these activities on the road network.
Pedestrian traffic and accessibility	<ul style="list-style-type: none"> • There appears to exist a disconnect between strategic and operational documents where strategic documents place great importance on development of pedestrian infrastructure whereas this does not appear to be a priority in operational documents and budgets.
Aerodromes	<ul style="list-style-type: none"> • The PHIA Master Plan 2018-2038 presents planning for the staged delivery of key airport infrastructure to meet forecast airport and regional growth, including airport terminal, apron and taxiway development. • Mining Aerodromes, particularly large-scale operations and those that extend operations to other mine sites, can have significant socioeconomic impacts on regional communities, reducing economies of scale at regional Regular Public Transport (RPT) airports, impacting infrastructure investment, and driving up the cost of airfares for residents and local small-medium business enterprises. • The State Aviation Strategy tasked DPLH with outlining the requirements for mining airstrips under the Mining Act, Planning Act and regulations and Identifying the role of the local planning framework in the planning and development of mining airstrips. • This process activates Section 120 of the Mining Act, allowing the Minister for Mines, Mining Registrar and Warden to consider the provisions of the Scheme regarding aerodromes. • While the approach is advisable, it does not address statutory mechanisms and documentation and processes for applications under mining tenements that constrain the Town's capacity to effectively assess legislative referrals for applications for aerodromes in the context of the Scheme.

3.4.8 Data Gaps and Additional Studies

Identified Data Gaps

The following data gaps to inform the LPS and scheme review have been identified by the consultant team:

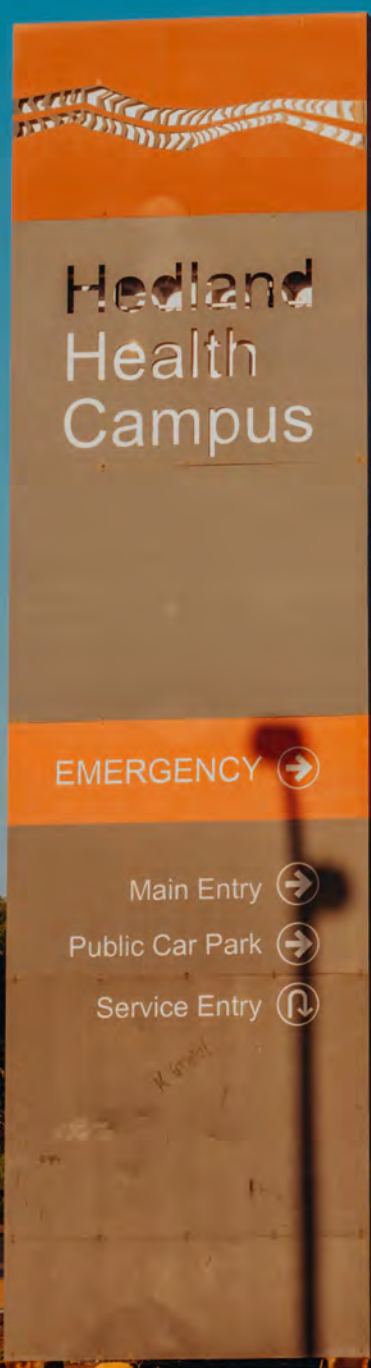
1. Traffic counts and modelling to inform road capacity analysis is limited. While the consultant team can work around this issue, it is recommended that the Town build up its database and maintain its data collection.
2. Current asset database (road condition, footpaths, cycle paths, etc) is limited which makes it difficult to verify what projects have been completed versus outstanding projects previously identified as a priority.
3. At the date of writing this report the following information remains outstanding:
 - a) Some Water Corporation data on the existing and planned networks.
 - b) Priority and Threatened Ecological Communities from Department of Biodiversity, Conservation and Attractions (DBCA).

Desirable studies to inform future growth and direction

The following additional studies have been identified as strategies that would benefit planning of the Town district, subject to obtaining funding:

1. Bushfire Hazard Level assessment for the local government area;
2. Regional Transport Modelling which examines the combined impact of development on road infrastructure;
3. Local Economic Development and Tourism Strategy to identify strategies and actions to leverage off competitive advantages, diversification opportunity and local tourism opportunities i.e. cruise ship industry, pastoral station tourism; and
4. Activity Centres Strategy which examines future requirements for provision and location of retail and commercial services outside of the West End precinct.





Hedland
Health
Campus

EMERGENCY →

Main Entry →

Public Car Park →

Service Entry ↻

4. Strategic Plan

4.1 Our Identity

4.1.1 Community Infrastructure

Health

The Hedland Health Campus is located in South Hedland and provides a range of primary care services. The Health Campus is supported by a number of medical practices within the district.

Education

There are two primary schools located within the locality of Port Hedland, being St Cecilia's Catholic Primary School and Port Hedland public primary school.

South Hedland incorporates three public primary schools and the Hedland public senior high school. A fourth primary school site has been set aside in Osprey in South Hedland.

Currently there are an adequate number of schools in the district to meet primary and secondary education requirements. However, should the population increase from 14,975 people to between 18,500 and 27,085 people by 2041, there may be a requirement to provide for additional school sites. It is noted that the endorsed Osprey Rural Structure Plan sets aside land for a combined primary school and high school site.

The North Regional TAFE site is also located in South Hedland and provides a range of tertiary courses.

Childcare

Through preliminary engagement to inform the preparation of this Strategy, it was identified that there is a clear shortage of operating childcare premises within the district and therefore it will be important to ensure the new local planning scheme provides the ability to approve child care premises and family day care centres in a range of appropriate zones.

Relevant Objectives:

- Provide a range of community facilities that are inclusive for the whole community, both now and into the future

Strategy Response: Plan for an appropriate level of community facilities

Actions

- Ensure the provision of an appropriate level of community facilities through the preparation of structure plans and implementation of subdivision and development approvals.
- Ensure that the use classes of 'Childcare Premises' and 'Family Day Care' can be permitted in a range of appropriate zones.
- ENSME community facilities remain modern and fit-for-purpose, including civic, aquatics, libraries and leisure / sporting facilities.
- Advocate for the State Government to ensure its community facilities (schools, healthcare services) are modern and fit-for-purpose.

4.1.2 Public Open Space

The Town has prepared a Public Open Space Strategy (the 'POS Strategy') in 2019 which establishes a hierarchical approach to the distribution and provision of open space and recreation facilities to meet the range of recreational needs of the community. The POS Strategy identifies an overall shortfall of public open space within the district with a substantial shortfall identified within South Hedland.

The POS Strategy also acknowledges the critical role of foreshore areas within the Town, providing the community with a recreational resource, area of cultural significance and a highly valued landscape feature. A range of active and passive recreational opportunities are identified along the coastline that contribute to the quality of life of the community.

Regional sports facilities are proposed by the McGregor Street Master Plan within the Port Hedland townsite and also by the South Hedland Integrated Sports Complex Master Plan for South Hedland. The JD Hardie Master Plan identifies new facilities focussed on youth activities.

A new pedestrian path and cycleway strategy is required to provide guidance relating to the provision of new paths to improve that gaps in the current path network.

Relevant Objectives:

- Provide a range of community facilities that are inclusive for the whole community, both now and into the future.
- Provide a hierarchy of open space to meet the diverse needs of the community.

Strategy Response: Implement the Town's Public Open Space Strategy

Actions

- The Town to review and update the Port Hedland POS Strategy to remove inconsistencies with the State Planning Framework and develop further land use planning strategies and actions that respond to the shortfall of POS in the local government area.
- Develop a shared path and cycleway access strategy to complement the Pilbara Cycling Strategy 2050.
- Progressively implement:
 - o The recommendations of the Town's POS Strategy to address open space and recreation requirements across the district.
 - o The following Master Plans to provide regional and youth-based recreation facilities:
 - McGregor Street Master Plan;
 - South Hedland Integrated Sports Complex Master Plan; and
 - JD Hardie Master Plan.
 - The Spoilbank Marina Masterplan and ensure landside POS is fit-for-purpose for the Town to commence maintenance following the developer's initial 5 year maintenance period.
 - Develop three (3) new parks in South Hedland to address the POS shortfall (JD Hardie, Murdoch Drive and Osprey West-Buzzar Street)
- In accordance with the Town's Public Open Space Strategy the Town will:
 - o Generally support the payment of cash-in-lieu of POS within the locality of Port Hedland; and
 - o Support the provision of consolidated areas of POS within the locality of South Hedland.
- Structure plans and subdivision of residential land to include provision for public open space in accordance with the principles and policy measures of the WAPC's Liveable Neighbourhoods framework (as amended), and having regard to the recommendations of the Town's adopted POS Strategy.
- The Town will require subdividers and/or developers to maintain landscaping within the public realm for a minimum period of five years before it is handed over to the Town.

4.1.3 Heritage and Culture

Aboriginal Heritage

The Kariyarra, Ngarla and Nyamal people are the original inhabitants of the Town of Port Hedland lands, having inhabited the area for 40,000 years. The Kariyarra people call the townsite of Port Hedland Marapikurrinya for the hand shaped formation of the tidal creeks coming off the natural harbour.

The Kariyarra Native Title claim includes exclusive and non-exclusive rights over parts of the claim area, which covers the majority of the Port Hedland local government boundary area.

In Port Hedland, Native Title negotiations between the Kariyarra Aboriginal Corporation and the State Government has recently been determined.

This Strategy acknowledges that there are numerous significant cultural heritage sites across the Port Hedland area, including numerous registered Aboriginal heritage sites.

Relevant Objectives:

- Promote development that respects our cultural heritage

Strategy Response: Acknowledge the Traditional Owner's cultural interest and role in decision-making processes

Actions

- Consider Native Title rights and interests in all strategy and statutory planning processes and decision-making.
- Adhere to the requirements of the *Aboriginal Heritage Act 1972* (or equivalent) in decision-making processes.
- Develop an internal operating procedure to ensure compliance to the requirements of the *Aboriginal Heritage Act 1972* when implementing Town projects.
- Promote dual naming for places throughout Hedland in accordance with the Town's Policy 12/010 Naming of Roads and Places.
- Progress and implement Indigenous Land Use Agreement(s) in conjunction with Native Title claimants as required with reference to Native Title determinations listed in Table 4 of this document.

Historic Heritage

Port Hedland has a rich history having been identified by Swedish-born mariner, Peter Hedland, as being a suitable location for a Port after his arrival in 1863. By 1896, Peter Hedland was settled on Kariyarra country, at Condon (gazetted as Shellborough), located on the coastline on land that now forms part of De Grey station. Shellborough was the first Port to be settled in the Pilbara. Since then, the district has a long-standing identity as a Port town.

A review of the Town's Heritage Inventory in 2017 identified 77 place listings and one formal Heritage Area comprising seven places. A further 15 heritage sites were added at this time. In accordance with the Town's 2017 Heritage Inventory, Grade A and Grade B listed properties are included on the Town's Heritage List.

Relevant Objectives:

- Promote development that respects our cultural heritage

Strategy Response: Protect and promote our historic heritage for the enjoyment of future generations

Actions

- Continue to review and update the Town's Heritage Inventory.
- Maintain a Heritage List under the Local Planning Scheme.

4.2 Our Prosperity

4.2.1 Industry

The Town's primary industrial area is Wedgefield which also includes the new Hedland Junction precinct. The proximity of the Port Hedland International Airport to Wedgefield provides an opportunity to consolidate this combined area as a functional industrial precinct. A total of 251 ha of industrial land remains undeveloped within Wedgefield. This land availability is sufficient to meet demand for light and general industry through to 2041.

The distribution of industrial land uses throughout the district has occurred on an ad-hoc basis leading to the establishment of smaller industrial precincts outside of Wedgefield. This has occurred as a result of a number of factors including:

- Limitations within Wedgefield including inadequate road infrastructure and ongoing land use conflict with caretakers' dwellings which may deter large logistics and heavy industry from establishing;
- Crown leases being granted for industrial land uses outside of Wedgefield; and
- The preference for industrial operators to lease land as opposed to purchasing and developing industrial land outright.

The Port Hedland International Airport Masterplan also includes provision for industrial land on a leasehold basis.

The Department of Jobs, Science, Tourism and Innovation (DJSTI) has set aside 1,325 ha of land within Boodarie for strategic and heavy industrial uses. However, this land requires substantial infrastructure investment before it can become available for industry. This means there are limited options for locating heavy industry. Pilbara Ports Authority has also identified land for the Boodarie Stockyards (Stage 2) adjacent to the Boodarie Strategic Industrial area.

Relevant Objectives:

- Protect strategic industry from sensitive and incompatible land uses
- Rationalise dedicated industrial areas required to service industry and the community

Strategy Response: Provide a clear strategy for the provision of industrial land to support the sustainable growth of industry

Actions

- Promote Wedgefield as the primary industrial precinct to meet demand for light and general industrial land.
- Allow for some industrial land to be provided on the airport on a leasehold basis to accommodate industrial uses that have synergies with the airport operations.
- Do not support further industrial land uses on Crown land outside of Wedgefield and Boodarie.
- Continue to protect the Boodarie Strategic Industrial area from encroachment or development of incompatible land uses via a Special Control Area within LPS7.

4.2.2 Commercial and Retail

Activity centres provide focal points for the community which can provide a range of functions including the provision of retail, commercial, employment, community and recreation services alongside higher density housing. A clear hierarchy of activity centres should be established to meet the varying needs of the community.

The South Hedland centre is recognised as the primary City Centre while the Boulevard Shopping Centre is recognised as a neighbourhood level centre which provides retail services to meet the weekly needs of residents based in Port Hedland.

The primary business district within the Port Hedland locality is the West End, however further investigations need to be undertaken to better understand the ongoing role that the West End will play in providing commercial and retail floorspace given the impacts of dust on the amenity of this area.

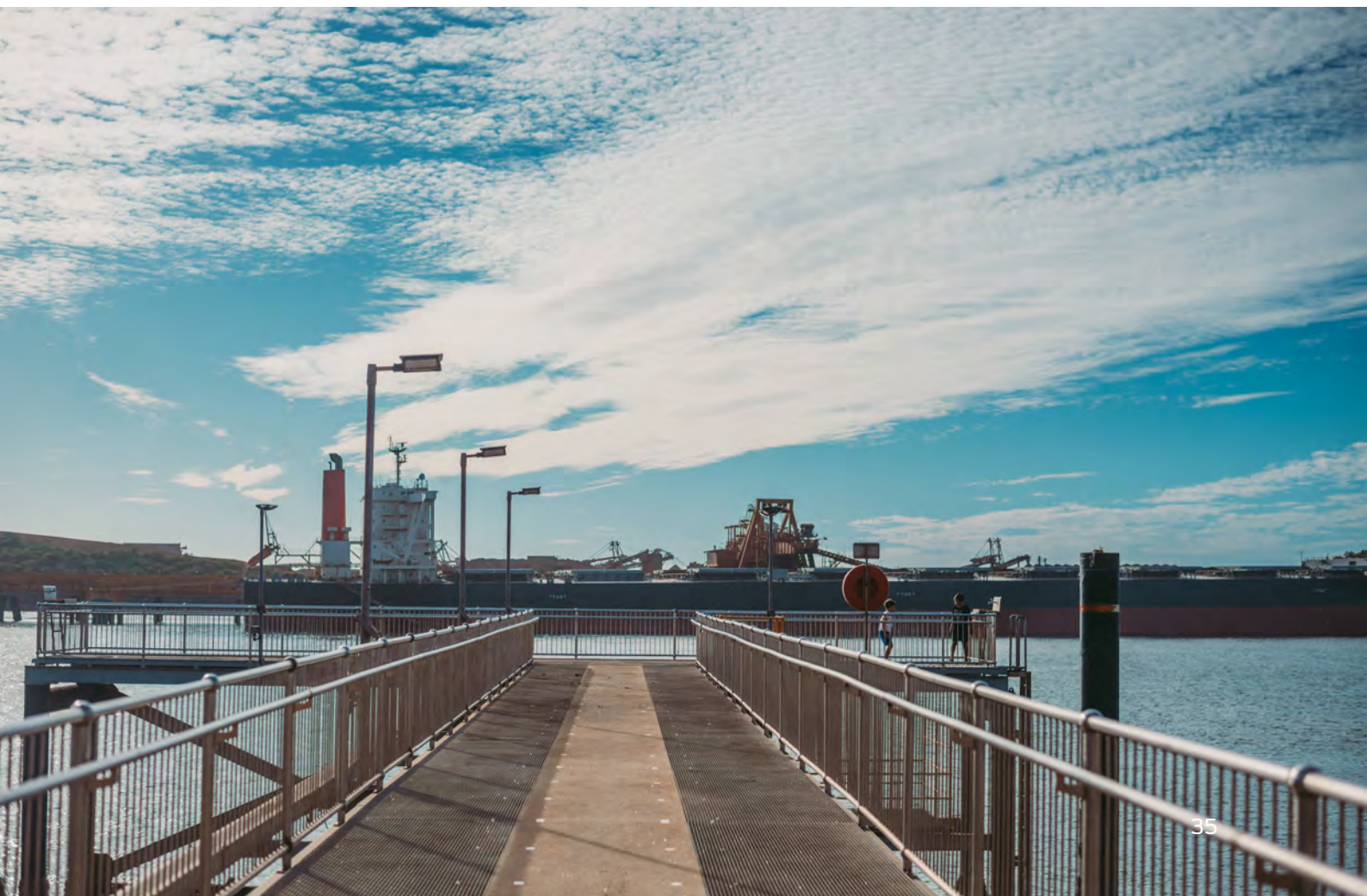
Relevant Objectives:

- Establish a clear hierarchy of commercial centres that meet the needs of the community

Strategy Response: Provide a framework which enables the existing activity centres to thrive and provides flexibility for new neighbourhood and local centres to meet the evolving needs of the community

Actions

- Maintain the existing Activity Centre hierarchy as identified on the Strategy maps and set out below:
 - o City Centre: South Hedland City Centre;
 - o Neighbourhood Centre: Port Hedland Boulevard Shopping Centre; and
 - o Specialised Centres: Kingsford Smith Business Park.
- Prepare a Commercial Strategy to investigate future commercial and retail floorspace requirements within the locality of Port Hedland.



4.2.3 Rural, Mining and Pastoral Areas

The port of Port Hedland was initially established to support the Pilbara's expanding pastoral industry. Today, 30 percent of the Pilbara is subject to leases and the pastoral industry exports \$31m of cattle per annum. Mining continues to play an important role in the region and relies on infrastructure that traverses rural land.

Growth of the pastoral industry represents an opportunity to diversify the economy. The regions access to mine dewatering and abundant groundwater resources provides the potential for the pastoral industry to diversify. The region's proximity to Asia means the industry can provide fresh food to Asian markets.

It is noted that there are also a number of former mine sites on pastoral land within the locality that may yield new opportunities.

Opportunities relating to rural, mining and pastoral industries within the locality include:

- Provision of new infrastructure to support the cattle industry, such as a dedicated holding yards, abattoir, palletisation plant and truck washdown facilities;
- Intensive irrigated agriculture utilising mine dewater and / or located on fertile soil along rivers;
- Ecological sustainability including carbon farming and sequestration to combat land degradation;
- Former mine site repurposing;
- Renewable energy facilities; and
- Tourism including unique pastoral stay opportunities and coastal-based accommodation

Relevant Objectives:

- Actively pursue opportunities to diversify the economy
- Promote our unique offerings to attract visitors and tourists

Strategy Response: To plan for facilities that support the pastoral industry and minimise statutory barriers to diversification of economic pursuits on pastoral land

Actions

- Note the Town's preferred location for dedicated holding yards includes the existing holding yards located on Lot 3003 Great Northern Highway, Boodarie, Lot 363 (Reserve 33593) Great Northern Highway, Boodarie, in a location serviced by Pippingarra Road or in a pastoral leasehold area where adequate separation distances exist between the site and existing sensitive land uses.
- Note the Town's preferred location for an abattoir would be subject to a site selection study that addresses environmental and land use separation requirements.
- Provide local government support for pastoral diversification permits and note the Town's position on pastoral diversification as follows:
 - o Support for low-key tourism and other activities that are compatible with the pastoral lease;
 - o Pastoral diversification could be centred around land uses that can be co-located with pastoral station homesteads or that can be located remotely within a pastoral lease, depending on the nature of the activity, its servicing an access requirements, and its impacts on nearby established or planned land uses;
 - o Encourage pastoral diversification activities that capitalise on the unique environmental attributes which attract visitation to the region; and
 - o Encourage new climate-appropriate industries that can capitalise on technological innovation, renewable energy or availability of natural resources.
- Ensure a diverse range of land use permissibility for the Rural zone within LPS7.
- Support the re-use of former mine sites on pastoral land to contribute alternative economic outcomes and activities. In considering proposals for re-use of former mine sites on pastoral land, the Town will consult with the Pilbara Development Commission and Department of Mines, Industry Regulation and Safety.
- Identify and engage with the State Government on opportunities to strengthen statutory mechanisms, documentation and processes for applications under mining tenements that constrain the Town's capacity to effectively review legislative referrals in the context of the Scheme.

4.2.4 Tourism

Port Hedland recorded approximately 244,000 domestic visitors (both day trips and overnight) and 15,300 international visitors in 2018. Large fluctuations in visitation over the 2008 to 2018 period can be attributed to the smaller size of Port Hedland compared to metropolitan areas, as well as the limitations of a small sample size during data collection.

Port Hedland is renowned for its sizeable resources industry, private railways, large ships and export tonnage port, providing visitors with a unique opportunity to view the export operations of Australia's iron ore mining industry. Key visitor attractions include Karijini National Park, Spinifex Hill Studios, Courthouse Gallery, Cemetery Beach Park, Redbank Bridge Salt and Train Lookout and Don Rhodes Mining Museum. Popular events include the Port Hedland Cup (Heddy's Cup) and Pilbara Music Festival (North West Festival).

The majority of visitors (51.6%) came to the region for business purposes (aligned to mining in the region) whilst a further 27.9% visited for holiday reasons in 2018.

It is noted that 12 mile, Turner and Yule mouth areas are generally valued by the Community for recreation, informal camping and 4WD Sports, however further investigations are required to be undertaken to understand whether these activities can be compatible with the environmental factors, heritage, Native Title and land tenure considerations.

The Town of Port Hedland's Short-Term Recreational Vehicle Overflow Area is located adjacent to the Port Hedland Turf Club on McGregor Street, Port Hedland. Situated within walking distance of local amenities, and a short drive from the Town Centre and multiple tourist attractions, the site encourages tourists to stop and stay within the Town.

Relevant Objectives:

- Actively pursue opportunities to diversify the economy
- Promote our unique offerings to attract visitors and tourists

Strategy Response: Identify strategies to promote and diversify the Town's tourism offer

Actions

- Identify coastal tourism nodes at Port Hedland, the historic Condon townsite and De Grey station on the Strategy maps to promote tourism opportunities compatible with the coastal environs.
- Zone the Hospitality Inn, Hotel Ibis, Cooke Point Caravan Park, Black Rock Caravan Park, The Landing Resort and the Port Hedland Walkabout Motel as 'Tourism' under LPS7 in recognition of these existing short stay accommodation facilities which cater for leisure visitors to the region.
- Actively develop future stages of the Spoilbank Marina Masterplan as a visitation hub inclusive of visitor facilities and caravan park accommodation.

4.3 Our Natural Environment

4.3.1 Coast and Foreshores

The Port Hedland townsite is located on a narrow headland, which is exposed to erosion hazards and low-lying areas are at risk of storm surge inundation.

The CHRMAP identifies coastal erosion and inundation risks as key influences on future urban growth and settlement patterns in Port Hedland. Urban development cannot be designed to withstand or accommodate erosion pressures and protection measures have a discrete design life. These factors will influence development in coastal urban areas of Port Hedland. Development design is better able to respond to inundation hazards, but inundation will also influence the shape of Port Hedland, in this case principally through building design and heightened development levels.

The CHRMAP informs long-term planning and decision-making processes to adapt the Port Hedland settlement and infrastructure to coastal erosion and inundation. The CHRMAP recommendations are limited to areas of planning control by the Town of Port Hedland. Adaptation responses may be reviewed over time in response to emerging coastal hazard risks and in line with CHRMAP review requirements established under State government guidelines.

Figure 4 provides a visual representation of the areas of the Townsite identified under the CHRMAP as vulnerable to erosion and/or inundation based on coastal modelling.

The CHRMAP identifies erosion as being the result of seasonal processes or storm events moving sediment offshore or alongshore through wave action or currents. The CHRMAP identifies a number of coastal residential areas (outlined at 3.3.2) at immediate intolerable risk including, the West End, western end of Sutherland Street and Barker Court near Goode Street. It also identifies risks to public beaches, and infrastructure, social and environmental assets associated with the foreshore, an area valued highly by the community.

While not discussed within the CHRMAP, coastal dune systems are also at risk of degradation from unmanaged informal 4WD access along the coastline.

The CHRMAP identifies ocean inundation as the general cause of flooding across the precincts of West End, Spinifex Hill, East End Urban Village, Port Authority and Finucane Island, Redbank, parts of Dampier Salt and Surrounds, and part of Wedgefield Industry and Logistics area. Low lying areas further away from the coast (e.g. around Wedgefield, South Hedland, Pippingarra and the Airport and surrounds) are impacted by flooding from the minor creeks (especially between South Creek and South West Creek) that convey flows from the south of the developed areas towards the inner harbour. This is exacerbated when combined with elevated ocean water levels in the inner harbour.

Flooding across the broader local government area will generally be associated with flooding of the major rivers, which may occur due to tropical lows and/or tropical cyclone activity.

Refer to Figure 4 – Proposed CHRMAP Special Control Area boundary.

The CHRMAP recommends a Special Control Area to provide additional planning controls to support long-term adaptation in the identified area.

Relevant Objectives:

- Promote our unique offerings to attract visitors and tourists
- Plan for development areas that can effectively respond to fluctuations in the economy and population change, while being resilient to climate change and natural systems
- Enhance and conserve our natural environment for the social, cultural, spiritual and economic wellbeing of the community

Strategy Response: Proactively plan for storm surge and other coastal events and minimise the risks of coastal processes on the community

Actions

- Include the coastal hazard area within a new Special Control Area within LPS7 with the following objectives:
 - o To protect new development from the impacts of flooding, coastal erosion and inundation;
 - o To provide for implementation of the Port Hedland Townsite Coastal Hazard and Risk Management Adaptation Plan; and
 - o To minimise the risks of coastal processes on the community.
- Implement the recommendations of the Port Hedland Townsite Coastal Hazard Risk Management Adaptation Plan to maintain the social, cultural and environmental values of the coastal foreshore while also acknowledging the importance of the coastline for active and passive recreation.
- Structure planning, subdivision and development within the Port Hedland locality to respond to the recommendations and requirements of the Port Hedland Townsite Coastal Hazard Risk Management Adaptation Plan.
- Develop a local planning policy to guide implementation of Special Control Area provisions.



Figure 4. Proposed CHRMAP Special Control Area boundary

4.3.2 Vegetation and Biodiversity

The Town is situated within three Interim Biogeographic Regionalisation for Australia (IBRA) regions; Dampierland, Pilbara and Great Sandy Desert. Numerous vegetation structural types therefore occur with varying degrees of vegetation conditions. Areas of 'pristine' condition vegetation; however, occur within the tidal flats near the townsite of Port Hedland.

The Town is also known to contain a number of significant flora, vegetation and fauna values under both State and Federal legislation. These include priority ecological communities, threatened and priority flora, and threatened and priority fauna. Of note is the Flatback Turtle that inhabit the Cemetery and Pretty Pool beaches. Two other areas are also identified.

The key environmental assets within the Town are the mangroves and beaches, both providing habitat for important marine and terrestrial organisms. Mangroves also improve water quality and shoreline stability.

The Town does not support the clearing of riparian vegetation along watercourses and mining activities should ensure that riparian vegetation is adequately protected from damage or clearing.

Relevant Objectives:

- Promote our unique offerings to attract visitors and tourists
- Plan for development areas that can respond to fluctuations in the economy and population change while resilient to climate change and natural systems
- Enhance and conserve our natural environment for the social, cultural, spiritual and economic wellbeing of the community

Strategy Response:

- Protect mangrove environments and recognise their important functions in both marine and terrestrial environments
- Protect the conservation value of Flatback Turtle nesting habitats from light spill impacts from adjoining development

Actions

- Reserve turtle nesting beaches and mangrove environments as 'Environmental conservation'.
- Carry over existing LPS5 development provisions relating to light impacts and turtle management in relation to Lot 1227 Keasing Street, Port Hedland and Lots 556, 1444 and 1732 Athol Street, Port Hedland into LPS7.



4.3.3 Water Quality, Supply and Management

Several major waterways flow through the Town, including the De Grey River, Yule River, Turner River and Shaw River. These primarily feed two large surface drainage systems being the De Grey River Basin and Port Hedland Coast Basin.

The Town is underlain with a multi-layered system of groundwater aquifers, with several important wetlands throughout. These wetlands include the De Grey River System, Eighty Mile Beach System and the Leslie (Port Hedland) Saltfields System.

There are two PDWSAs proclaimed by the Department of Water and Environment Regulation within the Town. While development is allowed to occur within PDWSA, careful consideration must be given to land use compatibility and associated activities to ensure that they are appropriate in meeting the water protection quality objectives of the area.

Three areas across the Town are classified as 'sewage sensitive' by the Government Sewerage Policy (DPLH 2019). These include two wetlands located to the east of the district and the Yule River and its tributaries across the southern portion of the local government area. The definition of sewage sensitive areas for the purposes of the Government Sewerage Policy limits coastal embayments, and estuaries and inlet areas to specified systems, none of which are located within the Town. While these are not formally mapped, water quality risks to environmental assets through the use of onsite wastewater systems should still be considered in the riverine, estuarine and coastal areas.

Relevant Objectives:

- Plan for development areas that can respond effectively to fluctuations in the economy and population change while being resilient to climate change and natural systems
- Enhance and conserve our natural environment for the social, cultural, spiritual and economic wellbeing of the community

Strategy Response:

- Ensure groundwater resources are sustainably managed
- Preserve ecologically important wetlands
- Protect public drinking water source areas from incompatible land uses

Actions

- Include the public drinking water source areas within a Special Control Area with the following objective:
 - o To ensure the quality of public drinking water is protected from contamination from inappropriate land use or development and to ensure off-site impacts from stormwater are appropriately managed.



4.3.4 Bushfire

The majority of the Town is identified as a 'bushfire prone area' under the state-wide Map of Bush Fire Prone Areas as designated by the Fire and Emergency Services Commissioner. This includes around areas of existing development within the major towns of Port Hedland and South Hedland.

In accordance with State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP3.7) and the Guidelines for Planning in Bushfire Prone Areas Version 1.3 (Guidelines), bushfire risk should be considered at all levels of the planning system.

A Bushfire Hazard Level (BHL) assessment is required to accompany strategic planning proposals (where lot layout is unknown) to inform the suitability of an area for future development by categorising land as having a low, moderate or extreme bushfire hazard level. A BHL assessment is a pre-development tool and provides a 'broad brush' means of determining the potential intensity of bushfire for an area. Given there is sufficient existing land zoned for residential purposes, and any proposed changes to zoning resulting in an intensification of land use have previously considered the application of SPP 3.7, a BHL assessment has not been prepared along with the Strategy.

However, it is important to ensure that bushfire risk is appropriately considered and refined as part of future development and is critical to reducing the vulnerability of future residents and development to bushfire.

Relevant Objectives:

- Plan for development areas that can respond effectively to fluctuations in the economy and population change while being resilient to climate change and natural systems
- Enhance and conserve our natural environment for the social, cultural, spiritual and economic wellbeing of the community

Strategy Response:

- Ensure existing understanding of the bushfire hazards and its potential to affect people, property and infrastructure is reviewed and refined at subsequent planning stage(s)

Actions

- Request the preparation of a Bushfire Hazard Level assessment and supporting Bushfire Management Plan for strategic planning proposals (where lot layout is unknown) in areas designated as 'bushfire prone' which have not previously considered the application of SPP 3.7, to be undertaken by an accredited bushfire planning practitioner in accordance with SPP3.7 and the Guidelines.
- Require the provision of a Bushfire Attack Level (BAL) contour map and supporting Bushfire Management Plan for subdivision and development on land designated as 'bushfire prone' in accordance with SPP3.7 and the Guidelines.

4.3.5 Air Quality

Since 2009, the State Government's Dust Taskforce has assessed the possible effects of dust on the health of Port Hedland residents. The assessment was precipitated by reports of elevated dust levels close to homes and businesses arising from the historic proximity of the port and sensitive land uses. A health assessment of particulate matter conducted by the Department of Health confirmed that sufficient evidence of possible negative health effects of dust warranted a land use planning response to reduce community exposure.

The Dust Taskforce was established by the State Government in 2009 in response to the EPA raising concerns about regular exceedance of dust concentrations for residential areas in the West End. The Port Hedland Industries Council (PHIC) subsequently established a network of monitoring stations (air quality monitoring network) around Port Hedland and the remote Yule River.

The Dust Taskforce was required to plan for, and address, dust management strategies in Port Hedland with a focus on the West End. The Dust Taskforce prepared the *Port Hedland Air Quality and Noise Management Plan*, which included a broad-based implementation strategy and governance framework to manage the potential health risks posed by dust levels in the 'West End'. The Dust Management Taskforce recommended a precautionary approach to residential development, with a focus on this occurring predominantly in the western areas of Port Hedland. The report recommended that additional work be conducted to establish the health impacts of dust. The Government adopted the recommendations of the report.

The Town's Strategy (Growth Plan), prepared during 2011 and 2012, reflected the recommendations of the Dust Taskforce Report. Further, the Town pursuant to Amendment No.22 to LPS5 (gazetted by the WAPC on 27 April 2012), introduced provisions applicable to existing residential areas in the West End, to promote housing redevelopment that discouraged long-term residency by those more at risk from exposure to dust.

In February 2016, the Department of Health published the *Port Hedland Air Quality Health Risk Assessment for Particulate Matter* report which concluded that sufficient evidence of negative health effects from dust on human health warranted dust management controls and planning measures to reduce community dust exposure. The findings of the report were considered by the Dust Taskforce which submitted a report to Government in August 2016 recommending that a Special Control Area be incorporated in LPS5 to prohibit new permanent residential development and other sensitive land uses (pursuant to Recommendation 5 of the report).

On 15 October 2018, after considering the Dust Taskforce report and public submissions, Government determined that a whole-of-government approach was required to address the issue, including adopting land use planning recommendations aimed at prohibiting sensitive land uses and restricting population growth in the West End. The WAPC was requested to prepare an Improvement Plan and Improvement Scheme to achieve land use outcomes under Recommendation 5.

The WAPC prepared Improvement Plan No. 50 (Improvement Plan) for the West End (gazetted 30 July 2019) which provided the basis for the preparation and implementation of the Port Hedland West End Improvement Scheme No.1 (Improvement Scheme), gazetted 18 September 2020 which as previously noted, provides the WAPC with land use and development controls over the Scheme area. The Government has also introduced a voluntary buyback Scheme for the West End.

Air quality is not confined to the West End with dust management to limit exposure to at-risk groups an ongoing concern within Port Hedland. Government's response to the Dust Taskforce report recommended transfer of the air quality monitoring network from PHIC to DWER, which is facilitating its transfer. DWER is also building on its current regulatory approach and policy framework for port activities with the aim of improving air quality for the whole of Port Hedland.

Recommendation 6 of the Dust Taskforce report recommended that the Town work with key stakeholders to identify and mitigate dust from non-industry sources.

Relevant Objectives:

- Strive to improve the amenity across the local government area
- Plan for development areas that can respond effectively to fluctuations in the economy and population change while being resilient to climate change and natural systems
- Enhance and conserve our natural environment for the social, cultural, spiritual and economic wellbeing of the community

Strategy Response:

- Minimise the negative health impacts from dust emitting activity on sensitive land uses

Actions

- The Town will work with key stakeholders to identify and mitigate dust from non-industry sources with a focus on:
 - o Identifying and implementing dust mitigation options for the Spoilbank Marina development;
 - o Sealing unsealed roads and undertaking regular and effective street sweeping operations;
 - o Identifying design requirements relating to industrial development to mitigate on-site dust generation;
 - o Considering greening options, including coastal dune revegetation and establishment of a green belt around the Port; and
 - o Reviewing and where applicable, improving the efficacy of local government services associated with dust control.



4.3.6 Land Use Compatibility

The Town of Port Hedland contains critical industry and infrastructure that is important to the State's economy and should continue to be protected from the encroachment of incompatible land uses. Additionally, the Town has several historically proximate land uses that if developed today would need to consider the risk posed to sensitive land uses (such as residential, schools, hospitals etc).

Relevant Objectives:

- Protect strategic industry from sensitive and incompatible land uses
- Facilitate consolidated urban form that maximises the efficient use of existing and planned infrastructure

Strategy Response:

- To protect industry and infrastructure facilities from the encroachment of incompatible land uses and ensure that planning decisions consider the locational constraints of these land uses, the significant investments they represent and their current and future benefits and costs to the community when considering the most appropriate land uses for the surrounding land.

Actions

- Provide separation areas to existing landfill and wastewater treatment plants and restrict the permissibility of land uses within these areas.
- Protect recognised industry and infrastructure from incompatible land use in line with draft State Planning Policy 4.1 – Industrial Interface.
- Protect established freight and infrastructure corridors from encroachment of sensitive land uses in accordance with State Planning Policy 5.4 - Road and rail noise.
- Decision making to take into consideration of any relevant technical acoustic reports and noise modelling prepared with respect to cumulative noise impacts within Port Hedland and South Hedland prepared to the satisfaction of the responsible authority on advice from the Department of Water and Environmental Regulation.





4.4 Our Built Environment

4.4.1 Urban Growth

Housing

The Pilbara Port City Growth Plan (the 'Growth Plan') was released in 2012 and referenced above was based on overly optimistic population forecasts and aspired to accommodate a total population of at least 50,000 people by 2035.

This Strategy adopts more realistic 'conservative' and 'aspirational' population scenarios to plan for a more rational approach to the provision of land for housing. The Strategy Maps identify sufficient land to accommodate projected population growth within the 15-year life of this Strategy and promotes infill development over the release of land for new estates and the development of land in areas of high amenity, such as in proximity to the South Hedland City Centre. The Strategy provides flexibility for the release of land to the market quickly should demand increase suddenly.

This Strategy prioritises the release of land in Port Hedland and South Hedland localities to accommodate the population scenarios that underpin this Strategy, generally as follows:

Short-term (0-5 years)	Medium-term (6-10 years)	Long-term (10+ years)
Port Hedland		
Telstra tower site		
The former recreation and detention centre site		
Former Waste Water Treatment Plant (WWTP) site		
	Athol Street Development Investigation Area	
		Portion of McGregor Street Sporting Precinct Development Investigation Area
		Pretty Pool Stage 3a Development Investigation Area
		The Stables Precinct Development Investigation Area
South Hedland		
Pundulmurra Structure Plan Area		
Trumpet Way Structure Plan Area		
Koombana Structure Plan Area		
Osprey Structure Plan Area		
Residential land identified within the City Centre		
Land immediately adjacent to the City Centre, including portion of Western Edge structure plan within 400m of the City Centre		
	Western Edge Structure Plan Area	
	Northern portion of Osprey Rural Structure Plan Area	Hamilton Road Structure Plan Area
		Club Hamilton Structure Plan Area
		Forrest Circle Structure Plan Area
		Osprey Rural Structure Plan Area

The following tables provide status details and indicative dwelling and population yields for the various urban areas to demonstrate the capacity for these areas to accommodate the population scenarios set out in this Strategy.

Port Hedland

No.	Development Area	Anticipated Number of Lots/ Dwellings	Anticipated Population (2.7 persons/ dwelling)	Zoned Urban Development	Structure Plan Approved	Subdivision Approved	Native Title Cleared
1	Detention Centre / Rec Club Site	40	108	Yes	No	No	Yes
2	Telstra Site	131	353	Yes	Yes	Lapsed	Yes
3	Former WWTP Site	189	510	Yes	No	No	Yes
4	Athol Street	232	626	Yes	Yes	No	Yes
5	Stables	188	507	Yes	Yes	No	Yes
6	Pretty Pool Stage 3	50	135	No	No	No	Unknown
7	McGregor Street	50	135	No	No	No	Unknown
TOTAL:		880 dwellings	2,375 persons				

South Hedland

No.	Development Area	Anticipated Number of Lots/ Dwellings	Anticipated Population (2.7 persons/ dwelling)	Zoned Urban Development	Structure Plan Approved	Subdivision Approved	Native Title Cleared
1	Pundulmurra	120	324	Yes	No	No	Yes
2	Trumpet Way	100	270	Yes	Yes	Lapsed	Unknown
3	Koombana	80	216	Yes	Yes	No	Unknown
4	Osprey West	360	972	Yes	Yes	Yes	Yes
5	Western Edge	1,600	4,320	Yes	Yes	No	Unknown
6	Hamilton Road	440	1,188	Yes	Yes	No	Unknown
7	Club Hamilton	100	270	Yes	No	No	Yes
8	Forrest Circle	200	540	<div>Yes</div> <div>Yes</div> <div>No</div> <div>Unknown</div>			
9	Osprey Rural	1,177	3,177	Yes	Yes	No	Unknown
TOTAL:		4,177 dwellings	11,277 persons				

Notwithstanding the preferred staging of residential land in this strategy, the Town may consider feasibility studies to further refine the staged release of urban land as required.

Given the extent of land provided for residential development as set out on the Strategy Maps, particularly the extent of land identified in South Hedland, the Town does not support the rezoning of 'Rural' land over and above what is provided for on the Strategy Maps.

Rural Residential

The existing rural residential estates are provided in the localities of Boodarie, Pippingarra and Redbank and in total cater for approximately 320 hectares of rural living development.

The following existing rural residential estates are recognised and protected within the Strategy and provide a sufficient supply of rural residential lifestyle property within the district:

- Redbank estate;
- Bosna, Turner River and Quartz estates in Boodarie; and
- 12-mile estate in Pippingarra.

On the basis of the current provision of land for Rural Residential purposes and in accordance with State planning policy, the provision of land for new rural residential development is not supported.

Workforce Accommodation

Workforce accommodation approved pursuant to *State Agreement Acts and the Mining Act 1978* are exempt to the extent that the provisions of those Acts override the *Planning and Development Act 2005* and the local planning scheme.

The Town has adopted a position statement on the approval and management of workforce accommodation.

The Position Statement provides the Town's rationale when responding to Development Applications and referrals for workforce accommodation, includes principles for consideration when proposing workforce accommodation, and underpins local planning policies pertaining to workforce accommodation and social impact assessment.

The Position Statement acknowledges the importance of workforce accommodation as a housing resource for industry and well-planned accommodation that effectively addresses both individual and cumulative impacts of developments to realise significant benefits for the community, industry and industry workforces. The Position Statement also recognises that accommodation requirements vary depending on the characteristics of the workforce, work rosters and labour requirements and therefore focuses on the lifespan of the workforce accommodation facility.

The Policy Statement supports:

- Workforce accommodation being demand driven to ensure workforce requirements are catered for while limiting the proliferation of workforce accommodation, high residential vacancy rates and competition with Town-based services and facilities.
- Workforce accommodation located within proximity to the Town being situated within the townsite boundary, where safe driving distances to site and return can be observed, to ensure developments realise immediate and sustainable value for the community and enhance psychosocial outcomes for industry workforces.
- Workforce accommodation located within higher activity centres, at the discretion of the Town, being required to be of a higher design standard, commensurate with the project lifespan and development approval timeframes.
- Recognition that short-term workforce accommodation has a shorter lifespan that does not require a higher level of design and therefore does not warrant the same level of investment as those projects subject to longer-term lifespans.
- Long-term workforces being accommodated in permanent residential-style developments, preferably located within higher activity centres for improved amenity, business stimulation and community integration.
- Analysis, monitoring and management of social consequences of workforce accommodation, including workforce demands on, and potential augmentation of, infrastructure and services and identifying co-location opportunities for industry workforces to create a sense of place.

Relevant Objectives:

- Plan for development areas that can effectively respond to fluctuations in the economy and population change while being resilient to climate change and natural systems.
- Facilitate consolidated urban form that maximises the efficient use of existing and planned infrastructure.
- Plan for a diverse range of housing typologies.

Strategy Response:

- Provide sufficient land to meet predicted population growth and which provides diversity in housing choice

Actions

Housing

- Land for future housing is identified on the Strategy Maps and is generally categorised as follows:
 - o Short term urban land, which is unconstrained and serviced land located in proximity to existing services and amenities suitable to accommodate short term growth over the next 5 years.
 - o Medium term urban land, which is land already zoned 'Urban Development' under the Scheme and which may be suitable to accommodate medium term growth within a 6-10 year timeframe.
 - o Long term urban land, which is land that is typically located on the fringe of the existing urban footprint, which may be required to accommodate growth over a 10+ year timeframe.
 - o Notwithstanding the above, the Strategy maps also identify Development Investigation Areas (DIAs) over some parcels of urban land. These DIAs are areas of land which require further detailed planning and investigation to determine the suitability of these land parcels for residential development. These detailed investigations would need to be undertaken prior to support for any rezoning and/or structure planning, subdivision and development for residential purposes.
- In considering structure plans proposing residential development, the Town will seek the following outcomes:
 - o Provision of a variety of lot sizes and diversity of housing typologies;
 - o Promotion of increased dwelling densities in proximity to activity centres and other areas of amenity;
 - o Provision of appropriate levels of community services and facilities;
 - o Provision of walking and cycling infrastructure;
 - o Provision of sufficient active and passive public open space;
 - o Protection of environmental values, including visual quality and amenity;
 - o Assessment of the environmental health risk;
 - o Consistency with Liveable Neighbourhoods or equivalent document;
 - o Consistency with Better Urban Water Management;
 - o Consistency with the Government Sewerage Policy; and
 - o Subdivision and development shall provide full urban services including reticulated sewerage.

Relevant Objectives:

- Plan for development areas that can effectively respond to fluctuations in the economy and population change while being resilient to climate change and natural systems.
- Facilitate consolidated urban form that maximises the efficient use of existing and planned infrastructure.
- Plan for a diverse range of housing typologies.

Strategy Response:

- Provide sufficient land to meet predicted population growth and which provides diversity in housing choice

Rural Residential

- The Town will not support any new proposals to rezone Rural land for Rural Residential purposes.
- Small scale subdivision of existing land zoned for Rural Residential purposes may be supported on a case by case basis, having regard to the following:
 - o Land capability;
 - o Ability to adequately sewer the land;
 - o Flooding and inundation;
 - o Bushfire risk;
 - o Land use compatibility with industry and infrastructure; and
 - o Servicing and infrastructure availability.

Workforce Accommodation

- Include the following specific provisions within LPS7 to address the provision of Workforce Accommodation:

In exercising discretion in relation to a development application for workforce accommodation, the local government shall consider the following:

- o Regard for the applicable Local Planning Policy; and
- o Appropriateness of the scale and design and standard of the accommodation in the context of the location and its integration with the surrounding development.

Development applications for all time-limited workforce accommodation shall, to the local government's satisfaction, be accompanied by information and plans indicating how and when the development will be removed and the site rehabilitated or developed for a subsequent use which is consistent with the intent of the zone.

The local government may require, by signed agreement, a commitment to the date and details of rehabilitation and development of a subsequent use.

- Include new supplemental provisions within LPS7 which sets out the requirement for proposals to demonstrate demand for workforce accommodation and include requirement for social impact assessments.
- Develop a local planning policy to guide the consideration of applications for workforce accommodation and social impact assessments.
- Work with mining companies to retain and reuse mine infrastructure left in-situ to support alternative land use outcomes.

4.5 Precincts

Within the Port Hedland district there are a number of distinct localities that have unique land use characteristics that warrant a precinct-based response. These precincts are identified at Figure 5 and addressed below.

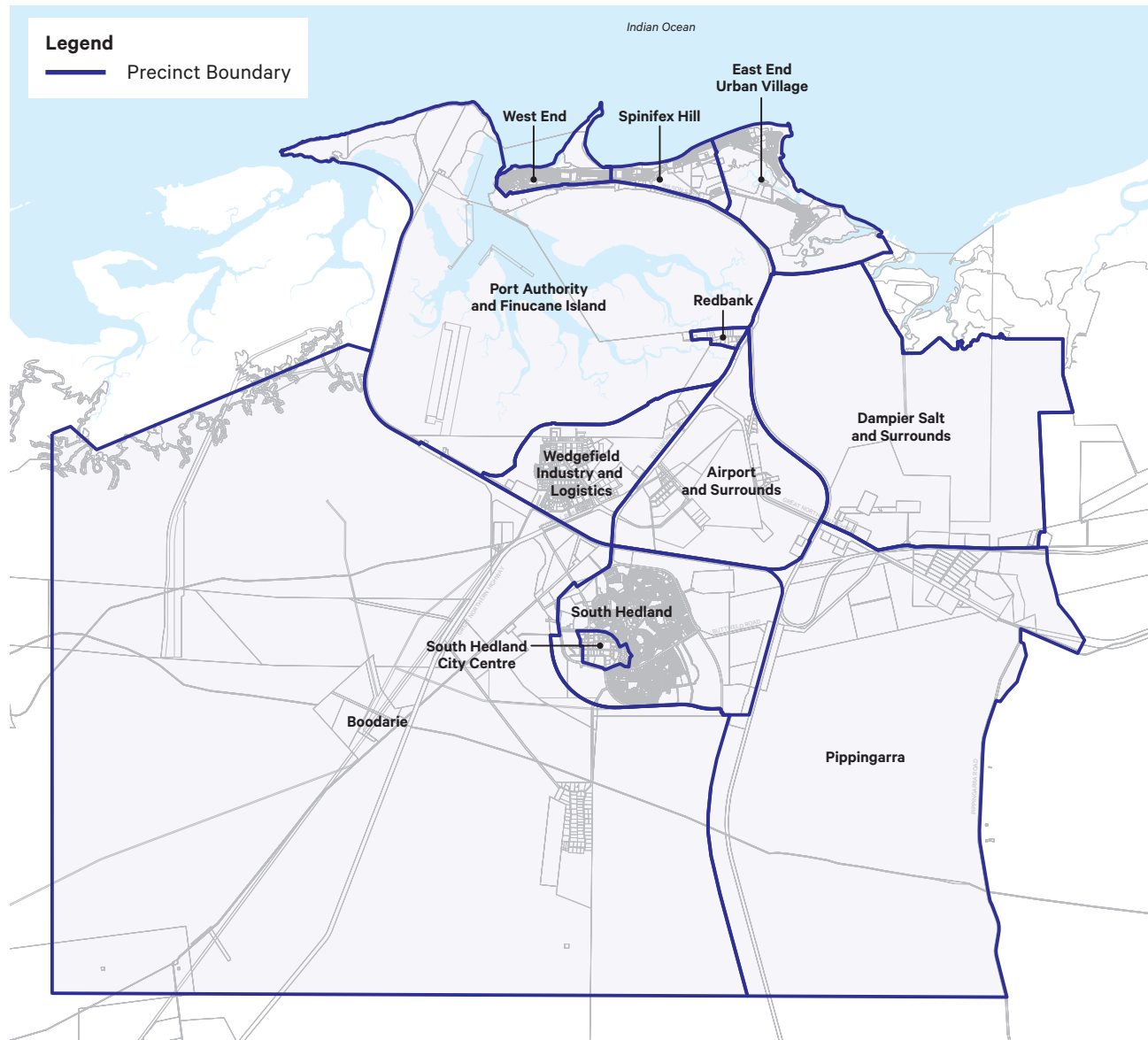


Figure 5. Precinct Location Plan

4.5.1 West End Precinct

Precinct Context

The West End Precinct contains the Port Hedland historic town centre and a mixture of residential, cultural / commercial and industrial land uses, located adjacent to port operations. The precinct is bound by Taplin Street in the east, port operations to the south and west and the Indian Ocean to the north. Along with coastal parklands, lookouts and coastal reserves, the precinct contains a highly valued recreational landform, the Spoilbank, which is allocated for a public recreation marina development.

The Government of Western Australia has earmarked the future of the West End Precinct as a Maritime Precinct with land tenure to be shaped by the Port Hedland Voluntary Buyback Scheme (PHVBS), and development control to be guided by the Port Hedland West End Improvement Scheme No. 1, administered by the WAPC.

The PHVBS is a voluntary land buyback option available to owners of more than 400 permanent residential dwellings located within the Improvement Scheme area. The voluntary scheme will be funded by industry, with the funding mechanism to be finalised. The PHVBS will be administered by the Pilbara Ports Authority (PPA) and governed by a Board of Directors that will include representatives from the Pilbara Development Commission, DevelopmentWA, and the DPLH. It is proposed that the PHVBS would be available in the second half of 2020 and remain open for at least three years. The delivery of the PHVBS will not lessen industry and State Government responsibilities for dust mitigation in the West End.

The Improvement Scheme replaces the Town of Port Hedland's Scheme as the statutory land use planning instrument over the West End area prescribed by the Improvement Scheme. It provides land use and development controls including, powers for the WAPC to determine development applications, prepare Improvement Scheme policies, structure plans, and local development plans. The majority of land within the Improvement Scheme area is zoned "West End Zone", providing a flexible planning framework that will facilitate development of the future Maritime Precinct.

The West End is the cultural heart of the Town and hosts a mix of uses north of Anderson Street consisting of arts, culture, historic sites, not-for-profit organisations, short-stay accommodation, retail and entertainment venues. It will be important to balance investment in commercial activity in the West End Precinct with this activity type in the South Hedland City Centre Precinct, which is promoted as the Town's regional centre and is not subject to environmental constraints associated with port operations.

Strategy Response

Future development within the majority of the West End Precinct will be guided by the Improvement Scheme. The Town of Port Hedland will seek to influence the determination of development applications within the precinct as a referral agency to DPLH. The Town's Scheme, and therefore planning control, will apply to all land outside the Improvement Scheme area.

The Town's local planning policies, strategies and other relevant documents may inform, or directly apply to, areas of the West End precinct including, but not limited to:

- LPP/02 Advertising Signs
- LPP/03 Shipping / Sea Containers and Transportable Buildings
- LPP/04 Percent for Public Art
- LPP/05 Workforce Accommodation
- LPP/06 Social Impact Assessment
- Port Hedland Townsite CHRMAP
- Heavy Vehicle Access Strategy Port Hedland (2020)
- Strategic Community Plan 2018-2028
- Public Open Space Strategy (2019)
- Arts and Culture Strategy 2019-2022
- Town of Port Hedland Local Heritage Inventory (Heritage List)
- Port Hedland Marina and Waterfront Masterplan

The following documents may also apply once adopted by Council:

- Coastal Reserves Foreshore Management Plan

Precinct Objectives

- Protect built heritage and enable adaptive reuse of heritage buildings to preserve the character of the West End;
- Limit new residential development and other sensitive land uses in accordance with the Improvement Scheme;
- Consolidate fragmented land ownership and road networks to support urban renewal;
- Develop a maritime precinct that focuses on high quality built form and port supporting commercial land uses;
- Encourage the establishment of a landscape buffer that separates industrial uses from sensitive uses to improve air quality and acoustic amenity;
- Designate land for tourism related land uses to encourage visitation of the precinct and contribute to economic activation;
- Adapt to coastal hazards by recognising land at risk of coastal erosion and inundation and apply a framework to reduce risk of damage during storm events;
- Improve the amenity of urban spaces through encouraging developments to provide landscaping and public art to contribute to the West End character.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> • To recognise the West End Improvement Scheme No.1. 	<ul style="list-style-type: none"> • Scheme Map to be modified to omit the West End Improvement Scheme Area from the Scheme Map with the following notation included on the Scheme Map: <i>'Refer to West End Improvement Scheme.'</i>
<ul style="list-style-type: none"> • Continue to recognise the importance of the role of the coastal foreshore for tourism and recreation opportunities. 	<ul style="list-style-type: none"> • Reserve the coastal foreshore within the West End Precinct as 'Environmental Conservation' and include tailored Reserve Provisions within LPS7 to enable appropriate recreation and tourism developments.
<ul style="list-style-type: none"> • Continue to provide an active role in planning for necessary infrastructure, services and activities within the West End precinct. 	<ul style="list-style-type: none"> • Implement the relevant local government endorsed policies and strategies within the West End precinct.
<ul style="list-style-type: none"> • Provide input into strategies and plans prepared by other agencies that guide or influence future development in the precinct. 	<ul style="list-style-type: none"> • Continue to engage with State Government agencies to realise the Town of Port Hedland's objectives for the West End Precinct.
<ul style="list-style-type: none"> • Promote visitation and economic opportunities within the precinct. 	<ul style="list-style-type: none"> • Prepare an economic development and tourism strategy that recognises the importance of the precinct.
<ul style="list-style-type: none"> • Encourage urban renewal of the former Port Hedland Hospital Site. 	<ul style="list-style-type: none"> • Continue to engage with State Government agencies to encourage an appropriate mix of land uses and built form outcomes for the site.
<ul style="list-style-type: none"> • Realise future stages of the Marina and Waterfront Masterplan to enhance activation of the precinct. 	<ul style="list-style-type: none"> • Undertake procurement processes to realise commercial and economic opportunities arising from the Marina and Waterfront Masterplan.

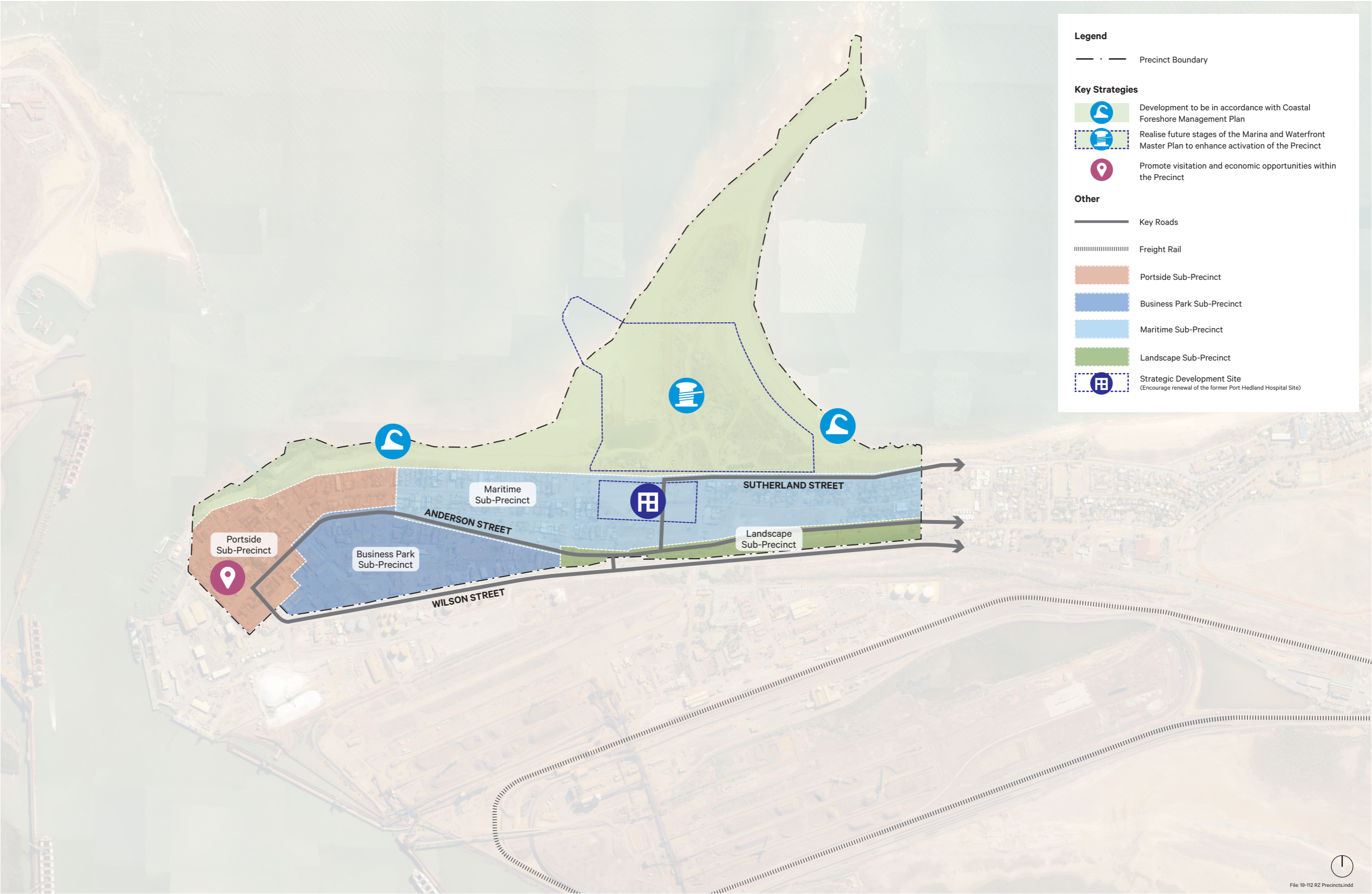


Figure 6. West End Precinct

4.5.2 Spinifex Hill

Precinct Context

The Spinifex Hill precinct relates to land generally located east of Taplin Street and west of Cooke Point Drive and includes such notable features as the Boulevard Shopping Centre, McGregor Street Sporting Precinct and Cemetery Beach.

The housing stock throughout this area is well established and is coded R12.5/R30 under the Town's Local Planning Scheme No. 5 with a corresponding clause (clause 5.1.5) that allows the application of the R30 density code for properties provided with reticulated sewer. All residential lots within this precinct are now provided with reticulated sewer, so this clause is redundant in its application.

Land within this precinct is prone to coastal erosion and inundation as identified within the Port Hedland Townsite CHRMAP and therefore the new local planning scheme will need to identify appropriate adaptation responses to these known risks.

The Boulevard Shopping Centre provides for the daily and weekly shopping needs of households within Port Hedland and is the primary retail hub which services the Port Hedland townsite.

Tjalka Boorda (also known as Three Mile) is a former Aboriginal community and town-based-reserve that has gradually been decommissioned over time with only one remaining dwelling occupied within the estate.

Strategy Response

Given that all residential lots are provided with reticulated sewer, it is proposed to remove the split coding over these lots and code these residential lots as R30. Notwithstanding, residential land between McGregor and Taplin Streets should not be subdivided and developed at a higher density than the R30 density code in line with the recommendations of the Dust Taskforce Report.

This precinct contains two sites with significant development potential for residential purposes, being the Telstra Tower site (Lot 102 on Deposited Plan 75275) and the former remediated Wastewater Treatment Plant site (Lot 952 on Deposited Plan 210755 and Lot 2046 on Deposited Plan 210755). These sites are relatively unconstrained in that they are not identified as being prone to coastal erosion and inundation and therefore should be prioritised for redevelopment over more heavily constrained urban land.

The existing Boulevard Shopping Centre will remain as the primary centre, providing retail services to Port Hedland based residents. Additional local convenience retailing may be considered in this precinct to complement the retailing on offer within the Boulevard Shopping Centre. In order to recognise the Boulevard Shopping Centre as the primary retail centre within the Port Hedland townsite, it is proposed to extend the Commercial zone over several additional properties adjacent to the centre, including land currently occupied by the Hedland Christian Church, to allow for further expansion and land use synergies over time.

Access to recreation facilities will be improved over time through the progressive development of the McGregor Street Sports Precinct Masterplan.

It is proposed to zone the former Tjalka Boorda site as 'Special Use' to promote the opportunity for a range of different commercial ventures to be pursued on this site.

The existing St Cecilia's Catholic Primary School is proposed to be rezoned from 'Public Purposes' to a 'Private Institution' zone reflecting the private education nature of the use.

Precinct Objectives

- Zone sufficient land to accommodate residential growth within the Port Hedland townsite.
- Ensure development provides an appropriate adaptation response to coastal processes.
- Maintain the role of the Boulevard commercial centre as a Neighbourhood Centre which will not compete with the South Hedland City Centre.
- Improve the provision of sport and recreation facilities through the implementation of the McGregor Street Sporting Master Plan.
- Provide sufficient zoned land for tourism purposes.
- Protect the established activity centre hierarchy.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> • Provide a logical and efficient staged approach to the release of land for residential purposes. 	<ul style="list-style-type: none"> • Zone the following sites as 'Urban Development' to allow for structure planning for residential purposes: <ul style="list-style-type: none"> o The Telstra Tower site (Lot 102 on Deposited Plan 75275); o The former Wastewater Treatment Plant site (Lot 952 on Deposited Plan 210755 and Lot 2046 on Deposited Plan 210755). • Repurpose surplus open space for residential or mixed use development following the development of the McGregor Street Sporting Precinct Masterplan sporting fields.
<ul style="list-style-type: none"> • Minimise the negative health impacts from dust emitting activity on sensitive land uses. 	<ul style="list-style-type: none"> • Not support the further intensification of permanent residential land use to that already permitted on the Scheme Maps for land located between Taplin and McGregor Streets.
<ul style="list-style-type: none"> • Ensure the established activity centre hierarchy is maintained. 	<ul style="list-style-type: none"> • Extend the 'Commercial' zone over Lots 5827 and 5828 Anderson Street and Lots 500 and 2065 Wilson Street, Port Hedland.
<ul style="list-style-type: none"> • Provide flexibility to facilitate appropriate development outcomes on the former Tjalka Boorda community site. 	<ul style="list-style-type: none"> • Zone the former Tjalka Boorda site as 'Special Use'.
<ul style="list-style-type: none"> • Provide a statutory response to coastal hazards within the Local Planning Scheme. 	<ul style="list-style-type: none"> • Include a CHRMAP Special Control Area which requires development to provide the following adaptation responses to known coastal hazards: <ul style="list-style-type: none"> o Coastal erosion: Managed retreat - avoid new development on the seaward side of the 100-year coastal erosion line except where engineered coastal protection structures can be funded and developed; o Coastal inundation: Accommodate - habitable floor levels for development on land prone to storm surge inundation, to be raised above the modeled storm surge level.
<ul style="list-style-type: none"> • Ensure sufficient land set aside for recreation and open space. 	<ul style="list-style-type: none"> • Reserve the McGregor Street Sporting Precinct as Public Open Space. • Progressively implement the McGregor Street Sporting Precinct Master Plan.



Figure 7. Spinifex Hill Precinct

4.5.3 East End Urban Village

Precinct Context

The East Urban Village is primarily a residential area capitalising on the high level of amenity offered by the precinct's connection to the coast and mangrove environments. It is this residential amenity that makes the precinct a highly sought after area for development. Much of the remaining vacant land within Port Hedland is located within the East Urban Village precinct, however, the majority of this land is constrained as a result of being low lying and prone to coastal inundation and flooding, or due to the land's proximity to environmental habitats (turtle nesting sites, mangroves) or heavy rail infrastructure.

In recent years, the State Government has determined that permanent residential is no longer an appropriate land use within the nearby West End precinct due to the impacts of dust on air quality. The State Government has recommended that population growth within the West End precinct is restricted and the government is in the process of implementing a voluntary buy back scheme for existing permanent residential housing in the West End Precinct. Over time and as a consequence of the Port Hedland Voluntary Buy-back Scheme and West End Improvement Scheme No.1, permanent residential populations will likely decline in the West End. Accordingly, there is a need to identify sufficient and appropriate land for future residential development within wider Port Hedland, including Spinifex Hill and the East Urban Village, and prioritise its release through the planning framework, from least to most constrained.

A CHRMAP has been prepared in relation to the Port Hedland townsite. This plan identifies land that is prone to coastal erosion and/or coastal inundation. The Town's LPS7 will need to identify appropriate adaptation responses to these known risks.

Strategy Response

The former detention centre and recreation centre located at 15 Dempster Street and 13 Keesing Street Port Hedland respectively are considered priority sites for redevelopment to accommodate new housing within Port Hedland. These sites should be prioritised for residential development ahead of more constrained land within Port Hedland.

In addition to the above sites, it is also proposed to identify a number of Development Investigation Areas, being areas of land which require further detailed planning and investigation to determine the suitability of these land parcels for residential development. These detailed investigations would need to be undertaken prior to support for any rezoning and/or development for residential purposes. These Development Investigation Areas are listed below:

- Athol Street, being portion of Lot 556 on Plan 74214 (Reserve 30768);
- The Stables Precinct, being portion of Lot 556 on Plan 74214 (Reserve 30768) and portion of adjacent vacant crown land; and
- A portion of Pretty Pool Stage 3a, excluding the portion located within the 100-year coastal erosion hazard line.

Land to the south of Styles Road was previously identified for residential purposes under the Port City Growth Plan, however this land will not be required to accommodate potential residential growth within the life of this Strategy. It is also located in proximity to BHP's rail infrastructure and for this reason, portions of the area are not considered an appropriate location for residential use.

Precinct Objectives

- Zone sufficient land to accommodate residential growth within the Port Hedland townsite.
- Ensure that any further urban development within the precinct is compatible with its environmental values.
- Plan for the efficient staged release of land for residential purposes with priority given to the development of less constrained land.
- Ensure development provides an appropriate adaptation response to coastal processes.
- Give particular priority to the conservation and management of mangroves and tidal flats.
- Permit additional tourist facilities, provided these do not detract from the district recreational function and the environmental values of the precinct.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> Provide a logical and efficient staged approach to the release of land for residential purposes. 	<ul style="list-style-type: none"> Zone the former detention centre and recreation centre located at 15 Dempster Street and 13 Keesing Street, Port Hedland respectively as 'Urban Development' to allow for structure planning for mixed use and residential development.
<ul style="list-style-type: none"> Progressively de-constrain land for future residential purposes. 	<ul style="list-style-type: none"> The following sites being identified as Development Investigation Areas. These are areas which require further detailed planning and investigation to determine the suitability of these land parcels for residential development. Investigations to support future scheme amendments, structure plans, subdivision and development applications should consider the cumulative environmental impacts arising from the development of these investigation areas and should provide a response on how these cumulative impacts are to be addressed and managed: <ul style="list-style-type: none"> Athol Street, being portion of Lot 556 on Plan 74214 (Reserve 30768), subject to the findings of the following documentation: <ul style="list-style-type: none"> Site-specific Coastal Hazard Risk Management Adaptation Plan; Environmental Assessment Report; Foreshore Management Plan; Mangrove Management Plan; Nutrient Management Plan; Acid Sulphate Soil Management Plan; Bushfire Management Plan; Traffic Report; Local Water Management Strategy; Servicing and Infrastructure Report; Geotechnical report; and Heritage investigations (i.e. World War Two Rifle Range and Merv's Lookout).

Strategies	Actions
<ul style="list-style-type: none"> Progressively de-constrain land for future residential purposes (continued). 	<ul style="list-style-type: none"> The Stables Precinct, being portion of Lot 556 on Plan 74214 (Reserve 30768) and portion of adjacent vacant crown land, subject to the relocation of the Port Hedland Pony Club and the findings of the following documentation: <ul style="list-style-type: none"> Site-specific Coastal Hazard Risk Management Adaptation Plan; Environmental Assessment Report, including consideration of impacts on mangroves, light pollution on marine turtle nesting areas and potential erosion impacts; Foreshore Management Plan; Mangrove Management Plan; Nutrient Management Plan; Acid Sulphate Soil Management Plan; Bushfire Management Plan; Local Water Management Strategy; Noise Impact Assessment in relation to proximity to heavy freight routes; Geotechnical report; Survey of Migratory Birds; Servicing and Infrastructure Report; and Aboriginal Heritage report. Pretty Pool Stage 3a, subject to resolving the following issues: <ul style="list-style-type: none"> Environmental Assessment Report including the impacts of light pollution on marine turtle nesting areas; Site-specific CHRMAP; Local Water Management Strategy; Bushfire Management Plan; Geotechnical Report; and Servicing and Infrastructure Report. Portion of the McGregor Street Sporting Precinct following implementation of the McGregor Street Master Plan; <ul style="list-style-type: none"> Bushfire Management Plan; Site-specific Coastal Hazard Risk Management Adaptation Plan; Environmental Assessment Report including the impacts of light pollution on marine turtle nesting areas; Local Water Management Strategy; Geotechnical Report; and Servicing and Infrastructure Report.
<ul style="list-style-type: none"> Provide a statutory response to coastal hazards within the local planning scheme. 	<ul style="list-style-type: none"> Include a CHRMAP Special Control Area which requires development to provide the following adaptation responses to known coastal hazards: <ul style="list-style-type: none"> Coastal erosion: managed retreat / interim protection - avoid new development on the seaward side of the 100-year coastal erosion line, except where engineered coastal protection structures can be funded and developed / or time/event limited approvals granted; Coastal inundation: accommodate habitable floor levels for development on land prone to storm surge inundation to be raised above the modeled storm surge level.
<ul style="list-style-type: none"> Recognise and reflect existing development outcomes where appropriate. 	<ul style="list-style-type: none"> Normalise the established Pretty Pool Structure Plan. Rezone Lot 11 Keesing Street, Lot 12 Dempster Street and Lot 2513 Dempster Street from 'Commercial' to 'Mixed Use'.



Figure 8. Eastern End Urban Village Precinct

4.5.4 Port Authority and Finucane Island

Precinct Context

The Port of Port Hedland is the world's largest bulk export port, exporting approximately 538.2 million tonnes in the 2019/20 financial year. Iron ore exports comprise almost all trade through the port. The vast majority of export materials is iron ore (approximately 98 percent). At present there are a total of 19 berths within Port Hedland harbour where 4 berths are designated for public use while the remainder are in private ownership, occupied by major resource industry.

Recent studies by the PPA indicate new and increasing trade such as lithium, livestock and ammonium nitrate will lead to congestion across Pilbara Ports Authority's three common-user berths at the Port of Port Hedland in the short-term. Expansion of trading goods in lithium (and related products) and livestock is likely to require expansion of port facilities.

The proposed Lumsden Point General Cargo Facility in Port Hedland will be designed to facilitate increased trade growth of general cargo and mineral concentrates across the common-user berths. The proposed facility is located in the inner harbour and will capitalise on land reclaimed during previous port expansion projects, as well as the realignment of the Great Northern Highway in 2014. Land remediation works and initial dredging completed in 2018, has led to the development of a 35 hectare landside area. The proposed ultimate development will consist of two new general cargo wharves, lay-down areas and a 95-hectare logistics hub.

At present there are no passenger terminals in Port Hedland (with the exception of intermittent cruise ship visitation) although many strategic plans suggest that this line of trade should be developed.

The port enjoys strong connectivity to the existing Wedgefield industrial precinct and Boodarie Strategic Industrial Area.

Finucane Island's western end is a popular recreation area for fishing and boating and also provides a scenic outlook over mangroves.

Strategy Response

This Strategy recognises the primacy of the port and the need to continue to allow for the expansion of port infrastructure and operations. The port and the strategic infrastructure corridors that provide access to the port need to be protected from the encroachment of sensitive land uses, such as residential.

Port operations are exempt from requiring planning approval pursuant to the Town's Local Planning Scheme within dedicated port boundaries. It is proposed to reserve the port area as 'Strategic Infrastructure' which reflects the nature of the port operations.

Precinct Objectives

- Recognise and protect the primacy of the port to allow for sustainable development of port facilities.
- Ensure that strategic infrastructure that services the port is recognised and protected.
- Provide for continued public access to Finucane Island for recreational purposes.
- Ensure strategic industrial land is set aside to support port operations.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> To recognise and protect the primacy of the port within the Local Planning Scheme. 	<ul style="list-style-type: none"> The Local Planning Scheme to include the following objective: <i>To recognise, protect and complement the primacy of the port.</i> Reserve the Port operational land as 'Strategic Infrastructure' under LPS7.
<ul style="list-style-type: none"> To ensure that sensitive land uses do not impede the operations of the port or the strategic infrastructure corridors that service the port. 	<ul style="list-style-type: none"> In accordance with SPP 5.4, Identify a 200m referral area for sensitive land uses in relation to freight rail corridors on the Strategy Maps; Reserve the freight rail corridors as 'Railways' Reserve on the Local Planning Scheme maps.
<ul style="list-style-type: none"> Enable continuation of public access to Finucane Island for public recreation 	<ul style="list-style-type: none"> Continue to engage with the Pilbara Ports Authority to maintain and protect public access to the recreation reserve.



Figure 9. Port Authority and Finucane Island Precinct

4.5.5 Redbank

Precinct Context

Redbank is an established rural residential estate that also includes a number of storage and rural industrial land uses.

The estate is serviced by Redbank Road which intersects with Wilson Street, approximately 400m south of Redbank Bridge. Redbank Road is a sealed road with a RAV10 classification however the road is not compliant with RAV10 requirements due to restrictions associated with the intersection with Wilson Street, its road geometry and carriageway widths.

The precinct also includes the former power station site which is zoned 'Commercial' under Local Planning Scheme No. 5.

Strategy Response

Redbank is an established rural residential estate and this strategy recognises the retention of this estate for the short to medium term. Further expansion of rural-residential subdivision is not supported due to a number of factors, including:

- Public health issues associated with mosquitos and sandflies breeding in the nearby mangrove environment;
- The risk of coastal inundation;
- Environmental considerations associated with the mangrove environment;
- Vehicle access considerations; and
- The proximity to port operations.

Further industrial uses within Redbank are not supported due to the incompatible nature with the predominant residential use of the precinct and due to the access limitations of Redbank Road.

In the longer term, the ultimate land use scenario is for Redbank to form part of the wider Port area due to it being one of the many 'fingers' of land that extends into the inlet. Redbank Road would need to be upgraded if access to the Port were to be contemplated.

Precinct Objectives

- Protect the rural residential amenity of Redbank.
- Protect the existing and future port operations.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> • Prevent further expansion of rural residential subdivision. 	<ul style="list-style-type: none"> • Retain the existing 'Rural Residential' zone for rural residential lots. • Do not support further rezoning or subdivision for rural residential purposes at Redbank.
<ul style="list-style-type: none"> • Provide a transition of land use between the existing rural-residential lots and port. 	<ul style="list-style-type: none"> • Zone the former power station site as 'Light Industry' to provide a transition to the port.

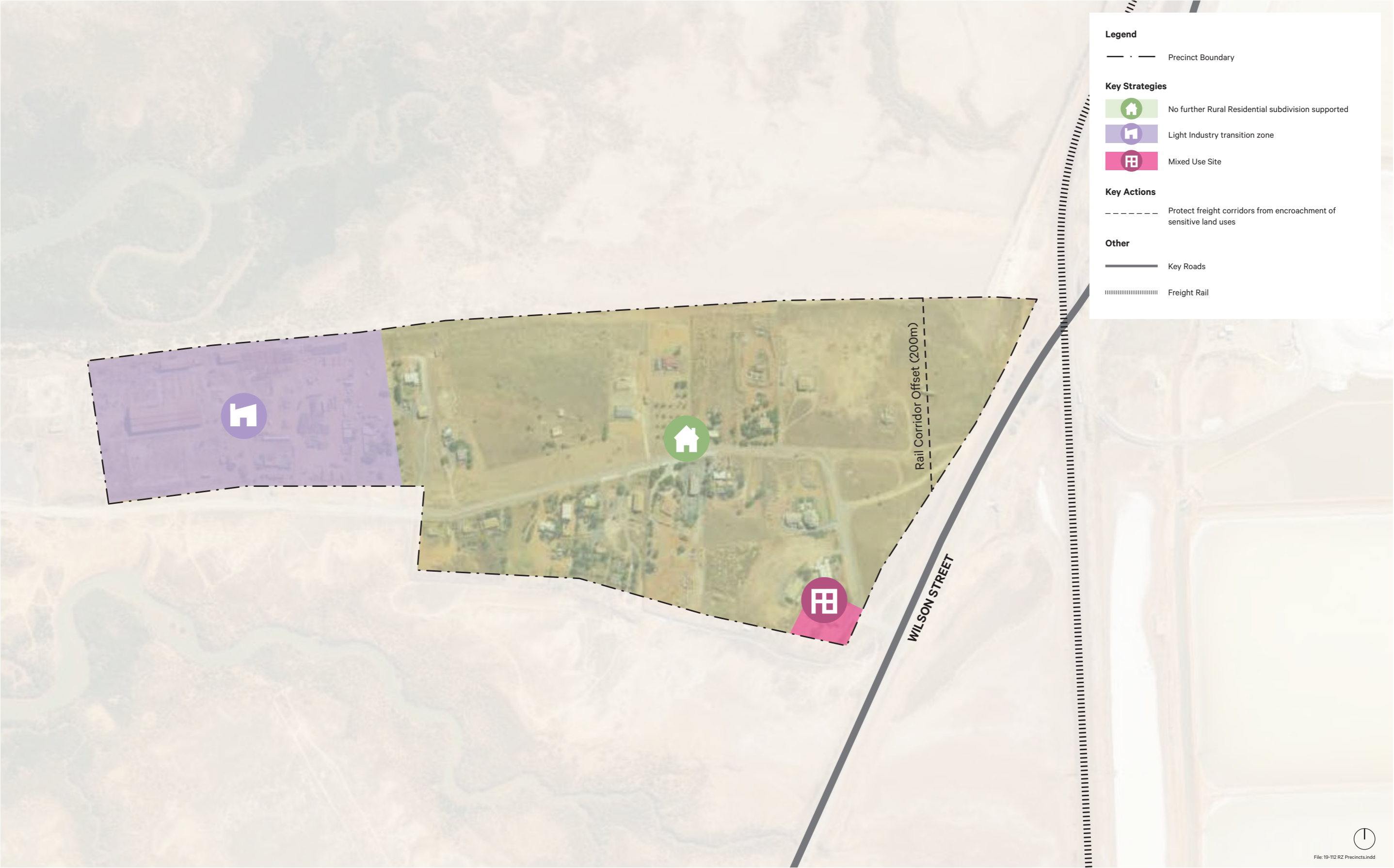


Figure 10. Redbank Precinct

4.5.6 Dampier Salt and Surrounds

Precinct Context

The Dampier Salt and Surrounds precinct will continue to service the growth of Dampier Salt operations.

The salt ponds and piles are clearly recognised within the landscape. Also located within this precinct is the Hedland Kart Club and Explosives Reserve. The Explosives Reserve is a term used to include a number of private operators providing commercial explosives expertise to the mining industry.

Strategy Response

The Strategy recognises the need to protect land for the expansion of Dampier Salt operations by limiting the encroachment of any sensitive land uses within this precinct. It is proposed to zone land associated with the existing and future Dampier Salt operations as 'Rural' under LPS7.

It is proposed that the majority of the explosives reserve will be reserved as 'Special Purpose'; however, it is proposed to recognise the commercial operations on freehold land through a 'Strategic Industry' zone. Any buffer requirements associated with the storage of explosive goods should be contained on-site and within the above zone and reserve, noting the proximity of these uses to the Port Haven camp and 12 mile rural residential estate.

Precinct Objectives

- Ensure the ongoing protection of land associated with the expansion of Dampier Salt.
- Provide for the storage of dangerous goods within the explosives reserve with any associated buffers to be contained on site.
- Continued support for leases to be granted to commercial operators within the explosives reserve provided leases address relevant planning and access considerations.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> • Provide sufficient land to support strategic industry. 	<ul style="list-style-type: none"> • Zone freehold land within the Explosive Reserve as 'Strategic Industry' under LPS7 in recognition of the commercial operation of these parcels. • Continue to support appropriately planned lease applications within the explosives reserve for explosives related land uses. • Maintain separation of sensitive land uses by reserving surrounding land as 'Special Purpose' to protect this precinct and allow for the continued operation of this strategic industry. • Promote the consolidation of access to Great Northern Highway.
<ul style="list-style-type: none"> • Protect land associated with the Dampier Salt operations. 	<ul style="list-style-type: none"> • Zone land associated with the Dampier Salt operations as 'Rural' under LPS7.
<ul style="list-style-type: none"> • Protect the rural residential nature of the nearby 12 mile rural residential estate. 	<ul style="list-style-type: none"> • Promote rural residential land for lifestyle residential use and discourage encroaching industrial development.

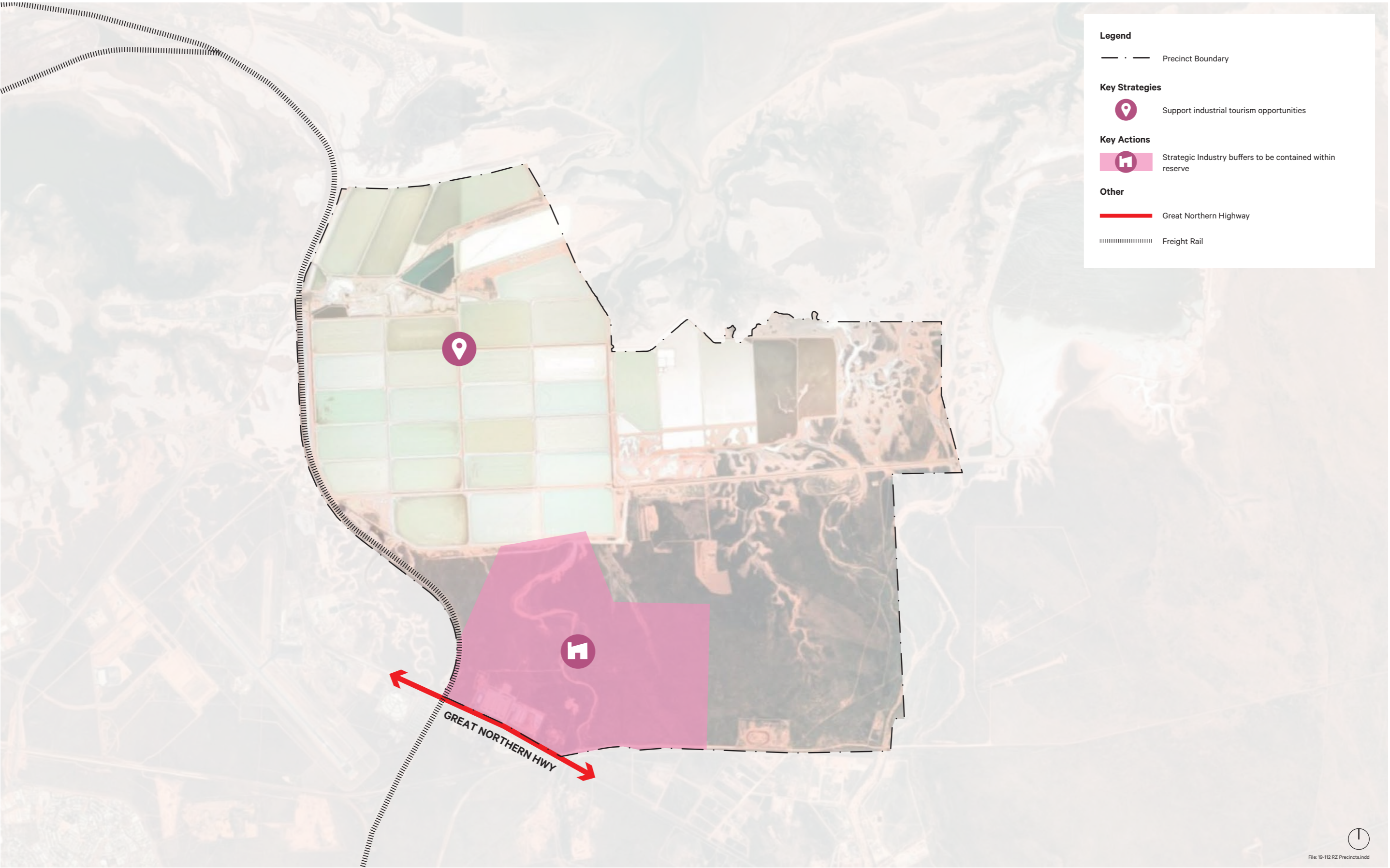


Figure 11. Dampier Salt and Surrounds Precinct

4.5.7 Wedgefield Industry and Logistics

Precinct Context

Wedgefield consists of two distinct 'sub-precincts'. The older part of Wedgefield, located west of Pinga Street and north of Anthill Street, was originally developed in the 1960s and 70s as a light industrial precinct and this is evident in the lot configuration, which consists of primarily smaller lots typical of a light industrial estate with narrow 20m – 30m road reservations. However, the types of industrial uses in this part of Wedgefield has evolved to accommodate a range of industrial uses, including concrete batching plants, tyre and scrap metal storage, transport depots and general industry.

The second sub-precinct is the new estate referred to as Hedland Junction. This estate has been purpose designed to accommodate industries reliant on heavy transportation and the road network is designed to a RAV10 standard. The subdivision and development of the Hedland Junction precinct is guided by the Wedgefield Industrial Estate Structure Plan which identifies a majority of the precinct as 'Transport Development'.

Transport logistics have also made technical advancements over time, with longer combination vehicles (up to quads) becoming more prevalent in Wedgefield. The road infrastructure in the older part of Wedgefield, despite being designated RAV10, does not meet that standard and cannot effectively accommodate these longer combination vehicles. The road network would require substantial investment by the Town to bring these roads up to RAV10 compliance standard. The Town is in the process of investigating several options to upgrade specific 'loop' roads to improve RAV access in this part of the estate, while simultaneously reducing RAV coverage over certain roads. In addition to this issue, there are a large number of caretakers' dwellings located in this part of Wedgefield which are typically considered incompatible with these heavier industries.

Strategy Response

In response to the issues identified in the older part of Wedgefield, it is proposed to zone this part 'Light Industry', while recognising the existing legitimate caretakers' dwellings as having 'additional use' rights. The existing general industrial and transport depot uses would retain 'non-conforming use' rights; however, the light industrial zoning would prevent further proliferation of both caretakers' dwellings and general industrial uses in this part of Wedgefield.

The newer Wedgefield Hedland Junction will be zoned 'General Industry' to provide sufficient land for general industry and transport logistics to meet the medium to longer-term demand for these types of uses within the Town. The 'Caretaker's Dwelling' use is not permitted in the 'General Industry' zone to protect the strategic nature of this land from the encroachment of sensitive land uses.

Undeveloped land in Wedgefield, comprising Hedland Junction and Wedgefield North (Crown Land vested in the PPA and leased for commercial/industrial activities), will be zoned 'Industrial Development' and the Wedgefield Industrial Estate Structure Plan will need to be reviewed and amended to ensure that land use outcomes consistent with the 'General Industry' zone can be achieved. The aforementioned PPA vested land is a result of the realignment of the Great Northern Highway and is segregated from the Port by a Primary Distributor Road reservation. As a result, the zoning of the PPA land requires rationalisation which factors in the location of Light Industry zoning adjacent to Great Northern Highway and General Industry zoning towards the southern end of the Industrial Development area.

Precinct Objectives

- Resolve land use conflicts between industrial and sensitive land uses.
- Provide a safe and efficient road network to support transport logistics.
- Provide sufficient industrial land to meet long-term requirements for industry.
- Protect open swale drainage networks from encroaching development.
- Improve the general amenity of industrial areas over time.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> Prevent further proliferation of general and transport logistic uses within the older part of Wedgefield. Prevent further proliferation of caretaker's dwellings and temporary accommodation land uses within dedicated industrial precincts. 	<ul style="list-style-type: none"> Zone the older part of Wedgefield as 'Light Industry'. List 'Caretaker's Dwelling' and other temporary accommodation land uses as an 'X' use within the 'Light Industry' and 'General Industry' zones. Identify existing operating 'Caretaker's Dwellings' as an Additional Use within the 'Light Industry' zone.
<ul style="list-style-type: none"> Identify and progress options to improve the road and drainage network in the older part of Wedgefield to accommodate existing transport logistics industry, where feasible. 	<ul style="list-style-type: none"> Develop an options and feasibility assessment of the Wedgefield road network to identify feasible options to upgrade parts of the road network to accommodate RAV10 accessibility requirements. Develop and implement the recommendations of the Town's Heavy Vehicle Access Strategy including the following recommendations specific to Wedgefield: <ul style="list-style-type: none"> review RAV status of road in Wedgefield through data collection and monitoring of land use over time; and develop and implement an engagement plan with transport logistics industries.
<ul style="list-style-type: none"> Ensure that sufficient land is set aside for general industry to meet the longer term requirements of industry within the Town. 	<ul style="list-style-type: none"> Zone the developed portion of Hedland Junction as 'General Industry' to provide for a range of general industrial uses. Zone the undeveloped portion of Hedland Junction as 'Industrial Development' to allow land use, subdivision and development to be progressed in accordance with a Structure Plan. Review and amend the Wedgefield Industrial Estate Structure Plan to ensure that it supports land use and development outcomes consistent with the intent of the 'General Industry' zone of LPS7.
<ul style="list-style-type: none"> Develop and impose minimum development standards on new industrial development relating to setbacks, landscaping and verge treatment to improve the amenity of industrial areas over time. 	<ul style="list-style-type: none"> Incorporate minimum development standards and requirements for industrial land uses within LPS7. Prepare a local planning policy that identifies minimum development standards and requirements for industrial land uses and protects open swale drainage networks from encroaching development.

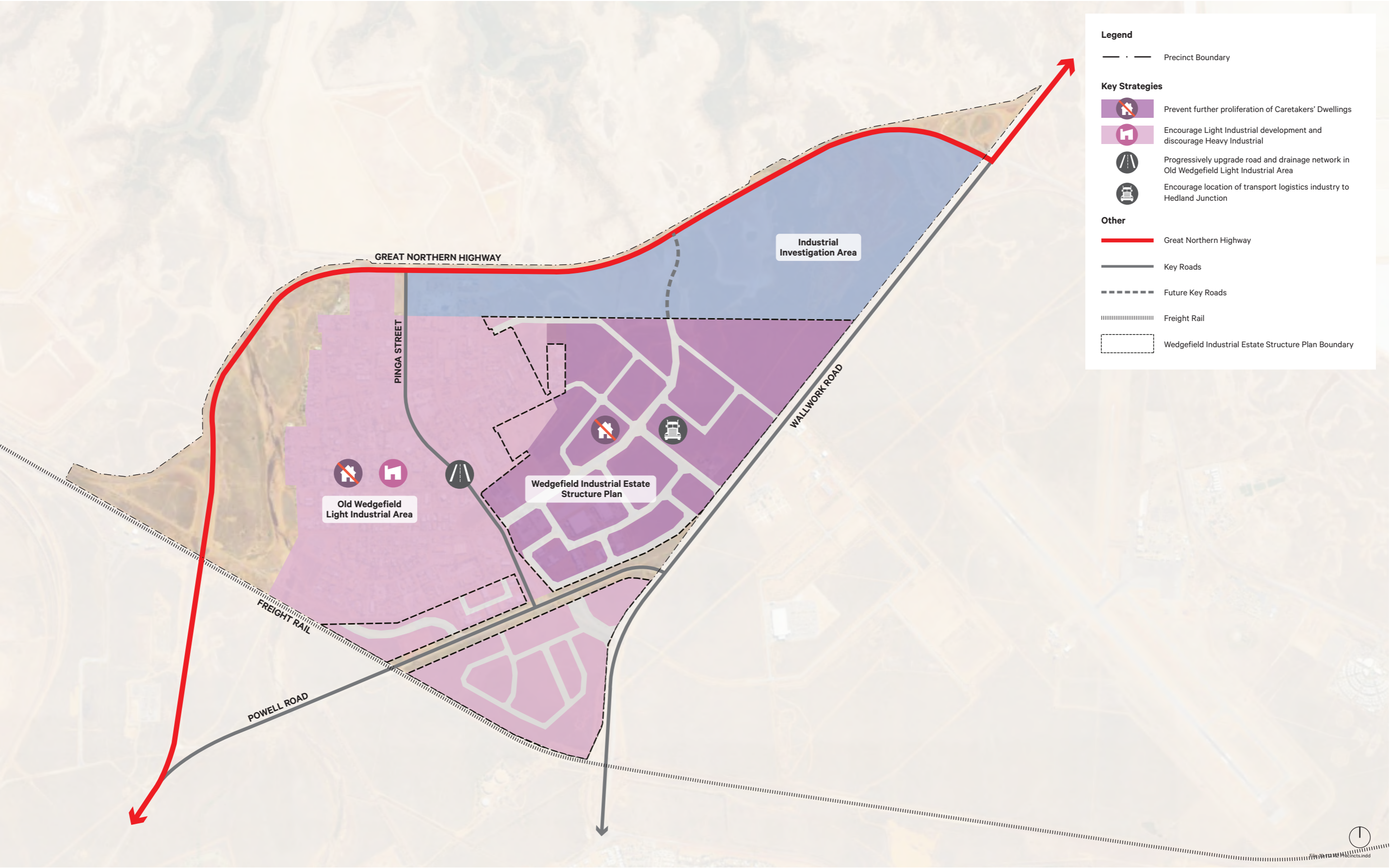


Figure 12. Wedgefield Industry and Logistics Precinct

4.5.8 Airport and Surrounds

Precinct Context

The Port Hedland International Airport (PHIA) is a major gateway to the North West of Australia and provides domestic and international flight options. In 2016, the Airport was acquired from the Town by a private operator through a 50-year lease.

Up to 50 commercial flights are offered per week from PHIA, with direct services to Bali, Brisbane and Perth. In 2017, there were over 4,600 aeroplane movements and 350,000 passenger movements from the airport. PHIA also provides for international freight services, charter and flight training facilities, a dedicated heliport facility and the region's Royal Flying Doctors Service. The main driver of the passenger market for Port Hedland is the mining sector and in particular, iron ore and base metals.

While the PHIA is the major airport for the Pilbara, its commercial viability is under threat from the proliferation of mine site based aerodromes, which take patronage away from the airport. These aerodromes are often exempt from planning approval under a local planning scheme and are provided under separate legislative instruments, such as individual State Agreements, land tenure negotiations under the *Land Administrative Act 1997* and through mining tenement applications under the *Mining Act 1978*.

The Town, along with the operators of the PHIA, Karratha and Broome airports, have expressed concern regarding the approval of aerodromes in close proximity to designated Regular Public Transport (RPT) airports. Principally, the impact on passenger and freight traffic and the potential reduction in economies of scale and escalation in airfare pricing.

The airport's operators are currently undertaking a number of upgrades to the airport to bring it up to a modern standard. The Airport provides a key role in the Pilbara, being the primary air transport hub and provides important air transport services to the community and to business in supporting the Port.

In addition to infrastructure associated with airport operations, two workforce accommodation facilities are located within the precinct, namely Mia Mia Port Hedland hotel and the ESS Port Haven Village.

The precinct also accommodates the Kingsford Smith Business Park, the majority of which is not part of the Port Hedland International Airport leasehold area, providing land for bulky goods, retailing and warehouse/service industry developments.

Strategy Response

The Port Hedland International Airport Master Plan 2018-2038 establishes the following vision for the Airport:

"to be a leading regional Australian airport and a modern, well-serviced airport which is a major domestic and international gateway airport for Western Australia. It will be the gateway to the Pilbara and a major intermodal hub."

The Master Plan establishes six sub-precincts on airport land, namely:

- Airside Precinct;
- Northern Precinct;
- Highway Precinct;
- Freight Precinct;
- Airport Industrial Park Precinct; and
- Terminal and General Aviation Precinct.

In summary, the airport sub-precincts provide for the following:

Airport Precinct	Land Use Intent
Airside Precinct	Dedicated to the provision and protection of aircraft operations.
Northern Precinct	Proximity to the highway provides an opportunity to accommodate transport logistics industry that require access to bulk freight and laydown areas.
Highway Precinct	The Highway Precinct has been identified to accommodate businesses that require proximity to the airport and that could take advantage of the exposure to the Great Northern Highway.
Freight Precinct	The Freight Precinct has been identified to accommodate air freight and logistics uses, including freight storage, laydown yards, warehousing and distribution facilities.
Airport Industrial Park Precinct	The Airport Industrial Park Precinct includes the portion of the Kingsford Smith Business Park. This precinct is intended to accommodate uses that can service the port and airport.
Terminal and General Aviation Precinct	The Terminal and General Aviation Precinct has been set aside to service the passenger terminal and also provides for concurrent supporting or ancillary uses of the Precinct.

Main Roads WA has planned the realignment of the section of Great Northern Highway adjacent to the airport. New access arrangements to the airport will need to be constructed following the realignment of the Highway.

Airport obstacle height initiatives and Airport Noise Exposure Forecast contours required to protect Airport operations are addressed under LPP/08 Port Hedland International Airport.

To define land use permissibility generally in accordance with the PHIA Master Plan, it is proposed to zone the airport as 'Special Use' which will include land use permissibility generally in accordance with the PHIA Master Plan.

It is also proposed to include land use definitions for 'Aerodrome' within LPS7. In order to address the issue of remote aerodromes impacting on the viability of the PHIA, it is proposed to list 'Aerodrome' as an 'X' use within the 'Rural' zone.

Precinct Objectives

- Protect options for future airport infrastructure within the precinct.
- Ensure that development within the precinct meets prevailing noise and height limitation standards associated with the operation of aircraft.
- Ensure that any commercial development reinforces the transportation functions of the airport.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> • Protect the Port Hedland International Airport from incompatible land use and development. 	<ul style="list-style-type: none"> • Maintain the Airport Buffer local planning scheme provisions to establish requirements in relation to obstacle height limits (OHL) and Australian Noise Exposure Forecast (ANEF) contours.
<ul style="list-style-type: none"> • Provide a suitable framework within LPS7 that supports the diversification of business operations on Airport land. 	<ul style="list-style-type: none"> • Zone the Airport as 'Special Use' with land use permissibility generally in accordance with the PHIA Master Plan. • Include a land use definition of 'Aerodrome' within LPS7 and list it as an 'X' use in all zones apart from the Airport site.
<ul style="list-style-type: none"> • Appropriately zone the Kingsford Smith Business Park. 	<ul style="list-style-type: none"> • Rezone the Kingsford Smith Business Park to 'Special Use' under LPS7 and support development in accordance with the Kingsford Smith Business Park Design Guidelines.

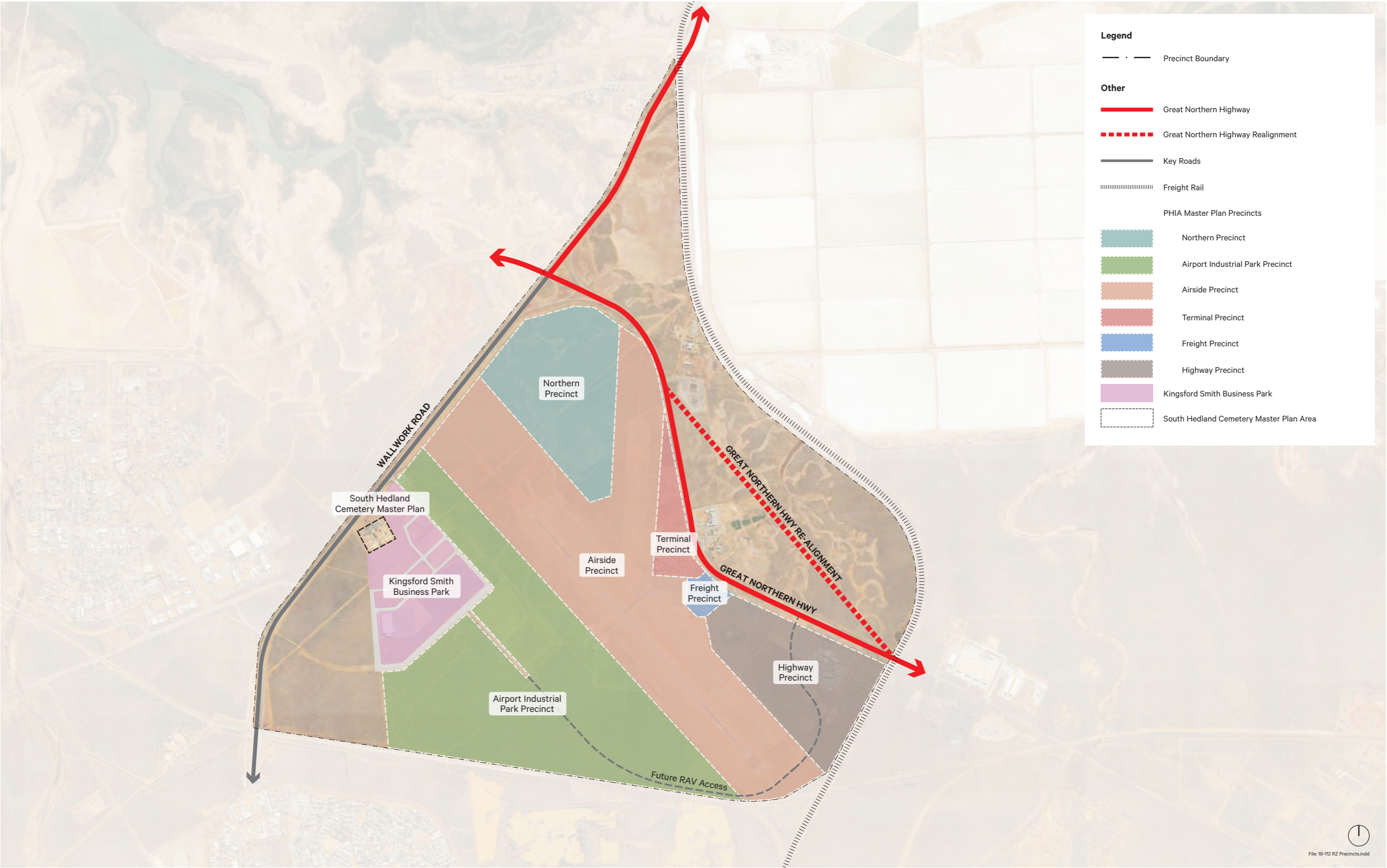


Figure 13. Airport and Surrounds Precinct

4.5.9 Pippingarra

Precinct Context

The Pippingarra precinct provides a rural lifestyle for some of Port Hedland's residents. An existing rural-residential estate is located on the northern side of the Great Northern Highway, while land to the south of the highway remains rural.

The remote Aboriginal settlements of Tjalka Wara and Pippingarra exist within this precinct.

On the eastern edge of the precinct is an industrial plant and associated buffer which will constrain the location of any sensitive land uses in this part of the precinct.

Pippingarra Road is classified as a RAV10 road on Main Roads WA networks; however, the majority of this road is unsealed and the intersection with Great Northern Highway does not allow for lane-correct movements. Pippingarra Road is considered a key regional freight route and is used by heavy haulage freight associated with mines located outside of the Port Hedland local government area.

Strategy Response

While there is an established rural residential estate within this precinct, there is no intention to permit further expansion of rural residential in this locality. Instead, there will be a general presumption against further fragmentation of land within this precinct.

Pippingarra Road will continue to accommodate heavy freight vehicles associated with mine sites located beyond the district and may also be required to provide access should a dedicated cattle holding yard and washdown facility be located in Pippingarra. The Town is investigating potential cost sharing arrangements for maintenance costs incurred as a result of its regional freight network.

Previous studies into a preferred location for a dedicated cattle holding yard identified Pippingarra as the preferred location. The predominant Rural zoning of this precinct would allow for a cattle holding yard to be established should this eventuate.

It will also be necessary to recognise the buffer associated with the industrial plant on the Strategy Maps.

Precinct Objectives

- To recognise and protect the amenity of the existing rural residential estate.
- To maintain a general presumption against further fragmentation of land within this precinct.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> • To prevent the further fragmentation of land within this precinct. 	<ul style="list-style-type: none"> • The Town will not support the further rezoning or subdivision of land for Rural Residential purposes within this precinct.
<ul style="list-style-type: none"> • To minimise land use conflict resulting from a mix of rural, residential and industrial land uses. 	<ul style="list-style-type: none"> • Identify a generic buffer on the Strategy Maps associated with the industrial plant.
<ul style="list-style-type: none"> • To discourage the sprawl of ad-hoc industrial and commercial development to encourage their co-location within planned estates. 	<ul style="list-style-type: none"> • Do not permit industrial and commercial developments on rural zoned land that are more appropriately located within zoned industrial and commercial areas.

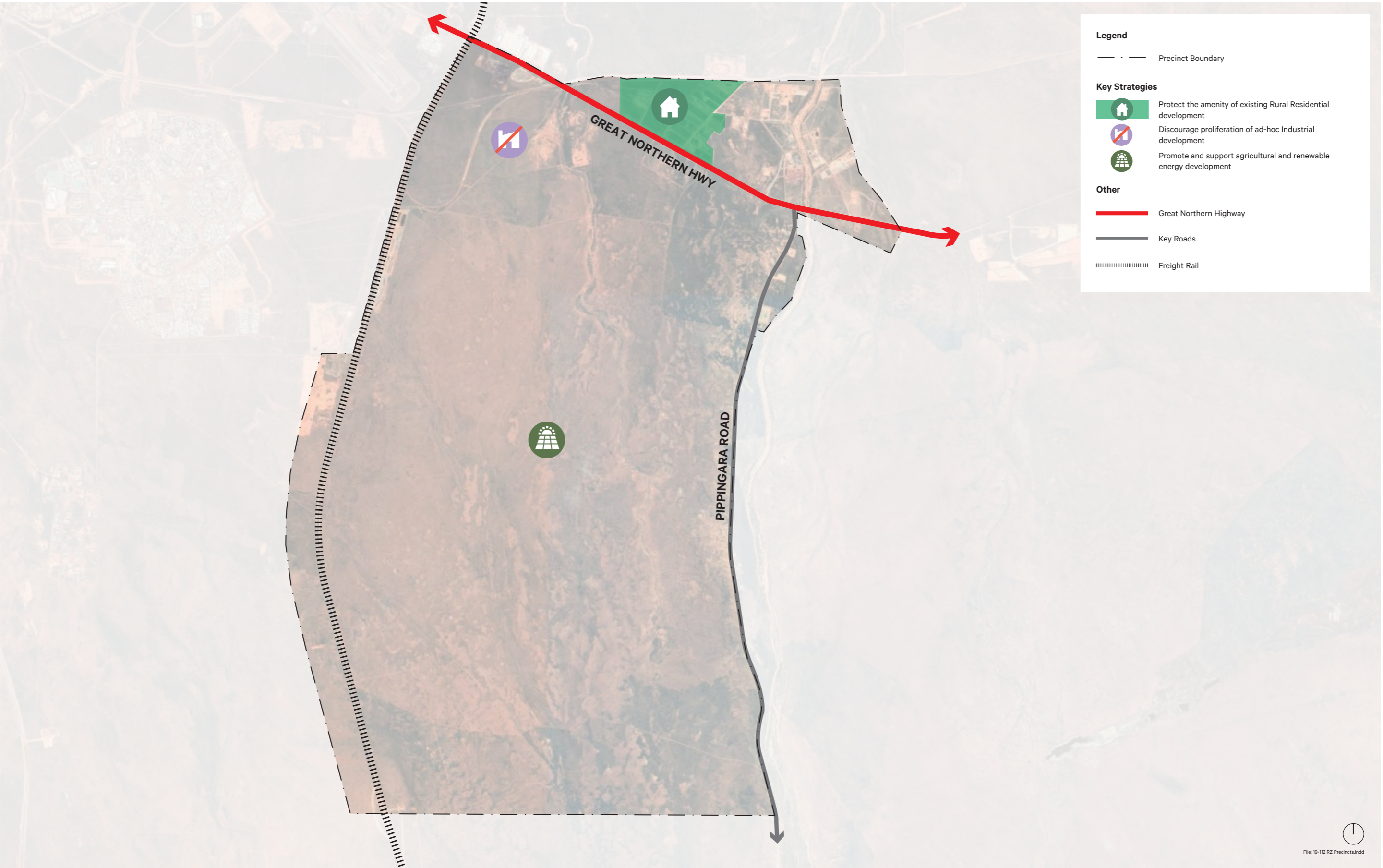


Figure 14. Pippingarra Precinct

4.5.10 South Hedland

Precinct Context

The South Hedland precinct comprises the four original neighbourhoods of South Hedland. South Hedland was established based on the Radburn design, which has resulted in issues relating to poor accessibility and way finding, amenity, safety and sense of place.

While well established, the precinct could benefit from improvements to the public realm to address issues related to way finding, access to useable areas of open space and general amenity improvement.

The precinct contains a substantial amount of zoned and serviced land available to accommodate residential development. The primary environmental considerations for future development relate to localised flooding and bushfire management. The Port Hedland landfill is located to the south-east of this precinct and would require a planned relocation before urban development can be realised within the existing buffer area associated with the landfill.

South Hedland is well serviced by community infrastructure, which includes the Hedland Health Campus, Wanangkura Stadium, Aquatic Centre, JD Hardie Youth & Community Hub, Youth Involvement Council, Matt Dann Theatre and Cinema, amongst other infrastructure.

The precinct provides a range of education opportunities, including four primary schools, a high school and the North Regional TAFE providing tertiary courses.

The wastewater treatment plant, golf club and equestrian precinct are all located to the west of South Hedland.

Strategy Response

Due to the substantial availability of zoned and serviced land for residential development, it is necessary to coordinate the delivery of residential land through prioritisation to ensure the efficient use of existing infrastructure and to contribute to the long term activation and viability of the South Hedland City Centre.

In this regard, the Town seeks to prioritise land for residential purposes, and the following sites have been identified as 'Short Term Urban Land' on the Strategy map for South Hedland:

1. Existing zoned and serviced vacant infill development sites, including the Pundulmurra, Trumpet Way, Koombana and Osprey West Structure Plan areas; and
2. Land immediately within the South Hedland City Centre designated for residential purposes and land within a 400m walkable catchment of the City Centre.

The Western Edge Structure Plan and Northern portion of the Osprey Rural Structure Plan area are identified as 'Medium Term Urban Land' on the Strategy maps. The Western Edge Structure Plan is located immediately to the west of the City Centre, and once developed, would 'round off' the south-western extent of the South Hedland urban footprint and also increase the residential catchment around the City Centre. The northern portion of the Osprey Rural Structure Plan area is unconstrained and represents a logical extension of existing developed land in the east part of South Hedland.

The Hamilton Road, Club Hamilton, Forrest Circle and remaining Osprey Rural Village Structure Plan Areas are all identified as 'Long Term Urban Land' being areas of land which may be required to accommodate long term residential growth over a 10+ year timeframe.

A strategy focussing on general amenity and improvements to the public realm would contribute to developing a sense of place and identity within the individual communities of South Hedland.

It is also proposed to improve access to recreation and open space through the following:

- Implementation of the South Hedland Integrated Sporting Complex Master Plan;
- Implementation of the JD Hardie Master Plan; and
- Ensure adequate provision of public open space in future structure planning and subdivision.

Precinct Objectives

- Provide for a permanent residential population within the catchment area of the South Hedland City Centre.
- Provide for diversity in housing choice and affordable housing.
- Provide for higher density residential development in closer proximity to the South Hedland City Centre, with more traditional home sites outside the walkable catchment.
- Progressively improve the accessibility, quantity and quality of open space within South Hedland in accordance with the principles and policy measures of Liveable Neighbourhoods having regard to local climatic conditions and other location specific considerations.
- Enhance the visual amenity of entry roads into South Hedland.
- Provide for district and regional recreation facilities.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> • Provide a logical and efficient staged approach to the release of land for residential purposes. 	<ul style="list-style-type: none"> • Promote the subdivision and development of the areas identified as 'Priority Urban Land' ahead of other areas as denoted on the Strategy Maps; • Allow the progressive delivery of urban land generally in accordance with the short, medium and long term staging identified on the Strategy maps; • Not support the further rezoning of rural land for urban purposes.
<ul style="list-style-type: none"> • Ensure that key infrastructure is protected from the encroachment of sensitive land uses. 	<ul style="list-style-type: none"> • Maintain separation of sensitive uses to the following: <ul style="list-style-type: none"> o Port Hedland Wastewater Treatment Plant; o Port Hedland Landfill site; o Existing mining buffer exclusion area; and o Boodarie Strategic Industry buffer area.
<ul style="list-style-type: none"> • Ensure sufficient land is set aside for recreation and open space. 	<ul style="list-style-type: none"> • Progressively implement the South Hedland Integrated Sporting Precinct Master Plan and JD Hardie Precinct Master Plan. • Develop three (3) new public open spaces in South Hedland above and beyond new subdivision areas in the following locations in accordance with the POS Strategy: <ul style="list-style-type: none"> o JD Hardie Masterplan Area (active POS) o Murdoch Drive (passive POS) o Buzzard Street, Osprey West (active POS) • Scheme amendments, structure plans and subdivision proposals are to ensure that public open space is provided in accordance with the principles and policy measures of the WAPC's Liveable Neighbourhoods framework (as amended), having regard to the recommendations of the Town's adopted POS Strategy.
<ul style="list-style-type: none"> • Improve the sense of place and amenity within South Hedland. 	<ul style="list-style-type: none"> • Develop a strategy to progressively improve the public realm within South Hedland with a potential focus on the following: <ul style="list-style-type: none"> o Closure of redundant pedestrian accessways with a view to amalgamating with adjacent land; o Enhancements to entry statement roads to each suburb; o Enhancements to streets including, street tree planting / theming strategy; o Dual naming / signage; o Arts and cultural programming to activate the public realm/ City Centre; o Enhancements to existing parks including installation of additional shade trees to all parks.

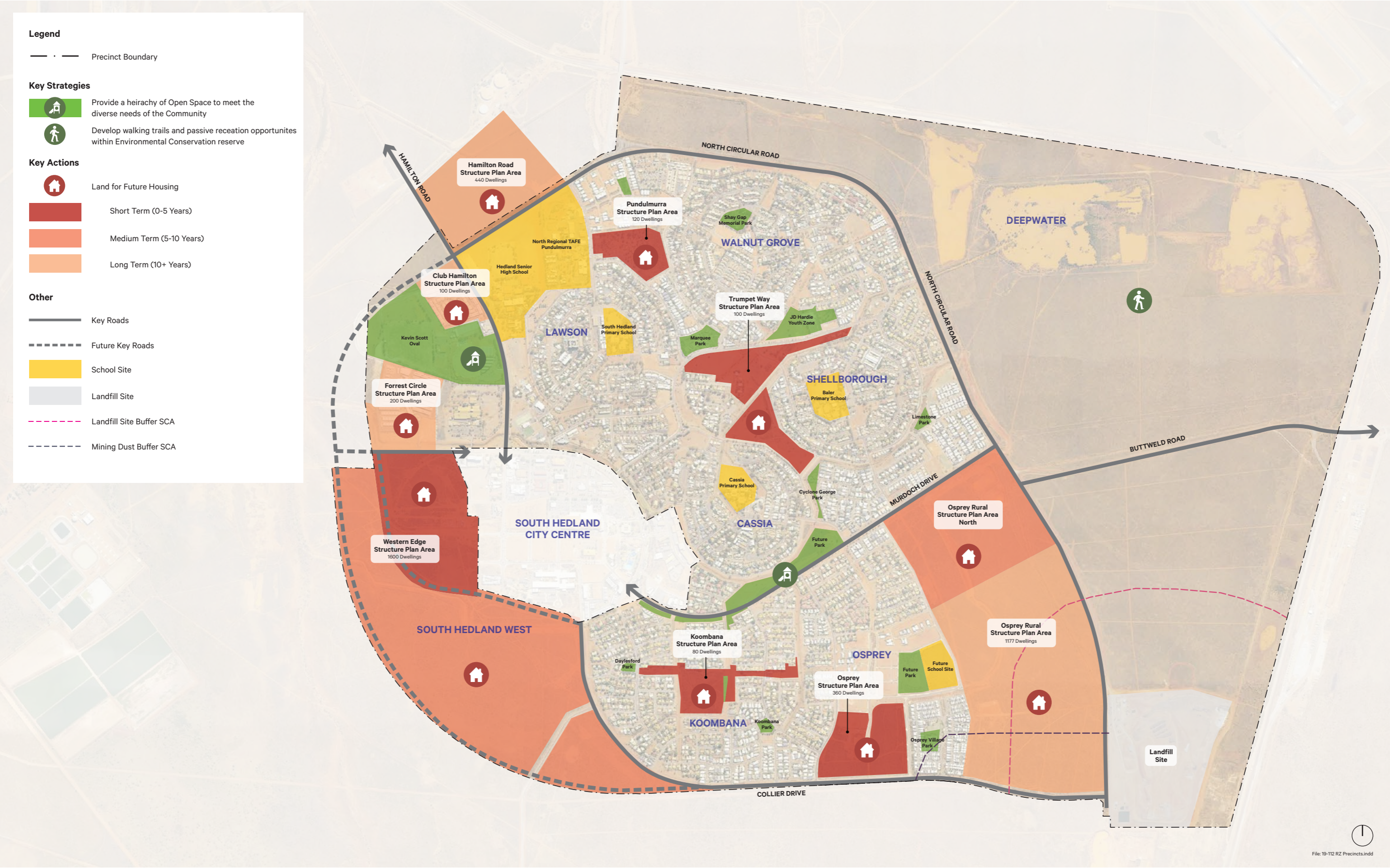


Figure 15. South Hedland Precinct

4.5.11 South Hedland City Centre

Precinct Context

The South Hedland City Centre is established as the primary retail and commercial centre within the Town of Port Hedland.

The centre is located on the western periphery of South Hedland and lacks a residential catchment to the west. Consequently, the Centre is currently struggling to attract new retail tenants and a significant amount of constructed floorspace remains vacant. There is currently a surplus of retail floorspace which is projected to be extinguished by 2041 with a total additional 8,100sqm of retail floorspace being required.

There is a current undersupply of commercial office space, with many tenants taking up traditional retail floorspace as a consequence.

Development of the centre is guided by the South Hedland Town Centre Structure Plan, adopted by the WAPC in 2014.

A number of hotel/motel developments exist in the centre, with some in care and maintenance due to market conditions.

Activity within the centre is focussed around South Hedland Shopping Centre due to its indoor environment, climatic conditions and combination of large-scale anchor tenants and smaller shops and services as attractors.

The area currently produces an environment prone to anti-social behaviour, negatively impacting the community. There is an opportunity for anti-social behaviour to be diminished by Crime Prevention through Environment Design frameworks.

A number of serviced vacant lots exist surrounding South Hedland Shopping Centre which presents an opportunity for investment in commercial and mixed use development to contribute to the vibrancy of the precinct.

Strategy Response

In order to recognise the South Hedland centre as the primary activity centre, it is proposed to zone the precinct as 'Centre' to differentiate it from the other commercial zoned centres in the district. Prioritisation for new commercial, retail and civic land use and development should be given to the centre and further investment should be made to improving the public realm to attract private investment.

It will be necessary to undertake a review of the South Hedland Town Centre Structure Plan to ensure that it provides current best practice guidance to future land use and development of the centre with a focus on resolving issues relating to:

- providing an integrated transport network to improve accessibility;
- establishing development requirements to ensure new built form is of a modern and high design standard which provides a visual focal point for South Hedland;
- establishing development standards for the public realm to ensure a clear definition of public spaces which contribute to a sense of place.

Precinct Objectives

- Reinforce the precinct as the primary activity centre for the Town of Port Hedland.
- Provide an identifiable activity hub within the centre.
- Improve pedestrian and vehicle connectivity between the centre and surrounding urban areas.
- Facilitate residential and mixed use development within the centre.
- Introduce a greater permanent residential population through a variety of medium and higher density housing types.
- Provide high levels of visual amenity and points of interest, including key destinations, landmarks and gateways.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> Improve the function of the Centre so that it can fulfil its potential as the primary centre for the region. 	<ul style="list-style-type: none"> Promote and protect the South Hedland City Centre through a range of strategies and actions including: <ul style="list-style-type: none"> Zoning the centre as 'Centre' within the Town's LPS7; Prioritising the release and development of new residential land within and in close proximity to the Centre to enhance access to services, activity and promote street surveillance; Improving the public realm and amenity through access improvements, landscaping, street furniture and public art upgrades; Improving shading of the public realm (i.e. shade structures over the skate park); Prioritising the Centre as the basis for employment through the provision of office floorspace; Locating government services, cultural facilities and civic functions within the Centre; Encouraging well designed operational workforce accommodation facilities to enhance activation, service provision and business patronage within the Centre; Providing stronger cycling and pedestrian connections to the Centre; and Not supporting land uses outside of the Centre of a scale that will be detrimental to the long-term sustainability and viability of the Centre.
<ul style="list-style-type: none"> Provide a coordinated plan for the future progressive development of the centre to ensure issues relating to access, land use and centre performance are comprehensively addressed. 	<ul style="list-style-type: none"> Undertake a review of the South Hedland Town Centre Structure Plan to resolve issues relating to: <ul style="list-style-type: none"> providing an integrated transport network to improve accessibility; establishing development requirements to ensure new built form is of a modern and high design standard which provides a visual focal point for South Hedland; establishing development standards for the public realm to ensure a clear definition of public spaces which contribute to a sense of place.

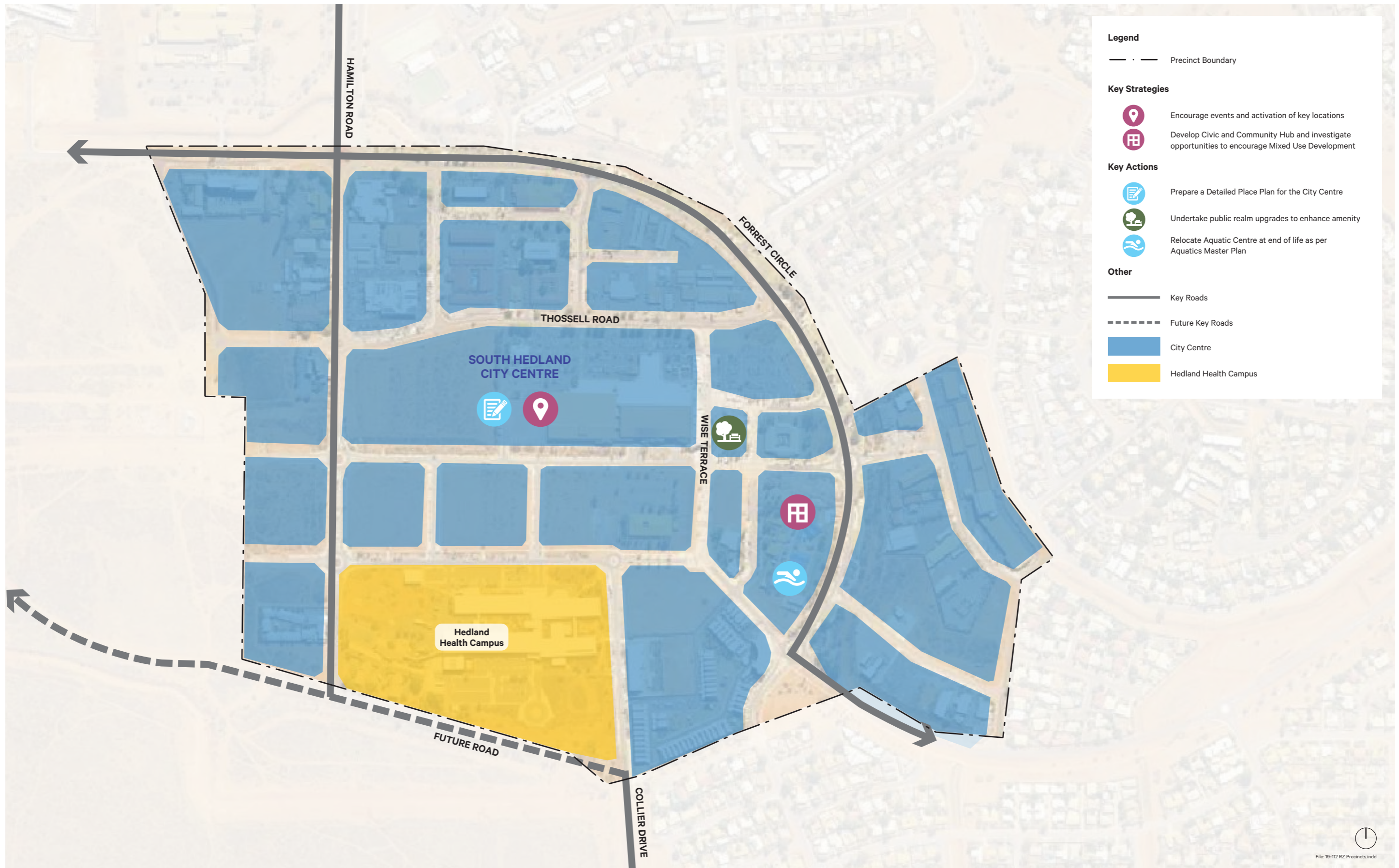


Figure 16. South Hedland City Centre Precinct

4.5.12 Boodarie

Precinct Context

The Boodarie Precinct is recognised as a priority strategic industrial area by the State and structure planning has been completed to coordinate future development.

The precinct is currently unrated and undeveloped land however does accommodate some infrastructure including FMG mining operations and rail loop, power station and cattle stockyards.

Strategy Response

The precinct is intended to accommodate major downstream processing, port dependent industrial land uses, noxious industry, utilities and general industrial support operations. Major infrastructure and rail corridors connecting Boodarie with the port need to be protected.

Boodarie has also been identified as a potential location for new industrial stockyards.

Coastal hazard risk management and adaptation planning will need to be completed for any new development that is identified as being at risk of coastal processes.

Precinct Objectives

- Establish synergies and clustering of co-located industries, transport and infrastructure, including port related and upstream industrial activities.
- Give priority to strategic resource processing industrial development comprising downstream processing such as iron ore processing, petro and gas processing, non-ferrous processing, noxious and port dependent processing, and other strategic industries.
- Promote proponent initiated industrial subdivision and development to facilitate strategic downstream resource processing.
- Enable support industries provided they are complementary to and offer goods and services that directly support and are compatible to downstream resource processing and other strategic industries.
- Facilitate local employment and economic growth opportunities through downstream resource processing and strategic industrial development.
- Limit the proliferation of land uses that are not compatible with strategic industry.

Strategies and Actions

Strategies	Actions
<ul style="list-style-type: none"> • Provide statutory protection for the Boodarie Strategic Industrial Area. 	<ul style="list-style-type: none"> • Carry over the Boodarie Industrial Buffer Special Control Area into LPS7. • Continue to zone the Boodarie Strategic Industrial Area as 'Strategic Industry' under LPS7. • Limit proliferation of sensitive land uses that may restrict the ability for heavy industry to locate within the area. • Encourage resolution of land assembly issues to further deconstrain the land and enable proponent led development. • Encourage investment in common-user infrastructure to activate Boodarie. • Recognise the Pilbara Port Authority's Boodarie Stockyards Stage 2 development as future industrial investigation area.

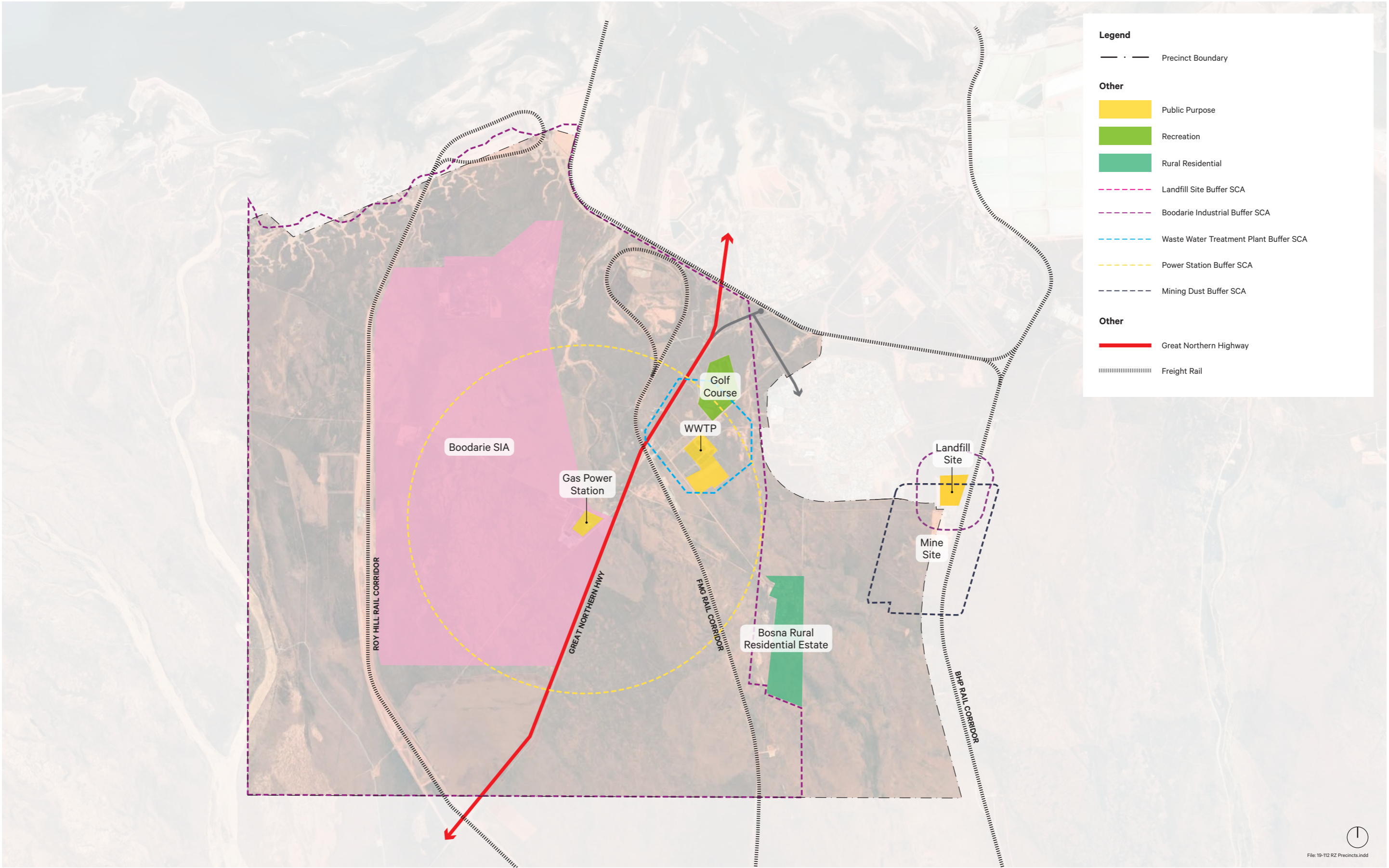


Figure 17. Boondarie Precinct



4.6 Our Infrastructure

4.6.1 Service Infrastructure

Water and Wastewater Infrastructure

The Water Corporation manages water under the East Pilbara Water Supply Scheme (EPWSS) from groundwater reserves at Yule and De Grey. This scheme allocation currently produces 13.5 GL/yr with a limit of up to 20.5 GL/yr.

The majority of the district (with the exception of Boodarie) are connected to the Water Corporation's EPWSS for potable supply. The Town utilises both groundwater (abstracted from a local bore) and the Water Corporation's wastewater reuse scheme for the irrigation of some open space areas. Across the district, groundwater is generally used as a supplement to potable scheme water and is anticipated to be used for various non-potable water demands.

Residential areas across the district (with the exception of Bosna, Turner River, Redbank and Pippingarra rural residential areas) are connected to the Water Corporation wastewater treatment plant (WWTP) in South Hedland via a reticulated sewer network. Wastewater (including trade waste) from industrial areas (including Port Authority and Finucane Island, Dampier Salt, Wedgefield, Airport and Boodarie precincts) are all serviced by Town approved onsite effluent disposal systems. Similarly, more remote land uses across the LGA are also serviced by Town approved onsite systems.

Power Infrastructure

Port Hedland is supplied via a network of 66 kilovolt (kV) overhead distribution lines that extend from substations in Port Hedland, South Hedland and Wedgefield. These substations are fed from the 150MW South Hedland power station located within the Boodarie Strategic Industrial Area. The South Hedland power station was commissioned in 2017 and is contracted to supply power to Horizon Power and Fortescue Metals Group.

Horizon Power also completed the Roy Hill Transmission Project in 2018 to increase the efficiency of the North West Integrated System. Roy Hill Transmission is a 25 MW power station which services the Roy Hill port facility in Port Hedland. The Horizon Power network includes a series of main transmission lines covering almost 5 kilometres and incorporating a connection between the 150 MW South Hedland power station and the Roy Hill power station.

The Port Hedland Alinta Energy Power Station is also located in Port Hedland in two locations (Port Hedland and Boodarie) and generates 210MW (gas and distillate) of power. Alinta Energy also owns and operates three high voltage transmission lines which connect the facilities at Boodarie and Port Hedland as well as the Horizon Power owned North West Interconnected System. This system provides peak power as required by industry.

Stormwater Drainage Infrastructure

Throughout most parts of Port Hedland, South Hedland, Wedgefield and Boodarie lots drain generally towards road networks with roads grading to kerb openings and then into a network of open drains. A minority of locations include piped stormwater drainage networks.

Therefore, the most appropriate system for the majority of drainage design solutions is to initially utilise kerbed roadways as the first conveyor of overland flows, with kerb openings directing water into open drains. At locations where roads cross these open drains, the usage of large box culverts and bridge structures is favoured over circular drainage culverts due to the issues with sedimentation and also safety.

Telecommunications

Strong business performance, local supply chains and economic diversification are a key collective focus under Federal and State Government policy. Reliable, consistent and uninterrupted internet and mobile connectivity supports efficiency and functionality across business operations and facilitates business investment and growth, as well as community-based activities and family and social connection.

Connectivity issues have been reported by residents and businesses in both Port Hedland and South Hedland and Pilbara local government concerns cited in submissions to Federal Government inquiries.

The Town is not a direct provider of telecommunications infrastructure or retail services. Telstra has undertaken recent upgrades to telecommunications infrastructure to improve mobile coverage and reliability in regional areas.

There is scope to better understand the issues experienced by consumers and the root cause of connectivity issues and to continue to work with infrastructure, retail and funding providers on service improvements.

Relevant Objectives:

- Provide services and infrastructure that meet urban growth requirements

Strategy Response:

- Ensure future subdivision and development is serviced by necessary infrastructure

Actions

Water and Wastewater Infrastructure

- Require all subdivision and development to be connected to reticulated sewerage, unless an exception is provided for in the Government Sewerage Policy.
- Prepare a Regional Water Management Strategy to guide water management and infrastructure maintenance outcomes.
- New development areas will need to demonstrate whether the development can be serviced by existing networks or if infrastructure upgrades are necessary.

Power Infrastructure

- Identify land required for power generation facilities through future local structure plans and establish appropriate buffers to this infrastructure as required. New development areas will need to demonstrate whether the development can be serviced by existing networks or if infrastructure upgrades are necessary.

Stormwater Drainage Infrastructure

- Develop an open swale stormwater maintenance program to ensure proactive accountable management of public drainage networks.

Telecommunications

- Consider whether further data should be sourced to identify the extent, and cause, of connectivity issues in Port Hedland and South Hedland.
- Continue to work with infrastructure and retail service providers on technical infrastructure and funding solutions that improve the reliability and consistency of service connections.

4.6.2 Road and Rail

Road Network

Port Hedland is served by a primary and regional distributor road network that includes North West Coastal Highway, Great Northern Highway and Wilson Street. The North West Coastal Highway links Port Hedland to Geraldton, while also providing access to Karratha, Exmouth and Carnarvon. The Great Northern Highway connects Port Hedland to Broome in the east and Newman and Perth to the south. Access between the localities of Port Hedland and South Hedland is provided via Wilson Street and Wallwork Road.

Main Roads is planning for the realignment of a section of the Great Northern Highway adjacent to the Port Hedland International Airport to provide separation between light and heavy vehicles.

Key to understanding requirements to upgrade road infrastructure to support future growth will be the development of a Town wide transport model.

Restricted Access Network (RAV)

The Town has an extensive Restricted Access Network enabling freight-based economy. Great Northern Highway, Wilson Street, Pippingarra Road, Marble Bar Road and Utah Road form key portions of the RAV 10 network enabling road trains up to 53.5m in length to travel through the Pilbara and access the port facilities. In addition to this, there are several concessional networks approved across this corridor. In this section, Great Northern Highway is also a High-Wide Load corridor.

The Town has commissioned the preparation of a Heavy Vehicle Access Strategy (HVAS) to address current deficiencies in the RAV network and potential funding mechanisms to support future upgrades. The HVAS identifies enhancements to the existing RAV network to allow this network to function as designated, as well as opportunities to expand the existing network.

Other key recommendations of the HVAS include:

- Develop a Town traffic monitoring program;
- Develop an asset register and asset management plan to document asset condition to inform future maintenance and cost sharing arrangements;
- Land use permissibility changes to the established part of Wedgefield to address the deficient RAV network and land use conflicts;
- Potential reclassification of the RAV network in the established part of Wedgefield upon land use transition over time to light industry;
- Develop and implement an engagement plan with transport industries in Wedgefield;
- Develop a funding strategy to upgrade heavy vehicle road network and associated assets;
- Evaluate mining tenements and Crown leases and negotiate road maintenance with industry on impacted roads; and
- Monitor industry development and consider developing a strategy for application of Smart Technologies in freight.

Rail

There are four (4) privately operated freight railway lines that connect mining operations to port facilities in Port Hedland. Two railway lines are owned and operated by BHP Billiton: the Goldsworthy Line and the Mount Newman line. The Goldsworthy Line connects Finucane Island to Yarrie (200 kilometres east of Port Hedland) and is 208 kilometres long. The Mount Newman line connects Newman to Nelson Point and is 426 kilometres long. Fortescue Metals Group owns and operates a 280-kilometre railway line which connects their mining operations at Cloud Break to their port facilities at Anderson Point. Roy Hill owns and operates a 344km stretch of standard gauge, single line built to transport iron ore from the Roy Hill mine to the dedicate Roy Hill stockyard area within the Port Hedland port.

In accordance with State Planning Policy 5.4 - Road and rail noise, it is proposed to recognise the 200m trigger distance for these rail corridors on the Strategy Maps whereby any application for planning approval within the identified trigger distance will require an assessment against the policy requirements.

Visual Protection Corridor

This Strategy recognises that the Great Northern Highway, North West Coastal Highway and the section of Wallwork Road between the Great Northern Highway and North Circular Road as the principal routes into Port and South Hedland and the visual amenity of these corridors should be improved where possible and standards established to ensure any new development does not detrimentally impact on the visual amenity of these corridors. This will ensure the key vehicular access corridors enhance visitor experience and perception of the Town.

Currently, substantial sections of these key vehicular access routes are framed by industry and other development which presents an unsightly interface. Other sections remain vacant however are zoned to permit future development. The Town seeks to establish a policy framework that supports opportunities to improve the amenity of existing development fronting these key access corridors while also requiring future development to incorporate measures such as landscape buffers to soften the interface with these roads.

Relevant Objectives:

- Provide services and infrastructure that meet urban growth requirements

Strategy Response: Provide a safe and efficient transport network that caters for the needs of industry and freight

Actions

Road Network

- Ensure future structure planning and subdivision provides for new road networks and upgrades generally in accordance with the requirements of *Liveable Neighbourhoods*.
- Identify the Great Northern Highway realignment on the Strategy maps and consult with Main Roads regarding future reservation requirements.
- Recognise existing sections of the Great Northern Highway within a 'Primary Distributor Road' reserve under LPS7.
- Provide appropriate separation distances to major freight routes in accordance with *State Planning Policy 5.4 – Road and rail noise*.
- Investigate statutory mechanisms to ensure future visual protection and better amenity outcomes for land use and development along Great Northern Highway, North West Coastal Highway and the section of Wallwork Road between Great Northern Highway and North Circular road.
- Upgrade Wilson Street and Redbank Bridge as funding becomes available.

Restricted Access Vehicle Network

- Develop and implement the findings and recommendations of the Heavy Vehicle Access Strategy to resolve issues associated with the RAV network.

Rail

- Protect established freight rail corridors from encroachment of sensitive land uses in accordance with *State Planning Policy 5.4 – Road and rail noise*.

Visual Protection Corridor

- Prepare a local planning policy and/or introduce a Special Control Area into LPS7 which establishes requirements for development along the Great Northern Highway, North West Coastal Highway and the section of Wallwork Road between the Great Northern Highway and North Circular Road to improve the amenity of these key access routes.

4.6.3 Walking and Cycling

Most streets in Port Hedland and South Hedland feature a pedestrian path on one side. Often, existing paths are not continuous, even on the same block. This lack of connection limits permeability of the network.

Port Hedland has previously prepared and endorsed a Trails Master Plan to guide the provision of walking trails as part of a wider strategy to promote the region to tourists.

Formal pedestrian access to the coast is quite limited therefore many informal trails were developed over time.

Port Hedland features modest cycling facilities. Port Hedland does not feature dedicated cycling lanes on any of the roads. Most notable, shared paths are placed along the coastline (along Sutherland Street, Counihan Crescent, POS areas and along key distributor roads in South Hedland (Hamilton Road, Forest Circle etc.)

The shared path connecting South Hedland and Port Hedland along Wallwork Road, Great Northern Highway and Wilson Street is only partially constructed – it currently connects South Hedland to the access road to Dampier Salt facilities.

Similar to the pedestrian network – the cycling network generally lacks continuity and permeability. This issue will be addressed through the Town's input the Department of Transport's preparation of the Pilbara Cycling Strategy 2050, which will guide the provision of new key cycle linkages and infrastructure.

Relevant Objectives:

- Provide services and infrastructure that meet urban growth requirements

Strategy Response: Plan for the provision of services and infrastructure to address identified gaps and to meet urban growth requirements

Actions

- Progressively implement the Trails Master Plan as funding permits.
- Develop an asset register and progressively complete cycle and pedestrian path projects in accordance with a capital works program and the Pilbara Cycling Strategy 2050.
- Plan for the provision of cycle and pedestrian infrastructure in the preparation of structure plans and applications for subdivision.

4.6.4 Aerodromes

Mining Aerodromes / airstrips can be approved under a number of legislative mechanisms including through land tenure negotiations under the Land Administration Act 1997; mining tenement applications under the Mining Act; and development approvals granted by the WAPC or local government pursuant to the Planning Act. The majority occur under the Mining Act and are referred to local government under Section 120 for advice in order that Government can take account of the provisions of the Scheme as they apply to the land subject to the tenement.

An objection under Section 120(2) pertaining to an application for an aerodrome under a Mining Lease or General Purpose Lease activates an additional stage of consideration by the Minister for Mines in consultation with the Minister for Planning, whereas an objection to an application under Section 91(10) for a Miscellaneous Licence does not.

The Town, along with the operators of the PHIA, Karratha and Broome Airports, have expressed concern regarding approval of aerodromes in close proximity to designated regional Regular Public Transport (RPT) airports. Principally, the withdrawal of passenger (and freight) traffic and the potential reduction in economies of scale and escalation in airfare pricing. Higher airfare costs can have significant adverse socioeconomic impacts on communities, including social disconnection and affecting small to medium business viability.

Where local planning schemes identify a policy regarding mining airstrips within the municipality, this effectively activates Section 120 of the Mining Act, allowing the Minister for Mines, Mining Registrar or Warden to consider that policy. This provides a degree of flexibility regarding approval of aerodromes, despite the potential significance of socioeconomic impacts.

Relevant Objectives:

- To support the Port Hedland International Airport as the principal airport facility for the region

Strategy Response: Ensure the Town's planning framework includes provision to trigger referral of aerodrome proposals to the Town for consideration

Actions

- Include a land use classification for 'Aerodrome' within Local Planning Scheme No. 7 and list it as an 'X' use in all zones apart from the Special Use zone relating to the Port Hedland International Airport where it should be listed as a 'P' use.
- The Town will not support aerodrome proposals that will directly compete with Town-based assets and the Port Hedland International Airport.

5. Implementation

The Local Planning Strategy provides the justification for matters that require review under the Local Planning Scheme, and guides decision-making around amendments to the Scheme, structure plans, subdivision applications and development proposals. Its objectives and recommendations are to be used as a planning guide to assist Council and the Western Australian Planning Commission in their respective roles in land use planning.

The following mechanisms will be used to implement the Strategy:

- Review of the Local Planning Scheme and amendments
- Preparation of Local Planning Policies
- Structure Plans
- Local Plans
- Preparation of further targeted strategies
- Advocacy/promotions; and
- Collaboration/partnerships

5.1 Review of the Local Planning Scheme and amendments

The Strategy provides the justification for matters that need to be addressed in the preparation of the Town's Local Planning Scheme No.7. The *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations) require local governments to undertake a review of their local planning scheme five years after gazettal. The preparation of Local Planning Scheme No.7 has been based on the model provisions of the Regulations, including the rationalisation of zones, reserves and land use classifications to generally accord with the model provisions.

5.2 Local Planning Policies

Local planning policies are prepared under the Local Planning Scheme. They are a tool to provide a consistent and coordinated approach for decision making on land use and development matters. They provide additional guidance to applicants, planning staff and elected members on the preferred way in which discretion may be exercised under the Local Planning Scheme.

The preparation and review of local planning policies is recommended to ensure consistency with the objectives and direction of the Strategy, the current planning framework and the preparation of Local Planning Scheme No. 7.

5.3 Structure Plans

Structure planning will be required as the basis for coordination of subdivision and development of greenfield sites. These areas are generally designated as 'Urban Investigation Areas' under the Strategy and may also apply to land zoned 'Urban Development', 'Centre' and the various industrial zones under the Local Planning Scheme.

5.4 Local Plans

Local Plans are strategies similar to this one where objectives that fall outside of the scope of land use and planning can be addressed. Examples are the *Arts and Culture Strategy 2019-2022*, the *Community Safety Plan 2019-2022* and the *Port Hedland Townsite CHRMAP*. These documents go beyond the scope of a planning strategy and cover other social, environmental and infrastructure outcomes.

5.5 Preparation of further targeted strategies

Research usually in the form of further studies are tools that the Town can use to assist in making land use and planning decisions that relate to implementing the Strategy. The following strategies may assist in informing future land use decision making within the district:

- An Economic Development Strategy to establish tangible actions to diversify and grow the local economy.
- A Regional Water Management Strategy to identify water resourcing and supply options.
- A district wide Traffic Model to inform future upgrade requirements to support urban and industrial growth.
- A dual naming strategy which identifies appropriate Aboriginal names and approaches for places throughout Hedland.
- A Coastal Access Strategy potentially integrated into the Coastal Reserves Foreshore Management Plan, to formalise access tracks to the coast and identify strategies and actions to manage and mitigate informal 4WD access to the coast.
- A Local Housing Strategy to establish a strategic direction for the review of residential density, response to housing issues and to identify appropriate locations to accommodate population growth and change, including but not limited to the following:
 - o Demography
 - Overall population/household trends and forecasts
 - Age structure
 - Household and types (prevalence of families, individuals, Aboriginal people, youth, seniors and people from culturally linguistically diverse backgrounds)
 - Average household size
 - Homelessness rates
 - o Supply
 - Dwelling structure
 - Dwelling tenure including low-cost rental
 - Bond lodgements
 - Public/Community Housing stock
 - Residential building approvals

- o Market
 - Change in rents and prices and vacancies
 - Number of lower income households in housing stress
 - Proportion of properties for rent and low-income households
- A local tourism strategy which identifies strategies to promote and diversify the Town's tourism offerings with a focus on the following:
 - o Development of regional and local tourism trails;
 - o Develop and promote the region's indigenous cultural and heritage values;
 - o Strategies to diversify tourism accommodation;
 - o Strategies to market existing tourism offers (i.e. turtle season tours, Seafarers tour, mining tours);
 - o Local arts and culture;
 - o Pastoral tourism opportunities;
 - o Industrial/ mining-based tourism;
 - o Tourism opportunities related to historic heritage; and
 - o Promote region to cruise ship industry.

5.6 Advocacy / Promotions

Advocacy is a tool that can be used to campaign for specific land use and planning desired outcomes of the Strategy such as improving public transport provided by State government and education of developers and builders on the need for greater diversity in housing product. Promotions are where the Town actively works to encourage positive change in behaviour and this is often achieved by education, information displays, community events such as *Live It Tell It Do It*, which encourage residents to give feedback on the Town's performance against its Strategic Community Plan. The intent is to get the message and information out to as many interested parties as possible to advocate the outcomes of this Strategy. Key issues that the Town may advocate on include:

- Advocate for enhanced inclusion of the pastoral industry in the Developing Northern Australia agenda.
- Advocate for improved public transport systems with the relevant State government agency.

5.7 Collaboration / Partnerships

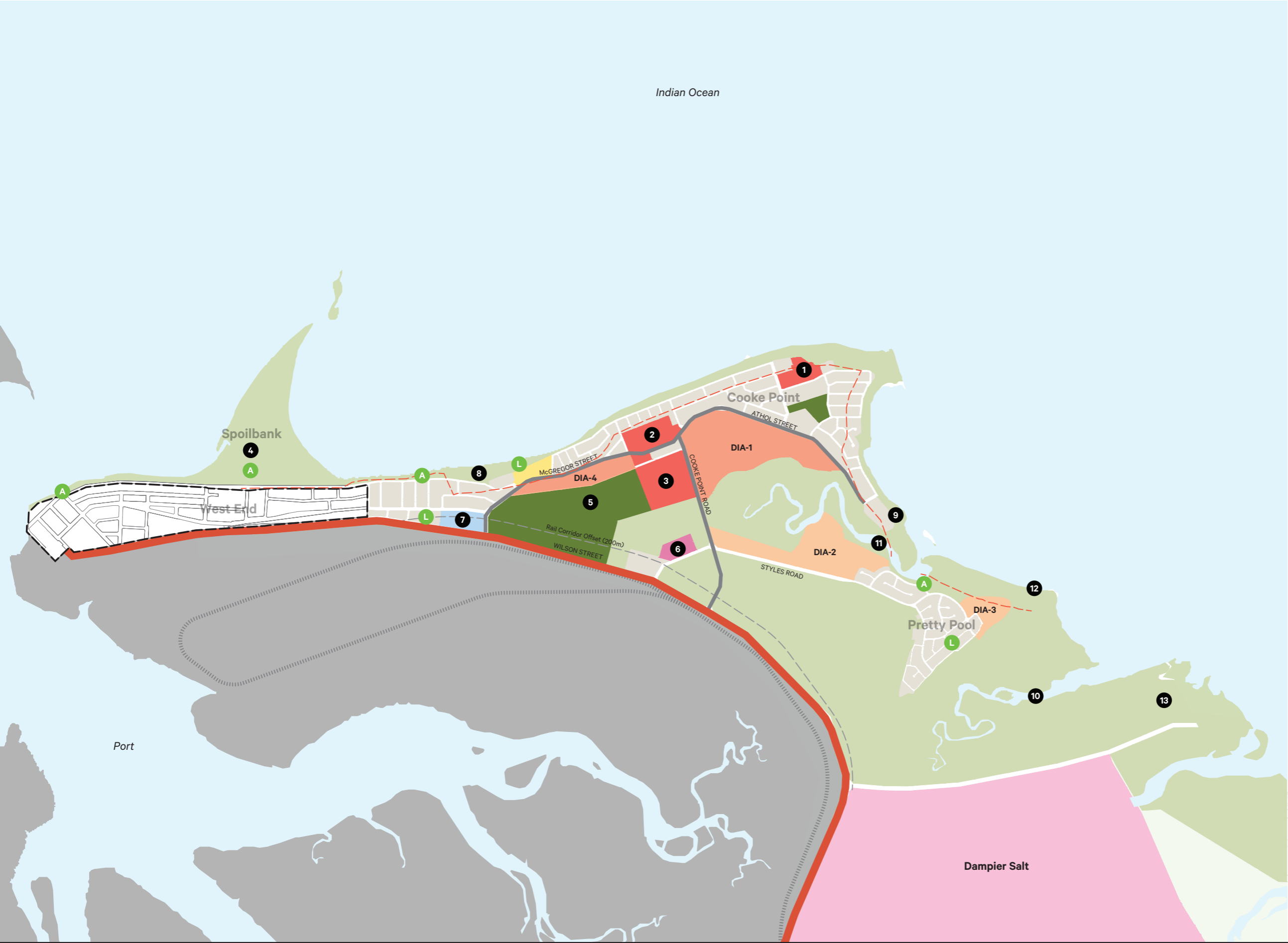
The Town has a vision to be Australia's leading Port Town, growing small to medium enterprises to support industry and community; undertaking lands and infrastructure planning for economic and population growth and diversification; and creating liveable towns through enhanced amenity and cultural activities. Strong and effective partnerships between the Town of Port Hedland, industry, government and its residents are key to the achievement of this vision.

The Town cannot tackle major issues on its own. It is widely accepted by all governing institutions that collaborative, integrated approaches are more successful as there are often cross-sectorial issues involved, or funding models at local and State government scale. An example of such collaboration is the Town's collaboration with the State government to deliver the Spoilbank Marina. Key collaboration opportunities for the Town include:

- The Port Hedland Marina Precinct as a government collaboration project which will be promoted as a flagship public recreation facility to enhance the recreational boating experience for the local community.
- Community-led place activation strategies for the historic West End Town Centre to celebrate the rich heritage and tourism values of the precinct.
- Work with Traditional owners to promote Aboriginal art and interpretation as part of a public art program.
- Progress and implement Native Title agreements in conjunction with the State and Native Title claimants.
- Explore and identify a location for an Aboriginal Cultural Centre.
- Partner with relevant State and local authorities to fund and improve cycle infrastructure in accordance with the *Pilbara Cycling Strategy 2050*.
- Engage with the Water Corporation to identify alternative non-potable water sources for dust suppression purposes at the port.
- The Town to identify opportunities to work with key stakeholders to identify and mitigate dust from non-industry sources, with a focus on:
 - o Identifying and implementing dust mitigation options for the spoil bank;
 - o Sealing unsealed roads and undertaking regular and effective street sweeping operations;
 - o Considering greening options, including coastal dune revegetation and the establishment of a green belt around the port; and
 - o Reviewing and improving the efficacy of municipal services associated with dust control.



6. Strategy Maps



Legend

Land Use

- Urban (Existing)
- Short Term Urban Land
- Medium Term Urban Land
- Long Term Urban Land
- Mixed Use
- Public Use
- Commercial
- Strategic Industry
- Strategic Infrastructure
- Regional / District Public Open Space
- Activated Foreshore Reserve
- Neighbourhood Public Open Space
- Local Public Open Space
- Conservation
- Rural

Other

- Waterbodies
- Improvement Scheme Boundary
- Primary Regional Road
- District Distributor Road
- Rail Corridor
- Rail Corridor Offset (200m)
- 100 Year Coastal Erosion Line

Urban Areas

- 1 Former Recreation and Detention Centre
- 2 Telstra Tower Site
- 3 Former Wastewater Treatment Plant Site

Development Investigation Areas

- DIA-1 Athol Street Development Investigation Area
- DIA-2 The Stables Development Investigation Area
- DIA-3 Pretty Pool Stage 3a Development Investigation Area
- DIA-4 Portion of McGregor Street Sporting Precinct Development Investigation Area

Community Infrastructure

- 4 Spoilbank Marina
- 5 McGregor Street Sporting Precinct
- 6 Tjalka Boorda Tourism Opportunity

Activity Centres

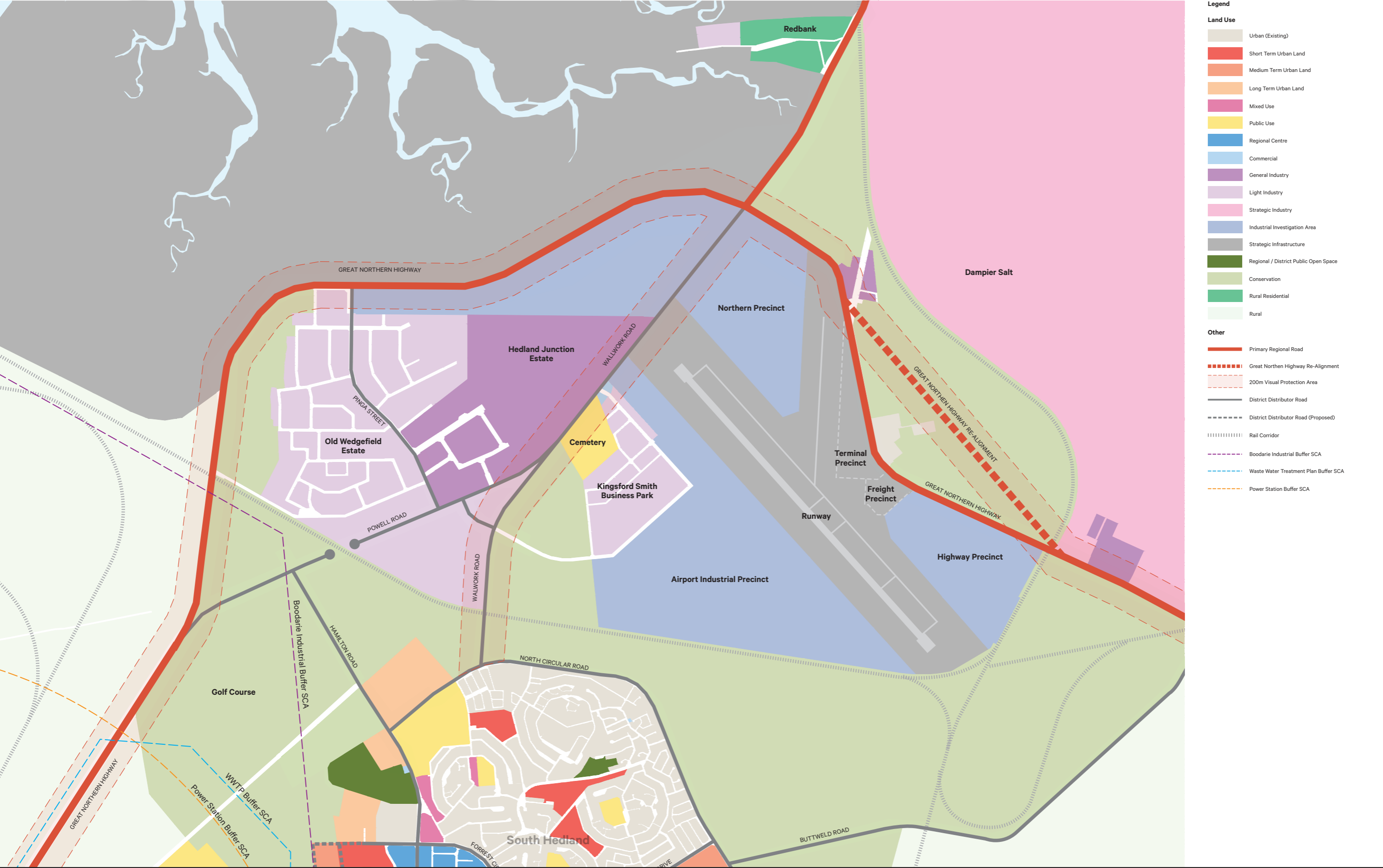
- 7 The Boulevard Neighbourhood Centre

Environmental Assets

- 8 Cemetery Beach Turtle Nesting Area
- 9 Cooke Point Beach Turtle Nesting Area
- 10 Four Mile Creek
- 11 Pretty Pool Creek
- 12 Pretty Pool Beach Turtle Nesting Area
- 13 Six Mile Reserve

Map 01 - Port Hedland Townsite

Town of Port Hedland Local Planning Strategy



Map 02 - Airport, Wedgefield and Redbank

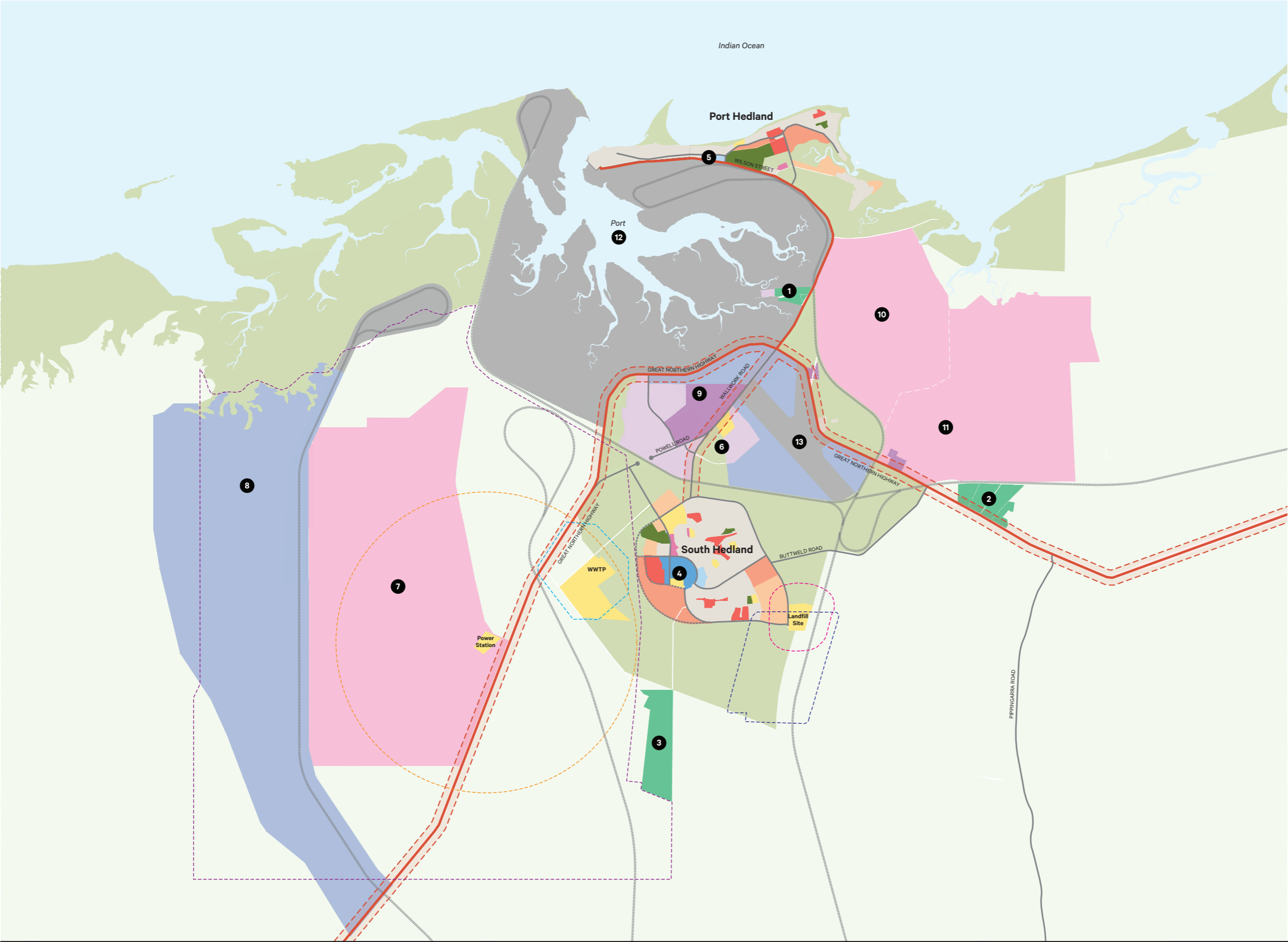
Town of Port Hedland Local Planning Strategy





Map 03 - South Hedland

Town of Port Hedland Local Planning Strategy



Legend

Land Use

Urban (Existing)

Short Term Urban Land

Medium Urban Land

Long Term Urban Land

Mixed Use

Public Use

City Centre

Commercial

Light Industry

General Industry

Strategic Industry

Industry Investigation Area

Strategic Infrastructure

Regional / District Public Open Space

Conservation

Rural

Rural Residential

Other

Primary Regional Road

District Distributor Road

District Distributor Road (Proposed)

200m Visual Protection Area

Rail Corridor

Landfill Site Buffer SCA

Boodarie Industrial Buffer SCA

Waste Water Treatment Plan Buffer SCA

Power Station Buffer SCA

Mining Dust Buffer SCA

Rural Residential

1Redbank Estate

212 Mile Estate

3Bosna and Quartz Estates

Activity Centres

4South Hedland City Centre

5The Boulevard Neighbourhood Centre

6Kingsford Smith Business Park Specialised Centre

Industrial Precincts

7Boodarie Strategic Industry

8Boodarie Stockyards (Stage 2)

9Wedgefield Estate

10Dampier Salt

11Explosives Reserve

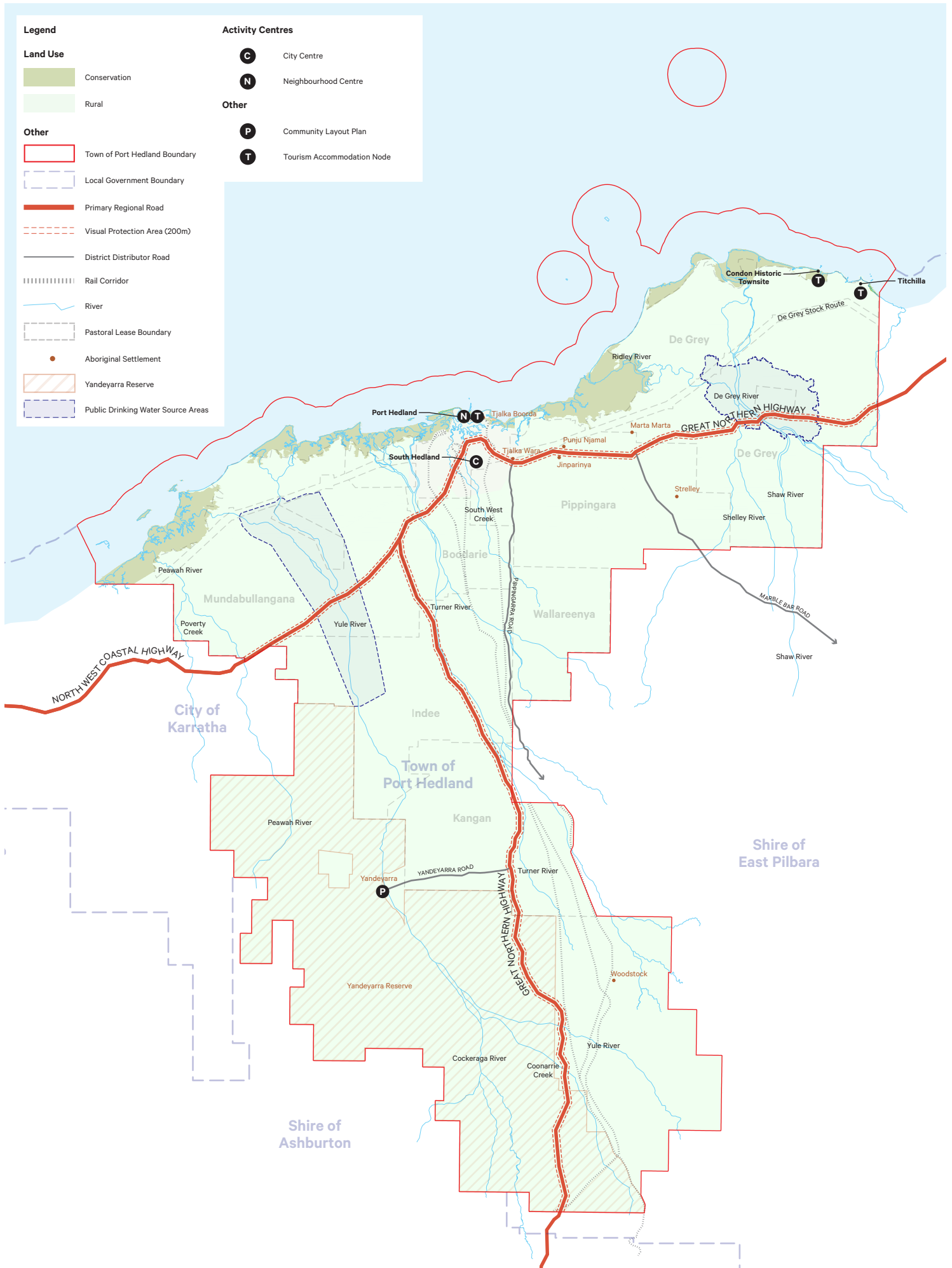
Strategic Infrastructure

12Port Hedland Port

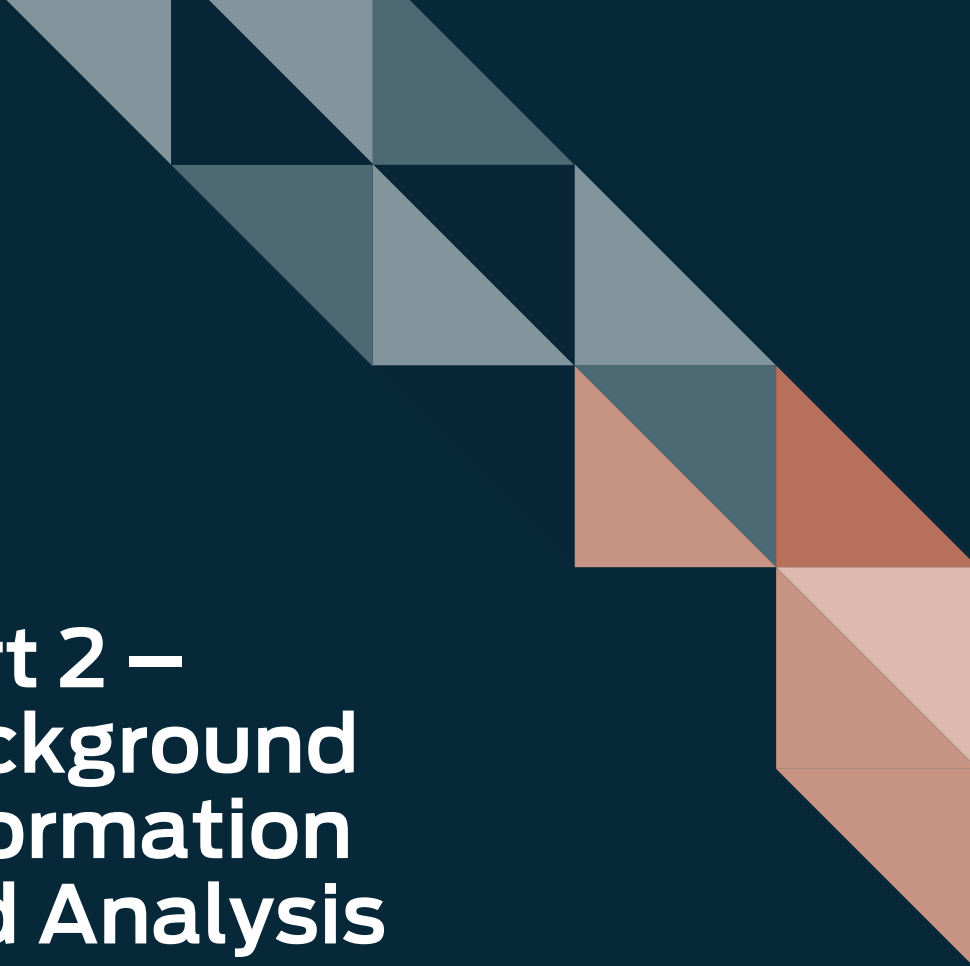
13Port Hedland International Airport

Map 04 - Townsite Surrounds

Town of Port Hedland Local Planning Strategy



Map 05 - Town of Port Hedland
 Town of Port Hedland Local Planning Strategy

A decorative graphic in the top right corner consisting of a grid of squares, each divided into two triangles by a diagonal line. The squares are arranged in a stepped pattern, with colors ranging from dark blue to light orange.

Part 2 – Background Information and Analysis

Pilbara Landscapes Coast to Desert

THE PILBARA is an area with extremely high conservation values, iconic landscapes, ancient cultures and extraordinary mineral wealth. It is one of Australia's 15 National Biodiversity Hotspots.

DID YOU KNOW?
The Pilbara covers over 500,000 km² of which 200,000 km² is the actual Pilbara bioregion.

The region includes the Pilbara bioregion which is comprised of the Roebourne, Chichester, Fortescue Plains and Hamersley subregions. It also includes parts of the Great Sandy Desert and Little Sandy Desert bioregions. These bioregions and subregions all have different examples of geology, plants, animals, marine life and birds, some of which are rare and endangered.



The landscapes and their environmental assets
The Pilbara landscapes are as diverse as the organisms found within it.

- Coastal marine environments with mangrove systems
- Grassy savannah plains
- Eucalypt woodlands along rivers
- Wetlands providing unique habitats
- Iron rich mountain ranges



Circular Pool, Karijini National Park - a wetland oasis



The towering River Red Gum (Eucalyptus camaldulensis)



Snappy Gums (Eucalyptus leucoxylon) dot the ranges



Rang Bush (Acacia pyramidalis) on Soft Spinifex (Triodia pungens) grassy plains

Common animals and plants

The Pilbara is home to an amazing number of birds, insects, mammals, bats, reptiles and even frogs! Many of these rely on cyclonic rains for their existence, or live in and around permanent water holes.

The Pilbara is a good place to spot raptors such as Spotted Harriers (*Circus assimilis*), Whistling Kites (*Haliastur spheurnus*), Kestrels (*Falco cenchroides*) and Brown Falcons (*Falco berigora*).

WATCH OUT



In a good season the landscapes are a blizz of colour



Limestone Spinifex (Triodia wislizeni)



The beautiful and common Tall Mulla Mulla (Ptilopus nobilis)



Long-necked Ta-ta Dragon (Lophosaurus lagotis)



Sandy Inland Mouse (Pseudomys hermannsburgensis)



The majestic Spotted Harrier (Circus assimilis)

Pilbara rare and threatened fauna

The rest of the world is now beginning to appreciate the Pilbara as a region where rare and threatened species are still able to exist. Management programs are in place to address the factors that threaten their continued survival.



Grey Falcon (Falco hypoleucos)



Bibby (Macrotis lagotis)



Pilbara Olive Python (Liasis olivaceus subsp. barroni)

Climate

The Pilbara's coastal communities are the most cyclone prone in Australia. There is an average of five tropical cyclones per year that occur between December and April, bringing drenching rain to the interior.

The winters are mild with temperatures ranging between 15-25°C but scorching summers result in inland temperatures averaging 26-40°C. Daily maximum temperatures regularly exceed 40°C for long periods of time, particularly in the east Pilbara.



Indigenous culture and heritage

The region is home to one of the world's oldest and richest Indigenous cultures whose older members first saw Europeans in the 1960's.

These people are the remaining custodians of an important heritage and possess a unique knowledge and understanding of the region.

The area has huge significance to traditional owner groups and there is a growing involvement of Indigenous people undertaking land management in the Pilbara.



Punda petroglyph site



KJ Martu rangers burning country to keep it healthy

Geological History

Some of the oldest rocks on the planet are found in the Pilbara. The Pilbara Craton, an old and stable part of the earth's crust is one of only two pristine crusts identified on the Earth.

The gorges in the Chichester and Hamersley Ranges began as iron rich sediments deposited on the sea floor 2,500 million years ago. Sea levels dropped and rivers carved away the sediments forming the gorges.

Over millions of years the coastline has been changed by rising and falling sea levels. Today it is highly variable, a low coastal plain with barrier islands, tidal inlets and wide tidal flats, constantly changed by river sediments and tides.



7. Background

This Background Review and Analysis report has been prepared for the Town of Port Hedland (Town or ToPH) to provide the background analysis of relevant reports and information to inform a review of the Town's existing local planning strategy (Growth Plan) and Local Planning Scheme No. 5 (TPS5). This report has been informed by work contributed by the following consultant team.

Consultant Team	
element	Strategic and statutory planning, heritage, engagement
AEC	Economic and population and community profiling
Emerge Associates	Strategic environmental and water
KCTT	Traffic and transport and civil engineering

7.1 Study Area

This background review and analysis relates to land contained within the Town municipal boundary.

Refer to Figure 18 – Town of Port Hedland Municipal Boundary

7.2 Overview

7.2.1 Context

The Town is a local government area located in the Pilbara region of Western Australia, approximately 1,800 kilometres north of Perth. It is home to over 14,000 people and primarily encompasses two urban residential and business centres, Port Hedland and South Hedland; the Aboriginal communities of Jinparinya, Marta Marta, Punju Njamal, Tkalka Boorda, Tjalka Wara and Yandeyarra; and the industrial areas of Wedgefield and Boodarie.

Port Hedland has been a significant community hub for the Pilbara since the late 1800s and continues to be a vital part of the region for culture, economy, sport, business and regional services. The local government area is home to unique desert landscapes, a tropical savannah climate, beautiful waterfronts located on the headland and provides access to internationally renowned nature reserves which continue to attract both residents and visitors.

7.2.2 Review of past population projections

At the height of the mining boom in 2012, a growth plan was prepared; Pilbara's Port City Growth Plan and Implementation Plan (Growth Plan). The Growth Plan was adopted by the **WAPC** as a local planning strategy (LPS) for the Town and established the principal strategic direction for any subsequent planning policies. With development aspirations based on a rapid city growth scenario, the projected regional population under that plan was 50,000 people by 2035.

As part of the review of the Growth Plan, the Town has incorporated population scenario modelling to achieve a balance between a conservative versus aspirational population forecast. The intention behind this revised approach is to ensure a balanced view of population growth to guide future growth and development within the Town. This approach will allow the Town to prioritise land to accommodate future population growth and services based on historical growth rates (baseline or conservative growth scenario), while also ensuring that the Strategy identifies sufficient medium to long term land for urban purposes should growth rates exceed the conservative population growth scenario (aspirational or high growth scenario).

The two population growth scenarios that inform the preparation of this Strategy are:

1. A conservative forecast of 18,500 by 2041, based on modelling prepared by consultants RFF (2020) which applies an average historical annual growth rate of 0.9% per annum focused on average growth between 2001 and 2018.
2. An aspirational forecast of 27,085 people within the Town by 2041, based on forecast.id population forecasts which take into account a range of factors such as demographic changes (births, deaths, migration) and accounts for urban development drivers (residential development opportunities, land availability, diversity of housing stock, regional competition, vacancy rates).

The two population scenarios above can be compared to the DPLH population forecasting *WA Tomorrow*, which is based on demographic trends. The 2019 *WA Tomorrow* forecasting identifies a population of between 14,380 (Band A – low change rate) and 17,715 (Band E – highest change rate) people by 2031. Band C represents the median forecast which identifies a total of 16,020 people for Port Hedland by 2031. These numbers are generally in the lower range of the two population scenarios adopted to inform this Strategy. However, DPLH acknowledge limitations with the forecasting in *WA Tomorrow* and cautions applying the forecasting for strategies which seek to influence existing trends to achieve a more desirable future outcome.

7.2.3 Overview of preliminary issues and gaps

The following provides an overview of the primary considerations, issues and gaps, which have emerged as part of the preparation of the Strategic Community Plan and Corporate Business Plan, early engagement, and literature review, which need to be considered in the preparation of the new Scheme:

- Improvement Plan No.50: Port Hedland West End (Improvement Plan) for the West End precinct was released by the WAPC in July 2019, following consideration of the Port Hedland Dust Management Taskforce (Dust Management Taskforce) Report recommendations to the State Government. The Improvement Plan provided the basis for the preparation and implementation of a separate Improvement Scheme over

the West End Precinct. Port Hedland West End Improvement Scheme No. 1 (Improvement Scheme) was gazetted on 18 September 2020 and provides land use and development controls over the Scheme area, including powers for the WAPC to determine development applications, prepare policies, structure plans and local development plans. The Town of Port Hedland's Scheme will now cease to apply to land within the Improvement Scheme area. The West End Improvement Scheme was not preceded by a planning strategy, therefore some strategic planning matters may need to be addressed by the Town's LPS, for the West End precinct.

- The need to prioritise land to accommodate future population growth and development, based on availability of services, proximity to existing developed land and consideration of constraints.
- The Town's recent position statement and LPP/05 Workforce Accommodation which requires the consideration of the lifespan and purpose of the workforce accommodation along with social impacts to inform the preferred location of workforce accommodation.
- Regional, secondary and tertiary education issues within the Town and the North West generally; improved secondary educational opportunities within the Town are vital to retaining and attracting families over the longer term.
- Approval of aerodromes in close proximity to regional RPT airports, particularly the withdrawal of passenger traffic, potentially reducing economies of scale and escalating airfare pricing.
- Effective and consistent mobile and internet connectivity to support community social connection, economic diversification, training for a regional skills base and emergency warning notifications.
- Complex issues facing Wedgefield; land use planning conflicts associated with caretaker accommodation, worker accommodation, industrial land uses and heavy vehicles, all seeking to collocate and utilise the area. Complexities associated with the provision of industrial lands within the Town including the Boodarie Strategic Industrial Area that may not necessarily support the many smaller and medium scale service commercial and industrial uses present within the Town.

- Coastal planning issues and the need to implement associated planning adaptation measures into LPS7 provisions.
 - Future plans and diversification opportunities for stakeholders under pastoral leases. Future plans may consider tourism opportunities, water management constraints, information to inform an economic development strategy (EDS), regional water management strategy (RWMS) and LPS generally.
 - The need to incorporate Yandeyarra Reserve into LPS7 and allocate appropriate zonings/ reservations given that it is currently unzoned land within the current TPS5.
- This report verifies and builds on the above identified issues.

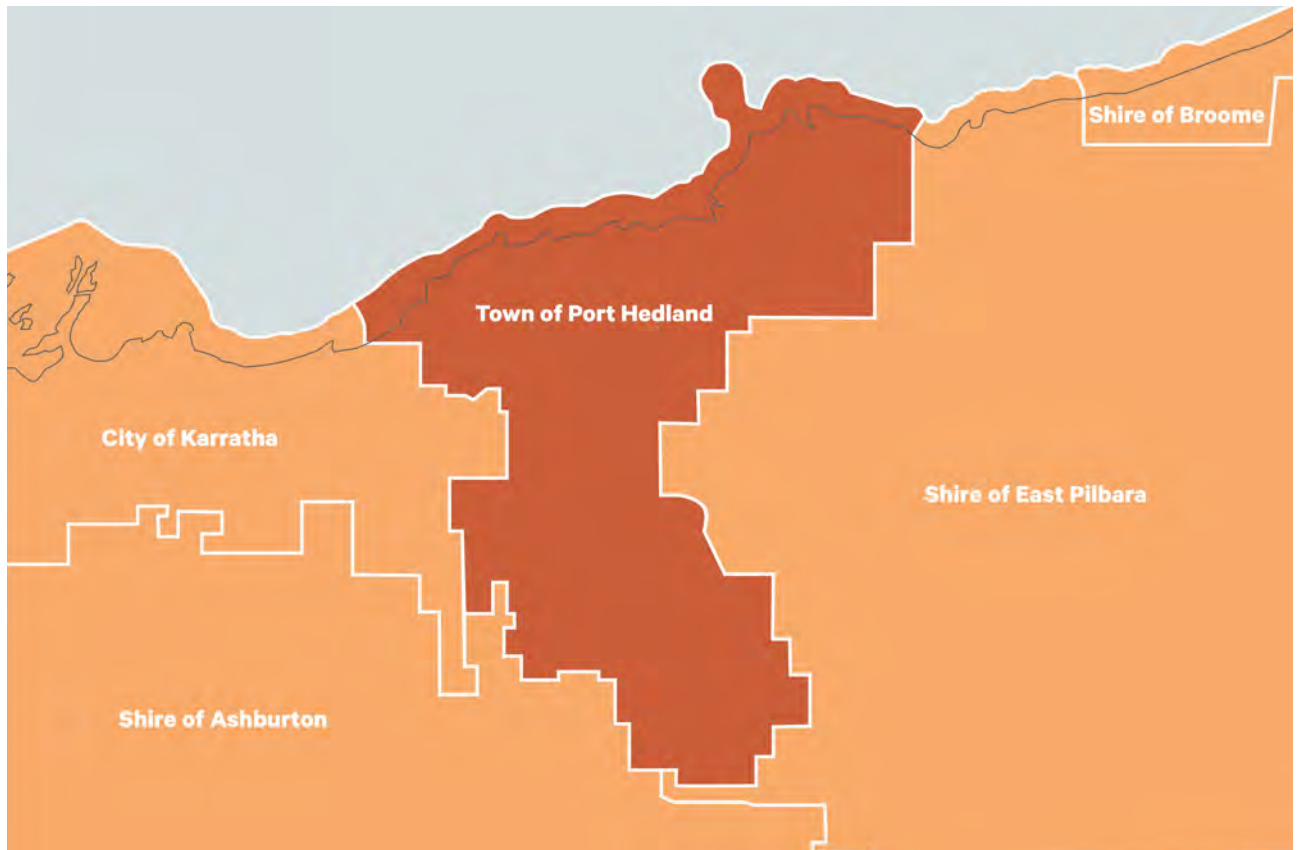


Figure 18. Town of Port Hedland Municipal Boundary



8. Statutory Context

8.1 Planning and Development Act 2005

Part 5 of the *Planning and Development Act 2005* (the Act) establishes the power in which a local government can prepare a local planning scheme. The processes set out under this section of the Act will be relevant relating to the preparation of a new Local Planning Scheme No. 7 (LPS7) for the Port Hedland local government area.

Part 8 of the Act establishes the power in which an Improvement Plan and Improvement Scheme can be prepared. This is relevant to the separate Improvement Plan and Scheme process being undertaken by the WAPC for the West End precinct in Port Hedland.

8.2 Planning and Development (Local Planning Schemes) Regulations 2015

The *Planning and Development (Local Planning Schemes) Regulations 2015* (the Regulations) requires the Town to prepare a LPS for the local planning scheme area. It also establishes the processes and requirements that a local government must follow in preparing a new LPS and local planning scheme for the district.

Regulation 11 states that a LPS must:

- (a) set out the long-term planning directions for the local government; and
- (b) apply any State or regional planning policy that is relevant to the strategy; and
- (c) provide the rationale for any zoning or classification of land under the local planning scheme.

Part 3 of the Regulations sets out the process for preparing a LPS and Part 4, the process for preparing a local planning scheme.

Schedule 1 of the Regulations sets out the model provisions that all local planning schemes should follow to ensure general consistency and format of local planning schemes throughout Western Australia.

Schedule 2 of the Regulations establishes mandatory deemed provisions that are automatically applicable to land use and development throughout Western Australia.

8.3 Mining Act 1978

Section 120 of the *Mining Act 1978* states that local planning schemes and local laws are to be considered but do not derogate from decisions made pursuant to the *Mining Act 1978*. Therefore, planning schemes cannot prohibit or affect the granting of mining tenements (mining leases and exploration licenses) or carrying out of any mining operation authorised by the *Mining Act 1978*. Recent State law has resolved that mining operations include accommodation camps and other associated infrastructure proposed to be located within mining tenements affecting Crown land.

While the Town of Port Hedland local planning scheme may have limited application to the control of land use in relation to mining activities undertaken on Crown land the subject of a State Agreement or mining tenement the inclusion of the following clause within the future local planning scheme has the potential to trigger consultation between the Ministers for Mining and Planning where it is considered a proposal for workforce accommodation is contrary to the provisions of the local planning scheme:

“In considering proposals for workforce accommodation on mining tenements, Council may exercise its discretion to inform the Minister for Mines and the Minister for Planning in writing that the granting of a mining lease or general purpose lease is contrary to the provisions of the Scheme.”

It is recommended that a clause to the above effect and consideration as to the use permissibility of Workforce Accommodation (i.e. 'X' use within the Rural zone) be included in the Town's new local planning scheme to provide some ability for the Council to require the Minister of Planning and Mining to give further consideration to a proposal for Workforce Accommodation outside of established urban areas within the district.

It is also noted that the definition of 'minerals' as contained within section 8 of the *Mining Act 1978* specifically excludes the extraction of basic raw materials on private property and therefore extractive industries are not subject to the exemptions afforded under the Act.

8.4 Port Authorities Act 1999

The *Port Authorities Act 1999* (PAA) establishes powers and provisions in relation to Western Australian ports and also sets out provisions relating to the establishment of port authorities, including the Pilbara Ports Authority (PPA). Clause 29A of the PAA states that a '*port authority does not have to obtain approval under the Planning and Development Act 2005 section 136 in order to grant a lease or licence in respect of port land.*'

Clause 35(8) states that with respect to port works and port facilities, a port authority is a local authority within the meaning of the *Public Works Act 1902*. This means that the PPA is exempt from the requirement to obtain development approval under the Town's local planning scheme for port works and port facilities pursuant to section 6 of the *Planning and Development Act 2005*. This exemption extends to a lessee or tenant of a port authority and a person acting on behalf of a port authority in accordance with Clause 38(1) of the PPA.

Clause 38(6) and (7) of the PPA deals with circumstances where there is a dispute between a port authority and a local government with respect to a planning matter relating to port works or port facilities. In these circumstances of dispute, the parties to the dispute are to refer the matter to the Minister for Ports. The Minister may, after consulting the Minister for Planning, make a decision on the dispute and that decision will be final and binding on the parties.

8.5 Native Title

The *Native Title Act 1993* was enacted as a result of the decision made by the High Court of Australia in *Mabo v Queensland (No. 2)* 1992. The Act establishes legislation to formally recognise Aboriginal rights and interests to their land that comes from their traditional laws and customs.

The National Native Title Tribunal governs decisions in relation to Native Title.

The Kariyarra Native Title Claim (WCD2018/015) was determined in the Federal court on 13 December 2018 whereby it was determined that Native Title exists in parts of the determination area covering 17,354.2775 km². The Native Title includes exclusive and non-exclusive rights over parts of the claim area which covers a majority of the Port Hedland local government boundary area.

In Port Hedland, Native Title negotiations between the Kariyarra Aboriginal Corporation and the State Government have recently been determined.

The following schedule documents the Native Title determinations that exist within the Port Hedland district.

Table 4 – Native Title determinations

Short name	Case name	Determination date	Outcome
Nyamal People #1	Allen on behalf of the Nyamal People #1 v State of Western Australia	24/09/2019	Native title exists in parts of the determination area
Nyamal People #10	Eaton on behalf of the Nyamal People #10 v State of Western Australia	24/09/2019	Native title exists in parts of the determination area
Kariyarra	Gordon (on behalf of the Kariyarra Native Title Claim Group) v State of Western Australia	13/12/2018	Native title exists in parts of the determination area
Yindjibarndi #1	Warrie (formerly TJ) (on behalf of the Yindjibarndi People) v State of Western Australia (No 2)	13/11/2017	Native title exists in the entire determination area
Banjima People	Banjima People v State of Western Australia & Ors	11/03/2014	Native title exists in parts of the determination area
Ngarla Overlap Proceeding	AB (deceased) & Ors on behalf of the Ngarla People v State of Western Australia & Ors	19/02/2013	Native title exists in the entire determination area
Ngarla People (Mount Goldsworthy Lease Proceeding)	Brown (on behalf of the Ngarla People v State of Western Australia (No. 3)	06/08/2010	Native title exists in parts of the determination area
Ngarla and Ngarla #2 (Determination Area A)	Brown (on behalf of the Ngarla People) v State of Western Australia	30/05/2007	Native title exists in parts of the determination area
Ngarluma/ Yindjibarndi	Daniel v State of Western Australia	02/05/2005	Native title exists in parts of the determination area
Palyku Part A	O'Conner on behalf of the Palyku People v State of Western Australia	12/03/2019	Native title exists in parts of the determination area.

8.6 Aboriginal Heritage Act 1972

The *Aboriginal Heritage Act 1972* was introduced to protect Aboriginal heritage and provide formal recognition of Aboriginal peoples' strong relationship to the land. The Act provides automatic protection for all places and objects in Western Australia that are important to Aboriginal people because of connections to their culture. These are referred to as 'Aboriginal sites'.

The Department of Planning, Lands and Heritage maintains a Register of Aboriginal Sites as a record of places and objects of significance to which the requirements of the Act apply.

There is a total of 904 registered Aboriginal heritage sites within the Town of Port Hedland at the time of writing this report.

Under the Act it is an offence for anyone to excavate, damage, destroy, conceal or in any way alter an Aboriginal site without the Minister for Department of Planning, Lands and Heritage's permission.

The requirements of the Act relate to any ground disturbing works and therefore will be applicable to any subdivision or development within the District.

It is noted that the *Aboriginal Cultural Heritage Bill 2020* has been prepared and released for public consultation. Once updated by Parliament and gazetted, the Bill will establish a totally new heritage protection system in Western Australia, including new statutory approval requirements.

8.7 Heritage Act 2018

The *Heritage Act 2018* came into effect on the 1 July 2019 and replaces the *Heritage of Western Australia Act 1990*. The *Heritage Act 2018* introduces key changes to the assessment and recording of heritage places within Western Australia, including a streamlined process for entering a place in the State Register, more certainty for owners relating to development of heritage places, better protections for significant heritage places and increased transparency through the Heritage Council now being required to publish its advice prior to the inclusion of a place in the State Register.

The *Heritage Act 2018* is supported by *Heritage Regulations 2019*, which amongst other matters, sets out the process and criteria required to nominate a place to be entered onto the State Register.

Within the Town of Port Hedland, there are five places included in the State Register of Heritage Places, being:

- St Matthew's Anglican Church (P2285);
- Dalgety House (P3357);
- District Medical Officer's Quarters (fmr) (P2286);
- Mundabullangana Station (P4004); and
- Lock Hospital (fmr) (P5948).

These properties are all subject to the provisions of the *Heritage Act 2018*.

8.8 Land Administration Act 1997

Part 7 of the *Land Administration Act 1997* (LAA) deals with pastoral leases. The term of a pastoral lease may not exceed 50 years. Pastoral leases are administered by the DPLH and are applicable to grazing activities on Crown land.

Section 104 of the LAA states that Aboriginal persons may at all times enter upon any unenclosed and unimproved parts of land under a pastoral lease.

Generally, a pastoral lease may not be used for another use other than pastoral activities unless approval has been granted by the Pastoral Lands Board. Pursuant to section 121 of the LAA, the Board may issue a permit for a pastoral lessee to use specified land for a pastoral-based tourist activity.

8.8.1 Local Government approval requirements

The Pastoral Lands Board is the authority responsible for issuing permits for pastoral operations and therefore pastoral land use generally does not require the additional development approval of the local government. However, local government approval may be required where a permit application involves:

- Building construction or addition to an existing building;
- Creation of a new supplementary business (i.e. tourism);

- Preparation of food for the public (local government health approval); and
- Creation of additional waste (local government health approval).

The granting of Crown leases by the former Department of Lands in areas such as Bell Street and Pippingarra has led to the decentralisation of industrial land beyond the intended focus area of Wedgefield. No local government approvals were granted in relation to the industrial use of these Crown Lease areas and consideration should be given to binding the Crown to consider the land use permissibility under the Town's local planning scheme in granting a Crown lease, similar to the avenue available to local government under Section 120 of the *Mining Act 1978*. Investigation should be undertaken to include a provision or note in the Town's local planning scheme to address this matter.

Pastoral Lands Reform

The State government has recently announced a draft Pastoral Lands Reform package and will conduct consultations with the pastoral industry before it is finalised. The pastoral lands reform process aims to:

- encourage good land management;
- provide clear standards for land condition;
- improve land monitoring, compliance and support;
- support pastoralists to demonstrate best-practice land management;
- reward good practice; and
- improve land administration.

Over the next three years, as part of the reform package, the State government will:

- develop regional land condition standards, good pastoral land management guidelines and policies;
- design a risk-based pastoral land condition monitoring and compliance system;
- work with industry to co-design and define best practice for business and land management; and
- identify long-term resourcing requirements.

8.9 Rights in Water and Irrigation Act 1914

In proclaimed areas under the *Rights in Water and Irrigation Act 1914* (RIWI Act) it is illegal to take water from a watercourse or groundwater aquifer without a licence. DWER is the responsible authority that issues permits to monitor and protect the State's water resources, and the Department promotes the sustainable and efficient use of water.

RIWI licensing is active in all proclaimed areas (groundwater and surface water areas) and for all artesian groundwater wells throughout the State. Applications for water licences are made through the DWER's regional office.

8.10 Improvement Plan No. 50 – Port Hedland West End

Improvement Plan No. 50: Port Hedland West End was introduced by the State government and gazetted in July 2019 to advance the planning, use and development of land within the West End Precinct, which generally comprises the land west of McGregor Street and Lukis Street in Port Hedland.

The key objective of IP50 is to 'guide the implementation of the State Government's response to the *Port Hedland Dust Management Taskforce Report to Government (2016)*' and it establishes a statutory framework in which an improvement scheme can be prepared and implemented over the precinct.

The WAPC has subsequently prepared and gazetted Port Hedland West End Improvement Scheme No.1.

8.11 Port Hedland West End Improvement Scheme No.1

As noted, the Improvement Scheme was gazetted on 18 September 2020. The preparation of the Improvement Scheme was one of the recommendations of the State Government's response to the Dust Management Taskforce report to Government.

The Scheme, administered by the WAPC, is the statutory planning instrument to facilitate orderly and proper planning of the Scheme area and replaces the Town's planning controls for that area provided for under LPS5 and subsequently, LPS7. The Improvement Scheme, in responding to the Dust Management Taskforce recommendations, will prohibit sensitive land uses and restrict population growth in the West End of Port Hedland, and will also provide the strategic planning framework to determine future land uses and facilitate investment for quality built form.

Refer to Figure 19 – Port Hedland West End Improvement Scheme No. 1 – Scheme Map.

The Improvement Scheme area will need to be excised out of LPS7 with the area delineated on Scheme Maps with a note to refer to the separate Improvement Scheme area.

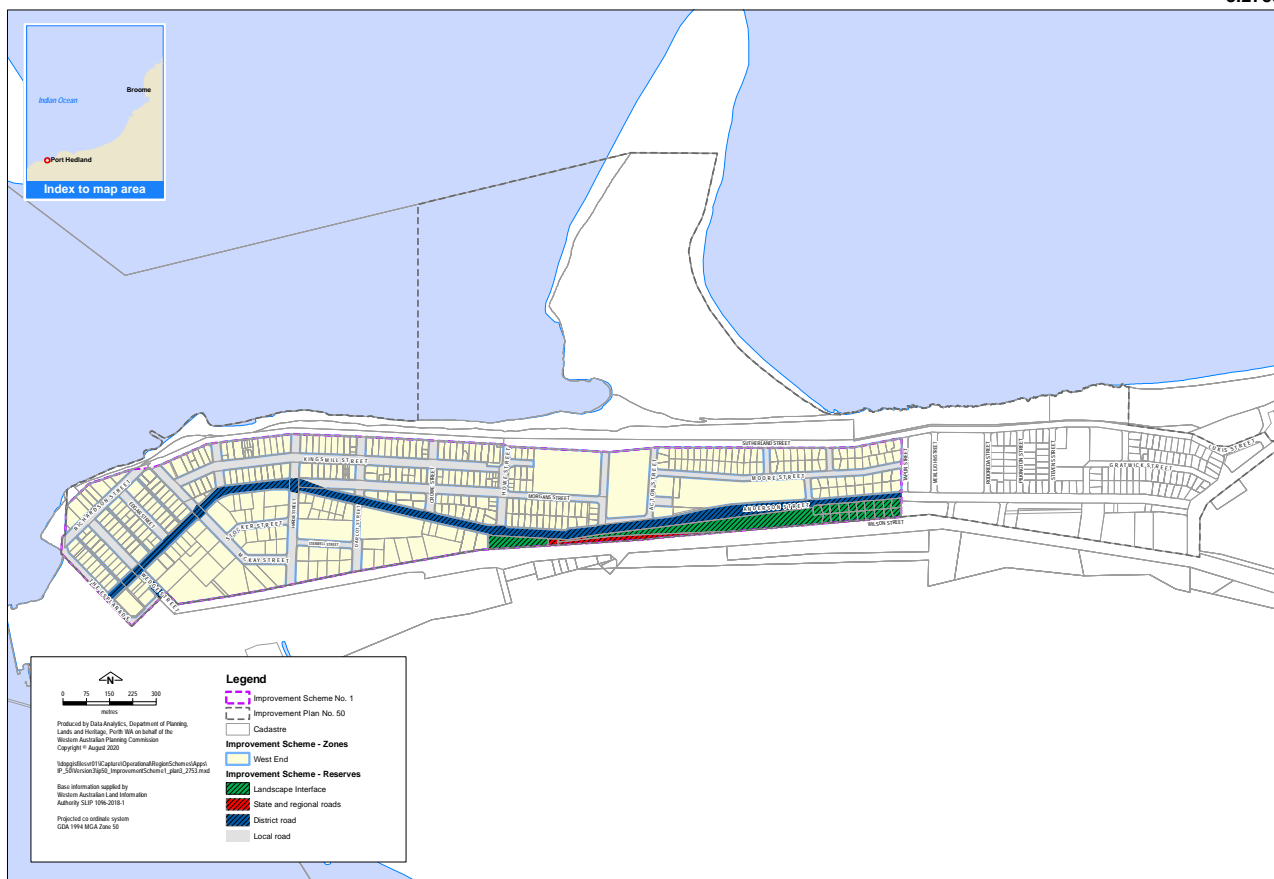
8.12 State Agreement legislation

State Agreements are used to secure major resource and infrastructure projects where the investment is considered significant or of strategic importance to Western Australia. They are legislatively approved contracts between the Western Australian Government and project proponents and are commonplace within the Town, allowing the development of railways, ports, mining infrastructure and ancillary buildings and secure long-term tenure where existing law is absent or inappropriate.

State Agreements have supported the region and State's continued economic growth by facilitating substantial investment in the resources sector. However, it is recognised that contemporary planning is giving greater attention to local community impacts and needs, rather than simply providing controls for on-site operations for State return. State Agreements have the potential to require project proponents to procure local goods, services and workforces, where it is reasonable and economically practical to do so, which has recently been observed as part of the Roy Hill railway infrastructure agreement.



3.2753



Port Hedland West End Improvement Scheme No. 1 - Scheme Map

Figure 19. Port Hedland Improvement Scheme No. 1 (Source: WAPC, 2020)





9. State Planning Context

9.1 State Planning Strategy 2050

The State Planning Strategy 2050 (SPS) is the lead strategic planning document for the State and provides overarching strategic direction to integrate and coordinate land use planning across the State. The SPS was published by the WAPC in 2014 and has a particular focus on managing population and economic growth across the State.

The SPS recognises that there are a range of factors that influence future development of the State, and these include:

- Population
- Workforce
- Global economy
- Diversification
- Urbanisation and regional expansion
- Technology
- Climate Change

The SPS establishes a vision and set of principles to best respond to these drivers for change. The vision is based around sustained growth and prosperity, as set out below:

- By 2050, Western Australia will have a diverse range of interconnected and vibrant local communities and regional centres. The people in these communities will be healthy, resilient, active, prosperous, respectful of cultural difference and participate in the public domain.
- Standards of living will continue to be amongst the highest in the world. Improved connections and smarter technologies will enhance the State's ability to attract global and domestic investment capital, where and when it is most needed.
- A 'can do' attitude will prevail, inspiring new ways of thinking and working, which will deliver optimal outcomes for the economy and communities of Western Australia.

Six interrelated planning principles underpin the SPS which are intended to inform planning at all levels of government within the State:

1. **Community:** Enable diverse, affordable, accessible and safe communities.
2. **Economy:** Facilitate trade, investment, innovation, employment and community betterment.
3. **Environment:** Conserve the State's natural assets through sustainable development.
4. **Infrastructure:** Ensure infrastructure supports development.
5. **Regional Development:** Build the competitive and collaborative advantages of the regions.
6. **Governance:** Build community confidence in development processes and practices.

The SPS also identifies five strategic goals to assist in realising the vision of sustained prosperity for Western Australia:

1. Global competitiveness will be enhanced through continued economic diversification.
2. Strong and resilient regions will be built through economic expansion and inter-regional collaboration.
3. Sustainable communities will be enhanced by investment in infrastructure and social capital.
4. Infrastructure planning and coordination will achieve efficiencies and synergies in pursuit of economic growth.
5. Conservation of the environment will be enhanced by sustainable development and efficient resource use.

The document contains comprehensive strategies around economic development, physical infrastructure, social infrastructure, the environment and security.

The SPS identifies Port Hedland as a Regional Centre to the Pilbara region, and through the Pilbara Cities initiative, the vision established for Port Hedland is to develop into a City where people choose to settle on a permanent basis.

It focuses on achieving this through providing the Town with access to high quality education and health services and creating diverse employment and career opportunities.

The document recognises the important role the resources industry and the Pilbara region plays in underpinning the State's economy and identifies a strategic approach to continue to support the resources industry. This approach includes ongoing government and industry collaboration to ensure delivery of important infrastructure and establishing effective, transparent, timely and efficient administrative and regulatory systems, amongst other measures.

Key to achieving the overarching vision for Port Hedland to be Australia's leading port town will be the delivery of community infrastructure and services and improvements to the amenity of Hedland generally.

With respect to tourism, the SPS identifies the following priorities relevant to Port Hedland:

- Port Hedland forming part of the west coast cruise shipping route;
- Opportunities for tourism and third-party investment on pastoral land; and
- Regional infrastructure and opportunities, including caravan parks and ecotourism initiatives.

Key findings and recommendations

- The revised local planning strategy and new local planning scheme will need to respond to and address the vision, principles and strategies detailed in the SPS. The structure of the revised local planning strategy in particular, will need to address the principles and strategies contained within the SPS.

9.2 State Planning Policies

9.2.1 State Planning Policy 1 – State Planning Framework Policy

State Planning Policy 1 State Planning Framework Policy (SPP 1) brings together existing State and regional policies, strategies, plans and guidelines within a central State Planning Framework. It sets the context for decision-making on land use and development in Western Australia and identifies six key principles which further define planning's primary aim of providing for the sustainable use and development of land. While in a broad sense, all six principles are relevant to planning for the Town of Port Hedland (community, economy, environment, infrastructure, regional development and governance), the following points relate to building the competitive and collaborate advantages of the regions, in particular, through planning processes that:

- Facilitate resilient regions by promoting a diverse range of land uses;
- Facilitate achieving optimal opportunities for regional communities by coordinating land use impacts and availability of land in the context of long-term sustainability;
- Allow regional centres to capture investment to create and sustain growth; and
- Enable more remote communities to maintain economic and community development through improved connectivity, services and cultural processes.

Key findings and recommendations

- The revised Local Planning Strategy and new local planning scheme No. 7 will both play an important role in guiding land use and development to foster resilient communities within the District.

9.2.2 State Planning Policy 2.0 – Environment and Natural Resources Policy

SPP 2.0 defines the principles and considerations that represent good and responsible planning with respect to environment and natural resource issues. It is supplemented by more detailed planning policies on particular natural resources' matters that require additional information and guidance (discussed below).

The objectives of the policy are to:

- Integrate environment and natural resource management with broader land use planning and decision-making;
- Protect, conserve and enhance the natural environment; and
- Promote and assist in the wise and sustainable use and management of natural resources.

Local planning schemes should:

- Consider mechanisms to protect and enhance wetlands of importance, waterways, and coastal environments;
- Encourage urban water management and protect water resource quality;
- Consider flood risk by identifying floodway's and avoid intensifying the development of floodway's;
- Have regard for potential for conflict between sensitive land uses and activities with air emission impacts;
- Consider coast erosion impacts and address through appropriate location of development;
- Recognise contaminated land and facilitate appropriate future use or remediation, while requiring new potentially contaminating activities to demonstrate they will not cause adverse environmental impacts;
- Identify areas affected by acid sulphate soils or other severe land degradation issues and facilitate vegetation retention, replanting and prevention of inappropriate development;
- Consider mechanisms to protect areas of high biodiversity or conservation value and assist the return of these areas to the State in the long term;
- Protect and enhance areas of agricultural significance while facilitating the diversification of compatible land use activities in agricultural areas, based on principles of sustainability; and
- Identify sensitive landscapes and consider the need for a landscape, cultural and visual impact assessment for land uses that may cause significant impact.

Key findings and recommendations

- Local Planning Scheme No. 7 will need to respond to a range of environmental and natural resources issues, including but not limited to, the following:
 - o Identify responses to areas at risk of flooding, storm surge inundation and coastal erosion;
 - o Identify public drinking water source (PDWSA) areas;
 - o Identify relevant separation distances between incompatible land use and development;
 - o Protect areas of agricultural significance; and
 - o Protect areas of cultural significance.

9.2.3 Draft State Planning Policy 2.4 – Basic Raw Materials Policy

A key objective of SPP 2.4 is to enable the responsible extraction of basic raw materials used in building and development while ensuring the protection of people and the environment.

Local planning strategies and schemes should:

- Identify known Basic Raw Materials (BRM), Significant Geological Supplies (SGS) areas, Extraction Sites (ES) and other significant BRM resources as required;
- Include provisions to identify and protect SGS areas and ES and known buffers or land suitable for providing appropriate separation distances;
- Avoid development of sensitive land uses within the separation distances or determined buffers identified for SGS and/or ES, and plan for compatible land uses;
- Where applicable, allow sequential land use on SGS and ES, including their corresponding separation distances or buffers following extraction to agreed levels, and site remediation;
- Enable the extraction of BRM identified as SGS and ES, subject to analysis of environmental, water resources, infrastructure or planning constraints and subsequent approvals; and
- Permit land uses related to SGS and ES consistent with the model provisions in Schedule 1 of the *Planning and Development (Local Planning Schemes) Regulations 2015*.
- Further guidance and principles are provided on statutory buffers and expansion of extractive industries.
- The draft SPP 2.4 will replace the existing policy dated 2000 which identified priority resource locations and key extraction areas for basic raw materials resources within the Perth Metropolitan area and was limited in its application to the Perth metropolitan area and surrounding rural hinterland. The draft SPP 2.4 applies across Western Australia.

Key findings and recommendations

- Strategic planning documents and planning schemes should address land use conflict and not defer its resolution or management to subdivision approval or development assessment stage, where mitigation options are limited, and expectations may have been raised by previous decisions.
- The policy encourages the recognition of SGS and significant BRM resources within the planning framework, and includes provisions for their protection, access and use, including consideration to establishing buffers around extractive industries via Special Control Areas and/or appropriate separation distances to sensitive land uses. This may not be practical to achieve in some areas that are subject to the *Mining Act 1978* i.e. Mining tenements.

9.2.4 State Planning Policy 2.5 – Rural Planning Policy

The purpose of this policy is to protect and preserve Western Australia's rural land assets due to the importance of their economic, natural resource, food production, environmental and landscape values. Ensuring broad compatibility between land uses is essential to delivering this outcome. Planning for rural-residential development should –

- Avoid productive agricultural land, important natural resources, areas of high bush fire risk or environmental sensitivity;
- Avoid future urban areas or areas particularly suitable for urban development in terms of their characteristics and proximity to urban services;
- Give preference to locations near existing settlements with available services and facilities in order to support the local community and avoid locations where services are not available or costly extensions are necessary;
- Minimise potential for conflict with incompatible activities associated with productive rural uses or natural resource management;
- Only include locations which are suitable for this type of development, such as land which is topographically varied, visually attractive and with distinctive environmental attributes or otherwise has potential for lifestyle pursuits; and
- Take a realistic approach by allocating land based on forecast estimates of demand for rural living not on the speculative development of land.

SPP 2.5 is supported by the Rural Planning Guidelines and associated Factsheets. These guidelines explain the intent and interpretation of SPP 2.5 and the associated Development Control Policy 3.4.

Key findings and recommendations

- The new Local Planning Scheme No. 7 should:
 - o In rural zones, limit the introduction of land uses that may constrain existing or potential future rural land uses (i.e. industrial uses);
 - o Only categorise land uses as permissible in rural zones if they are consistent with the objectives of this policy and a local planning strategy;
 - o Generally designate animal premises as 'permitted' or 'discretionary' uses;
 - o Consider whether sensitive land uses in rural zones serve a secondary function to the purpose of the land for primary production, environment and landscape, and whether they should not be 'permitted' uses in planning schemes; and
 - o Discourage industrial use of rural-residential land and limit any new rural-residential estates based on historic 'morphing' of rural-residential estates into industrial laydown areas.

9.2.5 State Planning Policy 2.6 – State Coastal Planning Policy

The purpose of SPP 2.6 is to provide guidance for decision-making within the coastal zone including managing development and land use change; establishment of foreshore reserves; and to protect, conserve and enhance coastal values. Local planning schemes shall identify, and where appropriate include, provisions for the sustainable use of the coast. The objectives of the Policy are to:

- Ensure that development and the location of coastal facilities takes into account coastal processes, landform stability, coastal hazards, climate change and biophysical criteria;
- Ensure the identification of appropriate areas for the sustainable use of the coast for housing, tourism, recreation, ocean access, maritime industry, commercial and other activities;
- Provide for public coastal foreshore reserves and access to them on the coast; and
- Protect, conserve and enhance coastal zone values, particularly in areas of landscape, biodiversity and ecosystem integrity, Indigenous and cultural significance.

It is noted that the Town has recently completed a CHRMAP for the Port Hedland townsite. The adaptation responses identified within this report will need to, in part, be implemented through the Town's local planning framework.

SPP 2.6 is supported by SPP 2.6 State Coastal Planning Policy Guidelines which provide detailed guidance relating to the application of the policy measures. In addition to this, the DPLH has prepared Coastal Hazard Risk Management and Adaptation Planning guidelines which provide guidance to local governments and proponents on how to prepare Coastal Hazard Risk Management and Adaptation Plans.

Key findings and recommendations

- Consider introducing a Special Control Area within Local Planning Scheme No.7 to address areas at risk of coastal storm surge inundation and/or coastal erosion in line with the CHRMAP prepared for the Port Hedland townsite.
- Note that the West End Precinct, Spinifex Hill Precinct and East End Urban Village Precinct are at risk of coastal processes and will require adaptation measures to be incorporated into future planning schemes for these areas.
- Consider identifying coastal nodes within the Local Planning Strategy where it may be appropriate to encourage relocatable tourism infrastructure / camping uses i.e. at Condon at De Grey station.

9.2.6 State Planning Policy 2.7 - Public Drinking Water Source Policy

SPP 2.7 seeks to ensure the long term protection and management of PDWSA's from incompatible land uses and pollution in order to maintain the quality of the drinking water. The Policy categorises drink water source areas into three priority hierarchies and provides land use guidance for each.

Key findings and recommendations

- Consider the introduction of Special Control Areas where appropriate, to implement measures for the protection of public water supply sources.
- Land uses and developments in all priority source protection areas that have the potential to impact detrimentally on the quality and quantity of public drinking water supplies should not be permitted unless it can be demonstrated that such impacts can be satisfactorily managed. In determining land uses and development proposals, the Local Government will have due regard to relevant State Government policies and the most recent DWER Land Use Compatibility Tables for Public Drinking Water Source Areas (DoW 2016).

9.2.7 State Planning Policy 2.9 – Water Resources Policy

SPP 2.9 provides further guidance on the matters set out under SPP 2.0. The objectives of SPP 2.9 are to:

- Protect, conserve and enhance water resources that are identified as having significant economic, social, cultural and/or environmental values.
- Assist in ensuring the availability of suitable water resources to maintain essential requirements for human and all other biological life with attention to maintaining or improving the quality and quantity of water resources.
- Promote and assist in the management and sustainable use of water resources.

Key findings and recommendations

- The new local planning scheme should afford water resources that are identified as significant economic, social and/or environmental values an appropriate level of protection under the planning scheme via Special Controls Areas, setbacks/buffers and the requirement for the preparation and ongoing compliance with a management plan.

9.2.8 State Planning Policy 3.0 - Urban Growth and Settlement Policy

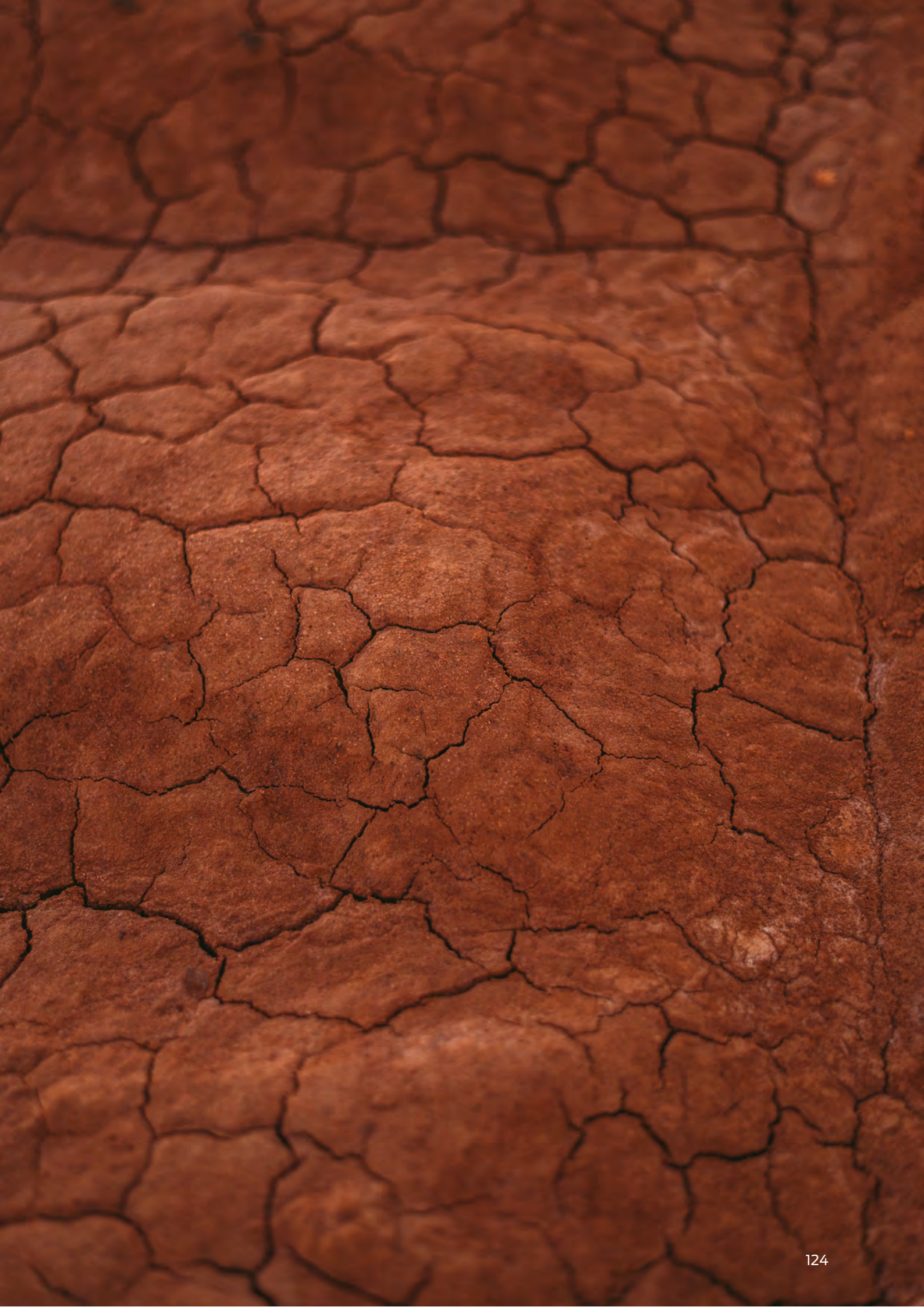
SPP 3.0 sets out the broad principles and considerations which apply to planning for urban growth and settlement in Western Australia.

Proposals for major new settlements, whether by large-scale additions to existing settlements or new free-standing settlements, are unlikely to prove to be a sustainable development option. New settlements are only likely to prove to be a sustainable development option where they address a significant shortfall of available residential land in the region, have a secure employment base, are large enough to support a range of local services including schools, shops and employment and there is no more sustainable alternative.

Notwithstanding this, new settlements may be necessary to provide accommodation for mineral and resource projects in remote locations. For mines located in reasonable proximity to the Town and where there is available residential land, infrastructure and facilities, the preference is to accommodate workforces in nearby communities.

Key findings and recommendations

- Local strategies and schemes should reflect and build on the urban growth and settlement policies set out in regional strategies and seek to identify sufficient land to meet future population and housing needs for at least a 10-year period. The identification of appropriate locations and/or general provisions for the development of new workforce accommodation should also be accounted for.
- Promote town-based accommodation and DIDO workforce to support a sustainable local economy.
- The Town has prepared LPP/05 Workforce Accommodation and LPP/06 Social Impact Assessment.



9.2.9 State Planning Policy 3.2 – Aboriginal Settlements Policy

SPP 3.2 provides the planning framework for the preparation of community layout plans and their incorporation into local planning schemes. In considering community living areas, proposals for new settlement will only be supported where the proposed settlement —

- Has an identified and sustainable drinking water source;
- Is not subject to inundation from river or creek flooding;
- Has a reasonable level of access to essential services including transport, health and education; and
- The landholding is of a sufficient size to accommodate a living area and all associated community infrastructure such as a water bore, sewerage ponds, rubbish tip and power supply.

Key findings and recommendations

- The new Local Planning Scheme No. 7 shall classify land as a 'Settlement' zone where—
 - o A layout plan has been endorsed under this policy; and
 - o A clear and appropriate area for a 'Settlement' zone is defined and delineated in the endorsed layout plan.
- A local planning scheme that includes a 'Settlement' zone is also to include provisions that require development to be in accordance with the endorsed Layout Plan.
- A layout plan has been prepared and endorsed in relation to the Yandeyarra Aboriginal settlement. The new Local Planning Scheme No. 7 could acknowledge this through applying the 'Settlement' zone to this settlement.
- The future of remote Aboriginal community settlements will depend on decisions by the State government in relation to Aboriginal communities more broadly.

9.2.10 State Planning Policy 3.4 – Natural Hazards and Disasters Policy

The purpose of SPP 3.4 is to minimise the adverse impacts of natural disasters on communities, the economy and the environment. SPP 3.4 seeks to ensure LPS's and schemes provide planning responses to a range of natural hazards and disasters, including:

- Severe storms and cyclones;
- Storm surge;
- Coastal erosion;
- Bushfires;
- Landslides and other land movements; and
- Earthquakes.

Key Findings and Recommendations

- With particular reference to cyclonic activity, the new Local Planning Scheme No. 7 should include provisions for the requirement for structures to be able to withstand cyclonic winds and rain, as set out within the Building Code of Australia.
- Provisions for temporary approvals of non-permanent structures outside of cyclone season.

9.2.11 State Planning Policy 3.5 – Historic Heritage Conservation Policy

SPP 3.5 sets out the principles of sound and responsible planning for the conservation and protection of Western Australia's historic heritage. The objectives of this policy are to:

- Conserve places and areas of historic heritage significance.
- Ensure that development does not adversely affect the significance of heritage places and areas.
- Ensure that heritage significance at both the state and local levels is given due weight in planning decision-making.
- Provide improved certainty to landowners and the community about the planning processes for heritage identification, conservation and protection.

The Model Scheme Text and Deemed Provisions for local planning schemes (Regulations) provide for flexibility in the application of planning controls to realise positive heritage outcomes **while also helping meet the expectations and aspirations of property owners.**

Importantly, SPP 3.5 distinguishes between 'historic heritage significance' and 'urban character'. Areas of 'historic heritage significance' are select areas with special qualities embodied in the built form, will generally be quite rare within a locality and will have some form of underlying aesthetic, social, scientific or historic cultural heritage value. 'Urban character' can essentially be identified by the built form and age of an area and its relationship with the surrounding streetscape, open space, land use and activity. Different combinations of these factors help create local distinctiveness and character.

It is widely accepted that places assessed as being of cultural heritage value are given 'protection' under the statutory framework (scheme) where development must manage the cultural heritage value of the place. Character on the other hand is best 'protected' through the local planning policy framework, where details surrounding built form can be guided for a specific area.

Key findings and recommendations

- For the Town of Port Hedland to have statutory authority and the ability to influence or manage the development of a heritage place, the property needs to be included in its 'Heritage List', which sits under the local planning scheme.
- In accordance with the Town's 2017 Heritage Inventory, Grade A (exceptional significance) and Grade B (considerable significance) listed properties are included on the Town's Heritage List.

9.2.12 Draft State Planning Policy 3.6 – Development Contributions for Infrastructure Policy

Draft SPP 3.6 infrastructure contributions introduces a framework for the delivery of infrastructure to new and existing communities. It also establishes a system that enables the coordination and delivery of infrastructure that will provide opportunities for development of new communities in greenfield locations, infill locations, activity centres, corridors and high-frequency public transport routes, industrial nodes and station precincts.

A Development Contribution Plan (DCP) is used to levy contributions through the subdivision and development process. However, a DCP does not have effect until it is incorporated into a local planning scheme. Prior to (or concurrent with) identification of the first Development Contribution Area within a scheme, and associated formulation of a DCP, operative scheme provisions must be included in the scheme to provide the framework for formulating and implementing a DCP, as provided in the *Regulations*.

Draft SPP 3.6 (2017) will ultimately replace the existing SPP 3.6 (2009) with the intent that the revised policy will ensure that a greater level of accountability, transparency and consistency is achieved in the provision of infrastructure contributions.

Key findings and recommendations

- Consider including a provision that SPP 3.6 is to be read as part of the scheme. To ensure consistency in the application of the development contribution system across Western Australia, and to provide certainty for system users, the DCP template in Schedule 3 should be used and will be incorporated into the new local planning scheme. Any departure from the model format will need to be justified based on individual circumstances.
- The Town should consider the merit in developing development contribution plans for key growth areas in Port and South Hedland to manage the equitable provision of community infrastructure.

9.2.13 State Planning Policy 3.7 – Planning in Bushfire Prone Areas Policy

Additional Planning and building requirements apply to developments, within areas designated as bushfire prone by the Fire and Emergency Services Commissioner, in accordance with Schedule 2 Part 10A of the *Planning and Development (Local Planning Schemes) Regulations 2015*, State Planning Policy 3.7 Planning in Bushfire Prone Areas (SPP 3.7), the supporting Guidelines for Planning in Bushfire Prone Areas (Guidelines) and the National Construction Code.

SPP 3.7 seeks to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure. The accompanying Guidelines provide supporting information to assist in the interpretation of the objectives and policy measures outlined in SPP 3.7. In accordance with SPP 3.7 and the Guidelines, a Bushfire Hazard Level (BHL) assessment should be undertaken to inform the suitability of an area for future development by categorising land as having a low, moderate or extreme bushfire hazard level. Given there is sufficient land zoned for residential purposes which has previously considered application of SPP 3.7, a BHL assessment has not been prepared along with the LPS.

Additional obligations apply to Local governments when mitigating the impact of bushfire. Local governments are required to develop an integrated Bushfire Risk Management Plans (BRMP) outlining a strategy to treat or reduce bushfire related risk across all land tenures and should be reviewed by the Office of Bushfire Risk Management (OBRM) and endorsed by the local government. BRMPs identify assets (Human Settlement, Economic, Cultural and Environmental), at risk from bushfire, assign them a risk rating and treatment priority, and set out a broad program of proposed coordinated, multi-agency treatment strategies to help reduce the risk to an acceptable level.

Key findings and recommendations

- The Local Planning Strategy to include high-level consideration of relevant bushfire hazards when identifying or investigating land for future development, which has not previously been considered in accordance with SPP 3.7.
- The Town's Ranger and Emergency Services shall prepare a Bushfire Risk Management Plan in accordance with the OBRM BRMP Guidelines that identifies, analyses, assesses, treats and reviews risks across the local government area.

9.2.14 Draft State Planning Policy 4.1 – State Industrial Interface Policy

SPP 4.1 guides planning decisions with the aim of protecting the long-term future operation of industry and infrastructure facilities, by avoiding encroachment from sensitive land uses and potential land use conflicts.

Key elements in achieving the objectives of this policy are:

- Statutory buffers should be provided around strategic sites and facilities of State significance with off-site impacts to prevent encroachment by incompatible land uses.
- Industries which generate off-site impacts should be located in Strategic or General Industry zones and ensure that off-site impacts can be contained within the industrial land use zone or surrounding compatible land use zones and/or reserves.
- A compatible interface should be provided between Strategic/General Industry zones and sensitive zones.

A statutory buffer should be designated via a Special Control Area for existing and proposed:

- Strategic Industrial Areas;
- Infrastructure facilities of State significance which generate off-site impacts;
- Individual industrial sites/facilities of State significance which generate off-site impacts; and
- As determined by Minister for Planning on advice from the WAPC.

Sensitive land uses should not be considered in industrial zones and Strategic and General Industry zones should not have a direct interface with sensitive zones in local planning schemes. An interface of compatible land use zones and/or reserves should be identified in local planning schemes (such as Light Industry and Commercial zones and Public Open Space reserves).

Draft SPP 4.1 (2017) will ultimately replace the existing SPP 4.1 (1997) with some of the key changes to the policy including:

- A change of name to reflect the broader policy measures that extend beyond the application of statutory buffers;
- Application of the policy more broadly to planning for industrial zones and infrastructure reserves;
- Provision of new policy measures for planning for transitional zones to address incompatibility between industry and sensitive land uses; **and**
- An implementation section which provides recommended approaches at each stage of the planning framework.

Key findings and recommendations

- The local planning scheme should:
 - o Identify Strategic, Industrial Development, General and Light Industrial zones;
 - o Identify compatible land use zones and/or reserves to provide a transition between General Industry and sensitive land use zones;
 - o Establish statutory buffers as Special Control Areas, or similar, with appropriate scheme provisions, for Strategic Industrial areas, strategic infrastructure facilities and industrial sites of State significance;
 - o Identify compatible and incompatible land uses within buffers and/or ensure zoning within buffers are consistent with the purpose of the buffer and do not constrain existing operations, or the proposed development/expansion, of the buffered industrial area or infrastructure facility; and
 - o Ensure zones identify any areas of land impacted by existing or proposed industrial land uses and infrastructure facilities, including high-pressure gas pipelines and mining operations, and exclude any sensitive land uses and/or zones from the impacted area of land.
- In addition to the above, strategic infrastructure secured through Stage Agreement leases / Port leases and associated off-site buffer requirements, to be recognised within the local planning strategy and/or new local planning scheme.

9.2.15 State Planning Policy 5.2 – Telecommunications Infrastructure Policy

SPP 5.2 provides guidance on matters relating to the location, siting, and design of telecommunications infrastructure (TI), with particular focus on protecting the visual character of local areas. The Policy provides for the benefit of improved telecommunication services to be balanced with the visual impact on the surrounding area.

Key findings and recommendations

- The new Local Planning Scheme No. 7 should:
 - o Include TI within the zoning table as a land use, and not designated as a prohibited use in any zone;
 - o Designate TI as permitted in zones where their location is supported, and provide guidance on exemptions to development approval; and
 - o Not include buffer zones or setbacks related to TI.

9.2.16 State Planning Policy 5.4 – Road and Rail Noise

This policy aims to promote a system in which sustainable land use and transport are mutually compatible. It seeks to minimise the adverse impacts of transport noise, without placing unreasonable restrictions on noise-sensitive residential development or adding unduly to the cost of transport infrastructure.

It aims to provide a standardised and consistent triple bottom line framework for consideration and management of the impacts of transport noise and freight operations when dealing with:

- new noise-sensitive development in the vicinity of existing or future major transport corridors or freight handling facilities; and
- new major road or rail infrastructure projects, including major redevelopments, in the vicinity of existing or future noise-sensitive land uses

The policy does this primarily by:

- identifying the situations in which it would be appropriate to assess proposals for transport noise impacts ('policy trigger distances');
- establishing noise targets to be used in the assessment of these proposals; and
- identifying measures that can be adopted to reduce road and rail transport noise in these instances.

Key findings and recommendations

- Spatial planning for Port Hedland shall consider the impact of any expanding freight facilities on surrounding land uses as well as the interface between higher volume traffic and residential land uses in the context of noise attenuation; and
- The new Local Planning Scheme No. 7 can address the impact of noise through:
 - o identification of appropriate compatible land-use zoning that is commensurate with the function of the transport corridor;
 - o consideration of density and built form outcomes that will help alleviate and/or manage noise;
 - o outlining the need for additional noise mitigation measures through quiet house requirements and or noise barriers in accordance with the guidelines; and
 - o giving consideration to appropriate future planning provisions to ensure more detailed planning is undertaken at the subdivision and development stage.

9.2.17 State Planning Policy 7.0 – Design of the Built Environment Policy

This is the lead policy that elevates the importance of design quality across the whole built environment. It includes 10 principles for good design and establishes the framework for integrating design review as a part of the evaluation process. The 10 design principles are:

1. **Context and character:** *Good design responds to an enhances the distinctive characteristics of a local area, contributing to a sense of place.*
2. **Landscape quality:** *Good design recognizes that together landscape and buildings operate as an integrated and sustainable system, within a broader ecological context.*
3. **Built form and scale:** *Good design ensures that the massing and height of development is appropriate to its setting and successfully negotiates between existing built form and the intended future character of the local area.*
4. **Functionality and build quality:** *Good design meets the needs of users efficiently and effectively, balancing functional requirements to perform well and deliver optimum benefit over the full life-cycle.*
5. **Sustainability:** *Good design optimizes the sustainability of the built environment, delivering positive environmental, social and economic outcomes.*
6. **Amenity:** *Good design provides successful places that offer a variety of uses and activities while optimizing internal and external amenity for occupants, visitors and neighbours, providing environments that are comfortable, productive and healthy.*
7. **Legibility:** *Good design results in buildings and places that are legible, with clear connections and easily identifiable elements to help people find their way around.*
8. **Safety:** *Good design optimizes safety and security, minimizing the risk of personal harm and supporting safe behaviour and use.*
9. **Community:** *Good design responds to local community needs as well as the wider social context, providing environments that support a diverse range of people and facilitate social interaction.*

10. **Aesthetics:** *Good design is the product of skilled, judicious design process that results in attractive and inviting buildings and places that engage the senses.*

Key findings and recommendations

- The 10 principles of good design should be given regard when proposing any new development areas or infill areas.

9.2.18 Draft State Planning Policy 7.2 – Precinct Design

This policy seeks to guide the preparation and evaluation of planning proposals for areas that require a high level of planning and design focus due to their complexity - such as planned infill development, activity centre designation or areas with certain values such as heritage or local character.

Key findings and recommendations

- When considering areas requiring more detailed planning, the new Local Planning Scheme No. 7 should identify precinct types to guide the preparation of future precinct plans.

9.2.19 State Planning Policy 7.3 – Residential Design Codes Volume 1 and Volume 2

The R-Codes control the design of most residential development throughout Western Australia. The R-Codes aim to address emerging design trends, promote sustainability, improve clarity and highlight assessment pathways to facilitate better outcomes for residents. They are also used for the assessment of residential subdivision proposals. Volume 2 is a policy specifically for apartments and mixed-use developments which focuses on improved design outcomes for apartments.

Key findings and recommendations

- The new Local Planning Scheme No. 7 shall have regard to SPP 7.3 when nominating residential densities throughout the residential areas of the local government.
- Carry forward LPS5 requirement to construct outbuildings for single houses due to the area being located in a cyclone region.



9.3 Operational Policies and Guidelines

9.3.1 DC 2.3 – Public Open Space in Residential Areas

Development Control Policy 2.3 – Public Open Space in Residential Areas (DC 2.3) contains a general requirement for residential subdivision to provide 10 percent of the gross subdivisible area as public open space (POS). It is noted that the Town has recently prepared and endorsed a POS Strategy which examines the provision of existing POS and requirements for future provision of POS.

Key findings and recommendations

- The Town's recently endorsed POS Strategy requires further review to ensure consistency with the State Planning Framework.
- Investigate rezoning of privately owned lots which are developed and used as POS, without triggering injurious affection claim (i.e. Limestone Park lots owned by BHP in South Hedland).
- Delineate key drainage corridors from POS reservations in the new local planning scheme.

9.3.2 DC 2.4 – School Sites

Development Control Policy 2.4 – School Sites (DC 2.4) establishes requirements for the provision of school and TAFE sites to service communities. The broad thresholds for provision of public school sites set out by DC 2.4 are:

- Primary schools – one site for every 1,500-1800 housing units; and
- Secondary schools – one site for every four or five primary schools.

Key findings and recommendations

- Future structure planning and subdivision of residential areas in Town will need to have regard to planning for future school sites.

9.3.3 DC 3.4 – Subdivision of Rural Land

Development Control Policy 3.4 – Subdivision of Rural Land (DC 3.4) provides operational guidance regarding the subdivision of rural land to achieve the objectives of State Planning Policy 2.5: Rural Planning. The policy seeks to protect rural land to support primary agricultural production. It also recognises the need to secure significant basic raw material resources throughout regional Western Australia.

Key findings and recommendations

- The new Local Planning Strategy and local planning scheme to include provision for a general presumption against subdivision of rural zoned land within the district.

9.3.4 DC 4.1 – Industrial Subdivision

Development Control Policy 4.1 – Industrial Subdivision (DC 4.1) establishes matters to be considered by the WAPC when determining applications for industrial subdivision. The policy addresses matters relating to industrial interface, lot sizes and shapes, flexibility and staging, access and road layout and provision of POS.

Key findings and recommendations

- Future structure planning and subdivision of industrial land to have regard to the requirements of DC 4.1.

9.3.5 Draft DC 4.3 – Planning for High-Pressure Gas Pipelines

Draft Development Control Policy 4.3 – Planning for High-Pressure Gas Pipelines (DC 4.3) is applicable to land in the vicinity of any high-pressure gas pipeline in Western Australia. It identifies trigger distances in proximity to high pressure gas pipelines whereby proponents of subdivision and development applications may need to consult with the relevant pipeline operator.

It is noted that the Pilbara Pipeline System operated by APA extends within the Town, including the HBI Lateral pipeline which transports gas from Port Hedland to Alinta Energy's Port Hedland Power Station and the Boodarie Gas Lateral Pipeline that runs to the (now closed) Solomon CNG Plant.

Key findings and recommendations

- DC 4.3 recommends that the relevant pipeline owner/operator be consulted in preparing a new local planning strategy for a district.

9.3.6 Draft Liveable Neighbourhoods (2015)

Liveable Neighbourhoods is an operational policy for the design and assessment of structure plans (regional, district and local) and subdivision for new urban (predominantly residential) areas in the metropolitan area and the States regional centres, on greenfield and large urban infill sites.

The document establishes objectives, design principles and requirements which should be used to inform the preparation and assessment of structure plans and subdivision applications for urban / residential areas. The guiding objectives used to inform design of new urban areas are set out below:

1. To achieve a sustainable urban structure that balances the provision of urban development through site-responsive design;
2. Provide a network of interconnected streets based on function within attractive, safe and pedestrian friendly streetscapes, which facilitates accessibility for all users to, within and between neighbourhoods and activity centres;

3. Promote mixed-use development and activity centres that optimise commercial opportunities, access to public transport and efficient street network connections;
4. Ensure that water is protected and managed to maximise efficiency by incorporating urban water management techniques into urban design;
5. Facilitate housing diversity, responsive built form, local employment and amenity within a legible and efficient urban structure of compact walkable neighbourhoods;
6. Provide education sites and other community infrastructure to meet the needs of existing and future communities; and
7. Provide utility services in a land efficient, environmentally responsible and sustainable manner.

Key findings and recommendations

- Future structure plan and subdivision design should have regard to the requirements of Liveable Neighbourhoods.

9.3.7 Better Urban Water Management (2008)

The State government's Better Urban Water Management provides guidance on the implementation of State Planning Policy 2.9 – Water Resources and establishes water management documentation requirements through each stage of the planning process, to achieve integrated water cycle management.

At the LPS level, the document recommends that a Regional Water Management Strategy be prepared to define regional objectives for total water cycle management.

Key findings and recommendations

- A Regional Water Management Strategy (RWMS) should be prepared to support the preparation of a local planning strategy. This RWMS will inform future levels of water management planning at subsequent planning stage(s).

9.3.8 Acid Sulfate Soils Planning Guidelines (2008)

The Acid Sulfate Soils Planning Guidelines has been prepared to ensure that subdivision and development of land containing acid sulfate soils is planned and managed to avoid potential adverse effects on the natural and built environment.

The Guidelines outline a range of matters that need to be addressed at various stages of the planning process. At the LPS level, the Guidelines contain the following guidance statements:

Guidance Statement A1: Avoidance of disturbance where practicable

Where practicable, strategies proposing any change of zoning that will lead to the introduction of, or an intensification of, development that is likely to result in significant amounts of excavation, drainage, or groundwater extraction on land depicted as being wholly or partially within an area of “high to moderate acid sulfate soils”, should be avoided.

Guidance Statement A2: Referral of marina, boat harbour and canal estate proposals

Strategies proposing any change of zoning that will lead to the introduction of a marina, boat harbour or canal estate in any area should be referred to the relevant environmental authority for advice prior to a decision being made.

Key findings and recommendations

- The new local planning strategy to provide high-level consideration and strategies responding to areas at risk of acid sulfate soils.

9.3.9 Tourism Planning Guidelines (2014)

The objectives of the Tourism Planning Guidelines are to:

- encourage a consistent approach to planning for tourism across LPS's;
- ensure that tourism planning and development is considered at the strategic planning stage, as part of the wider planning context; and
- clarify expectations on the scope and detail required as part of a planning assessment, to enable considered planning decision making around tourism uses at the State, regional and local levels.

The Guidelines set out the purpose, scope and content of the tourism component of an LPS. The Guidelines establish the following criteria which should be used when giving consideration to identifying suitable sites for future tourism accommodation within an LPS:

- the site has been identified in a report/study as having the potential to accommodate a tourism facility; and/or
- the site contains an existing tourist accommodation development; and/or
- the site is located in an area of high tourist amenity and is of an adequate size to accommodate a tourism facility.

Sites should be assessed based on their suitability for tourism purposes. This will involve an analysis of the amount of vacant Tourist-zoned land currently available to determine whether this land will meet the needs forecast in the supply/demand study over the life of an LPS. Analysis should also identify sites zoned for tourism purposes which are no longer suitable for tourism based on size, location or existing non-residential development.

The Guidelines recognise that it is important to identify service capacity and infrastructure projects which could potentially impact directly and indirectly on tourism growth and visitor experience within the local government area including, access (e.g. roads, rail, airports), water, wastewater, telecommunications and power, noting that these factors can also impact on the growth of other sectors.

Key findings and recommendations

- The above site selection criteria and other considerations should be factored into the identification of tourist accommodation sites within the new local planning strategy.

9.3.10 Government Sewerage Policy (2019)

The State government released the new Government Sewerage Policy in September 2019. In broad terms, the policy requires a new subdivision to connect to reticulated sewerage where available. In instances where reticulated sewerage cannot be provided, the policy adopts a best practice approach to the provision of on-site sewage treatment and disposal.

The objectives of the policy include:

1. To generally require connection of new subdivision and development to reticulated sewerage;
2. To protect public health and amenity;
3. To protect the environment and the State's water and land resources;
4. To promote the efficient use of infrastructure and land;
5. To minimise costs to the broader community including by ensuring an appropriate level and form of sewage servicing is provided; and
6. To adopt the precautionary principle to on-site sewage disposal.

Key findings and recommendations

- The Government Sewerage Policy establishes minimum lot size and land capability requirements for subdivision of land that does not have the ability to connect to reticulated sewerage. This may have yield implications for zoned land beyond the available reticulated sewerage network within the Town.

9.3.11 Position Statement: Workforce Accommodation (January 2018)

The WAPC has prepared a position statement on workforce accommodation to outline requirements for development of workforce accommodation and to provide guidance for local government. The position statement acknowledges that the jurisdictions of the *Mining Act 1978* and State Agreement Acts can vary the application of the *Planning and Development Act 2005* and extinguish the requirement for mining operations to require the prior development approval of a local government.

The position statement does; however, provide local government with guidance in assessing applications for workforce accommodation where development approval is still required. Additionally, the position statement provides guidance in the role that the local planning framework can play with respect to consideration of workforce accommodation development.

Local Planning Strategy

- Could acknowledge that workforce accommodation is economically critical infrastructure that may be required in a very short timeframe, which warrants a flexible approach to the application of the planning framework to be able to respond quickly to changing needs;
- Could identify preferred locations for future workforce accommodation; and
- Could provide direction on the circumstances in which it is appropriate for workforce accommodation to be located in existing towns.

Local Planning Scheme

- Could set land use permissibility in the local planning scheme to guide the location of workforce accommodation, where that accommodation is not associated with a mining tenement or State Agreement Act;
- Could include a provision within the local planning scheme to trigger possible consultation between the Ministers for Mining and Planning; and
- May include provisions that provide development requirements specific to workforce accommodation.

Local Planning Policies

- Utilise local planning policies to provide guidance regarding the circumstances where uses could be approved.

Key findings and recommendations

- Local planning strategy to include a broad statement regarding the Town's position on workforce accommodation.
- Local planning scheme to establish land use permissibility for Workforce Accommodation and to include a separate provision which may trigger the possible consultation between the Ministers for Mining and Planning in relation to Workforce Accommodation within a mining tenement or on land subject to a State Agreement.
- The Town has prepared LPP/05 Workforce Accommodation and LPP/06 Social Impact Assessment.

10. Regional Planning Context

10.1 Pilbara Planning and Infrastructure Framework 2012

The Pilbara Planning and Infrastructure Framework 2012 (PPIF) establishes a framework to address a breadth of opportunities and challenges facing the Pilbara region through a range of strategic planning goals, objectives and actions. The Framework seeks to establish a more permanent population in the Pilbara through the expansion of Port Hedland and Karratha, reflecting their designation as Pilbara Cities.

In summary, the PPIF:

- addresses the scale and distribution of future population growth and housing development, as well as identifying strategies for economic growth, environmental issues, transport, infrastructure, water resources, tourism and the emerging impacts of climate change.
- sets out regional planning principles, together with goals, objectives and actions to achieve these. It represents an agreed 'whole-of-government' position on the broad future planning direction for the Pilbara and will guide the preparation of local planning strategies and local planning schemes.
- informs government on infrastructure priorities across the Pilbara and gives the private sector more confidence to invest in the region. The infrastructure priorities identified in the Framework have been determined, following extensive liaison with State Government agencies, local government and other key stakeholders.

The PPIF sets a population target of 50,000 people by 2035 for both Port Hedland and Karratha, reflecting their designation as Pilbara Cities. It also establishes several key themes including settlement, economy, utility infrastructure, community infrastructure, transport, natural environment, cultural heritage and development.

It is evident that the aspirational targets will not be met by 2035 and therefore many of the infrastructure priorities identified within the PPIF may not need to be delivered within the 2035 timeframe.

Key findings and recommendations

- It is evident the target to accommodate 50,000 people within Port Hedland by 2035 will not be achieved within this timeframe due to the slowing down of the mining economy and other factors. This will have a bearing on the timing of delivery of key infrastructure to support the region in the short to medium term.
- Traffic growth estimates for Great Northern Highway are highly optimistic and do not correspond with current use. For example, approximately 25,000 vehicles per day were anticipated on Great Northern Highway in Port Hedland by 2019; however, traffic on Great Northern Highway in this area is generally below 5,000 vehicles per day with exception of the section near Port Hedland International Airport.
- Road transport action plan does not stipulate any Port Hedland-specific actions.
- It is noted that the PPIF requires updating to reflect new population scenarios and market conditions.

10.2 Pilbara Regional Investment Blueprint (2016)

The Pilbara Regional Investment Blueprint was prepared by the Pilbara Development Commission (PDC) and represents a commitment by the PDC to tackle the key risks and challenges facing the Pilbara region, through innovative thinking.

The document articulates a vision for the Pilbara by the year 2050 which describes Port Hedland and Karratha as developing into vibrant modern cities, underpinned by a hierarchy of lower order centres.

The document outlines nine Regional Pillars which are considered integral to realising the vision for the Pilbara:

- Land Access and Economic Infrastructure
- Education, Training and a Skilled Workforce
- People and Communities
- Logistics, Engineering and Supply Chains
- Innovative and Advanced Technology
- Diverse and Robust Small and Medium Businesses
- Agriculture and Aquaculture
- Energy
- Tourism

The document identifies a suite of transformational opportunities and the opportunities, benefits, constraints and challenges in pursuing these. The document has been prepared on the back of the Pilbara Cities funding program and incorporates the aspirational vision and growth scenarios that informed the Port City Growth Plan.

Key findings and recommendations

- The transformational opportunities identified by the document should be reviewed and considered to inform the preparation of relevant economic development and tourism strategies for the Town.

10.3 The New Pilbara (2016)

The New Pilbara (2016) is a report published by the PDC and documents what was delivered through the \$1.7 billion committed by the then State Government through the Royalties for Region's Pilbara Cities initiative, since its inception in 2009.

The document recognises the challenges faced by regional communities such as Port Hedland, and acknowledges that in order to achieve a population target of 50,000 people, strategic effort will be needed in the following key focus areas:

- Community projects and engagement – education, health, community facilities and Indigenous participation.
- Land availability and development – land preparation, planning, developer attraction and retention, and housing.
- Economic diversification – industry development, business attraction and development and transformational projects.
- Infrastructure coordination – energy, water, wastewater, roads, ports and marinas.

The report identifies the following projects which are applicable to Port Hedland:

- Pilbara Town-Based Reserves Project.
- Bloodwood Tree Aboriginal Training and Employment Centre in South Hedland
- Health and Allied Services in South Hedland
- Pilbara-Wide Education Attraction and Retention Program
- Pilbara-Wide E-Learning Program
- Hedland Senior High School Upgrade
- Improvements to Clinical and Imaging Equipment Pilbara-wide
- Pilbara Health Initiatives Partnership
- Various park upgrades
- South Hedland Aquatic Centre and South Hedland Bowling and Tennis Club
- Wanangkura Stadium in South Hedland
- West End Revitalisation Scheme
- Various key worker housing projects
- Communications Enhancement Project
- Co-working and Innovation Centre
- Pilbara Hinterland Agricultural Development Initiative
- Pilbara Underground Power Project
- Wallwork Road Bridge

- Boodarie Entrance Road (has not been delivered)
- Spoilbank Marina Project
- South Hedland Town Centre Revitalisation Project
- Pilbara Water Resource Assessment
- South Hedland Wastewater Treatment Plant (WWTP) Upgrades

The document was prepared as part of the Pilbara Cities initiative and documents a number of transformational projects as part of this initiative.

Key findings and recommendations

- Development initiatives documented within *The New Pilbara* document are noted in relation to the Town.

10.4 Port Development Strategy 2030

The Port Development Strategy 2030 has been prepared by the PPA to establish strategies for land use, infrastructure development and logistics across the ports it operates within the Pilbara. PPA's vision is:

‘To be the global leader in port planning, operations and marine services’

which is underpinned by three broad objectives:

- To facilitate trade through the Pilbara for the benefit of the State.
- To manage the ports' growth and operations, while respecting the Pilbara's environment and heritage.
- To optimise performance through industry leading practices and innovation.

The Strategy identified a number of development objectives and strategies to optimise performance of the Pilbara Ports.

The Strategy establishes the following development outcome for the Port of Port Hedland:

‘The Port of Port Hedland will sustain growth as the world's largest bulk commodities export port, with a focus on facilitating trade for the resource sector’.

The competitive advantages that the Port of Port Hedland is able to leverage are:

- Proximity to significant iron ore resources and Pilbara pastoral land holdings.
- Access to a freight network including the Great Northern Highway.
- Port Hedland's deep-water inner harbour.
- Extensive land resources including reclaimed land and planned future expansions to port land.
- A comprehensive dredging programme in conjunction with advanced marine technology including Dynamix Under Keel Clearance (DUKC) to maximise vessel drafts.
- Access to a local workforce, accommodation and service industries that support major projects and general operations.

Key findings and recommendations

- The document notes the following factors which may contribute to the potential increased capacity of the Port:
 - o Development of additional land to support port activities (such as the future vesting of land at Boodarie for the development of stockyards, and the development of reclaimed land at South West Creek).
 - o The development of industrial land (such as the Boodarie Strategic Industrial Area) and associated infrastructure.
 - o Further dredging work within the port to support the development of new infrastructure.
- The new local planning scheme will need to appropriately zone land consistent with Pilbara Ports Authority boundaries and reserve infrastructure corridors to support and protect Port developments.
- It is noted that the northern part of Wedgefield is currently located within Pilbara Ports Authority boundaries. Following the realignment of Great Northern Highway, the Town to consider rezoning this area to Industry.



10.5 Pilbara Conservation Strategy (2016)

The Pilbara Conservation Strategy (PCS) was prepared by the State government to provide strategic direction for conservation actions across the Pilbara region and takes a landscape-scale approach to biodiversity conservation. The PCS establishes a vision for conservation within the Pilbara, as follows:

“The diverse natural environments and exceptional biodiversity of the Pilbara are enhanced and conserved, through enduring partnerships, for their intrinsic value and for the social, cultural, spiritual and economic wellbeing of the community.”

The key conservation outcomes sought by the PCS include:

1. Landscape-scale conservation through improved management of key threats;
2. Improved condition of threatened and other important species and communities;
3. Evidence-based conservation management;
4. Conservation through partnerships.

The document identifies a range of on the ground implementation priorities for conservation in the Pilbara, including prescribed burning to control bushfires and programs to control feral animals and weed invasion.

Key findings and recommendations

- Opportunities for broad scale landscape conservation should be explored on Pastoral and Aboriginal reserves.

10.6 Pilbara Tourism Product Development Plan (2014)

The Tourism Product Development Plan (TPDP) establishes an implementation plan to further develop the tourism offer in the Pilbara. In developing this implementation plan, the document acknowledges that there are several challenges to increasing the tourism offer for the region, being:

- Physical location and size of the region, which translates to significant travel time and cost to visit;
- Dominance of the mining and resource sector which creates the perception that the Pilbara has ‘nothing to offer’ and masks its existing tourism product;
- Relatively high cost basis, influenced by the mining and resource sector; and
- Lack of tourism operators which diminishes access to many of the Pilbara’s potential tourism products.

Notwithstanding these challenges, the TPDP establishes the following vision for tourism in the Pilbara:

- By 2050, the Pilbara is a recognised tourism destination, attracting a range of visitors with its natural and man-made attractions and delivering a variety of significant economic, social and community benefits to the residents of the Pilbara.

The document acknowledges the wide variety of tourist attractions on offer currently provided within the Pilbara and identifies a range of short-term and long-term product development priorities to augment the existing offer. These are set out below.

Short-term tourism product development priorities

- **Regional Tourism Trails:** Creation of themed tourism trails to highlight the variety and depth of individual tourism experiences and products on offer throughout the region.
- **Regional/Destination Marketing:** Marketing of the themed tourism trails will be conducted through signage, gateway statements and online and digital marketing.
- **Diverse Range of Accommodation:** Seek to diversify the existing accommodation offer with the addition of caravan parks, backpacker accommodation, eco-accommodation and camping.

This accommodation is planned to be provided in coastal destinations, pastoral stations and national parks to enhance the accommodation offer.

Long-term tourism product development priorities

- **Better and more extensive road infrastructure:** identify extensive road improvements and extensions that would support tourism into the future. Replacing many unsealed roads with bitumen would provide greater connectivity within the region.
- **Marinas:** The development of numerous marinas along the coast, including the Spoilbank Marina, would provide important infrastructure for growing water-based coastal tourism.
- **Airport expansions:** Various airport expansions, including to PHIA, would support greater levels of access to the region, particularly from overseas.
- **Hotels:** The development of a diverse range of hotels at varying price points (including provision for family accommodation, backpackers, etc) would provide greater levels of choice to attract a more diverse range of visitors.
- **Wildlife park:** A wildlife park to focus on Indigenous and non-Indigenous animal species, ideally set amongst a national park or along the coast.

Key findings and recommendations

- Ensure that the revised local planning strategy identifies strategies and actions relating to the following:
 - o regional tourism trails; and
 - o strategies to diversify tourism accommodation.
- The construction of the Spoilbank Marina will provide for additional recreational boating activities and will contribute to the overall local tourism offer.
- The new local planning scheme should identify a range of appropriate use classifications for tourism accommodation and provide the discretion for such uses to be approved in appropriate locations.

10.7 Draft Port Hedland Regional Land Supply Assessment (2019)

The *Port Hedland Regional Land Supply Assessment Draft* (WAPC; unpublished) provides guidance on the volume of land required to support future population and employment activities within Port Hedland in the short, medium and long term. Whilst the individual datapoints recorded for the region, in terms of current and future population and economic activity, differ somewhat between the *Port Hedland Regional Land Supply Assessment Draft* and those published in Sections 6.1 and 6.2 of this document, the context of the existing profile and the implications outlined for future land demand remain consistent.

Overall, the study found sufficient land availability to accommodate future population growth with remaining lots available in existing residential land and rural living estates. Residential land zones (excluding rural living estates) are estimated to be sufficient to accommodate a population of approximately 26,000 and would be anticipated to support the Port Hedland population for at least the next 48 years (under medium and high population growth scenarios). In addition to residential land, rural living estates are present in the region. Existing estates have experienced low take-up rates in recent years, reflecting low demand for rural living zones within Port Hedland. It is anticipated that the Bosna Estate will be sufficient to meet short-term demand for rural living lands, whilst the sub-division plans for Quartz Estate are sufficient to meet long-term demand.

Industrial land zoning in Port Hedland is provided for via the following zoning categories; industrial development, general industry, light industry, strategic industry and transport development. Industrial zoned land in Port Hedland totals 5,950 ha with just 190 ha considered developed. A considerable portion of zoned land (93%) is considered 'unrated' and almost all of this land is Crown Land (zoned strategic industry) and subject to Native Title. Existing estates of Wedgefield and West End are considered fully developed. Via the delivery of the Boodarie SIA, approximately 4,600 ha is anticipated to accommodate large-scale noxious and other heavy industry uses as well as enabling accommodation of heavy and general industry

uses from Wedgefield and West End, which will accommodate increased industrial activity within Port Hedland. The study does not explicitly indicate whether anticipated industrial activities would require additional industrial lands.

Commercial land zoning in Port Hedland is provided for within the airport, commercial, mixed business, tourism and town centre zones. These zones account for 120 ha of land in the municipality, 58% of which is developed. Approximately 11% of this land is considered undeveloped, and the remainder is considered unrated. Recent population declines have resulted in reduced demand for commercial land within the municipality. The study found that the existing supply of commercial zoned land would be adequate to meet demand in the short to medium term.

Key findings and recommendations

- The findings of the *Port Hedland Regional Land Supply Assessment Draft* indicate sufficient land for anticipated population growth and associated retail and commercial activity. However, estimated demand for industrial land is not quantified. Identifying and quantifying the degree of economic diversification which takes place in the region over the coming decades will be essential to understanding the adequacy of industrial lands available within the municipality. Whilst the study discusses potential avenues for economic diversification, such as increased activities from knowledge-based industries, these are not quantified against existing land supply (though the anticipation of appropriate sites for campuses is suggested). However, given the quantum of supply coming online in the near future, it is likely that the volume of industrial land will be adequate for industry in the short to medium term.
- With land supply adequate for population and likely employment activities in the region, the focus for land planning in Port Hedland can be the optimal location and mix of land uses within the area.

10.8 Port Hedland International Airport Master Plan 2018-2038

The Port Hedland International Airport Master Plan 2018-2038 (PHIA Master Plan) establishes a coordinated approach to the staged delivery of key airport infrastructure to accommodate the forecast growth in airline traffic. The PHIA Master Plan includes the following aspirations:

- Build upon the “Gateway to the Pilbara” experience;
- Provide for the upgrade and expansion of the passenger terminal to present a modern, efficient passenger experience;
- Develop a land use framework that can accommodate the aspirations of the Town, regional planning and the future growth and prosperity of the Pilbara;
- Become the dominant intermodal transportation and logistics hub in the Pilbara;
- Encourage non-aviation and commercial development; and
- Foster opportunities for local employment and education.

The Master Plan divides the PHIA site into six separate precincts, as follows:

- Airside Precinct (309.4 ha)
- Northern Precinct (107.6 ha);
- Terminal and General Aviation Precinct (24.5 ha);
- Freight Precinct (8.4 ha);
- Highway Precinct (89.3 ha); and
- Airport Industrial Park Precinct (278.3 ha).

Of particular interest from a land use planning perspective, the PHIA Master Plan notes the following non-airport specific related land uses contemplated for specific precincts:

Table 5 – Contemplated Uses for PHIA Master Plan Precincts

Precinct	Contemplated Land Uses
Northern Precinct	<ul style="list-style-type: none"> • Bulk freight; • Service stations; and • Laydown yards.
Terminal and General Aviation Precinct	<ul style="list-style-type: none"> • Vehicle servicing; • Car wash; • Service station; • Hotels and short-term accommodation; and • Residential use for airport operational staff.
Freight Precinct	<ul style="list-style-type: none"> • Freight storage shed; • Laydown yards; • Vehicle servicing; • Freight forwarding facilities; • Ground transport access for freight vehicles; • Warehousing; • Distribution facilities; • Parking for freight vehicles; and • Ancillary freight uses.
Highway Precinct	<ul style="list-style-type: none"> • Offices for businesses that use the airport; • General warehousing; • Industry-general; • Industry-light • Retail fuel sales; • Road freight facilities and road transport lay down yards; • Car dealerships; • Short term accommodation (i.e. Transient Workforce Accommodation); and • Solar power storage collection.

The Master Plan acknowledges that the PHIA is subject to a 50-year lease with the Town and the Town will continue to retain its statutory role in assessing development applications pursuant to its local planning scheme.

Key findings and recommendations

- Consideration will need to be given to zoning and land use permissibility within the PHIA site as part of Local Planning Scheme No. 7.
- The Master Plan is silent on pedestrian and cycling infrastructure requirements in the precinct. This was identified as one of the key requirements.
- In some of the earlier documents a shortage of parking on airport premises was mentioned (dating from 2010 with roughly 280,000 passengers per year). This Master Plan states the parking area is underutilised and there is sufficient capacity to increase the number of passengers to 487,000 by 2034.
- In the Master Plan a clear intent was shown to develop three separate business / industrial precincts on the airport land. Notwithstanding that this was flagged as a long-term plan, the Master Plan is silent on the potential impact on the transport network.
- The Master Plan document also indicates the intention to intensify freight air transport. The impact on the existing road network was not analysed.
- The costs of infrastructure upgrades are noted as a key risk in Section 3.8 as these are usually calculated separately to the cost of building airport infrastructure.
- While the Town of Port Hedland (and presumably Horizon Power) upgraded electrical assets in 2016, the report states it is not clear if the upgrades would be sufficient for future expansion of the Port Hedland International Airport and that this should be reviewed by a qualified electrical consultant.
- The report confirms that there is no direct connection between the Port Hedland International Airport and the Water Corporation wastewater system. Section 3.8.2 states that “only a basic treatment system” presently exists. For greater expansion of passengers and freight logistics a full review of the wastewater system should be undertaken with consideration to connect the Port Hedland International Airport to the Water Corporation system.

- Section 3.8.3 also confirms that existing water storage tanks and pumping systems are nearing the end of their design lives and consideration should be given to a full upgrade of the internal and external water systems as part of the redevelopment of the Port Hedland International Airport.
- Section 3.8.4 documents the existing overland flow characteristics of the stormwater drainage and states that presently overland flow is “directed towards the existing building” and that “from there, it flows over land to the east to be collected and eventually into open swales that traverse adjacent properties passing under the North West Coastal Highway to discharge to the Indian Ocean.”
- There is no confirmation of whether it is acceptable that the flow path from the apron toward the buildings is or isn’t acceptable for future expansion of the premises, and no confirmation on the adequacy of the present system to accommodate existing flows between the PHIA and the Indian Ocean.
- Further, there is no confirmation that any expansion of hardstand areas can be accommodated within the existing stormwater drainage network and whether there are any issues with the expansion of the drainage assets as they are stated to traverse private properties between the PHIA and the Indian Ocean.
- A major existing low point for drainage purposes is also located 1.5 kilometres northwest of the subject site (unnamed) with Stingray Creek located 1.6km north of the subject site. These are interconnected by a series of stormwater drains.



11. Local Planning Context

11.1 Integrated Planning and Reporting Framework

11.1.1 Strategic Community Plan 2018 – 2028

The Town's Strategic Community Plan 2018 – 2028 (SCP) represents the highest level of strategic corporate planning for the Town. The SCP was prepared following a comprehensive community and stakeholder engagement process and articulates the aspirations of the community over a 10-year timeframe.

The SCP establishes a range of desired outcomes, progress measures and strategic responses to deliver across a number of themed areas. The themes and desired outcomes are referenced in the table below.

Table 6: Town Strategic Community Plan themes and desired outcomes

Theme	Desired Outcomes
Our Community We honour our people and our cultural heritage – ensuring wellbeing, diversity, creativity and a strong civic dialogue.	<ul style="list-style-type: none"> • A hardy, healthy and safe people • An inclusive and involved community • A unique, vibrant and diverse community lifestyle • Well-utilised and valued community facilities and services
Our Economy We build prosperity for all – enabling sustained economic growth	<ul style="list-style-type: none"> • Enhanced participation in the workforce • An enabling, attractive business environment • A thriving, resilient, sustainable and diverse economy • The development and expansion of key industries
Our Built and Natural Environment We treasure and protect our natural environment and provide sustainable and resilient infrastructure and built form	<ul style="list-style-type: none"> • A healthy natural environment • A safe and fit-for-purpose built environment • An accessible and sustainable urban environment
Our Leadership We are united in our actions to connect, listen, support and advocate thereby leveraging the potential of our people, places and resources	<ul style="list-style-type: none"> • A global, national, state and local presence and voice • Transparent and accountable governance and financial sustainability • Effective delivery of services and infrastructure to meet community needs

The SCP informs the Town's Integrated Planning and Reporting Framework, including Corporate Business Plan, annual plans and asset management plan.

The preparation of the SCP was informed by one of the most extensive engagement programs rolled out in Hedland and the information captured serves as a useful basis to build upon in preparing a new LPS for the Town. A summary of relevant issues captured during the SCP engagement program is outlined in the following table.

Table 7: Key Issues arising from SCP engagement

Area	Issue
Community	<ul style="list-style-type: none"> Hedland diverse population is viewed as a strength and the Australian Institute of Aboriginal and Torres Straight Islanders (ATSI) and culturally and linguistically diverse communities (CALD) need to be included in decision making. The Hedland community enjoy the sporting and recreational culture, but noted that there needs to be greater investment in attracting ATSI and CALD to these activities. Aboriginal leadership was seen as a strength within the community and there needs to be greater investment into developing young Aboriginal leaders. There is general agreement that youth need greater investment in the quality of education available, life skills training, pathways to work, access to safe places to recreate, services, programming and facilities. There is concern about rising socio-economic disparity and the need for actions to address inequality in the community and cost of living. Health services are seen as a fundamental priority and the challenges of addressing the needs of aging and the chronically ill were highlighted as areas requiring particular focus. The community is less concerned with building more facilities and desires a greater focus on 'working with what we've got'. Focus should be on provision of more services and programs to foster a more connected and lively culture in order to bridge the gap between townships and communities. While the desire for a marina is not broadly supported, there is a desire for greater investment in boating facilities. The community appreciate that the arts and culture are supported through the presence of local community groups.
Economy	<ul style="list-style-type: none"> The community value the economic benefits of living and working in Port Hedland but expressed the challenges of high living costs and living in a town that is subject to a boom-bust cycle. Stakeholders believe the economy of Port Hedland needs to diversify by building small to medium enterprises and noted the difficulties of sustaining businesses in a town with high costs of doing business and high levels of transience. The need to develop strategies to support small and medium sized businesses through local procurement incentives, avenues for partnerships, affordable commercial tenancies and strategies to attract a residential workforce. Cost of living is broadly seen as an area requiring greater attention, particularly to help address core costs such as housing, transport (flights), food and services. Industry generally wants to see greater investment in key infrastructure, education, health and community facilities and services so they can attract and retain the best staff. The need for investment in the port is seen as an area of great potential for Hedland which would contribute to the town's long-term sustainability and its role in contributing to the nation's economy. The need for a small business hub in South Hedland and greater investment into the area's tourism industry to capitalise on the area's unique cultural and natural features.

Area	Issue
Natural and Built Environment	<ul style="list-style-type: none"> • The natural environment is treasured by many and seen as an important asset to be nurtured and protected. • Custodians of the area said that one of the strengths of Hedland is that elders can still take you out into country and teach about culture. They advocated for programs to build understanding of their cultural heritage. • Residents view parks as an integral part of the urban setting to provide shade from the Pilbara sun, to beautify areas and to create community spaces. • The community want sustainable practices like recycling and green community initiatives which preserve and enrich the natural environment to be prioritised. • Greater investment in amenity and upgrades to the foreshore, Spoilbank, South Hedland Square, and more lights in South Hedland to improve safety. • Concerns about dust and industry's effect on the environment prevail, despite industry efforts to manage this issue. • Industry stakeholders voiced an interest in partnering with the Town to share information on environmental management. • Many community members believe there needs to be a greater focus on enhancing the local character and spirit of built form, green star ratings and more options for mixed and affordable housing.

Key findings and recommendations

- The above key findings arising out of the engagement for the SCP have been used as a basis for engaging with the community and stakeholders through the preparation of the revised local planning strategy and new local planning scheme.
- Where practical, the local planning strategy should be informed by, and aligned with, the SCP to ensure the local planning strategy plays a further role in delivering the desired outcomes established within the SCP.



11.1.2 Corporate Business Plan 2018 – 2028

The Corporate Business Plan 2018–2028 aligns the Town's service delivery to the SCP to deliver desired outcomes to the community. The Corporate Business Plan will be reviewed annually to ensure that it remains current and responds to challenges and opportunities. The Corporate Business Plan identifies a suite of actions to deliver a strategic response to the Town's SCP.

Key findings and recommendations

Key actions relevant to this study include:

- Engage with key stakeholders to promote a residential first approach for workforce accommodation (1.b.2.1).
- Provide meaningful opportunities for Aboriginal and Torres Strait Islander people to engage with the Town (1.b.3.1).
- Support the provision of cultural, sporting and recreational facilities which are fit for purpose (1.d.3.1).
- Develop, implement and review partnerships with key stakeholders to promote economic growth and diversification (2.b.2.1).
- Regularly review policies and local laws to minimise red tape within statutory frameworks (2.b.3.1).
- Work with key stakeholders to develop, implement and review strategies to stimulate and diversify the local economy and address business challenges (2.c.1.1).
- Develop, implement, monitor and promote strategies to protect and enhance Port Hedland's natural environment (3.a.1.1).
- Develop, implement and review a POS Strategy (3.b.1.1).
- Identify and manage coastal hazards and flood risks (3.b.1.2).
- Advocate and support State government initiatives to resolve land use conflicts (3.b.1.3).
- Appropriate community engagement is undertaken for strategic planning and land use decisions (3.b.5.2).
- Develop, implement and review public open space in line with the Parks and Paths Strategy (3.c.3.1).

11.1.3 Strategic Resource Plan 2019/20-2033/34 (draft)

The Strategic Resource Plan (2019–2033) (SRP) is part of the Town's integrated approach to planning and identifies key projects over the next ten years.

The document highlights expenditure requirements for a range of key infrastructure, including but not limited to, roads, footpaths, drainage, car parks, landfill and depot.

Key findings and recommendations

- Relevant base data is not collected regularly.
- Road network conditions and traffic volumes should be recorded regularly.
- Stormwater drainage asset maintenance (cleaning of culverts and trash racks / grates) in particular, is a key requirement in the Town of Port Hedland as the accumulation of sediment and debris has an impact on the capacity of culverts.

11.2 Strategic Planning Framework

Strategic land use planning of the Town of Port Hedland has, in recent times, been guided by three principal documents, being:

- Port Hedland Area Planning Study prepared in 2004;
- Port Hedland Land Use Master Plan prepared in 2007; and
- Pilbara Port City Growth Plan prepared in 2012.

These documents are reviewed in the following section.

11.2.1 Port Hedland Area Planning Study

Published in 2004, the Port Hedland Area Planning Study provided a comprehensive strategy framework to guide State decision-making and detailed planning at the local level for the Town, with a planning horizon of 20–25 years. The study made several recommendations regarding the future of Port Hedland, many which have been implemented. The Study was subsequently replaced by the Pilbara Planning and Infrastructure Framework as the primary regional strategy.

11.2.2 Port Hedland Land Use Master Plan

The Port Hedland Land Use Master Plan (LUMP) was published in 2007 and adopted as the Town of Port Hedland's LPS to guide the town's growth and development over a 20 to 25-year period. It focuses on the use of land and its development character, defining the community's long-range vision of how the physical form of the town should develop.

The development of the LUMP was guided by a Steering Committee which consisted of a wide range of stakeholders and government representatives and was also informed through a comprehensive community engagement process.

Key findings and recommendations

Key recommendations of the LUMP that remain relevant to the review of the Town's local planning strategy include:

- Environmental and heritage investigations to identify appropriate land at the southern end of the Boodarie Industrial Estate for general industry and noxious uses.
- Preparation of a structure plan for release of general industrial land in the area east of Wedgefield, around the Shell Roadhouse.
- Review of land use permissibility and definitions in Wedgefield.
- Mapping and prioritisation of natural areas in the Town, including turtle nesting areas.
- Clearance of Native Title on proposed residential expansion areas, particularly in South Hedland.
- Improvements to Great Northern Highway and access to the western side of the Port.
- Managing the effects of dust in the West End precinct.

11.2.3 Pilbara's Port City Growth Plan and Implementation Plan

The Pilbara's Port City Growth Plan (Growth Plan) and Implementation Plan were endorsed by Council in May 2012 with the Growth Plan being adopted by the WAPC in December 2012. Together, they form the Town's current LPS.

The Growth Plan was prepared during the height of the resources sector construction boom, which has since shifted into the operational phase. Evidently, the population and economic growth projections used in the Growth Plan are aspirational in nature and are no longer appropriate to underpin the future strategic growth and direction of the Town. The Pilbara's Port City Implementation Plan was not endorsed by the WAPC.

Key findings and recommendations

- The local planning strategy will align with the Town's current Strategic Community Plan.
- The Port City Growth Plan was prepared at the height of the mining boom and was based on an aspirational population growth of 50,000 people by 2035. Current population growth projections forecast Hedland's population to grow to between approximately 18,500 (conservative, RFF) and 27,000 (aspirational, Forecast.id) people by 2040.
- The extent of population growth within Port Hedland will be influenced by a range of factors including some policy decisions at the Federal and State level (i.e. position on FIFO and migration). This will impact upon the desirable pattern of land release, built form and infrastructure considerations.
- A staged approach to residential growth should be developed based on current population projections and should take into account the following considerations:
 - o Much of the vacant residential land identified within the Port Hedland townsite in the Growth Plan is either constrained (coastal inundation) or now set aside for other uses (i.e. McGregor Street recreation precinct).
 - o The Stables precinct and former Wastewater Treatment Plant site appear suitable as Urban Development areas.

- o There is a substantial bank of vacant residential zoned land in South Hedland and it will be important to ensure that this land is subdivided and released in a logical and efficient manner over time. Logic would suggest focussing on existing vacant infill development sites in the first instance to make efficient use of existing infrastructure, before moving to release new urban land.
- Consideration needs to be given to future provision and location of retail and commercial land to service the Port Hedland townsite.
- A review of infrastructure capacity requirements to support growth and development is required due to revised population and growth projections.
- Investigate identification of new Special Control Areas associated with coastal hazards and Public Drinking Water Source Protection Areas.
- Many actions within the Implementation Plan, forming part of the Growth Plan, are either outdated or do not relate to planning matters.

11.3 Statutory Planning Framework

11.3.1 Town of Port Hedland Local Planning Scheme No. 5

The Town's Local Planning Scheme No. 5 (LPS5) was originally gazetted on the 31 August 2001. Local Planning Schemes should be reviewed every five years and therefore the review of LPS5 is well overdue.

A review of the LPS5 should be undertaken having regard to the future requirements of the Scheme area and also taking into account relevant State and local planning policies. Specifically, the preparation of Local Planning Scheme No. 7 should have regard to the Model provisions (Schedule 1) of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

Key areas of LPS5 that require review include:

- The identification of new aims to address current land use planning issues;
- The standardisation of local reserves and zoning to accord with the model provisions of the Regulations;
- A review of the land use classifications to generally accord with the model provisions

of the Regulations and rationalisation of use classes (i.e. tourism use classes);

- A review of land use permissibility within the zoning table to ensure current best practice is applied to land use allocation and to address specific compatibility issues i.e. within Wedgefield;
- Review and establish new development requirements for specific zones;
- Carry over existing Special Control Areas and introduce new Special Control Areas to address coastal hazards, and public drinking water source areas; and
- Introduce new supplemental provisions which address specific local issues over and above those already addressed by the deemed provisions of the Regulations.

Key findings and recommendations

- Review LPS5 in light of the model and deemed provisions of the Regulations and to address current issues, within new LPS7.

11.3.2 Local Planning Policies

The following section provides a short review of existing Local Planning Policies of the Town, noting that these policies should be regularly reviewed and updated where required to ensure they remain current and apply best practice.

LPP/01 Exemptions from Development Approval

This policy outlines specific development that is exempt from requiring development approval. The exemptions are intended to apply by way of Clause 61 (1) (l) and Clause 61 (2) (e) of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015* which provides the power for a local planning policy to exempt certain uses and works from requiring development approval.

LPP/01 lists certain circumstances in which a 'Family Day Care' does not require development approval.

Key findings and recommendations

- Consideration should be given to whether specific additional uses and works, proposed to be exempted from requiring development approval, should be identified in the Supplemental Provisions of LPS7 or a separate local planning policy of the Town.

LPP/02 Advertising Signs

This policy seeks to establish expectations and requirements for exempt and non-exempted advertisements within the Town. The policy seeks to guide good quality signage outcomes.

Key findings and recommendations

- Policy to be carried forward under LPS7.

LPP/03 Shipping/sea containers and transportable buildings

The policy provides guidance on the requirements for development of transportable buildings, defining acceptable design standards for transportable buildings such as dongas and shipping/sea containers. The policy aims to ensure maintenance of the amenity, character and streetscape of an area, and to achieve quality, built form and design outcomes relative to location.

Key findings and recommendations

- Policy to be carried forward under LPS7.

LPP/04 Percent for Public Art

The Percent for Public Art Policy provides the framework for the development, funding and management of public art in, or visible from, public spaces. It aims to engage artists in creatively celebrating the values of Port Hedland, its unique character, Indigenous history and future aspirations, influencing built form and the way people interact with the public realm.

The Policy requires eligible development applications over the value of \$2,000,000 to set aside 1% of the total project cost of the development for public art, up to a maximum contribution of \$150,000. For developments delivered by the Town, it requires a minimum of 2% of the project cost to be set aside for public art, with the public art contribution capped at \$500,000.

Key findings and recommendations

- Policy to be carried forward under LPS7.

LPP/08 Port Hedland International Airport

The policy aims to ensure planning instruments and development applications recognise and maintain the safe and efficient operation of the PHIA. Specifically through, examining construction and operational aspects of development regarding potential impacts on the PHIA; ensuring developments observe height limits to maintain clearance for protection of controlled airspace and public safety; avoiding unreasonable encroachment of noise sensitive development to the PHIA and flight paths; and establishing a procedure for referrals of proposals for PHIA consideration.

The policy incorporates PHIA Obstacle Restriction and Limitations Surfaces Map and Noise Contour Map and relates to the following clauses within LPS5:

- Clause 5.10.1 which seeks to prevent development encroaching within the height restriction areas indicated on the Obstacle Restriction and Limitations Surfaces Map; and
- 5.10.2 which seeks to prevent certain prescribed forms of development inside the 25 Australian Noise Exposure Forecast map with scope for local government to vary the clause if it is satisfied that aircraft noise will not unduly impact on the proposed use or the development is constructed to attenuate the impact of aircraft noise.

Key findings and recommendations

- LPS7 will need to address Obstacle Restriction and Limitation Surfaces and ANEF Noise Contours. Therefore, it is recommended that this policy be carried forward under LPS7 with a corresponding clause in the Scheme addressing these requirements.

Draft Local Planning Policies

The following local planning policies are in draft format at the time of writing this report and will support LPS7:

- LPP/07 Coastal Planning
- LPP/11 Stormwater Management
- LPP/13 South Hedland Centre Design Guidelines
- LPP/14 Design Review Panel

LPP/05 Workforce Accommodation

The Policy provides guidance regarding the location, design and integration of workforce accommodation to encourage social integration of workforce accommodation and sustainable patterns of growth.

The policy acknowledges that workforce accommodation is an invaluable housing resource for industry and advocates for well-planned accommodation that effectively addresses both individual and cumulative impacts of developments to deliver benefits to the community, industry and industry workforces.

The policy acknowledges that there are different forms of workforce accommodation that have different locational requirements and encourages workforce accommodation to be integrated with existing urban environments and developed to a high standard where workforce accommodation is not associated with a remotely located project.

The policy also recognises that where workforce accommodation is to have a shorter lifespan that the accommodation does not warrant the same design standard as long-term workforce accommodation.

Key findings and recommendations

- Policy to be carried forward under LPS7.

LPP/06 Social Impact Assessment

The Policy provides guidance when a Social Impact Assessment (SIA) is required to support a planning proposal and matters which should be addressed in an SIA. The policy seeks to assist applicants, the community and industry to identify and address potential social impacts of specific developments to inform decision making.

The policy defines a process for preparing SIA's, which consists of the following phases:

1. Initial scoping of potential social impacts and other matters;
2. Baseline analysis;
3. Community and stakeholder engagement;
4. Impact assessment;
5. Social Impact Management Plan; and
6. Monitoring and review.

An SIA should identify management measures that are outcomes-focused, reasonable, relevant, transparent and monitorable and which would be delivered through a Social Impact Management Plan that aim to enhance project benefits and mitigate negative impacts.

An SIA would typically be required in the following circumstances:

- Workforce accommodation;
- Development or land use that the Town considers would result in significant social impact;
- An amendment to a proposal which previously required an SIA;
- Where the EPA has determined that a proposal is to be assessed under Part IV of the *Environmental Protection Act 1986*.

The Town may also recommend an SIA be submitted for proposals that do not require development approval under the provisions of the Scheme, such as proposals under the *Mining Act 1978* and/or proposals covered by a State Agreement.

Key findings and recommendations

- Policy to be carried forward under LPS7.

LPP10 Highway Precinct Design Guidelines

The policy establishes design requirements specific to development within the Highway Precinct of the Port Hedland International Airport. Specifically, the policy establishes guidelines relating the following:

- Primary building requirements including setbacks, minimum levels, and height;
- Site design requirements including parking and access, loading and storage, fencing and landscaping;
- Built form design requirements including orientation and layout, materials, finishes, signage, plant and equipment; and
- Management requirements including stormwater, waste, verge amenity and bushfire risk.

Key findings and recommendations

- Policy to be carried forward under LPS7.

11.3.3 Structure Plans / Development Plans

The following table provides a summary of the status of the structure plans that have been prepared within the Town of Port Hedland.

Table 8: Summary of status of Structure Plans

Structure Plan Name	Adoption Status	Expiry	Planned Yield	Implementation Status	Precinct	Comment/Implications
Hamilton Road Development Plan	WAPC 2012	2025*	440 dwellings	Not commenced	South Hedland	Retain
Koombana Area Development Plan	WAPC 2012	2025*	216 dwellings	Not commenced	South Hedland	Retain
Area A – Lot 503 Forrest Circle Development Plan	Town 2011	2025*	365 dwellings	Completed for transient worker accommodation. Long-term full residential not commenced.	South Hedland	Retain
Stanley and Parker Street Development Plan	WAPC 2012	2025*	249 dwellings	In progress (>50%)	South Hedland	Normalise full
McGregor Street Development Plan (Lot 2)	WAPC 2012	2025*	313 dwellings	Not commenced	East End Urban Village	Retain
Clark Street Development Plan (Lot 4)	WAPC 2012	2025*	89 dwellings	In progress (>50%)	East End Urban Village	Normalise full
Pretty Pool Development Plan	WAPC 2008	2025*	174 dwellings	Complete (minus southern tip)	East End Urban Village	Normalise full
Wedgefield Industrial Estate Development Plan	WAPC 2011	2025*	Unknown	In progress (<50%)	Port and Industry	Retain
South Hedland Town Centre Development Plan	WAPC 2014	2025*	Not readily available	In progress (>50%)	South Hedland	Normalise portion
Boodarie Strategic Industrial Area Structure Plan	WAPC 2017	2027	3,743 ha industrial	Higher order strategic plan	Port and Industry	Retain
Western Edge Structure Plan	WAPC 2017	2027	1,600 dwellings 1,000sqm commercial NLA 1 primary school	Not commenced	South Hedland	Retain
Osprey Rural Structure Plan	WAPC 2019	2029	1,177 Dwellings	Not commenced	South Hedland	Retain

**Note: These Structure Plans were all approved prior to the Planning and Development (Local Planning Schemes) Regulations 2015 coming into effect. In accordance with Clause 28 of Schedule 2 of the Regulations, given that the Subdivision Guide Plan was approved prior to the introduction of the Regulations, the Subdivision Guide Plan is taken to have been approved on the date that the Town Planning Regulations 1967 were repealed and replaced by the current Regulations.*

In addition to the above, the following development areas within the East End Urban Village precinct require completion of structure planning prior to subdivision and development occurring:

- The Stables Precinct;
- Pretty Pool Stage 3; and
- Athol Street.

Key findings and recommendations

- It is evident that a number of areas with endorsed Structure Plans have not progressed through to subdivision and development due to a slowing down of the real estate market generally.
- Structure Plans to be prepared for the following precincts and are to be informed by the Town of Port Hedland Coastal Hazard Risk Management Adaptation Plan:
 - o The Stables Precinct;
 - o Wastewater Treatment Plant site;
 - o Pretty Pool Stage 3 (subject to rezoning); and
 - o Athol Street.

11.3.4 Local Development Plans

The following table provides a summary of the status of the Local Development Plans (LDP) that have been prepared within the Town.

Table 9: Summary of Local Development Plans

LDP Name	Adoption Status	Expiry	Implementation Status	Precinct	Comment/Implications
Stanley Street South Hedland	Town 2012	2025	In progress (>50%)	South Hedland	Retain
Osprey Drive Subdivision	Town 2013	2025	In progress (<50%). Acts as a quasi-structure plan	South Hedland	Retain
Trumpet Way Subdivision	Town 2013	2025	Not commenced	South Hedland	Retain
Various Lots - South Hedland	Town 2014	2025	Not commenced	South Hedland	Retain
Hamilton Road	Town 2015	2025	Not commenced	South Hedland	Retain

Key findings and recommendations

- The Local Development Plans will continue to be operational until 2025 and therefore will not require review as part of the local planning scheme review.



11.3.5 Design Guidelines

Pilbara Vernacular Handbook

The Pilbara Vernacular Handbook was prepared for LandCorp (now DevelopmentWA) to explore what high quality, contemporary design means for development in the Pilbara. The document establishes a range of 'Design Values' and 'Design Principles' that are relevant to informing a design response in the Pilbara. The document then identifies potential design responses to these values and principles.

Key findings and recommendations

- The document is a sound basis to refer to in preparing any future comprehensive planning (structure/precinct planning), subdivision, design guidelines or requirements relating to building design.

Kingsford Smith Business Park Design Guidelines

The Kingsford Smith Business Park Design Guidelines were prepared following the finalisation of the Port City Growth Plan to provide design guidance for development within the Kingsford Smith Business Park located within the airport precinct. The guidelines have been prepared under Clause 5.1 of LPS5 and are intended to be implemented as a local planning policy. The Kingsford Business Park is divided into two parts, the first part intended to provide for bulky goods, light industry and warehouse uses and the second part intended to be set aside for transient workforce accommodation.

Key findings and recommendations

- The local planning strategy review to consider ultimate intended land use outcomes for this precinct which will inform any requirement to review these design guidelines.

South Hedland Town Centre Design Guidelines

The South Hedland Town Centre Design Guidelines were prepared following the State Government's Royalties for Regions commitment to providing funding assistance for the expansion and revitalisation of the South Hedland Town Centre. The design guidelines support implementation of the South Hedland Town Centre Development Plan and Port City Growth Plan through advocating for good design outcomes in the South Hedland Town Centre.

Key findings and recommendations

- Consider carrying these design guidelines forward under the new local planning framework.
- Town Centre Design Guidelines to be reviewed as part of the South Hedland Place Plan.

Hedland Junction Wedgefield Industrial Estate Design Guidelines

These design guidelines apply to DevelopmentWA's Transport Development Area forming a 72 ha portion of the 280 ha Wedgefield Industrial Estate. The design guidelines seek to facilitate a flexible, well-designed industrial estate that has an attractive appearance to Great Northern Highway and Pinga Street. The design guidelines require DevelopmentWA to grant pre-approval to developments prior to a formal application being lodged with the Town of Port Hedland.

Key findings and recommendations

- These design guidelines are estate design guidelines administered by DevelopmentWA to achieve a high-quality aesthetic outcome for the Transport Development Area.

Wedgefield LIA2 Development Design Guidelines

These design guidelines have been structured to indicate a number of Mandatory Requirements for development as specified under LPS5 and a number of additional Mandatory Requirements that are to be imposed by DevelopmentWA as developer of the estate. The document establishes a process whereby preliminary development plans are provided to DevelopmentWA for review prior to formal lodgement of development applications with the Town.

Key findings and recommendations

- These Design Guidelines are estate design guidelines administered by LandCorp to achieve high quality design outcomes for the Wedgefield (LIA2) estate.

Hedland Junction Wedgefield Industrial Estate LIA3

These design guidelines provide guidance on the design, layout and management of development within DevelopmentWA's Wedgefield Light Industrial Area 3 (LIA3) area. The document establishes a process whereby preliminary development plans are provided to DevelopmentWA for review prior to formal lodgement of development applications with the Town.

Key findings and recommendations

- These Design Guidelines are estate design guidelines administered by LandCorp to achieve high quality design outcomes for the Wedgefield (LIA3) estate.

11.3.6 Heritage Inventory Review

The Town's current Heritage Inventory was reviewed in 2017 and was undertaken in two stages. The 2017 review recommends 77 place listings and one formal Heritage Area that comprises seven places. Fifteen new places were recommended to be added following the 2017 review, and these are listed below:

- Freemasons Masonic Lodge
- Port Hedland Police Station
- Town of Port Hedland Civic Centre
- Gratwick Aquatic Centre
- Marapikurrinya Park
- Port Hedland Yacht Club & RSL
- RSL War Memorial
- Goldsworthy Rear Lead
- TS Pilbara Building
- Dampier Salt
- Cape Thouin (first landfall)
- Turner River Water Scheme
- Goldsworthy townsite
- Shay Gap townsite
- Hillside Homestead complex

Key findings and recommendations

- Confirm adoption of relevant heritage places as a Heritage List pursuant to the *Planning and Development (Local Planning Schemes) Regulations 2015*.

11.4 Studies

11.4.1 The Economic Significance of the Port of Port Hedland (June 2020)

In 2017 ACIL Allen was engaged by the Port Hedland Industries Council (PHIC) to estimate the value of trade through the Port and examine the potential economic and social benefits that might arise if further Port expansion was to occur. The report focused centrally on the iron ore industry. The report noted the contribution of the Port as \$1 billion in total economic output in the Town of Port Hedland in 2015-

16 (approximately 21% of economic output of the Town), with Port activity accounting for approximately 5,000 FTE jobs (just under half of total employment in the Town in 2015-16. It further estimated that growth of export capacity to 700MT over 10 years (2016-17 to 2026-27) would deliver a cumulative \$316.2 billion in iron ore export to the local, State and national economies with the national forecast in employment estimated to reach 5,337 FTE over the same period, with the majority located in WA.

In 2019, the PHIC again engaged ACIL Allen to undertake further modelling for 2018-19 given significant developments influencing activity in, and around, the Port such as new resources and higher commodity prices.

Key findings and recommendations

The contribution of the Port:

- The Port accounted for a total \$1.1 billion total economic output for the Town in 2018-19.
- The Port activity supported approximately 3,581 FTE jobs, which equated to 44% of total jobs in the Town in 2018-19.

The opportunity: a 700MT Port

- ACIL Allen estimates that should the Port grow to its potential over the 10-year period between 2018-19 and 2028-29, the Port will deliver an estimated cumulative \$427 billion in **all export commodities** to the local, state and national economies.
- National employment is forecast to increase by 5,307 FTE jobs per annum over the 10-year period, with the majority of jobs expected to be concentrated in WA.

Key findings and recommendations

- The Port will continue to be a key driver for economic growth and employment in not only the Pilbara but for the nation generally. If the Port reaches its full capacity, this will have significant flow-on benefits for the economy.

11.4.2 Port Hedland Townsite Coastal Hazard Risk Management and Adaptation Plan

The Town commissioned the preparation of a CHRMAP for the Port Hedland townsite in accordance with the requirements of SPP2.6.

The hazard assessment identified coastal erosion and flooding as an immediate risk to assets in the following locations:

- Coastal residential properties in the West End (vulnerable to erosion in a possible and rare event)
 - Public infrastructure (playgrounds) within the Cemetery Beach foreshore (vulnerable to erosion in a rare event)
 - Public beaches, roads, and residential properties at the western end of Sutherland Street (vulnerable to erosion in the rare event)
 - Public beaches, roads and residential properties on Barker Court, near Goode Street (vulnerable to erosion in the rare event)
 - The existing Port Hedland town centre within the West End (vulnerable to coastal flooding in all events)
- The CHRMAP recommends the following adaptation measures to respond to these identified coastal hazards:

Table 10: Port Hedland CHRMAP adaptation recommendations

Planning Area	Immediate actions (2018 to 2030)	Current Planning (2018 up to 2060)	Long-Term planning (2060-2120)
West End (erosion)	Interim protection via sand replenishment and dune stabilisation or rock armour seawall		Managed retreat or further interim protection
Kingsmill Street (erosion)	Interim protection via rock groynes and sand replenishment or rock armour seawall		Managed retreat or further interim protection
Spoilbank (erosion)	Has not been assessed – undertake localised hazard and geotechnical investigations to understand localised risk of erosion		
Cemetery Beach (erosion)	Monitor		
Spinifex Hill/Cooke Point (erosion)	Interim protection via sand replenishment	Managed retreat or hard passive protection, depending on the outcomes of further community engagement, informed by detailed coastal processes assessment	
East End (erosion)	Interim protection via sand replenishment	Managed retreat or hard passive protection, depending on the outcomes of further community engagement, informed by detailed coastal processes assessment	
Pretty Pool (erosion)	Monitor and avoid new development in long-term hazard area		
West Townsite (inundation)	Accommodate		Managed retreat and/or further accommodation
East Townsite (inundation)	Monitor	Interim protection and accommodation	

Key findings and recommendations

- Consider incorporating a Coastal Hazard Special Control Area within Local Planning Scheme No. 7 to establish requirements for land identified as being prone to coastal hazards within the planning horizon.
- It is noted that urban development zones in the East End are either in, or situated immediately next to, known floodways. Development of these areas will require significant fill, but the quantum of fill is not known or stated in this report.
- The report makes reference to major infrastructure being located within existing areas of inundation from storm and / or sea surge; however, the commentary on how to protect these assets is limited.
- The West End is shown to have significant issues with inundation, with a large area at risk of having inundation issues in 1 in 100-year events. The report states that a detailed stormwater drainage assessment is required as “protection against inundation is not considered viable” therefore, the key item is for management of the issue rather than resolution. A principal concern appears to be lack of direct drainage connection to the ocean.
- Section 4-10 shows the inundation mapping from the Shared Land Information Platform (SLIP) which confirms that the proposed urban expansion areas in the east end of Port Hedland have almost certain (1 in 100-year) issues with inundation.
- The level of imported fill required to ensure future urban development lots have a 300mm clearance to the 1 in 100-year event is not clear and cost and availability may be prohibitive to development.

11.4.3 Consolidated Foreshore Redevelopment Masterplan (2013)

The Consolidated Foreshore Redevelopment Masterplan was commissioned by the Town to articulate an overarching vision for the Port Hedland foreshore which is reflective of community aspirations and which provides a cohesive approach to numerous proposed development and activities along the foreshore.

The Masterplan recognises and responds to a range of considerations, including but not limited to, coastal vulnerability, sediment movement, dust, turtle hatching areas, vegetation and access. The Masterplan identifies opportunities and directions for five precinct areas within the foreshore, being; Old Town (West End), Spoil Bank (West End), Cemetery Beach and Civic Node, Cooke Point to Goode Street (East end) and Pretty Pool to Four Mile Creek (East End).

The Masterplan identifies a range of improvements to respond to opportunities identified along the foreshore, including improvements to access for all users, areas for viewing platforms and beach shelters, event space, tourism development opportunities and responses to major development projects, such as the Spoilbank Marina.

The Port Hedland Consolidated Foreshore Redevelopment Masterplan (UDLA, 2013) is deficient in its consideration and response to relevant State planning policy framework (e.g. SPP 2.6 and Guidelines) – and has been superseded by the Town's CHRMAP (2018) and the Coastal Reserves Management Plan (under preparation).

Key findings and recommendations

- It is noted that this document was prepared prior to the commissioning of a CHRMAP for the Port Hedland coastline and therefore does not adequately consider coastal processes or risks. This document will ultimately be superseded by a new Coastal Foreshore Management Plan to be completed by the Town in due course.

11.4.4 Community Consultation and Needs Analysis (2019)

The Community Consultation and Needs Analysis (CCNA) was commissioned by the Town to inform the preparation of master plans for the McGregor Street Sporting Precinct, JD Hardie Centre and South Hedland Integrated Sports Complex (SHISC).

Key guiding principles that the CCNA identifies to inform the preparation of sporting facilities master plans include:

- Financially sustainable;
- Collocation, shared use, multipurpose designs;
- Maximised utilisation;
- Contemporary;
- Accessibility; and
- Sustainability.

Key findings and recommendations

- That the JD Hardie Centre be identified as the Community Youth and Learning Hub within the Town and should accommodate a range of new youth-focused recreation facilities and activities.
- That the South Hedland Sporting Precinct be identified as the Regional level Sporting Precinct in the Town and a range of new facilities be considered in the master planning for the site.
- That the master planning for the McGregor Street Sporting Precinct includes a range of new regional level sporting facilities.

11.4.5 Public Open Space Strategy (2019)

The Town's Public Open Space Strategy (POS Strategy) was adopted at the ordinary Council meeting held in August 2019 and provides a current strategy for the distribution of public open space and recreation facilities within the district. The POS Strategy establishes a hierarchical approach to the distribution and provision of open space and recreation facilities to meet the range of recreational needs of the community.

The POS Strategy identifies an overall shortfall of POS within the district, with the audit identifying the following POS provision per residential locality:

Table 11: POS Audit

Locality	Locality Area (ha)	GSA (ha)	Total POS (ha)	Current Provi-sion of POS (% of Gross Subdivisible Area)
West End	147.38	61.8	0.92	1.49%
Spinifex Hill	223	43	57.66	134.09%
Cooke Point	229.03	64.9	3.82	5.89%
Pretty Pool	246.7	34.9	0.93	2.66%
Lawson	130.8	59.05	0	0%
Cassia	62.05	49.62	0	0%
Shellborough	116.81	100.54	1.25	1.24%
Walnut Grove	129.28	102.68	1.6	1.57%
Koombana	315.31	267	16.16	6.05%
South Hedland West	398.74	259	18.85	7.28%

The POS Strategy makes the following recommendations per locality (West End excluded):

Table 12: POS Strategy recommendations

Locality	Recommendation
Port Hedland	
Spinifex Hill	<ul style="list-style-type: none"> Monitor the foreshore for any evidence of coastal erosion and take action to protect the reserves. Develop McGregor Street Master Plan for regional sporting facilities.
Cooke Point	<ul style="list-style-type: none"> Continue to monitor the foreshore for any evidence of coastal erosion and take action to protect the reserves. Create path connections with upgraded amenities along foreshore to complement redevelopment of urban areas.
Pretty Pool	<ul style="list-style-type: none"> Build on Pretty Pool's swimming suitability and include the additional facilities to encourage extended use for tourists. Reserve Dowding Way park area as 'Parks and Recreation' under a new Local Planning Scheme No. 7. Consider cash-in-lieu payments for provision of POS in new subdivision to create a new foreshore park or enhance Pretty Pool Park.
South Hedland	
Lawson	<ul style="list-style-type: none"> Require the provision of local open space for new residential subdivisions.
Cassia	<ul style="list-style-type: none"> Develop the 'Parks and Recreation' reserve adjacent to Murdoch Drive into Neighbourhood Open Space. Should be of high quality as it forms part of a major eastern entrance to South Hedland and the town centre.
Shellborough	<ul style="list-style-type: none"> Consolidate multiple lots that form Limestone Park into single reserve for 'Parks and Recreation' in new Local Planning Scheme No. 7.
Walnut Grove	<ul style="list-style-type: none"> Develop land to the west and east of JD Hardie Centre into Local Open Space. Include local open space as part of the Kennedy Street Structure Plan. Amalgamate Marquee Park Splash and Play into single Crown Reserve for Recreation. Develop management order to formalise the Town's responsibilities of the space.
Koombana	<ul style="list-style-type: none"> New POS should be appropriately scaled and located to meet the requirements of walkable catchments.
South Hedland West	<ul style="list-style-type: none"> New residential subdivision should ensure Local and Neighbourhood Open Space areas. Implement the South Hedland Integrated Sporting Precinct Masterplan.
Key findings and recommendations	
<ul style="list-style-type: none"> Incorporate the recommendations of the POS Strategy into the new local planning strategy as applicable. Undertake a review of the POS Strategy to incorporate a strategy relating to the provision of pedestrian paths and cycleways. 	

11.4.6 McGregor Street Master Plan

The McGregor Street Master Plan was endorsed at the ordinary meeting of Council held in August 2019. The Master Plan depicts the retention of the Port Hedland Turf Club race track and proposes a diverse range of additional recreation facilities to the east of the race track. In summary, these future facilities include:

- Sports field facilities, including new sporting ovals and running track;
- Pavilions, car parking, family BBQ facilities and cricket nets;
- Tennis and hockey club room upgrade, and fields with shaded viewing areas;
- Childcare facilities;
- Re-appropriated club rooms; and
- BMX pump track and shelter extension.

The south westerly portion of the Master Plan has been identified for future commercial development as it is located adjacent the Port Hedland Boulevard Shopping Centre.

It is noted that the Port City Growth Plan identified the McGregor Street Turf Club as future development, including Neighbourhood Centre at the south-western corner of the site with the remainder of the site being developed for residential purposes. The new LPS and **LPS7** will need to reflect the latest intent to develop the McGregor Street site as an integrated recreation precinct to provide regional sporting facilities.

Key findings and recommendations

- The new local planning strategy and Local Planning Scheme No.7 will need to recognise the McGregor Street precinct as providing regional sporting and recreation facilities.

11.4.7 South Hedland Integrated Sports Complex Master Plan

The South Hedland Integrated Sports Complex (SHISC) Master Plan was endorsed at the ordinary meeting of Council held in August 2019. The SHISC Master Plan comprises the following broad components:

- New northern extension and internal modification to the existing Wanangkura Stadium;
- Retention of the existing Kevin Scott Oval;
- New large multi-use pavilion building;
- Two new small multi-use pavilion buildings;
- Shaded grass mound spectator area;
- New family area / BBQ Park;
- Retention and upgrade to existing playground;
- New small playground;
- New adventure playground;
- New dog park;
- New multi-purpose football/cricket and rectangular sports oval;
- Existing baseball diamond upgraded;
- New baseball diamond – permanent;
- New softball field – permanent;
- New flexible softball / rectangular sports field;
- New shared-use running track; and
- New cricket practice nets.

The SHISC precinct will provide regional level sporting and recreation facilities for the South Hedland community. The SHISC is recognised as a multi-purpose regional centre within the existing Port City Growth Plan.

Key findings and recommendations

- The new local planning strategy to recognise the SHISC precinct as a regional recreation facility and the new Local Planning Scheme No. 7 to reserve the site for 'Parks and Recreation'.

11.4.8 JD Hardie Youth and Community Hub Master Plan

The JD Hardie Youth and Community Hub Master Plan was endorsed at the ordinary meeting of Council held in July 2019. The JD Hardie Youth and Community Hub Master Plan has been prepared to facilitate upgrades at the centre site on Cottier Drive in South Hedland. The planned upgrade works focus on youth recreation activities and include the following:

- Junior BMX track and separate pump track;
- Outdoor games area;
- Skate zone;
- Mini golf;
- Shaded basketball courts;
- Library;
- Childcare centre; and
- Covered café alfresco area.

Key findings and recommendations

- The recreation use of the JD Hardie Youth and Community Hub should be reflected in the new local planning strategy and Scheme as a Community Use or POS reserve.

11.4.9 Arts and Culture Strategy 2019-2022

The Arts and Culture Strategy 2019-2022 has been developed to define the role the Town and community organisations can play in fostering grassroots art and cultural programs.

The Town has identified the following roles it can play to promote art and culture:

1. **Leader** – developing and implementing initiatives for the community.
2. **Advocate** – championing arts and culture initiatives.
3. **Promoter** – sharing and exemplifying the good things that can, and are, happening.
4. **Enabler** – providing support to kick start new initiatives through training, resources, funding or facilitating community action.
5. **Convener** – bringing together the right people with the passion, energy and resources to achieve joint outcomes.

The strategy seeks to maximise use of existing infrastructure by holding events but also acknowledges opportunities to fund temporary or permanent infrastructure in key locations to hold events.

Key findings and recommendations

- No specific considerations for the local planning strategy and scheme review.



11.4.10 Community Safety Plan 2019-2021 (draft)

The purpose of the Town's Community Safety Plan 2019-2021 is to set out actions that Council can undertake in partnership with governance groups to improve safety in the community.

Key findings and recommendations

- Key actions of the Community Safety Plan that require further spatial and/or land use considerations as part of a local planning strategy are set out below:
 - o Invoke a sense of identity and place in the community through encouraging community and visitor participation in the cultural history of Port Hedland in meaningful and relevant ways. Examples:
 - Advocacy to strengthen cultural tourism.
 - Incorporating Aboriginal language in public spaces and facilities.
 - Cultural awareness training for community.
 - Developing a Place Plan for the South Hedland City Centre.
 - o Identify 3 'hot spot' locations and pilot Crime Prevention through Environmental Design (CPTED) assessments for South Hedland CBD (encompassing the Shopping Centre, Skate Park, Aquatic Centre, small businesses outlets and liquor stores).
 - o Develop and implement CPTED principles for internal Town planning and project management processes, including CPTED training for property, business and community stakeholders.
 - o Investigate and identify an appropriate short-term accommodation strategy and facilities; specifically, addressing and identifying transiency and homelessness needs and issues.
 - o Support and facilitate the development of a safe space for men i.e. Men's Shed or Breathing Space House.
 - o Empower our first nation's people in Hedland to create a safe healing plan and space. This will also identify how the community can participate in trauma-informed practice in all aspects of cultural engagement and social reinvestment.

11.4.11 South Hedland Flood Study (2010)

South Hedland is noted as generally being flat with topography ranging between RL 13.0m and 16.0m AHD. The document showed a series of pictures of open drains and culverts with large amounts of trapped sedimentation decreasing the capacity of the existing drainage system.

The drainage strategy (Section 3) states that a modified approach to water sensitive urban design (WSUD) is required in the north-west but the document does not go into further detail on what that modified approach could be.

The document goes into specific detail on the requirements of the minor and major drainage systems with kerbed roadways forming the initial conveyance system, then directing overland drainage into roadside swales and downstream into existing open drains and catchments.

Key findings and recommendations

Section 4.5 discusses anecdotally, proposals to close a number of existing drainage corridors in South Hedland in the following locations:

- Between Brodie Crescent and Greene Place
- From Acacia Way and Boronia Close through to Huxtable Crescent
- From Somerset Crescent through to Lawson Street
- From Eucla Close to Delamere Street

The report goes on to state that any such proposals to close drainage corridors should only be considered after detailed studies have been completed that confirm that there are no negative impacts on the integrity of the drainage system through the closure of such assets.

Section 6.2 provides details on drainage systems to be upgraded in the following locations:

- Parker Street and Kennedy Street
- Traine Crescent and Edkins Place
- Brodie Crescent and Draper Place
- Acacia Way
- Gascoyne Court
- Egret Crescent / Spoonbill Crescent
- Steamer Avenue
- Bottlebrush Crescent

11.4.12 Port Hedland Air Quality Health Risk Assessment for Particulate Matter (2016)

The Port Hedland Dust Management Taskforce (the Taskforce) was convened in response to the EPA raising concern regarding regular exceedance of the National Environmental Protection Measure for dust concentrations permitted for residential development in the West End precinct, defined between McKay and Taplin Streets. The Taskforce was chaired by the former Department of State Development and comprised representatives from relevant local government departments (including planning), industry and the local government. The Taskforce commissioned an independent health risk assessment of air quality in Port Hedland.

Additionally, the Taskforce prepared the 'Port Hedland Air Quality and Noise Management Plan', the recommendations of which were adopted by Cabinet in January 2010. The plan provided a broad-based implementation strategy and governance framework to manage the potential health risks posed by dust levels in the 'West End'.

In relation to land use planning, the Plan recommended a precautionary approach that residential development should occur predominantly in the eastern areas of Port Hedland. Regarding existing residential areas in the 'West End', Amendment 22 (gazetted on 27 April 2012) introduced provisions into the Town's Local Planning Scheme No. 5 to promote housing redevelopment that discouraged long-term residency by those more at risk from exposure to dust.

In 2016, the Taskforce considered the findings of the Department of Health's 2016 report: *The Port Hedland Air Quality Health Risk Assessment for Particulate Matter* and provided recommendations to the Government through the Port Hedland Dust Management Taskforce Report to Government (Taskforce Report).

After considering the Taskforce Report and submissions received, on 15 October 2018 the Government decided that a whole-of-government approach was required to deal with this issue, including adopting land use planning recommendations aimed at prohibiting sensitive land uses and restricting population growth in the West End of Port Hedland. To give effect to this, the Government requested the WAPC to consider preparing an Improvement Plan and

Improvement Scheme designed to achieve the land use outcomes of the Taskforce Report.

On 13 June 2019, following consultation with the Town, the WAPC certified Improvement Plan No. 50. It was accepted by the Minister for Planning on 4 July 2019, subsequently accepted by the Governor's deputy and gazetted on 30 July 2019.

Improvement Plan No. 50 provides the strategic framework to guide the proposed preparation of an Improvement Scheme over the West End of Port Hedland aimed at implementing the Government's response to the Taskforce Report.

The Port Hedland West End Improvement Scheme No.1 was gazetted on 18 September 2020 and this scheme is administered by the WAPC.

Key findings and recommendations

- The West End Improvement Scheme establishes specific land use planning and development controls for the West End Precinct in response to this report. Consequently, the West End Precinct will be excluded from the Town's local planning scheme as a result of the gazettal of the separate Improvement Scheme.

11.4.13 Port Hedland Waterfront Place Plan (2014)

Village Well were engaged by the Town to prepare a Place Plan for Port Hedland's urban foreshore. The aim of the document is to articulate a shared place vision for the Waterfront based on place research and outcomes of engagement with the community. Key aspirations identified for the Waterfront following consultation were:

- A social and recreational destination for everyone, not an exclusive place;
- A place to appreciate the much-loved Port Hedland coast – the 'theatre of the waterfront';
- A place to relax and enjoy the food life (casual with a touch of luxury);
- Green, shady and inviting public realm, near the centre of town;
- A fully functioning marina with quality facilities for small fishing and leisure boats as well as large yachts; and
- A balanced, moderately scaled development, that provides community and environmental benefits as well as commercial success.

Primary recommendations for the Waterfront include:

- A new wharf in the Marina;
- Marapikurrinya Visitor Centre and markets in the Dock Square;
- A jetty, atmospheric lighting, an arbor and water art along the promenade and pathways;
- A bespoke children's park with an industrial / maritime theme, wildlife habitat and Marapikurrinya drinking fountains in the recreational areas;
- North West Festival and a new Indigenous Music Meet-up event in the Event Green;
- An eco-tourism operator and a bush tucker garden in the campground; and
- A focus on seafarers and locally made gifts in the Village Hub.

This document is being used by the Town as a baseline visioning document to inform the design around the new Spoilbank Marina project.

Key findings and recommendations

- The local planning strategy to recommend more detailed place planning and design of the Waterfront Precinct to deliver key recommendations of this document.

11.4.14 Transient Workforce Accommodation Strategy (2014)

The Town's Transient Workforce Accommodation Strategy (TWAS) seeks to manage the location and development of future Workforce Accommodation within the Scheme Area. The document encourages the location of Workforce Accommodation on:

- land located at the PHIA; and
- land located on the periphery of South Hedland.

The TWAS also requires Workforce Accommodation proposals to demonstrate a community benefit through either augmentation of service infrastructure, a monetary contribution towards community facilities or through provision of permanent community buildings and infrastructure. The recommendations of the TWAS were never incorporated into LPS5 and were not implemented.

The Town has released LPP/05 Workforce Accommodation and LPP/06 Social Impact Assessment. LPP/05 replaces the TWAS.

11.4.15 Trails Masterplan (2013)

The Town commissioned a Trails Masterplan to facilitate the creation of a network of nature and culturally-based recreational trails within the precincts of Port Hedland, South Hedland and Finucane Island.

The document identifies a number of trails' loops in each of the three precincts with a view to fostering a greater level of cultural, ecological and historical appreciation of the Port Hedland terrain.

Key findings and recommendations

- Several options were proposed for off-road vehicle use, yet the Town of Port Hedland has only two locations where off-road vehicles are allowed (based on information accessed on the Town's website in August 2019). These locations are Spoilbank in Port Hedland and Deep-Water Reserve in South Hedland. The information on the website explicitly states that vehicles cannot approach these locations but must be brought on a trailer to the location.
- Staging plan for implementation is brief and general in nature. There is no comprehensive action plan or timeline for implementation.
- There is no confirmation that any portion of the Master Plan was implemented or considered for implementation. None of the proposed trails are included on Town's website or any other bushwalking site.
- It is unclear how "accessible" paths are to be actually accessed. Plans of trails with mixed grading do not show the extent or location of each grade (i.e. which portion of the proposed path is accessible, etc).
- The new local planning strategy should consider strategies and actions to pursue completion of the identified loop trails and to integrate these loops with other identified path and open space networks (i.e. Town of Port Hedland Parks and Paths Strategy).

11.4.16 Disability Access Improvement Plan (2013-17)

The Disability Access Improvement Plan (2013-17) establishes a framework which enables the Town to advocate for improved access and inclusion at events held by others at Town facilities and venues. Key recommendations of the plan include:

- When the Town or its contractors provide, or offer, transportation, this transport will be accessible.
- When building new facilities or refurbishing existing facilities, access will be ensured and enhancement of access will be explored.
- The Town will provide meaningful information and promote the accessibility of our facilities and venues.
- The Town will investigate and improve access in play areas and in our parks and gardens.
- When providing information across social media platforms the Town will use best practice to ensure that the information is as accessible as possible.

Key findings and recommendations

- The plan identifies accessible public buildings, yet it makes no mention of the movement network which would enable residents with reduced mobility (or other senses) to get to the buildings.
- Consideration should be given to the provision of public maps showing accessible parking and other accessible venues within the Town.

11.4.17 Pilbara Cattle Holding Yard Feasibility Assessment

The Pilbara Cattle Holding Yard Feasibility Assessment was commissioned by the Pilbara Development Commission into the expansion of existing or development of new cattle holding yard infrastructure to support the Pilbara's agricultural industry.

The assessment included a site selection process which identifies two sites that represent optimal locations for a holding yard. These included the existing South Hedland holding yards and a new facility at Pippingarra Station.

The analysis concluded that from a public perspective, the investment in re-establishing the existing South Hedland holding yards would present substantial benefits to the Western Australian pastoral industry.

Key findings and recommendations

- The document is focused on the access requirements and convenience for this particular use and it does not consider traffic impact on the network. Given that volumes of 40,000 – 80,000 head per year are discussed and that approximately 144 cows can be accommodated in an A-triple road train, this use will make a significant traffic impact on the network.
- The revised local planning strategy should recognise the potential for a cattle holding yard to be located at the existing South Hedland site and potential for a new facility at Yandeyarra.
- Local Planning Scheme No. 7 should contain flexibility for a cattle holding yard to be permitted at these locations.

11.4.18 Port Hedland Growth Readiness Investigations

The Port Hedland Growth Readiness Investigations report was prepared to evaluate the ability for the Town to respond to future growth pressures associated with a new investment cycle driven both by resources and economic diversification.

This report included future population modelling for the Town to better understand future demand for land associated with housing, commercial/retail, industrial, short-stay and transient workforce accommodation. The population modelling adopted for this report was based on the average historical annual growth rate of the population between 2001 and 2018, which was calculated at 0.9% per annum. Based on this growth rate, the report projected a population of 18,500 people by 2041. This is considered a reasonable basis for future population growth within the Town and was subsequently adopted as the conservative baseline population growth scenario to inform the preparation of the Strategy. The different demands of residential, commercial/retail, industrial, short-stay and TWA have been considered in relation to the available and planned supply of land in the area, including infrastructure capacity as set out within DPLH's Regional Land Supply Assessment (2019). The LPS utilises the same, conservative population forecasts as included within the Growth Readiness Investigations, with demand profiles therefore consistent.

Key findings and recommendations

- The report indicates that there is sufficient land (as opposed to floor area) available for dwellings, commercial/retail and industrial land through to 2041.
- Supply will likely be exceeded in the near future for short-stay and transient workforce accommodation, especially if any new major infrastructure projects are announced near the Port.
- There are various factors which impact the Town's capacity to respond to new intensive growth despite land being appropriately zoned, including investment risks in property and business due to a highly volatile market, land tenure matters and unviable development controls.
- The report recommends that land use planning should ensure development controls are limited, to provide flexibility of use and lower construction costs.

11.4.19 Workforce Accommodation Facilities' Position Statement

The Town's Workforce Accommodation Position Statement provides the Town's rationale when responding to Development Applications and referrals for workforce accommodation, includes principles for consideration when proposing workforce accommodation, and underpins local planning policies pertaining to workforce accommodation and social impact assessment.

The Position Statement acknowledges the importance of workforce accommodation as a housing resource for industry and well-planned accommodation that effectively addresses both individual and cumulative impacts of developments to realise significant benefits for the community, industry and industry workforces. The Position Statement also recognises that accommodation requirements vary depending on the characteristics of the workforce, work rosters and labour requirements and therefore focuses on the lifespan of the workforce accommodation facility.

The Position Statement supports:

- Workforce accommodation being *demand driven* to ensure workforce requirements are catered for while limiting the proliferation of workforce accommodation, high residential vacancy rates and competition with Town-based services and facilities.
- Workforce accommodation located within *proximity* to the Town being situated within the townsite boundary, where safe driving distances to site and return can be observed, to ensure developments realise immediate and sustainable value for the community and enhance psychosocial outcomes for industry workforces.
- Workforce accommodation located within higher activity centres, at the discretion of the Town, being required to be of a higher *design standard*, commensurate with the project lifespan and development approval timeframes.
- Recognition that short-term workforce accommodation has a shorter lifespan that does not require a higher level of design and therefore does not warrant the same level of investment as those projects subject to longer-term lifespans.

- Long-term workforces being accommodated in permanent residential-style developments, preferably located within higher activity centres for improved amenity, business stimulation and community integration.
- Analysis, monitoring and management of social consequences of workforce accommodation, including workforce demands on, and potential augmentation of, infrastructure and services and identifying co-location opportunities for industry workforces to create a sense of place.

Key findings and recommendations

- Unless exceptional circumstances apply and depending on the distance from Port Hedland, the Town supports permanent residential settlement for operational workforces that enhance community integration, growth and sustainability and mental health outcomes for industry workers
- Where operational workforce accommodation is used, industry should give due regard to the development of plans to transition workers to residential accommodation options
- The Town of Port Hedland supports workforce accommodation for projects located within reasonable proximity of Port Hedland, being collocated within the Town in accordance with the zoning requirements of the Scheme
- Remote workforce accommodation should be of a requisite standard and amenity to support the health and wellbeing of workers

11.4.20 Mining Tenements – Position Statement

The Town's Mining Tenements Position Statement sets out the Town's rationale when responding to a statutory referral seeking a grant of a mining tenement.

The *Mining Act 1978* (Mining Act) provides the legislative framework for the application and grant of mining tenements. Pursuant to Section 120(1) of the Mining Act, decision-makers are required to give consideration to local planning schemes through referral of an application to a relevant local government authority. Under Section 120(2) a local government may advise the Minister for Planning that an application for a mining lease or general purpose lease, if granted would be contrary to the provisions of the local planning scheme. The Minister for Mining is required to consider any recommendations made by the Minister for Planning against the broader objectives of the Mining Act.

The Town recognises that the policy positions within the Position Statement cannot be unilaterally imposed on mining tenements approved pursuant to State Agreements which are ratified by Acts of Parliament, or under the Mining Act 1978. It is acknowledged that such proposals are exempt to the extent that the provisions of those Acts override the *Planning and Development Act 2005* and the Scheme.

When providing advice in relation to an application for a mining tenement, the Town will consider whether the proposed mining tenement and associated infrastructure and activities are:

- Within a gazetted boundary or located on land set aside for urban growth;
- Within relative proximity to a rural residence or station homestead;
- Proposed to overlay a Town managed asset, land or reservation;
- Within a visual protection area or located in relative proximity to a highway or major road;
- Within a Public Drinking Water Source Protection Area;
- Within a coastal foreshore reserve, waterway or area deemed by the public as having significant social, cultural, local economic or environmental value; and/or
- To include workforce accommodation, an aerodrome or other substantial infrastructure that will duplicate, or compete with, Town based assets and services.

Key findings and recommendations

- The position statement provides guidance on referrals relating to mining tenements. It sets out expectations for referral to local government, and the type of matters that the Town may consider in responding to a referral.

11.4.21 Disposal and Management of Crown Land – Position Statement

The Town's Disposal and Management of Crown Land Position Statement establishes the Town's position when responding to statutory referrals for the disposal and management of Crown land. The Position Statement establishes minimum information requirements required for the Town to review referrals relating to Crown land to ensure the Town can provide a quality and informed response.

Additionally, the Position Statement encourages applicants to review the Town's local planning framework, including Local Planning Strategy, to ensure applications are aligned to the framework.

The Position Statement relates to the referral of applications for Crown leases, Pastoral leases, Crown reserves, Crown licences, Crown land sales, Crown land developments and compliance on a grant of Crown land tenure.

The Position Statement seeks to ensure applications are reviewed and recommended for approval only where the proposal aligns with the land use and development outcomes that can be supported by the Town's local planning framework. It seeks to prevent proposals that would establish competing satellite industrial or commercial estates, for instance.

Key findings and recommendations

- The position statement provides guidance on the referral of applications relating to Crown land and seeks to align land use outcomes with that supported within the Town's local planning framework.

12. Local Profile

12.1 Community Profile

12.1.1 Population and Demography

Port Hedland's estimated resident population increased by an average 0.9% per annum over the past 10 years, to reach approximately 14,975 people in 2018. Historical population growth has demonstrated great volatility, typical of regional mining communities, where population growth is strongly linked with economic outcomes and cycles. Population growth was strongest during the mining boom between 2006 and 2013 at 1.8% per annum (on average); after the mining boom (2013-2018) negative growth has been recorded (-1.3% per annum on average).

Port Hedland's resident population is projected to increase by 2.5% annually (on average) for the next 20 years, supported by the anticipated boom in construction, including the capital works program to expand the Port (2-year project), BHP South Flank mine in Pilbara, FMG Port Hedland expansion, Rio Tinto expansion and new mines (Centre Point Finance, 2019).

Due to concerns regarding the impact of high dust levels from industrial, natural and anthropogenic sources in Port Hedland, the Western Australian Government has revealed an aim to cap the resident population (in dust affected areas) (Department of Jobs, Tourism, Science and Innovation, 2017). This will be conducted through residential property management. Therefore, this may result in overestimation of the current population and dwellings projections.

There is also potential for a ban on 100% FIFO employed mining operations in Western Australia, if the Government is to follow Queensland's lead (Mining Safe to Work, 2019). This may lead to underestimation of the current population growth and dwellings projections.

These considerations (and other current and potential future regulations, developments and activities) have not been incorporated into the population and dwellings projections in this chapter, and hence should be viewed with caution.

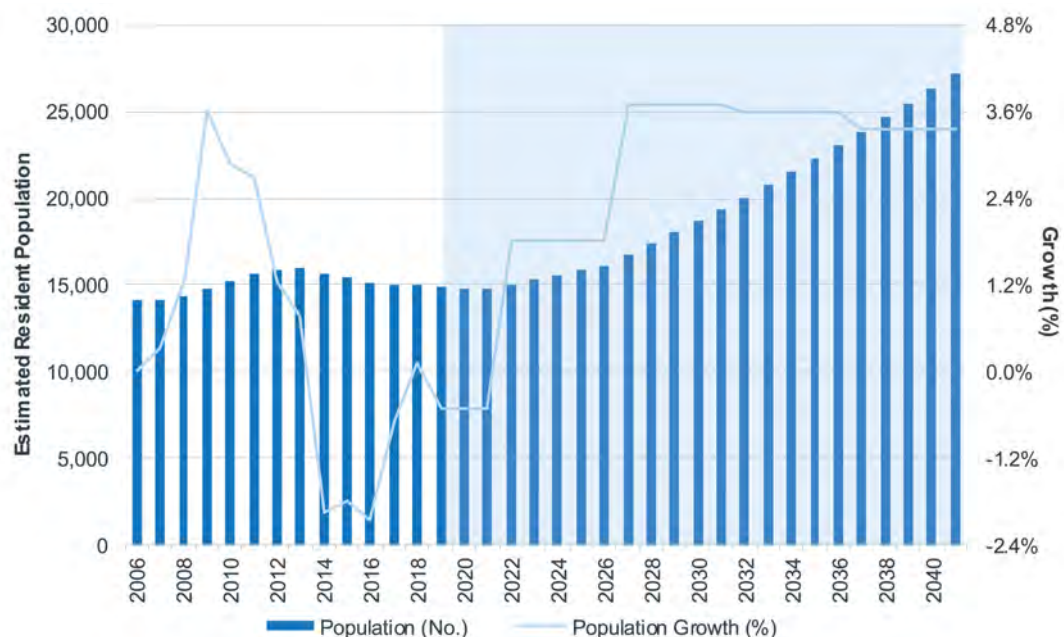


Figure 20. Historical and Projected Resident Population, Port Hedland, 2006 to 2040. Source: Profile.ID (2016a), Profile.ID (2019).

The economic activity in Port Hedland has influenced population growth and the local demographic composition. Port Hedland has a higher concentration of males (57.6%) compared to females, particularly in the 25 to 39 years age cohort, likely due to the trades-related nature of work within the prominent industries of mining and construction. From 2011 to 2016, the proportion of males in the Port Hedland population decreased by 4.3%, whilst the proportion of females increased. The increasing portion of females and growth in the number of youth aged 0 to 19 years (2.2% in total between 2011 and 2016) reflects the migration of families to the region over this period.

The Port Hedland population is relatively culturally diverse with almost a quarter (20.4%) of the population comprising those born overseas, an increase of 2.9% since 2011. Most were born in English speaking countries; however, modest growth was evident in the Filipino representation (1.5% between 2011

and 2016). Port Hedland's cultural diversity is further enhanced by the Indigenous population, representing approximately 16.0% of the total in 2016.

The number of educated people in Port Hedland is rising, with an increase in Year 12 completions of 5.2% between 2011 and 2016, to reach 41.4% in 2016. This shift is consistent with a broader increase in educational attainment across Australia's regions. This is further evidenced by attainment of non-school qualifications, which increased for all qualification levels over the period. Vocational qualifications represented the largest proportion of non-school qualifications (34.0%) in 2016, likely reflecting the higher presence of industries such as construction and mining, which tend to require trades-related skills rather than university level education.

This analysis is supported by additional data provided at Appendix B.

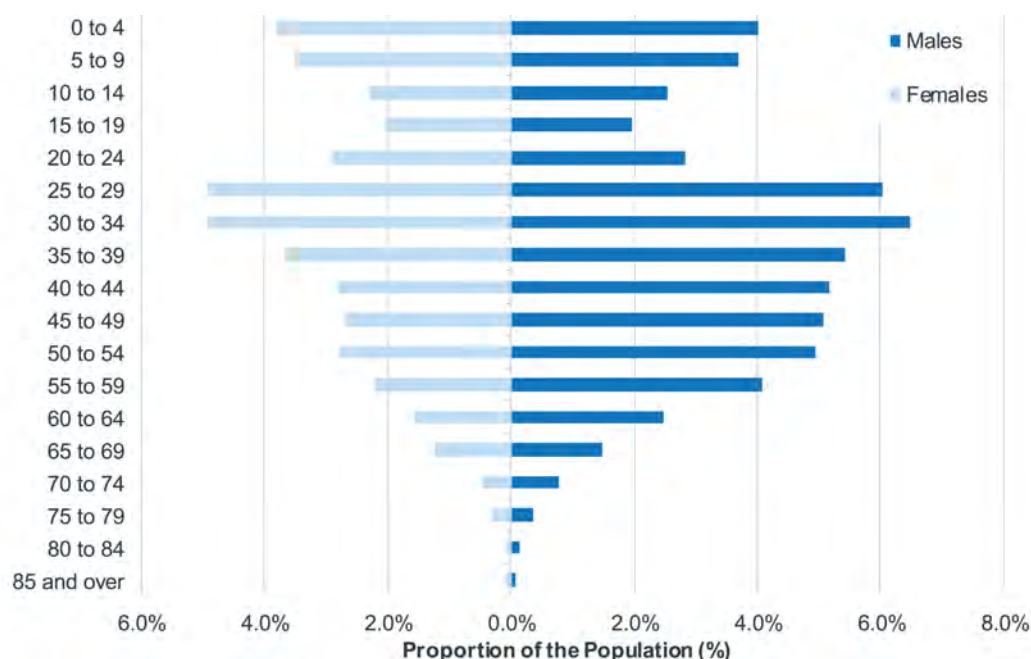


Figure 21. Age and gender Distribution, Port Hedland, 2016. Source: Profile.ID (2016c).

Comparative Analysis with Karratha and Regional WA

Port Hedland and neighbour, Karratha, have experienced similar volatility in population growth in recent years. For both regions, population growth has mirrored the volatility in the local economy which has been driven by fluctuations in the resources sector. Since 2001, Port Hedland's population growth has recorded lower volatility by comparison with Karratha, due to continued economic expansion of Port Hedland's economy in the 2014-15 to 2016-17 period, which was not replicated in Karratha. However, both Port Hedland and Karratha have recorded greater fluctuations in population growth by comparison with Regional WA which has a larger population and more diverse economic base.

The labour intensive (trades-related) nature of work in Regional WA is a large determinant of demographic characteristics, as these occupations tend to employ young males (Labour market Information Portal, 2018). Port Hedland revealed a higher concentration of males (53.7%) compared to females in 2018, in line with Karratha (55.1%); however, slightly less than Regional WA (50.7%). The 25 to 39 years age cohort was the most prominent in Port Hedland (31.4%). This is consistent with Karratha (31.7%); however, Regional WA's

population is more evenly distributed in its age structure.

Almost a quarter (24.5%) of Port Hedland's population comprised those born overseas. This is slightly higher than Karratha (23.5%) and Regional WA (21.1%). The Malay and Tagalog speaking populations were the largest foreign speaking representations in Port Hedland, however, both Karratha and Regional WA recorded lower representations of these groups. Port Hedland's Indigenous population represented approximately 19.1% of the population in 2016, higher than in Karratha (14.5%) and Regional WA (8.1%).

There has been an overall trend of increasing educational attainment across Port Hedland, the comparison regions, and more broadly across regions in Australia (Australian Institute of Health and Welfare, 2018). Port Hedland revealed a higher proportion of Year 12 completions than Regional WA in 2016 (by 6.6%); however, fell slightly behind Karratha (by 2.4%). Certificates were the most common form of non-school qualification in Port Hedland in 2016 (28.8%). This was similar in Karratha (28.2%), however, slightly lower in Regional WA.

This comparative analysis is supported by additional data provided at Appendix C – Comparative Profile Details.

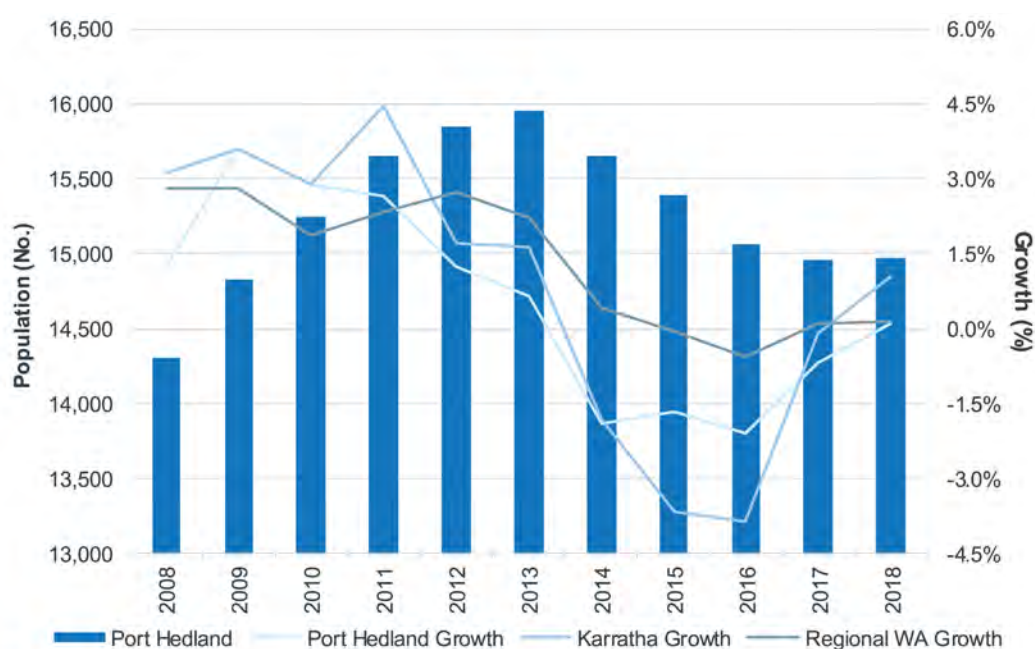


Figure 22. Historical Population, Comparison Regions, 2008 to 2018. Source: ABS (2019).

12.1.2 Dwellings and Household Demand

Port Hedland had approximately 5,470 households in 2016. Of these, families (couples with children) were the most prevalent household type in Port Hedland in 2016, comprising 28.2% of all households. Lone person households recorded strong growth (3.3%) between 2011 and 2016, potentially influenced by the number of working age males (particularly 30 to 34 years age cohort) over this period. The number of households are expected to increase by approximately 2,630 (2.3% annually) between 2016 and 2041.

Table 13: Household/ Family Composition, Port Hedland. Source: Profile.ID (2016)

Household/ Family Type	2011	2016
Couples with Children	26.8%	28.2%
Couples Without Children	19.7%	21.2%
One Parent Families	5.9%	6.5%
Other Families	1.3%	0.9%
Group Household	3.9%	2.8%
Lone Person	14.3%	17.6%
Visitor Only Households	15.2%	11.8%
Other Not Classifiable	12.9%	11.0%
Total	100.0%	100.0%

Household incomes in Port Hedland are reflective of the significant economic activity in the mining industry, with average household income reported at \$2,793 per week in 2016 (equating to \$145,236 per annum). This is a positive sign for consumption, investment and the health of the regional economy.

Lowering house prices and rents were recorded in Port Hedland between 2014 and 2018, with a reduction of 26.1% in house price and 24.9% in rents. Lower housing and rental prices combined with high household incomes suggest improved housing affordability in the region. Similar to many regional communities, this was driven by the reduced demand from population as population growth was negative over this period. Negative population growth resulted from the end of the mining boom, as mines shifted from expansionary to production phases.

Port Hedland recorded approximately 7,667 dwellings in 2016, of which 67.9% were occupied. Occupancy rates are still recovering from the end of the mining boom, which instigated negative population growth (until 2018) and hence reduced dwelling demand. Low density (separate housing) dwellings are becoming increasingly prevalent, with 1,470 new separate houses between 2011 and 2016 (total growth of 5.9%). Similarly, dwellings are expected to increase by 4,630 (1.9% annually on average) and occupancy rates by 0.4% annually (on average), to reach 75.6% in 2041. Over the next 20 years, projected residential population growth is anticipated to drive increased demand and put pressure on the delivery of residential development areas.

Table 14: Historical and Projected Households, Port Hedland. Source: Profile.ID (2016)

Dwellings	Number	Occupancy Rate
2016	7,667	67.9%
2021	7,715	66.7%
2026	8,080	68.5%
2031	9,276	70.8%
2036	10,725	73.1%
2041	12,305	75.6%
Avg. Ann. Growth	1.9%	0.4%

The predominant dwelling structure within Port Hedland is a separate or traditional single house. The single house increased in its proportionate share of dwelling structure between 2011 and 2016, while medium density terrace, village or townhouses have decreased along with caravan and cabin-type living structures.

Table 15: Dwelling Structure, Port Hedland. Source: Profile.ID (2016).

Dwelling Structure	2011	2016
Separate house	62.9%	68.8%
Medium density	22.3%	21.8%
High density	2.3%	3.2%
Caravans, cabin, houseboat	8.7%	4.5%
Other	2.9%	0.9%
Dwelling Structure	0.9%	0.8%
Total	100.0%	100.0%

Notes: High density dwellings consist of flats, units or apartments. Medium density dwellings consist of semi-detached, row or terrace houses, townhouses, etc.

Separate to the above analysis, a large number of fly-in, fly-out (FIFO) workers (usually short term) are accommodated in TWA facilities. This is evidenced by the large supply of TWA facilities, including the Gateway Village, extensive supply of motels and The Landing.

This analysis is supported by additional data provided at Appendix B – Socio-Economic Profile Details.

Comparative Analysis with Karratha and Regional WA

Whilst Port Hedland's housing supply is primarily comprises separate houses, it has a more diverse housing supply than Karratha and broader Regional WA which record proportions of the housing stock as separate houses of approximately 73.1% and 82.9%, respectively.

One family households were consistently the most prevalent household type across Port Hedland and the comparison regions. However, both Port Hedland and Karratha recorded lower prevalence of lone person households and higher proportions of group households than Regional WA, likely reflecting the accommodation options for mining workers in these regions.

Corresponding to the higher average household incomes in Port Hedland and Karratha, housing stress is less problematic in these communities than for Regional WA. Rental stress in particular, was considerably lower in 2016 in Port Hedland (5.9% of rented dwellings) and Karratha (6.3%) compared to Regional WA (23.5%).

This comparative analysis is supported by additional data provided at Appendix C – Comparative Profile Details.

12.2 Economic Profile

12.2.1 Economy

In 2018, the Port Hedland economy recorded Gross Regional Product of approximately \$3.7 billion. Port Hedland's economic growth is heavily influenced by fluctuations in mining and construction industry activity. Between 2001 and 2018, the economy recorded average annual growth of approximately 6.4%; however, annual

growth over this time period has been volatile, with a peak of 24.2% in 2012 and a trough of -6.1% growth in 2016.

Key industries for Port Hedland's economy in 2018 were:

1. Mining: Contributed \$1,218 million (70.0%) to industry value add in 2017-18.
2. Transport, Postal and Warehousing: Contributed \$285 million (8.0%) to industry value add in 2017-18.
3. Construction: Contributed \$183 million (5.1%) to industry value add in 2017-18.

Refer to Figure 11 – Proportion of Industry Value Add, Port Hedland, 2012-13 and 2017-18

Port Hedland's resources sector has experienced a shift away from construction activity, which was strong in 2012-13, for production activity. This is evidenced by mining activity recording 25.5% growth since 2012-13, whilst construction activity recorded a 21.9% decline over the same period.

The industrial composition of the economy is reflected in the occupational breakdown of workers. Technicians and trades workers were the most prevalent occupation held in 2016 (26.9%), followed by machinery operators and drivers (17.5%); both occupations driven by mining and construction activity.

In 2018, Port Hedland recorded an unemployment rate of 5.0%, higher than its average of 4.4% over the 2010 to 2018 period. The unemployment rate in Port Hedland has fluctuated significantly, from a low of 2.7% in 2012 to a high of 5.5% in 2015.

The retail sector in Port Hedland is facing an undersupply in the provision of cafes, restaurants/ takeaways, groceries and shop retail offering, which needs to be corrected to accommodate the projected population growth over the next two decades (Town of Port Hedland, 2012). Currently, South Hedland Square and Port Hedland Boulevard are the major retail centres servicing the population, holding 63 shops in total.

There are a number of developments proposed for Port Hedland which may support economic growth in the coming years. The following is a list of identified known developments that may impact on the Port Hedland economy.

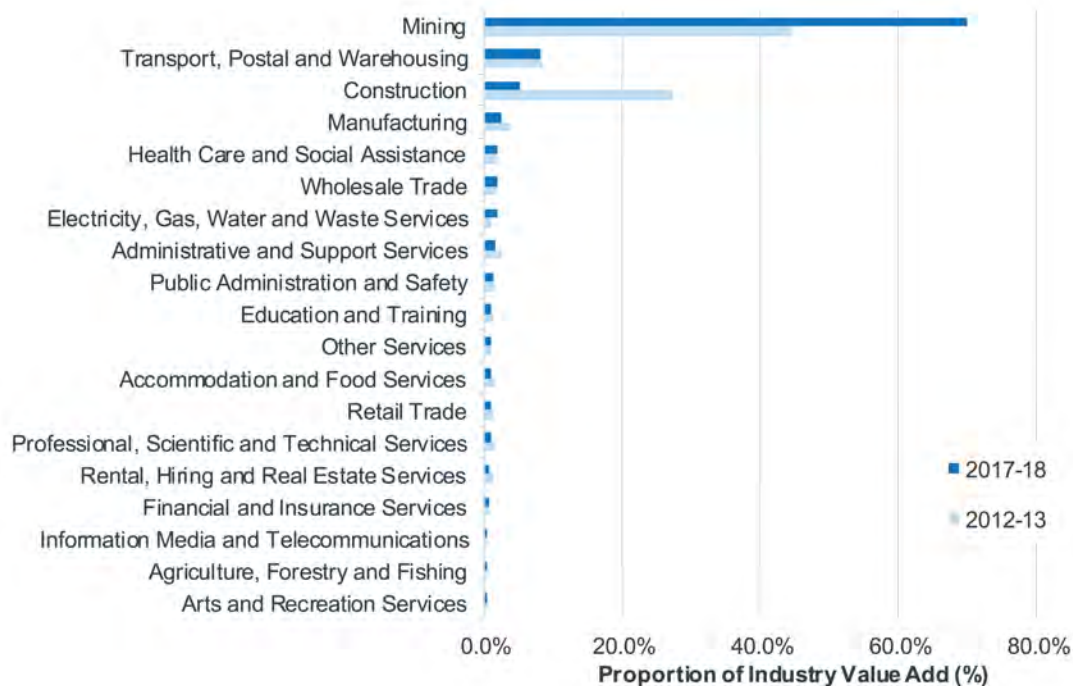


Figure 23. Proportion of Industry Value Add, Port Hedland, 2012-13 and 2017-18. Source: Economy.ID (2018b).



Table 16. Major Projects, Port Hedland. Source: Mid-West Development Commission (2019), Landcorp (2019). Fortescue (2019).

Project	Cost	Status	Details
Low density residential sites (two) at Pretty Pool	Unknown	Stage 3 yet to be released	7 ha residential development designed to complement the fragile surrounding environment.
Athol Street	Unknown	Unknown	Development of 40 ha of land at Athol Street, Cooke Point in Port Hedland.
Hedland Junction at Wedgefield Industrial Estate	\$275,000	Underway	Offering expansion for small to medium businesses servicing the mining, construction and transport industries.
Iron Bridge Magnetite Project and Port Hedland	\$3.7 billion	Stage 2 construction in late 2019	The Project will deliver high grade 67% Fe magnetite concentrate product in the first half of the calendar year 2022. It will employ approx. 3,000 people during construction and 900 full time positions once operations commence in 2022.
South Hedland Cemetery	\$3.4 million	Master Plan completed and approved	Upgrades include additional car parking, shade and shelter, extra seating throughout the site, upgrades to the path system, landscaping and new universal access toilets. Introduction of a ring road with parking and pedestrian entrance dates at each border.
South Flank to replace Yandi mine	\$4.7 billion	Underway	South Flank will replace Yandi mine and is due to become operational by 2021, running through until at least 2046. It will generate about 2,500 jobs during construction and a further 600 ongoing operational roles.
Berth 3 Deck Replacement Project - Port of Port Hedland	\$33.5 million	Construction underway	Replacement of Berth 3 concrete deck, installation of the new wharf fenders and completion of other ancillary works. Expected to be completed by late October 2019.
Spoilbank Marina Development	\$95 million	Concept plan approved	Construction of 20 boat pens with capacity for up to 45 boats, a two-lane boat ramp, two breakwaters and internal revetment walls and a separate channel access to deep water. Expected before 2020.
South Hedland Integrated Sports Complex, McGregor Street Master Plan and JD Hardie Youth Centre upgrades	Unknown	Master Plans approved	Town of Port Hedland led upgrades to sporting precinct master plans to be staged as funding becomes available.

This analysis is supported by additional data provided at Appendix B - Socio-Economic Profile Details.

Comparative Analysis with Karratha and Regional WA

Between 2012-13 and 2017-18, Port Hedland's economic growth surpassed that of Regional WA (by 2.9%) and Karratha (by 5.4%) which recorded negative growth. Port Hedland's historical gross regional product growth rates are similar to Karratha, which have followed the ebbs and flows of mining and construction industry activity. However, Port Hedland has experienced lower volatility by comparison with Karratha, due to the economy's continued economic expansion in the 2014-15 to 2016-17 period which was not replicated in Karratha. Compared to Port Hedland and Karratha, Regional WA's growth experienced a downward trend between 2010-11 and 2015-16.

The three key industries for Port Hedland's economy were in line with both Karratha and Regional WA in 2017-18 and include:

- Mining
- Transport, Postal and Warehousing
- Construction

However, Port Hedland had a greater reliance on transport, postal and warehousing than both Karratha and Regional WA in 2017-18. This can be attributed to Port Hedland's geographical location and proximity to the water, with one of the world's largest export ports (in terms of

cargo tonnage) situated on its coastline (Pilbara Ports Authority, 2019). Port Hedland had a heavier reliance on the mining industry than Regional WA, contributing to 78.6% of industry value add compared to 61.6% in Regional WA in 2017-18. Employment by industry (by place of work) estimates are consistent with this result in 2017-18; however, larger differences in labour specialisations of the above industries are evident between Port Hedland and comparison regions.

Compared to the comparison regions, in terms of employment by occupation, Port Hedland has a higher prevalence of machinery operators and drivers, whilst Karratha and Regional WA have a higher prevalence of professionals. The low prevalence of professional occupations is typical of regional areas with a small population; Port Hedland's population represents just 66.8% of Karratha's population.

Port Hedland recorded an unemployment rate of 4.4% in 2018. Port Hedland's unemployment rate fluctuations have trended in line with Karratha since 2006, sitting below the Regional WA average (5.6%), however higher than Karratha's rate of 2.5%.

This comparative analysis is supported by additional data provided at Appendix C - Comparative Profile Details.

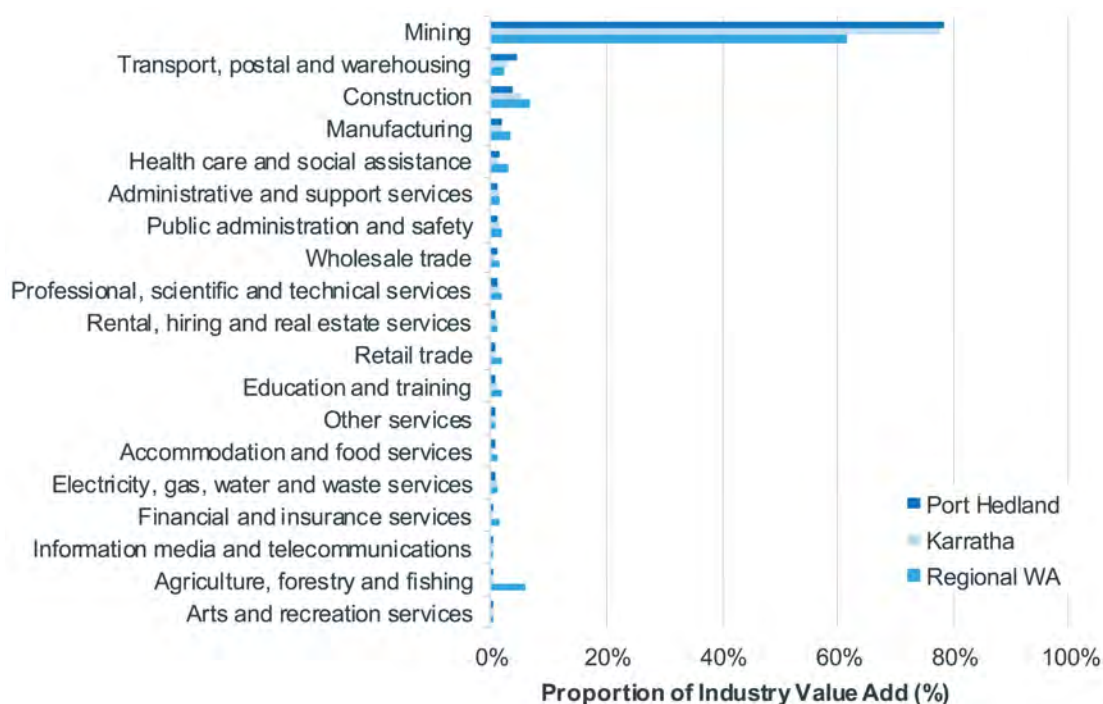


Figure 24. Proportion of Industry Value Add, Comparison Regions, 2017-18. Source: AEC (unpublished).

12.2.2 Tourism

Port Hedland recorded approximately 244,000 domestic visitors (both day trips and overnight) and 15,300 international visitors in 2018. The large fluctuations in visitation over the 2008 to 2018 historical period can be attributed to the smaller size of Port Hedland compared to metropolitan areas, as well as the limitations of a small sample size during data collection.

Note: Visitation projections have been estimated using Tourism Research Australia visitor night projections for Regional WA. Visitor night statistics were collected for 2018, to which visitor night growth projections were applied. These visitor night projections were converted to visitor projections by assuming that the average length of stay of visitors was held constant over the estimation period (2019 to 2027).

Port Hedland is renowned for its sizeable resources industry, private railways, large ships and export tonnage port, providing visitors with a unique opportunity to get close to the operations of Australia's iron ore mining industry. Key attractions include Spinifex Hill Studios, Courthouse Gallery, Cemetery Beach Park, Redbank Bridge Salt and Train Lookout and Don Rhodes Mining Museum. Proximity to Karijini National Park provides a wider drawcard. Popular events include the Port Hedland Cup

(Heddy's Cup) and Pilbara Music Festival (North West Festival).

The majority of visitors (51.6%) came to the region for business purposes (aligning with the presence of mining in the region) whilst a further 27.9% visited for holiday reasons. The demographic composition of visitors in Port Hedland is largely linked to business visitation in Port Hedland, including FIFO employment opportunities. The strong FIFO presence within industry in Port Hedland, particularly construction and mining, attracts a large proportion of young males to the area. This is evidenced by males recording higher visitation than females in 2018, particularly for overnight stays where 90.1% of visitors were male. Correspondingly, domestic visitors were primarily those aged 25 to 34 years (38.6%); influenced by FIFO visitation. FIFO visitation is not largely evident in the international visitor market, which recorded a high number of visitors in the above 55 years old age cohort (27.7%) in 2018.

Within holiday visitation, social activities, outdoor/ nature and active outdoor/ sport activities were the most popular activities for both domestic and international visitors, whilst international visitors also enjoyed local attractions/ tourist activities.

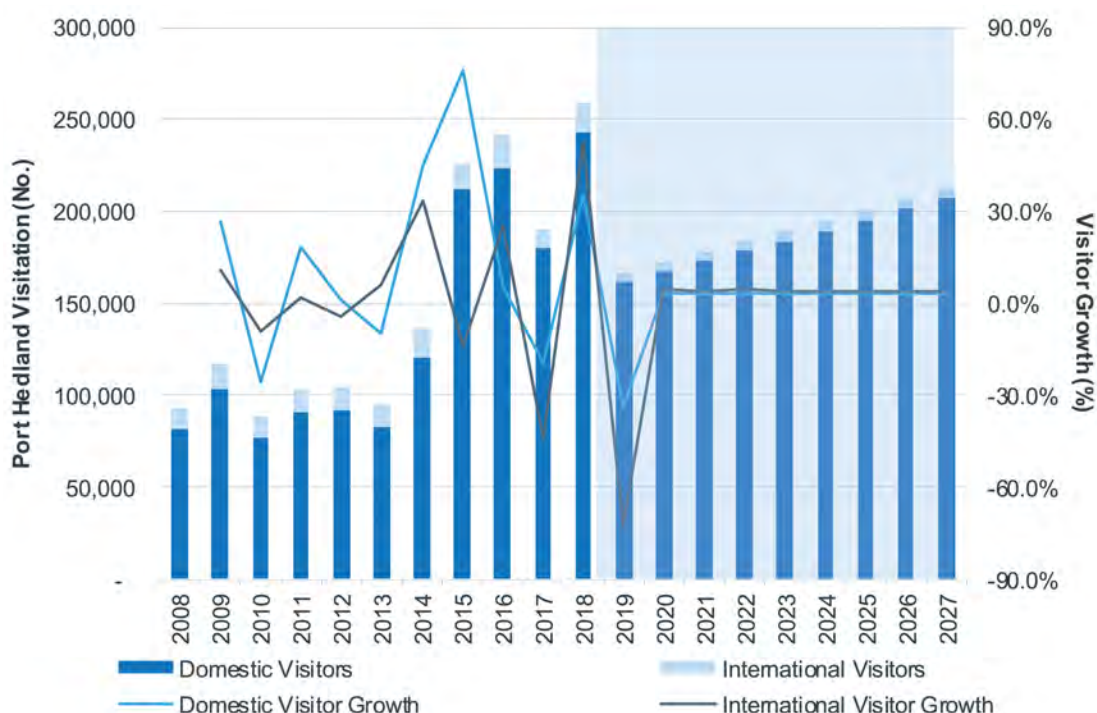


Figure 25. Visitation, Port Hedland, 2008 to 2018. Source: Tourism Research Australia (2019 a,b,d).

'Other accommodation' was the most common accommodation type in 2018 (41.9%), which comprises educational institutions, boats, accommodation in FIFO locations and on transportation vehicles. It is anticipated this was largely driven by the FIFO visitation in Port Hedland, where workers reside in accommodation camps such as 'The Gateway Village'.

Visitation expenditure, including on activities, transport, accommodation, etc., in Port Hedland equated to \$8.56 million for international visitors and \$147.30 million for domestic overnight visitors in 2018.

Domestic visitation is projected to grow by 3.2% per annum (on average) until 2027, whilst international visitation is expected to be higher at 4.3% per annum (on average). As half of visitation in Port Hedland is related to business (incl. FIFO work), visitation is anticipated to trend in line with construction and mining activity in the coming years.

Self-drive caravan/camping visitors represent a key component of genuine leisure-based visitors to the region and the Town of Port Hedland RV Overflow Camping area seeks to attract visitation and extended stays within the Port Hedland townsite.

This analysis is supported by additional data provided at Appendix B - Socio-Economic Profile Details.

Comparative Analysis with Karratha and Regional WA

Port Hedland recorded higher growth in domestic visitation since 2013 than the comparison regions; 24.1% per annum (on average) growth compared to 12.9% in Karratha and 7.4% in Regional WA. International visitation growth differed, with Regional WA recording higher growth than in Port Hedland (5.8% compared to 4.1% per annum on average), whilst Karratha recorded negative growth (2.1% per annum on average) since 2013.

In 2018, visitation for business purposes was the most common for Port Hedland (51.6%) and Karratha (41.0%). Comparatively, Regional WA recorded high visitation for holidaying purposes (53.3%). The demographic composition of visitors in Port Hedland is influenced by the large proportion of business visitation, typically linked to mining and construction employment (trades-related FIFO work). Domestic visitors in

Port Hedland were primarily those aged between 25 and 34 (38.6%), whilst domestic visitation from the 45 and above age cohort was the most prevalent in Karratha (57.0%) and Regional WA (57.9%). International visitation by age was consistent across Port Hedland and comparison regions, with the above 55 age cohort the most prevalent. Males were the most common visitor across Port Hedland and comparison regions.

In 2018, domestic visitors in Port Hedland tended to undertake social activities and active outdoor/ sports activities, whilst international visitors more commonly undertook social activities and local attractions/ tours. This differs from Karratha and Regional WA, where both domestic and international visitors more commonly undertook social activities and outdoor/ nature activities.

In 2018, visitors in Port Hedland tended to stay in 'other accommodation' (41.9%) which comprises of educational institutions, boats, accommodation in FIFO locations and on transportation vehicles. Comparatively, 38.0% of visitors in Karratha and 69.9% of visitors in Regional WA stayed in 'other private accommodation', which comprises friends or relatives' properties, caravan or camping, homestay and other non-commercial property (TRA, 2019a, b). The higher proportion of Regional WA visitors staying in 'other private accommodation' may be attributed to the higher holiday visitation compared to Port Hedland and Karratha.

International visitor expenditure was \$5.4 million lower in Port Hedland than in Karratha and \$63 million lower for domestic overnight. This can be attributed to the 53.4% higher visitation recorded for Karratha compared to Port Hedland in 2018.

Port Hedland domestic visitation is projected to grow by 3.2% per annum (on average) from 2019 to 2027 and international visitation by 4.3% per annum (on average), in line with projected growth for Karratha and Regional WA. As half of visitation in Port Hedland is related to business (incl. FIFO work), visitation is anticipated to trend in line with construction and mining activity in the coming years.

This comparative analysis is supported by additional data provided at Appendix C - Comparative Profile Details.

12.2.3 Economic Competitive Assessment Results

This section is supported by additional data and analysis provided at Appendix D - Competitive Assessment.

Macro-Economic Trends Analysis

Key macro-economic trends potentially influencing Port Hedland's economy include:

- **Mining activity boom and busts:** Port Hedland's economy runs on direct and indirect mining activity. The booms and busts within the mining activity cycle impact direct labour usage, intermediate input usage for mining operations, dividends, retained earnings and investment in the economy. The prolonged downturn in mining activity since 2013 is anticipated to recover, due to a number of new mining projects as well as the approval of the Eliwana project and replacement of the Yandi mine with South Flank.
- **Growing population:** Volatility in annual population growth rates in regional mining communities is common, where population growth is strongly linked to periods of operational expansion and major construction works. Positive population growth is anticipated for Port Hedland until 2041, with growth anticipated in line with the growth in mining and construction industry activity.
- **Growing dwelling demand:** Dwelling demand in Port Hedland differs from that in Western Australia as a whole, with a more diverse housing supply. Port Hedland's dwelling demand is heavily influenced by changes in the resources sector, which impacts population growth, real estate confidence and thus demand for dwellings. Port Hedland's dwelling demand has decreased by 3.6% annually between 2006 and 2016; yet this is anticipated to increase with projected population growth.
- **Consumer expenditure patterns:** Consumer expenditure in Port Hedland is heavily driven by activity cycles of the mining industry, as resident workers are typically directly or indirectly associated with employment in this industry. The retail sector in Port Hedland is small, representing just 5.2% of overall employment. Therefore, capturing greater spend from local residents and FIFO workers will prove essential for growth over the coming years.
- **FIFO practices:** FIFO practices are common in areas associated with labour-intensive, short-term activities such as construction works. More FIFO workers will be required over the next few years in Port Hedland, with the anticipated boom in construction, including the capital works program to expand the Port (2-year project), BHP South Flank mine in Pilbara, FMG Port Hedland expansion and Rio Tinto expansions and new mines (Centre Point Finance, 2019).
- **Visitation activity:** Tourism in Port Hedland is associated with its shipping and mining heritage as well as its Indigenous and European history experiences. Domestic visitors can be primarily attributed to those visiting for business purposes (54.1%), followed by holidaying visitors (25.3%). Comparatively, international visitors are primarily comprised of those on holiday (69.1%) followed by business (11.9%).

Industry Concentration

Mining and Support Services

Mining is a prominent industry within the Port Hedland economy, responsible for 70% of total industry value add in 2017-18. The success of Port Hedland's mining industry is enhanced by the Port of Port Hedland, one of world's largest bulk export Port's, which is responsible for approximately 75% of the State's and 50% of the world's seaborne iron ore exports (in conjunction with the Dampier Port) (Pilbara Ports Authority, 2018). Coupled with the extensive inland rail network, Port Hedland is well-positioned to service mining exports and transport industry activity.

Accordingly, Port Hedland has well established industries in mining and transport, postal and warehousing, as well as electricity, gas, water and waste services, and rental, hiring and real estate services. Each of these sectors has a strong existing labour specialisation in the region. Forward projections of population (including increased population attraction of remote workers) and the number of newly announced projects (predominantly mining and construction), are supportive for the future of these sectors locally.

Manufacturing, Training and Service Provision

Manufacturing, education and training, and healthcare and social assistance industries are comparatively lacking in terms of labour specialisation in Port Hedland. Port Hedland has the potential to support greater advanced

manufacturing in terms of mining equipment, technology and services, which would enhance the mining supply chain locally. To transform Port Hedland from a region of cyclical economic activity to a more balanced and sustainable economy, the provision of high-level community services is essential.

Service provision (including professional scientific and technical services, etc.) are also lacking in terms of labour specialisation in Port Hedland. This is typical of a regional community which may not be able to support large provision of these services. However, in the case of Port Hedland, the volatile population over the past decade has resulted in minimal investment directed towards increasing service provision in line with demand from the population. As mentioned, projections reveal that Port Hedland's population is anticipated to increase by 2.5% annually (on average) for the next 20 years and increased service provision will be required to fill the gap.

Import/Export Analysis

With approximately \$1.4 billion inputs purchased from outside the local economy compared to just \$711.6 million purchased within the local economy, Port Hedland's local supply chains could be further established. Key imports to the region consist of construction, financial and insurance services and mining support services. Evidently, import replacement opportunities exist for construction and mining support services, which will strengthen these local industry supply chains.

The high importation of financial and insurance services is consistent with those seen in similar regional areas of Australia. While some degree of important replacement may come from increased critical mass associated with population growth and increased population attraction of remote workers over time, it is likely this sector will remain a key import to the region into the future.

Local exports are reflective of key industries in the region, including metal ore mining, construction and transport, and logistics.

COVID-19 Pandemic

With the exception of the 'Covid-19 pandemic', this section is supported by additional data and analysis provided at Appendix D – Competitive Assessment.

Covid-19 pandemic: During the pandemic and as at September 2020, iron ore exports have remained strong and comparable to performance seen through the majority of the second half of 2019. The latter driven by robust Chinese demand due to supply issues out of Brazil and increased production by Chinese steel mills with an expectation of higher spending on infrastructure over 2020.

There remains a significant pipeline of global projects reliant on iron ore; however, the Office of the Chief Economist forecasts that while relatively strong export earnings are expected over the next few years, significant growth in iron ore production is not likely over the next two years. Both Fortescue Metals Group and BHP have announced that they will continue with Port and new mine projects and expansions, respectively.¹

Global containment measures will be the key driver of global economic growth and industrial production in 2020. Economic assumptions do not consider the impacts of a second wave of Covid-19 infections.

Strong performance by the resources sector means this sector will remain a significant focus of government policy during the recovery period. A substantial number of the priorities identified in the WA Recovery Plan address vulnerabilities identified during the Covid-19 pandemic, including supply and demand issues associated with limited markets, by targeting industry expansion and diversification underpinned by a skilled workforce.

¹ Australian Government, Office of the Chief Economist, Resources and Energy Quarterly, June 2020, Available at: <https://publications.industry.gov.au/publications/resourcesandenergyquarterlyjune2020/documents/Resources-and-Energy-Quarterly-June-2020.pdf>

12.2.4 Coronavirus (Covid-19) pandemic

On 11 March 2020, the World Health Organisation declared Covid-19, which originated in China, as a public health emergency of international concern (a pandemic), requesting countries take aggressive and urgent action to suppress and control the virus.²

The Australian Government enacted a raft of unprecedented measures to stop the spread of Covid-19 including, international border closures and associated quarantine requirements; restrictions on social gatherings; unprecedented levels of emergency payments, stimulus and relief packages; and Covid-19 testing and other health measures.

Western Australia was impacted by the pandemic, largely linked to cruise ships. On 15 March 2020, the State Government declared a State of Emergency, and in late March 2020 introduced quarantine requirements for interstate travellers, closing its border in early April 2020 along with schools.³ A number of other States and Territories also implemented border controls. Restrictions were subsequently tightened in Western Australia, resulting in a month-long period of lockdown during April 2020. The State Government also introduced a raft of relief and stimulus measures, with significant funding allocated to support the health sector; small business, tourism operators, arts and culture, and crisis support services; to boost housing construction; facilitate traineeships; freeze household utility charges; and provide rental support.

As at September 2020 Federal, State and Territory border restrictions remain in place under varied conditions, along with a raft of stimulus and relief packages and payments. In June 2020, Victoria experienced localised outbreaks of Covid-19 which due to expanded community transmission resulted in an extended period of lockdown with substantial and protracted economic impacts.

The Covid-19 pandemic has placed unprecedented pressure on global health systems and economies, presenting enormous fiscal challenges for Governments. As at July 2020, the Federal Government had provided \$289 billion or around 14.6 percent of GDP in fiscal and balance sheet measures. This, together with a substantial decline in taxation receipts and increase in payments, has seen a major deterioration in the Federal Government's budget position with an estimated deficit of \$85.8 billion and \$184.5 billion in 2019-20 and 2020-21 respectively.⁴ The world has entered into recession, experiencing the worst economic crisis since the Great Depression.

The Federal Government reports the global and domestic economic outlook as highly uncertain, and shaped by the evolving health crisis, with recovery in many economies likely to be protracted. The pandemic and containment measures has seen record falls in indicators of business investment, household consumption, and labour market and trade activity.

In September 2020, the OECD announced that global GDP would contract by 4.5 percent in 2020 before picking up by 5 percent in 2021 as the world responds to the 'fallout' from the virus. The OECD forecasts Australia's GDP to fall by 4.1 percent in 2020, which compares well to a number of other Western nations.⁵ More recently, the Parliamentary Budget Office⁶ indicated that in nominal terms, Australian GDP increased by 1.7 percent in 2019-20, well below the pre-COVID anticipated increase of 3.25 percent⁷ (forecasted pre-COVID), and may decline by 1.75 percent in 2020-21.

² BBC News, *Coronavirus confirmed as pandemic by World Health Organisation*, 11 March 2020. Accessed 22 September 2020. Available at: <https://www.bbc.com/news/world-51839944>

³ Government of Western Australia, *Covid-19 coronavirus: State of Emergency Declarations*. Accessed 22 September 2020. Available at <https://www.wa.gov.au/government/document-collections/covid-19-coronavirus-state-of-emergency-declarations>

⁴ Commonwealth of Australia, *Economic and Fiscal Update, July 2020, Statement by the Hon Josh Frydenberg MP, Treasurer of the Commonwealth of Australia and Senator the Hon Mathias Cormann, Minister for Finance*, July 2020. Available at: <https://budget.gov.au/2020-efu/downloads/JEFU2020.pdf>

⁵ Commonwealth of Australia, *OECD upgrades Australia's economic growth outlook*, the Hon Josh Frydenberg MP, Treasurer, Media Release, 16 September 2020. Accessed 22 September 2020. Available at: <https://ministers.treasury.gov.au/ministers/josh-frydenberg-2018/media-releases/oecd-upgrades-australias-economic-growth-outlook>

⁶ Parliamentary Budget Office (2020). *Medium-term fiscal projection scenarios: impact of COVID-19 pandemic and response*. Parliamentary Budget Office, Canberra.

⁷ Parliamentary Budget Office (2019). *Mid-Year Economic and Fiscal Outlook 2019-20*. Canberra, Australian Capital Territory.

The impacts on GDP are anticipated to be felt in the long term. Interest rates provide a useful indicator of the long-term impact on the economy. Jorda, Singh, and Taylor (2020) reveal that following a pandemic, the response of the natural rate of interest will be skewed downwards by nearly 1.5 percentage points about 20 years later. This is reflective of low investment resulting from higher precautionary savings and the net deficit expected to endure through to at least 2030-315. Further long-term implications include reduced business start-ups, disrupted supply chains, lower levels of employment and reduced circulation of incomes in the economy, as well as reduced labour productivity due to loss of skills by unemployed persons⁸.

In May 2020, the Western Australian Government noted that the economic shock for the Western Australian economy would be significant, forecasting growth of 0.7 percent in 2019-20, with contraction of 3.1 percent in 2020-21, before returning to growth in 2021-22. Total general revenue over 2019-20 to 2020-21 was expected to be \$1.8 billion lower than the \$2.6 billion forecast in the 2019-20 mid-year review due to the fiscal response to Covid-19 and reduction in revenues. The State Government has warned that forecasts need to be treated with caution due to the high level of uncertainty regarding the ongoing effects of Covid-19 on state, domestic and international economies.⁹

Indicative estimates of the impact of COVID-19 to the Port Hedland and Western Australian economy to 2 January 2021 have been developed based on data from the Australian Bureau of Statistics (ABS, 2020) outlining impacts on employment at the State level by industry. Indicative estimates of employment impacts for the Town were developed assuming the proportional change in industry activity at the State have been experienced in the Town as well. Impacts on GRP were inferred considering both the estimated change in employment as a result of the COVID pandemic and the estimated change in labour productivity (value added activity per full time employee) experienced since 2019.

8 BIS Bulletin (2020). Macroeconomic effects of Covid-19: an early review. Available from: <https://www.bis.org/publ/bisbull07.pdf>. Accessed: 19 August 2020.

9 Parliamentary Budget Office (2020). Medium-term fiscal projection scenarios: impact of COVID-19 pandemic and response. Parliamentary Budget Office, Canberra.

Based on these indicative estimates, at 2 January 2021, the pandemic has resulted in a decline of approximately 568 employees (or 5.6%) in Port Hedland compared to 2018-19 estimates. This is slightly higher than that for the State, which is estimated to have recorded a 4.5% decline in employment over the same period. The impact on Gross Value Added (GVA) has been slightly more pronounced than that for employment (likely due to the high GVA per employee in mining), with Port Hedland recording a decline of approximately \$358.6 million due to the pandemic, a decline of 6.2% from 2018-19 levels. This compares to a decline of 5.0% for the State.

During the pandemic (and ongoing as at September 2020), iron ore has underpinned economic stability in Western Australia and been a major bulwark of the Australian economy, with a surge in iron ore exports since March 2020 given supply constraints from Brazil and Chinese stimulus measures. In June 2020, the Australian Chief Economist forecast Australia's resources and energy exports to reach a record \$293 billion in 2019-20 with a fall to about \$263 billion and \$255 billion in 2020-21 and 2021-22 respectively but remaining relatively strong.¹⁰ The Port has become a key component of Port Hedland's COVID-19 recovery plan; the Western Australian government's Recovery Plan included a significant program of works totalling \$81.7 million to support trade, boost the local economy and jobs. The ongoing trade-tensions with China has seen China continue to impose trade restrictions on Australia, in the form of import tariffs on Australia's barely and wine, bans on exports from Australian abattoirs, and bans on timber and grain exports. Despite this, China has become increasingly dependent on Australia for iron ore, which represents more than 60% of China's iron ore imports¹¹, due to production problems in Brazil and the increasing

10 Australian Government, Office of the Chief Economist, *Australia's resources and energy exports are estimated to have reached a record \$293 billion in 2019-20, despite the Covid-19 global economic downturn*, Media Release, 29 June 2020. Available at: <https://www.industry.gov.au/news-media/office-of-the-chief-economist-news/australias-resources-and-energy-exports-are-estimated-to-have-reached-a-record-293-billion-in-2019-20-despite-the-covid-19-global-economic-downturn>

11 China Macro Economy (2020). China – Australia relations: Canberra unwilling to 'give up ground' as value of iron ore exports rise. Available from: <https://www.scmp.com/economy/china-economy/article/3112395/china-australia-relations-canberra-unwilling-give-ground-even>. Accessed: 21 January 2020.

government spending on transport infrastructure in the country. This demand is expected to remain high over the next 12 months, and as such, the Australian Government commodity forecaster has raised its forecast for Chinese ore demand¹². Though, it is likely that Chinese demand for iron ore is at its peak, and will gradually decline over the next 10 years.

In the Pilbara, regional businesses have been significantly impacted, along with the tourism, recreation and hospitality sectors. The JobKeeper Payment Scheme was introduced in April 2020 to support businesses and individuals during the pandemic by providing \$1,500 payments to employers for eligible employees each fortnight. In Port Hedland, approximately 182 businesses applied for JobKeeper (on average) per month from April to September¹³. It is anticipated that some of the small-medium enterprise businesses covered by the JobKeeper payment may struggle to recover once the payment is ended. The JobKeeper rate declined in the December quarter and again in the March Quarter 2021. As at September 2020 it is difficult to discern changes to business behaviour going forward, although the pandemic has evidenced disruptions to the FIFO model due to border restrictions and infection risk; identified over-dependence on particular markets for supply and demand and the requirement to focus on market diversification and domestic and local manufacturing; an acceleration in the trend towards automation, robotics and remote-control operations at mine sites; and utilisation of more online services (telehealth and other government services).¹⁴

The pandemic has likely resulted in lower than usual population growth in Port Hedland (as with most of regional Australia), due to reduced migration resulting from the international travel ban implemented in March 2020 and on-and-off border closures between States. During the latter period of 2020, however, mining companies encouraged staff to move closer to

the mining sites to avoid issues associated with pandemic induced border closures between States. This, alongside changes in lifestyle preferences towards residing regionally, may soften the decline in population growth.

Whilst there has been a slowdown in property market activity as a result of the pandemic in regional areas more broadly¹⁵, Port Hedland's property market has started to show signs of improvement. Regional Western Australia has recently recorded lower vacancy rates, increased rental demand, and increased sales activity as a result of recovering population growth and investment in pandemic recovery projects¹⁶. In July 2020, the State Government released its \$5.5 billion WA Recovery Plan which includes 21 recovery priorities outlined briefly under 3.2.1 'Coronavirus (Covid-19) recovery'¹⁷. In July 2020, the State Government released its \$5.5 billion WA Recovery Plan which includes 21 recovery priorities outlined briefly under 3.2.1 'Coronavirus (Covid-19) recovery'.

The economic data provided at 12.2.2 below provides an economic analysis and comparison data with Karratha and regional WA pre-pandemic (i.e. based on available datasets as at the time of writing). As noted, it is too early to ascertain the breadth and depth of impacts from Covid-19 on the Australian, Western Australian or regional / local economy. The timing of release of many data sets can lag by three to six months (and in the case of Census data this is only available every five years), which can mean recent developments and macro-economic conditions (including ramifications of COVID-19) are unlikely to be fully reflected in the statistics and data presented. As noted at 3.4.2 'Population Forecasting', this local planning strategy includes a balance between a conservative population forecast and aspirational population forecast, providing sufficient land for growth, services and infrastructure while being able to cope with fluctuations in growth should certain economic or policy factors come into play.

12 Argus (2020). Australia raises Chinese iron ore demand forecast. Available from: <https://www.argusmedia.com/en/news/2170779-australia-raises-chinese-iron-ore-demand-forecast>. Accessed: 21 January 2021.

13 Treasury (2020). Economic Response to the Coronavirus. The Treasury, Australian Government. Available from: <https://treasury.gov.au/coronavirus/jobkeeper/data>. Accessed: 19 August 2020.

14 Regional Development Australia Pilbara, Initial Impact Assessment of Covid-19 on the Pilbara Economy, May 2020, pp22-23. Available at: http://www.rdapilbara.org.au/resources/site/General/Publication%20Reports/Initial_Impact_Assessment_of_COVID-19_on_the_Pilbara.pdf

15 CoreLogic (2020). Can regional housing markets benefit from COVID-19? Available from: <https://www.corelogic.com.au/news/can-regional-housing-markets-benefit-covid-19>. Accessed: 18 August 2021.

16 REIWA (2021). Strong property market conditions expected in WA in 2021. Available from: <https://reiwa.com.au/about-us/news/strong-property-market-conditions-expected-in-wa-in-2021/>. Accessed: 18 January 2021.

17 Government of Western Australia, *WA Recovery Plan: We're all in this together*, July 2020. Available at: <https://www.wa.gov.au/sites/default/files/2020-07/WA-Recovery-Plan.pdf>

12.3 Environmental Profile

The following section has been prepared by Emerge Associates and provides a review of the key environmental features and issues within the Town.

12.3.1 Physical Features and Environment

Climate

The Town is described as having an arid-tropical climate, with warm dry winters and warm to hot summers. Weather data has been taken from the PHIA historical data, with the average maximum temperatures range from 27.3°C in July through to 36.8°C in March, while the average minimum temperatures range from 12.4°C in July through to 25.6°C in January.

The average rainfall within Port Hedland is approximately 317 mm annually (BoM 2019), with rainfall generally higher within the coastal portion of the Town. The majority of rainfall occurs between December and June, with the wettest months being January – March, associated with tropical storms and the cyclone season.

During the northern wet season (October – April), winds are generally easterly to south-easterly in the morning and westerly to north-westerly in the afternoon. During the northern dry season (May – September), the winds are generally variable, from easterly to east-south-easterly in the morning and westerly to northerly in the afternoon (Cardno 2011). The coast is also strongly impacted by sea breezes, which can be around 25% stronger than the mean annual wind speed. The sea breezes are likely to develop in the afternoon and are generally from a westerly to north-westerly direction (Cardno 2011). The average wind speed and direction for the dry season and wet season are provided in Figures 14 to 17.

The Town is located within the ‘cyclone belt’, the most cyclone-prone stretch of coastline within Australia, with the Pilbara coastline experiencing more cyclone activity than any other part of Australia. Winds associated with cyclone events may exceed 100 knots and may be experienced in association with rough sea conditions and elevated water levels (Cardno 2011).



Figure 26. Average wind direction and speed at 9am for the wet season (BoM 2019)

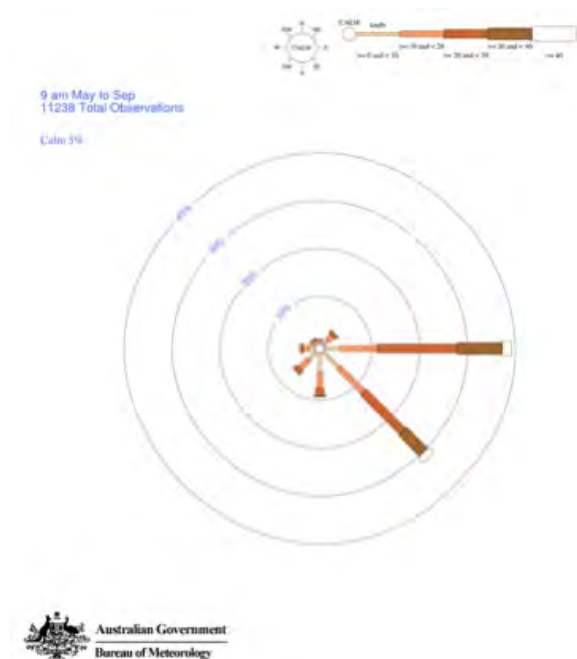


Figure 27. Average wind direction and speed at 9am for the dry season (BoM 2019)



Figure 28. Average wind direction and speed at 3pm for the wet season (BoM 2019)



Figure 29. Average wind direction and speed at 3pm for the dry season (BoM 2019)

Landforms and soils

There is a minimum of eight geological units within the Town, based on broad-scale mapping produced by the Geological Survey of Western Australia (1990), as listed below:

- ACDcsw - CONSTANTINE SANDSTONE, subunit: Wacke; locally subarkosic; fine to coarse grained; well developed graded units; minor pebble beds and shale; turbiditic; metamorphosed.
- AgPMA - Granitic rock, unassigned, interpreted from aeromagnetic data.
- APixmbmut - Interleaved amphibolite and talc tremolite serpentine chlorite schist.
- ACDms - MALLINA FORMATION: interbedded shale, siltstone, sandstone, and medium to fine grained wacke; metamorphosed.
- AmyyPWP - Mylonitic granitoid, felsic and mafic volcanic, ultramafic, and sedimentary rocks.
- APixbs - Pilbara Supergroup, unassigned: mafic and ultramafic volcanic rocks; minor chert; metamorphosed.
- AgPI - PIPPINGARRA GRANITIC COMPLEX: undivided granitoid rocks; metamorphosed.
- AgmPMA - Unassigned monzogranite, interpreted from aeromagnetic data; metamorphosed.
- Other – Unassigned geological areas.

There is a minimum of five soil groups located within the Town, based on Tille (2006), as listed below:

- Tidal soils - Intertidal soils are inundated regularly, while supratidal soils are inundated infrequently. Soils are deep (>100 cm) sandy clay loams or silty light to medium clays overlying silty medium clays.
- Calcareous deep sands - This soil group comprises deep white, grey and brown calcareous sands of the coastal margins of the survey area. The sands tend to be white to light grey on the beach and foredune zones, trending to yellowish brown to strong brown away from the beaches.
- Red deep sandy duplex soils - These soils have medium (10-30 cm) topsoils of loamy sands to sandy loams overlying medium to thick (30-60 cm) subsoils of clay loams or light to medium clay. These soils are mostly deep (>100 cm).

- Red/brown non-cracking clays - Shallow (<50 cm) red/brown non cracking clays have thin clay loam or light clay topsoils overlying subsoils of light clay or are uniformly clay throughout.
- Red deep sands - The majority of the deep red sands occur on sandplains, sand sheets and sand banks. These soils are deep and have thin to medium (10 30 cm) topsoil textures of loamy sand overlying thick (>60 cm) subsoils of clayey sand or sandy loam.

Acid sulfate soils

Acid sulfate soils (ASS) is the name commonly given to naturally occurring soils and sediment containing iron sulphide (iron pyrite) materials. In their natural state, ASS are generally present in waterlogged and/or anoxic conditions and do not present any risk to the environment. ASS can pose issues when oxidised, producing sulphuric acid, which can present a range of risks for the surrounding environment, infrastructure and human health.

DWER provides broad-scale mapping indicating areas of potential ASS risk (DWER 2019). A review of the DWER mapping indicates that the entire Port Hedland townsite is classified as having a 'moderate to low risk' of ASS occurring within 3 m of the natural soil surface. Areas of the port operations area are classified as having a 'high to moderate risk' of ASS occurring within 3 m of the natural soil surface.

Coast and foreshores

The Town has as an extensive coastline, which encompasses a variety of nearshore and coastal landforms. Within the Town this includes:

- Port Hedland port.
- The Spoil Bank, composed of dredged harbour spoil.
- A number of islands, including Finucane Island, Downes Island, Little Turtle Island, Bedout Island and Weerde Island.
- Several river mouths, including the Turner, De Grey and Yule Rivers.

The Port Hedland port is the largest port (by tonnage) in Australia (Town of Port Hedland 2018). The port services the mineral export business, primarily iron ore. The harbour has been dredged several times to accommodate expansion of the port.

The Port Hedland townsite is located on a narrow headland, which is exposed to erosion hazards and low-lying areas are subject to storm surges and inundation.

The general coastal morphology of the Port Hedland region is a limestone barrier system which is typified by the low coastal cliff and rock formations along the shoreline. Due to the nature of the coastline, there are limited mobile sediments present at the shoreline; however, the development of the Spoil Bank has provided a source for mobile sediments around the Port Hedland shoreline (Cardno 2011).

Additionally, due to the large tide range combined with wave forcing, there is a highly energetic environment near the shoreline which results in limited mobile sediments in the nearshore zone. Sandy beaches in the Port Hedland region are normally perched on rock platforms or constrained by rock formations. Where mobile sediments exist in the nearshore zone, they generally have an eastern movement, although this can vary seasonably (Cardno 2011).

Biodiversity and natural areas

The Town of Port Hedland is situated within three Interim Biogeographic Regionalisation for Australia (IBRA) regions; Dampierland, Pilbara and Great Sandy Desert. These three regions can be broken down into four sub-regions: Chichester (extending across the southern portion of the Town), Roebourne (extending across the northern portion), Pindanland (located within the north-western portion) and McLarty (located within the north-eastern portion) (Thackway and Cresswell 1995). The four IBRA regions are described below in Table 15.

Table 17: IBRA regions within Town of Port Hedland

Region	Description
Chichester	Undulating Archaean granite and basalt plains include significant areas of basaltic ranges. Plains support a shrub steppe characterised by <i>Acacia inaequilatera</i> over <i>Triodia wiseana</i> (formerly <i>Triodia pungens</i>) hummock grasslands, while <i>Eucalyptus leucophloia</i> tree steppes occur on ranges.
Roebourne	Quaternary alluvial plains with a grass savannah of mixed bunch and hummock grasses, and dwarf Shrub Steppe of <i>Acacia translucens</i> or <i>A. pyrifolia</i> and <i>A. inaequilatera</i> . Resistant linear ranges of basalts occur across the coastal plains. These uplands are dominated by <i>Triodia</i> hummock grasslands. Ephemeral drainage lines support <i>Eucalyptus</i> woodlands. <i>Samphire</i> , <i>Sporobolus</i> grasslands and mangal occur on the marine alluvial flats and river deltas.
Pindanland	The Pindanland subregion comprises sandplains of the Dampier Peninsular and western part of Dampier Land, including the hinterland of the Eighty Mile Beach. it is a fine-textured sand-sheet with subdued dunes and includes the paleodelta of the Fitzroy River. The vegetation is described primarily as pindan. This is the coastal, semi-arid, north-western margin of the Canning Basin.
McLarty	This is mainly tree steppe grading to shrub steppe in south; comprising open hummock grassland of <i>Triodia pungens</i> and <i>Triodia schinzii</i> with scattered trees of <i>Owenia reticulata</i> and Bloodwoods, and shrubs of <i>Acacia</i> spp, <i>Grevillea wickhamii</i> and <i>G. refracta</i> , on Quaternary red longitudinal sand dune fields overlying Jurassic and Cretaceous sandstones of the Canning and Armadeus Basins. Gently undulating lateritised uplands support shrub steppe such as <i>Acacia pachycarpa</i> shrublands over <i>Triodia pungens</i> hummock grass.

A variety of vegetation structural types occur in the Port Hedland area, comprising numerous floristic types. Broad-scale mapping completed by Beard (1975) indicates that at least seven broad vegetation types occur within the Port Hedland area, as identified below:

- Hummock grasslands, dwarf-shrub steppe; *Acacia translucens* over soft spinifex.
- Hummock grasslands, shrub steppe; kanji over soft spinifex
- Hummock grasslands, grass steppe; soft spinifex
- Bare areas; mudflats
- Low forest; mangroves (Kimberley) or thicket mangroves (Pilbara)
- Mosaic: Short bunch grassland – savannah/grass plain (Pilbara)/Hummock grasslands, grass steppe; soft spinifex
- Medium woodland; river gum (*Eucalyptus camadulensis*)

Vegetation condition within the northern portion of the Town has been previously surveyed by ENV. Australia (2011). This survey identified vegetation condition ranging from 'completely degraded' to 'pristine'. Areas of 'pristine' condition vegetation occur within the tidal flats near the town, whilst large areas of 'excellent' condition vegetation are located to the south of the town.

The Town is known to contain a number of significant flora, vegetation, and fauna values that are identified under both State and Federal legislation and policy. These values include:

- Priority Ecological Communities (PECs) such as:
 - o Eighty Mile System.
 - This is a Priority 3(iii) system;
 - Described as: Beach foredunes, longitudinal coastal dunes and sandy plains with tussock grasslands and spinifex grasslands; and
 - Threats: extensive threatening processes acting at landscape scales, namely altered fire regimes, over grazing, erosion, and weed invasion (buffel grass).
 - o Gregory System
 - Linear dunes and restricted sandplains supporting shrubby hard spinifex (and occasionally soft spinifex grasslands).

- Threatened and Priority flora, including but not limited to, *Abutilon pritzelianum*, *Bulbostylis burbridgeae*, *Gomphrena pusilla*, *Goodenia nuda*, *Gymnanthera cunninghamii*, *Heliotropium muticum*, *Nicotiana umbratica*, *Phyllanthus aridus*, *Ptilotus appendiculatus* var. *minor* and *Tephrosia rosea* var. *venulosa*.
- Threatened and Priority fauna species, including but not limited to, eastern curlew, northern quoll, green turtle, brush-tailed mulgara, flatback turtle, ghost bat, bilby, Pilbara olive python and banded hare-wallaby.

Refer to Figure 18 – Priority Flora Locations

Refer to Figure 19 – Threatened and Priority Fauna Locations

Three areas within the Town are identified as lands under DBCA control:

- Eighty Mile Beach Marine Park, located within the north-eastern portion of the Town, extending to the east of the Town.
- Bedout Island Nature Reserve, located approximately 33 km offshore, to the north-east of Port Hedland.
- Little Turtle Island Nature Reserve, located approximately 20 km offshore, to the north-east of Port Hedland.

Key environmental assets within the Town include:

- Mangroves – provide habitat for marine and terrestrial organisms, and nursery habitats for fish and crustaceans, performing an important ecosystem function. Additionally, mangroves improve water quality through acting as a nutrient and sediment sink, and provide important physical functions, including the stabilisation of shorelines, and mitigation of wave energy.
- Beaches – Cemetery and Pretty Pool beaches provide important nesting habitat for flatback turtles. Nesting turtles are sensitive to light impacts, and can be protected through the avoidance, management and mitigation of light impacts from development and industry.

12.3.2 Hydrology

Surface Water

There are two surface drainage systems located within the Town, namely the De Grey River Basin (located within the north-eastern and a small area of the south-eastern portion of the Town) and the Port Hedland Coast Basin which occupies the remainder of the Town area.

A number of major waterways flow through the Town, including the De Grey River, Yule River, Turner River and Shaw River.

Refer to Figure 20 – Major Waterways

Groundwater

Information relating to regional groundwater obtained from the Water Register (DWER 2019b) indicates the groundwater beneath the Local Government Area (LGA) is a multi-layered system comprised of the following aquifers:

- Canning - Wallal
- Canning - Broome
- Combined - Fractured Rock West - Fractured rock
- Hamersley - Fortescue
- Hamersley - Fractured rock
- Lower Turner Alluvial
- Pilbara - Alluvial
- Pilbara - Coastal saline
- Pilbara - Fractured rock
- Pilbara - Lower de grey Alluvial
- Pilbara - Lower Yule Alluvial
- Wittenoom – Wittenoom

Available groundwater level data suggests that groundwater flow is generally from south-east to north-west towards the Indian Ocean. Depth to groundwater across the townsite (i.e. West End, Spinifex Hill, East End Urban Village) can be assumed to vary between 1 m and 15 m below ground level (BGL). Depth to groundwater in South Hedland can be assumed to be approximately 5 m BGL, and depth to groundwater below the PHIA and Surrounds precinct can be assumed to be approximately 4 m BGL. Overall, groundwater level and quality data are limited.

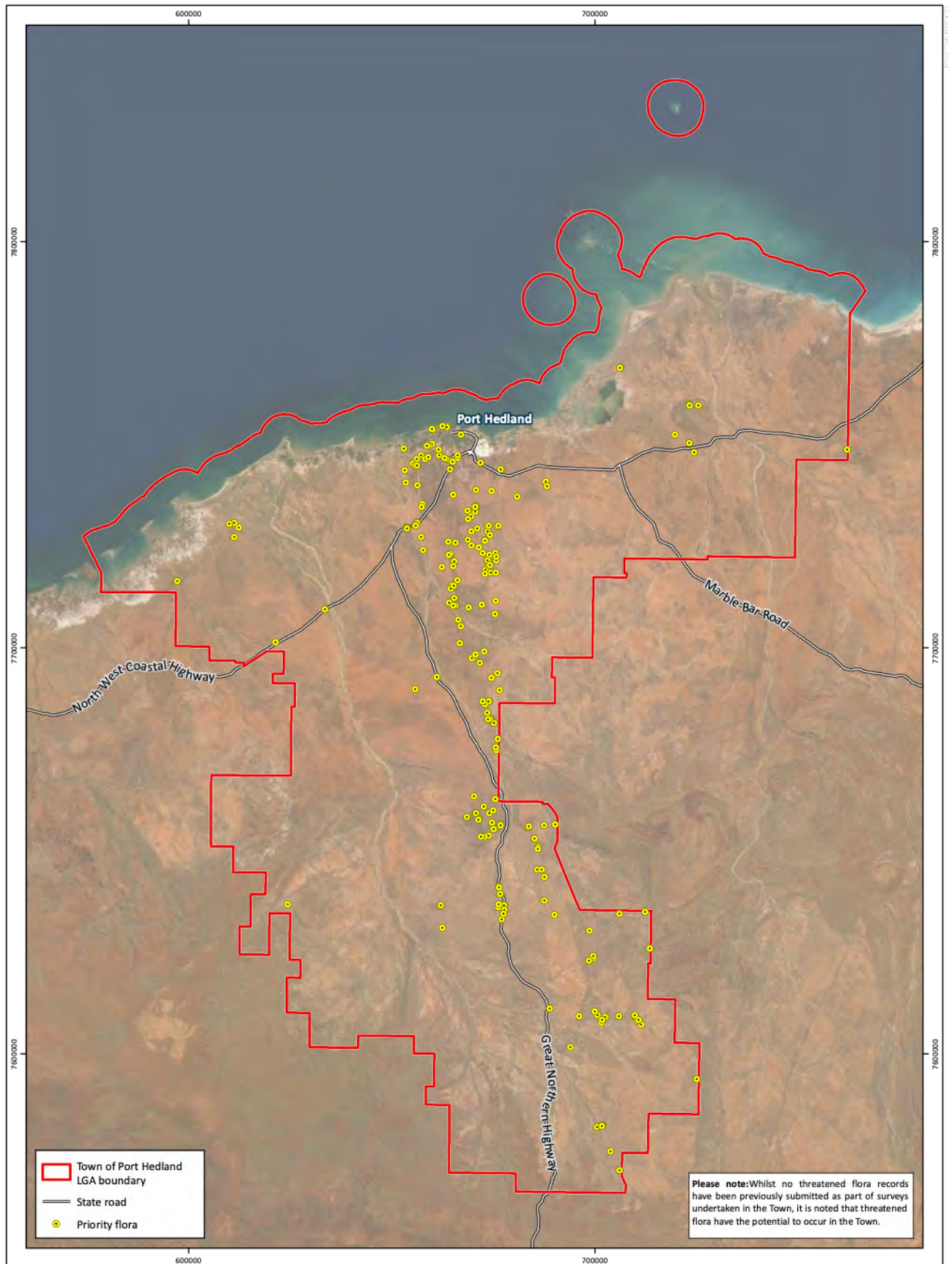


Figure 30. Priority Flora Locations

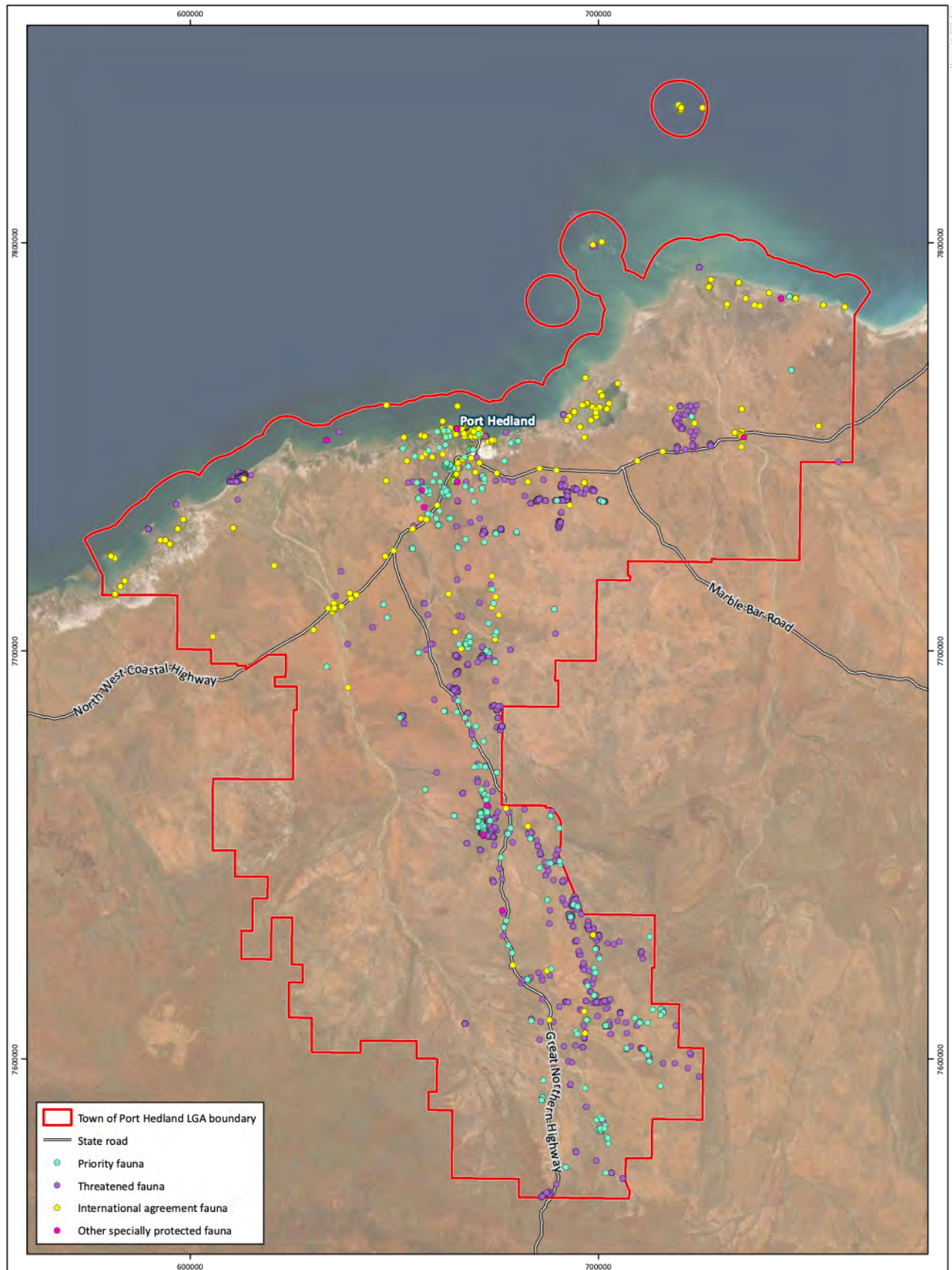


Figure 31. Threatened and Priority Fauna Locations

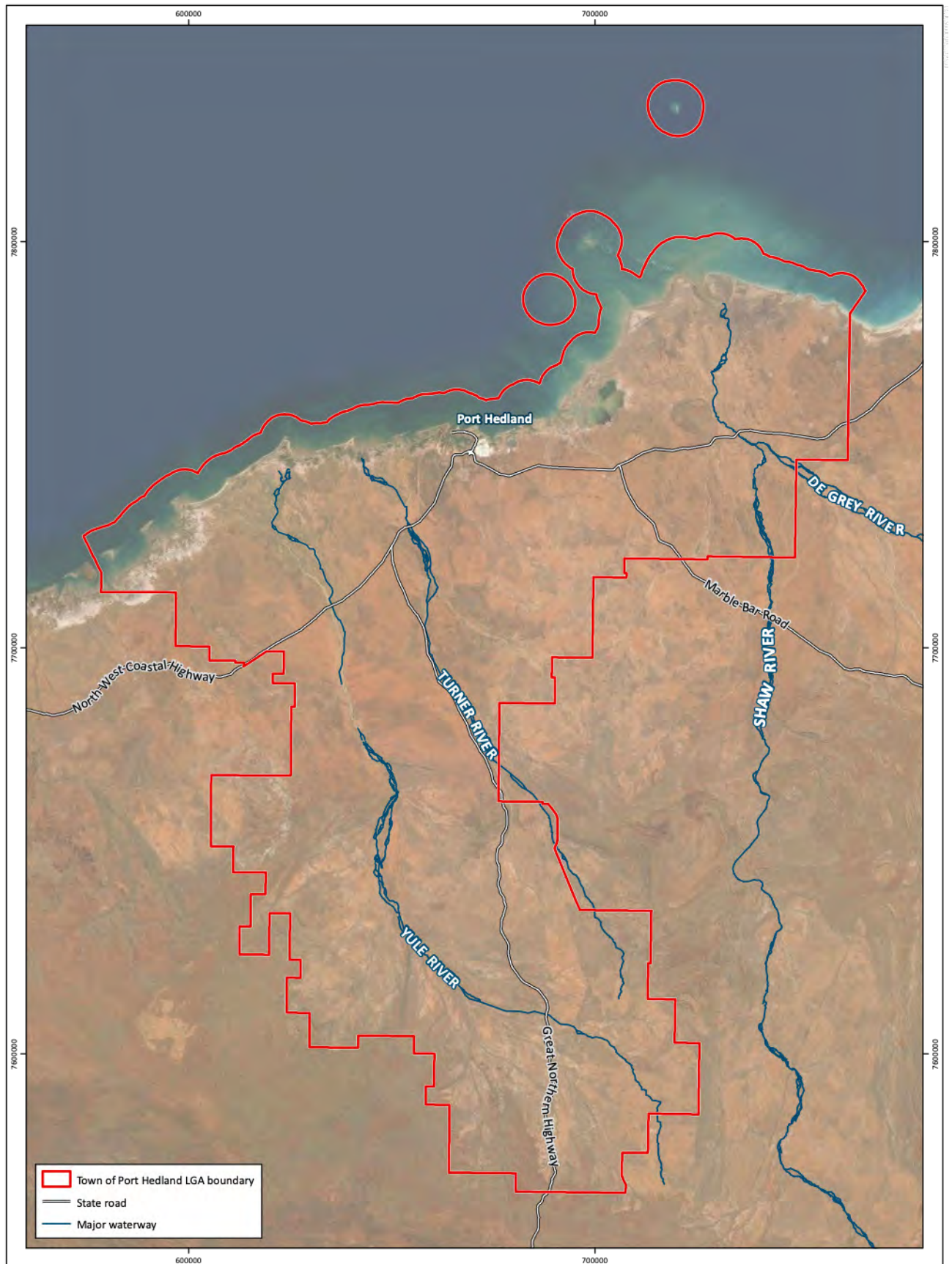


Figure 32. Major Waterways

Wetlands

Wetland mapping of the Pilbara was undertaken by the V & C Semeniuk Research Group (2000), which identified several significant wetlands within the Town, on the basis of their vegetation, avifauna and other fauna, and general features. There is currently no mapping of these wetlands available apart from the report.

Additionally, three areas located within the Town are identified as 'Important Wetlands' by the federal Department of Environment and Energy (DoEE). Important Wetlands are those that are determined to be nationally important wetlands; however, are not protected under legislation. The three wetlands identified within the Town are:

- Eighty Mile Beach System
- De Grey River
- Leslie (Port Hedland) Saltfields System.

12.3.3 Water Supply

Public Drinking Water Source Areas (PDWSA) are proclaimed by DWER to protect identified drinking water sources, including surface water and groundwater sources (DoW 2009). They are proclaimed under the *Metropolitan Water Supply, Sewerage and Drainage Act 1909* or the *Country Areas Water Supply Act 1947* as Water Reserves, Catchment Areas or Underground Water Pollution Control Areas. PDWSAs provide the population with the majority of its drinking water supplies and can be vulnerable to contamination from a range of land uses. Once an area is identified as a PDWSA, consideration needs to be given to the intended land use and associated activities to ensure that they are appropriate in meeting the water protection quality objectives of the area.

Two PDWSAs are located within the Town, the De Grey River Water Reserve, located to the east of Port Hedland, and the Yule River Water Reserve, located to the west of Port Hedland. Development is able to occur within PDWSAs, subject to compatibility as identified within Water Quality Protection Note no. 25 (DoW 2016).

Refer to Figure 21 – Public Drinking Water Source Areas

12.3.4 Land Capability

Several stations operate in the Town across large pastoral leases, including Mundabullagana, Indee and De Grey. A survey undertaken in 2004 (DAFWA) assessed land capability for pastoral uses, with capability ranging from 'very low' to 'very high' across the Town. The higher-ranking areas were ranked as such on the basis that they had lower soil erosion and better condition vegetation than any other areas.

Solar salt ponds are located within the Town, which allow Dampier Salt (subsidiary of Rio Tinto) to produce over 3 million tonnes of industrial salt.

12.3.5 Bushfire hazard and risk

Bushfires are a natural and periodic event in the Australian landscape, with many native flora and fauna adapted to fire and often requiring fire as part of their life cycle. The frequency and occurrence of fire within the Town is affected by a complex range of interrelated factors, including seasonal rainfall conditions and the associated accumulation of flammable materials (i.e. vegetation, leaf litter), ignition source (i.e. lightning, people) and land use (i.e. urban, rural, pastoral, mining, amenity). Of these, the main determinant is the availability of flammable material which often influences the intensity, extent and frequency of fires. Bushfire risk is likely to exist where areas of intact remnant vegetation are present, and in particular will be an important consideration where dwellings and infrastructure occur within 150 m of intact remnant vegetation.

The majority of the Town is identified as a 'bushfire prone area' under the state-wide Map of Bush Fire Prone Areas prepared by the Office of Bushfire Risk Management (OBRM 2019), including around areas of existing development within the major towns of Port Hedland and South Hedland. In accordance with State Planning Policy 3.7 Planning in Bushfire Prone Areas (WAPC 2015) and the Guidelines for Planning in Bushfire Prone Areas Version 1.3 (WAPC and DFES 2017), the identification of a site within an area declared as bushfire prone necessitates that a further assessment of the determined bushfire risk affecting the site is carried out as part of detailed planning and design.

Ensuring that bushfire risk is appropriately considered as part of future development is critical to ensuring future residents and development are not put at risk of bushfire.

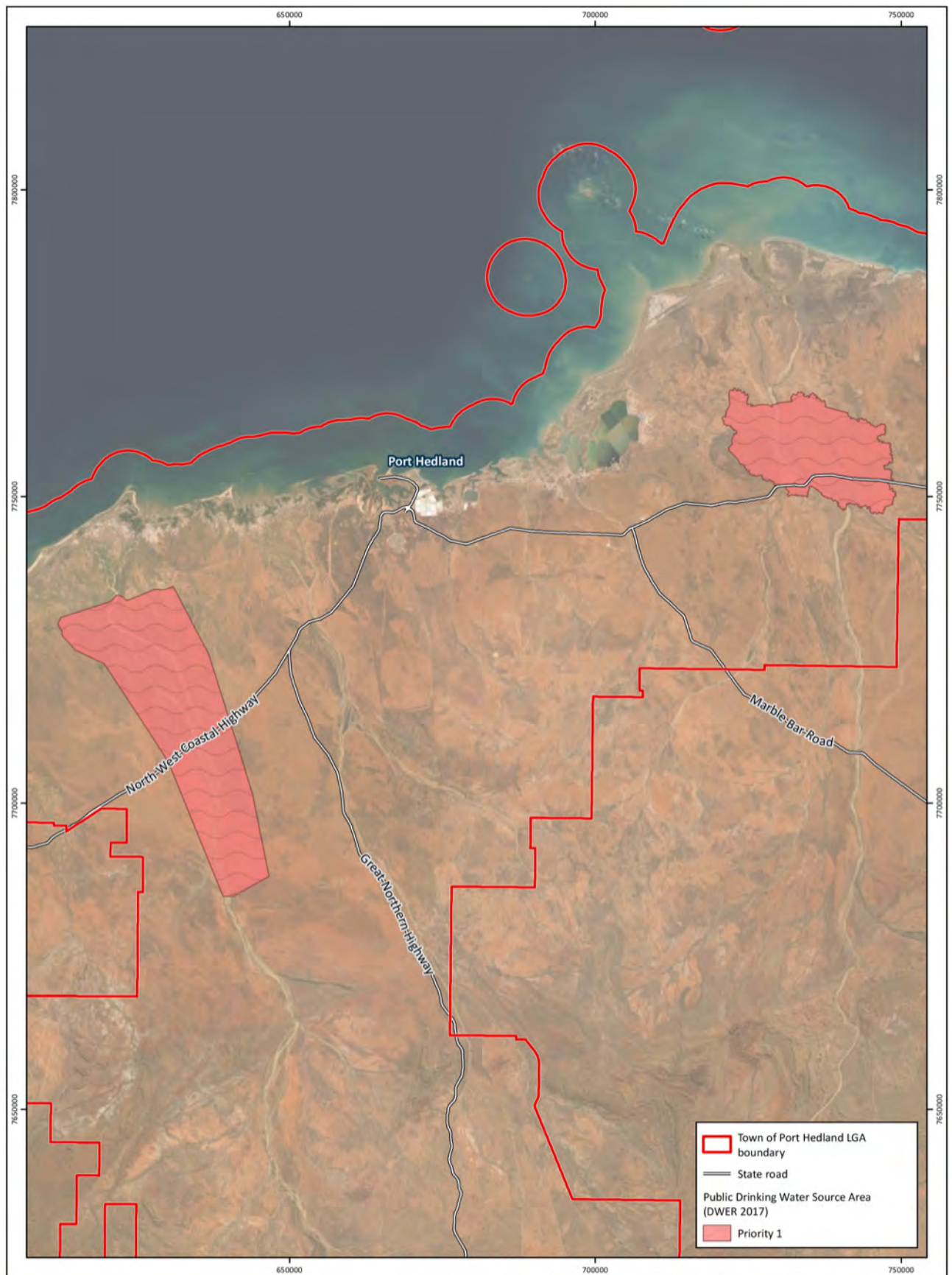


Figure 33. Public Drinking Water Source Areas

12.3.6 Other land use considerations

Within the Town, there are a number of land uses that occur within the vicinity of existing sensitive land uses (such as residential development, schools, hospitals, motels, etc.). These land uses include:

- Port Hedland port and associated infrastructure, including extractive industry and railways;
- PHIA;
- Dampier Salt;
- Wastewater treatment plant;
- South Hedland landfill;
- Explosives reserve;
- Ammonium nitrate emulsion plant; and
- Petrol stations.

Where future expansion of these areas occurs, or where new development is planned, these will need to consider the risk posed to sensitive land uses.

12.3.7 Contaminated sites

A review of the DWER Contaminated Sites Database indicates that there are several sites within the Town that are recorded within the Contaminated Sites Database, including areas that are classified as 'contaminated – remediation required' and 'contaminated – restricted use'. Future land use planning can appropriately consider contaminated lands through the existing planning process.

12.3.8 Air Quality

The Port Hedland Dust Management Taskforce (the Dust Taskforce) was convened in response to the EPA raising concerns regarding regular exceedance of the National Environmental Protection Measure for dust concentrations permitted for residential development, in the West End precinct (defined between McKay and Taplin Streets). The Taskforce was chaired by the former Department of State Development and comprised representatives from relevant government departments (including planning) and industry. The Dust Taskforce commissioned the 'Port Hedland Air Quality and Noise Management Plan', the recommendations of which were adopted by Cabinet in January 2010. The plan provided a broad-based implementation strategy and governance

framework to manage the potential health risks posed by dust levels in the West End.

During 2011 and 2012, the Town prepared the Town's Strategy (Growth Plan) which reflected the recommendations of the Dust Taskforce's report 2010.

With regards to land use planning, the Dust Taskforce recommended a precautionary approach to residential development, with a focus on this occurring predominantly in the eastern areas of Port Hedland. With respect to existing residential areas in the West End, Amendment 22 (gazetted on 27 April 2012) introduced provisions into LPS5 to promote housing redevelopment that discouraged long-term residency by those more at risk from exposure to dust (aged persons, families, etc). The Dust Taskforce also recommended that further work be undertaken to establish the health impacts of dust, noting that this process may take some time.

In February 2016, the Department of Health published the *Port Hedland Air Quality Health Risk Assessment for Particulate Matter* report and provided recommendations to the State Government through the Port Hedland Dust Management Taskforce Report. After considering the Dust Taskforce 2016 report and submissions received pursuant to a public consultation process, Government decided on 15 October 2018 that a whole-of-government approach was required to address the issue, including adopting land use planning recommendations aimed at prohibiting sensitive land uses and restricting population growth in the West End of Port Hedland.

To give effect to this, the State Government requested the WAPC consider preparing an Improvement Plan and Improvement Scheme to achieve the land use outcomes of the Dust Taskforce report. On 13 June 2019, following consultation with the Town, the WAPC certified Improvement Plan No. 50. It was accepted by the Minister for Planning on 4 July 2019, subsequently accepted by the Governor's deputy and gazetted on 30 July 2019. Improvement Plan No. 50 provided the strategic framework to guide the preparation of an Improvement Scheme over the West End of Port Hedland in order to implement the State Government's response to the Taskforce Report. On 21 August 2019, the WAPC resolved to prepare an Improvement Scheme to implement the objectives of

Improvement Plan No. 50 and the Government's response to the 2016 Dust Taskforce Report. On 13 September 2019, Government appointed an independent consultant to investigate the potential for an industry-funded voluntary buyback scheme.

On 12 June 2020, the State Government announced that it had provided in-principle support for a buyback scheme in the area subject to the Improvement Scheme.

On 21 August 2019, the WAPC resolved to prepare an Improvement Scheme to implement the objectives of Improvement Plan No. 50 and the State Government's response to the Taskforce Report. Approval of the Port Hedland West End Improvement Scheme No.1 was supported by the WAPC on 19 August 2020 and granted by the Minister for Planning on 7 September 2020. It was gazetted on 18 September 2020. The Improvement Scheme establishes land use planning and development controls for the West End, within the area prescribed under the Scheme. The Town's Scheme and planning controls no longer apply to that area, although the Town will seek to influence the determination of development applications within the area as a referral agency to DPLH.

Recommendation 6 of the Dust Taskforce Report 2016 also recommended specific actions be undertaken by the Town in conjunction with key stakeholders to identify and mitigate dust from non-industry sources such as dust mitigation options for the Spoilbank; road sealing and street sweeping; greening options and reviewing the efficacy of the Town's dust control services. The Town has been addressing these issues, including preparatory dust mitigation options for the Spoilbank.

The report also recommended DWER assume the air quality monitoring network from the PHIC and further develop its regulatory and policy framework to improve air quality for the whole of Port Hedland. DWER is progressing these recommendations.

12.4 Servicing and Infrastructure

12.4.1 Wastewater Infrastructure Overview

The Water Corporation has previously undertaken wastewater planning and service delivery for Port Hedland and South Hedland.

The Water Corporation presently has planning for future expansion over a number of areas within the Port Hedland Townsite.

The Water Corporation operates a WWTP in South Hedland. All residential zoned land in both Port Hedland and South Hedland is serviced by reticulated sewerage. Development on the outskirts of existing urban land is likely to require the construction of additional wastewater infrastructure, including wastewater pumping stations and pressure mains. This will be based on the local topography and the invert levels of any adjacent infrastructure pipelines for connection.

12.4.2 Water Infrastructure Overview

Under the same request for information in August 2019, KCTT received a full planning scheme for water across the following zones within the Town of Port Hedland: -

- Zone 1 – West End Port Hedland Town Centre
- Zone 2 – East End Urban Village Port Hedland Town Centre
- Zone 3 – Wedgefield Industrial and Logistics
- Zone 4 – Airport and Surrounds
- Zone 5 – Eastern Gateway
- Zone 6 – South Hedland East
- Zone 7 – City Centre (South Hedland)
- Zone 8 – South Hedland West
- Zone 9 – Lumsden Point Light Industrial Area

Refer to Figure 22 – Water Infrastructure

This planning shows a detailed analysis of current and future requirements as planned today by the Water Corporation for the whole of the Port Hedland district.

The Water Corporation manages water under the East Pilbara Water Supply Scheme from groundwater reserves at Yule and De Grey. This scheme allocation currently produces 13.5 GL/yr with a limit of up to 20.5 GL/yr. The Pilbara Groundwater Allocation Plan (2013) forecasts a water drawdown requirement of 29 GL/yr based on present per annum development rates for residential and commercial / industrial landholdings to 2031. The Water Corporation completed upgrade works to water storage tanks and water mains in Port Hedland and South Hedland.

12.4.3 Power Infrastructure Overview

Power services in Western Australia north of Geraldton are managed by Horizon Power via the North West Interconnected System (NWIS), covering an area of approximately 400 kilometres from east to west and 350 kilometres from north to south servicing communities such as Dampier, Wickham, Pannawonnica, Paraburdoo and Tom Price through the Pilbara Iron (Rio Tinto) network and the communities of Port Hedland, South Hedland, Karratha, Roebourne and Point Samson through the Horizon Power network.

Port Hedland is supplied via a network of 66 kilovolt (kV) overhead distribution lines that extend from substations in Port Hedland, South Hedland and Wedgefield. These substations are fed from the 150mW South Hedland power station located within Boodarie Strategic Industrial Area. The South Hedland power station was commissioned in 2017 and is contracted to supply power to Horizon Power and Fortescue Metals Group.

Horizon Power also completed the Roy Hill Transmission Project in 2018 to increase the efficiency of the NWIS. Roy Hill Transmission is a 25mW power station which services the Roy Hill port facility in Port Hedland. The Horizon Power network includes a series of main transmission lines covering almost 5 kilometres and incorporating a connection between the 150mW South Hedland power station and the Roy Hill power station.

The Port Hedland Alinta Energy Power Station is also located in Port Hedland in two locations (Port Hedland and Boodarie) and generates 210mW (gas and distillate) of power. Alinta Energy also owns and operates three high voltage transmission lines which connect the facilities at Boodarie and Port Hedland as well as the Horizon Power owned NWIS. This system provides peak power as required by industry.

12.4.4 Stormwater Drainage Infrastructure

Throughout most parts of Port Hedland, South Hedland, Wedgefield and Boodarie, lots drain generally towards road networks with roads grading to kerb openings and then into a network of open drains. A minority of locations include piped stormwater drainage networks. Further, this type of drainage system is supported by DWER for projects in the northwest due to:

- Areas with low changes in topography don't lend themselves to gravity-based drainage systems;
- Areas such as the north-west and Port Hedland that exhibit low frequencies of storm events have significant issues with the formation of sediments in piped drainage systems.

Therefore, the most appropriate system for the majority of drainage design solutions is to initially utilise kerbed roadways as the first conveyor of overland flows, with kerb openings directing water into open drains. At locations

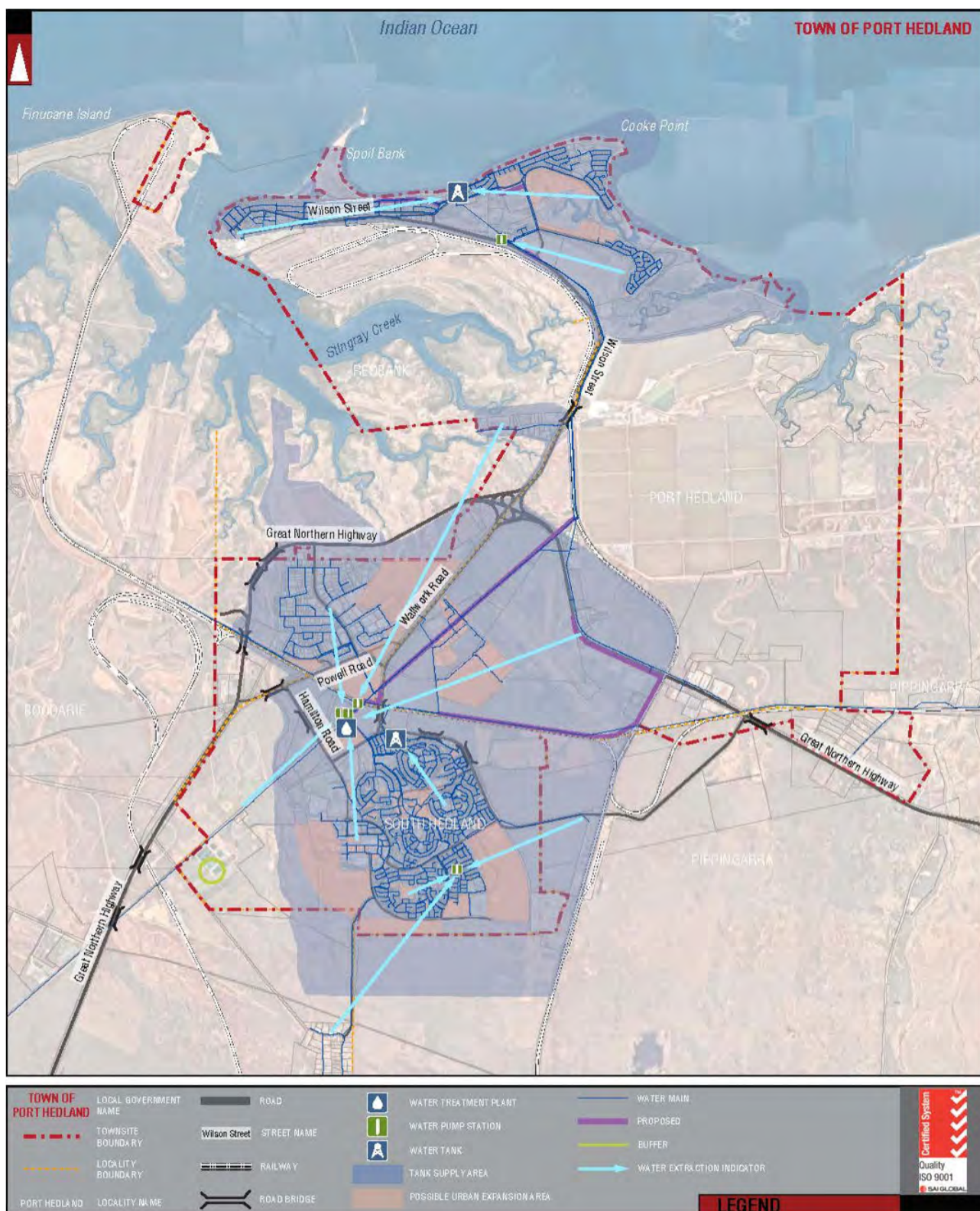


Figure 34. Water Infrastructure

where roads cross these open drains, the usage of large box culverts and bridge structures is favoured over circular drainage culverts due to the issues with sedimentation and also safety.

Existing open drains throughout the study area are generally 1 to 2 metres deep, with widths of 2 to 4 metres and are trapezoidal in shape. The longitudinal grades of the open drains are typically flatter than 0.5% in grade. Photographic evidence was supplied and it was noted in the GHD South Hedland Flood Study that there a number of culvert structures in South Hedland that have issues with high levels of sedimentation and / or debris. This type of lack of maintenance can have a major impact on the hydraulic capability and capacity of a drainage system and cause localised flooding and / or scour and erosion damage to existing open drains and adjacent to culvert crossings. Where grates are used (to improve safety and prevent access into the culverts by young children and adults) debris can be captured against the grating, therefore impacting the capacity of the drainage culvert. This build up can also produce further issues with the accumulation of sediment, as sediment build ups tend to occur where flow velocities are limited.

Of further importance, a large number of areas proposed for future urban and industrial expansion contain either low points in the drainage system, networks of existing open drains or are adjacent to existing drainage reserves. The impact of these drainage networks and reserves on the overall proposed urban and industrial expansion is very important and will determine important items for the development of land such as future required building pad levels and roads for egress during major flood events to ensure safety from flooding.

12.4.5 Telecommunications Infrastructure

Telecommunication services are generally provided by Telstra and NBN for large-scale developments in rural areas. Optus also has a significant presence in Port Hedland.

The development of major infrastructure for future expansion is usually managed during the structure planning and the subdivision stage.

The closest point of interconnect for NBN for Port Hedland is Geraldton with internet retailers leasing capacity to service consumers. A subsea cable located off the coast of Port Hedland

services mining companies with demand for large volumes of data. Telecommunications towers located across Port Hedland and South Hedland provide mobile coverage for residents.

Telecommunications connectivity is critical to business performance and viability (for those not connected to the subsea cable), economic diversification, developing a regional skills base, residential settlement and emergency warning notifications.

A Regional Telecommunications Independent Review Committee (Telecommunications Review) is established every three years pursuant to Part 9B of the *Telecommunications (Consumer Protection and Service Standards) Act 1999* to conduct reviews into telecommunications services in regional, rural and remote parts of Australia. The review focuses centrally on the adequacy of service provision; equity of access to telecommunication services (within certain parameters); the rollout and investment in the national NBN and Black Spot Program; how economic and social benefits can be maximised; coverage achieved under the Black Spot program and existing gaps in coverage.

The last review was in 2018 and identified amongst a number of findings disconnect between NBN's cited performance and lived experience and slower speeds on the wireless network than paid for.

Issues with internet and mobile connectivity have been raised as an issue in Port Hedland. The Pilbara Regional Council submitted to the aforementioned Telecommunications Review citing the challenge of unreliable connections, lack of retail options and concerns regarding a reliance on investment decisions based on population growth as opposed to including consideration of other factors such as economic development.

The Australian Government's Black Spot program identifies areas where mobile coverage or connectivity is poor. The Black Spot program lists eight community-reported mobile coverage Black Spots in the Town of Port Hedland. There has been no funding allocation under the Black Spot program in Port Hedland or South Hedland, although Yandeyarra, located 110km south of Port Hedland, received a transmission tower under round one of the program.

12.4.6 Gas

There are no reticulated gas services in the Town of Port Hedland and business and residents rely on gas bottles as required.

12.5 Transport

12.5.1 Roads

Port Hedland is served by a primary and regional distributor road network that includes North West Coastal Highway, Great Northern Highway and Wilson Street. The North West Coastal Highway links Port Hedland to Geraldton, while also providing access to Karratha, Exmouth and Carnarvon. The Great Northern Highway connects Port Hedland to Broome in the east and Newman and Perth to the south. Access between the localities of Port Hedland and South Hedland is provided via Wilson Street.

The Great Northern Highway realignment project delivered by John Holland and Main Roads Western Australia (MRWA) was completed in 2014. The aim of the project was to improve road safety by allowing heavy vehicles to bypass established areas in the town, reducing road train incidents and local traffic, improving access to new port and harbour areas and improving traffic flow between Port Hedland and South Hedland. The project delivered approximately eight kilometres of new road; a major interchange at the Broome turn-off, enabling uninterrupted flow for local traffic over Great Northern Highway; a new intersection with Utah Point Road to provide access to the western port area; a new link to South Hedland; and a new road bridge over the BHP rail line.

The proposed Roy Hill Bridge is privately funded by Roy Hill Iron Ore and will replace the existing level crossing along Great Northern Highway. The current level crossing is located approximately 25 to 30 kilometres south-west of Port Hedland. The key benefits of the project include improved safety along Great Northern Highway, improved traffic efficiency and economic advantages. Construction of the bridge was completed in early 2019.

Traffic Data

Table 12 below shows the most recent traffic data available within the Town of Port Hedland local government area. Data was collected from the Main Roads WA database and the Town of Port Hedland database. As can be seen from the table below, the majority of traffic counts can be deemed outdated (older than 3 years at the time of reporting). The majority of primary network is characterized by high heavy vehicle counts.

Table 18 – Traffic Data

Road Name	Location of Traffic Count	Vehicles Per Day (VPD)	Vehicles per Peak Hour (VPH)				Heavy Vehicle % <i>If HV count is Not Available, are HV likely to be in higher volumes than generally expected?</i>	Date of Traffic Count
			AM Peak Time	AM Peak VPH	PM Peak Time	PM Peak VPH		
Anderson Street	Between Short Street and Darlot Street (Westbound) *	1,548	08:00 – 131		12:00 – 125		7.4%	May 2017
Buttfield Road	Between Flashbutt Yard and Great Northern Highway *	596	05:00 – 41		17:00 – 62		22.9%	Jun 2017
	South of Great Northern Highway *	723	05:30 – 46		16:45 – 80		18.1%	2018
Capenas Road	N/A	7,707	06:00 – 630		17:00 – 744		23.5%	Sep 2010
Cooke Point Drive	North of Tindale Street	3,738	07:00 – 335		17:00 – 360		11.2%	Jun 2016
Dalton Road	N/A	2,456	07:00 – 172		17:00 – 199		21.1%	Sept 2010
Forrest Circle	South Hedland N/A *	7,308	11:00 – 473		17:00 – 612		15.3%	Feb 2013
Great Northern Highway	East of Madigan Road **	1,181	11:00 – 84		16:00 – 84		54.4%	2018
	East of Utah Point Road **	3,214	05:15 – 230		16:45 – 215		33.6%	2017
	South of Port Haven Village Access Road **	2,549	05:15 – 204		17:15 – 237		30.0%	2015
	South of Port Hedland Airport Access Road **	9,124	07:45 – 676		17:00 – 799		15.2%	2015
	East of Wilson Street **	4,750	05:45 – 384		17:30 – 437		27.7%	2014
Hamilton Road	South of Great Northern Highway **	5,389	05:30 – 675		17:30 – 629		20.1%	2014
	North of North Circular Road **	4,226	05:45 – 346		16:45 – 397		13.7%	2009
Harwell Way	Fidlar Street to Munda Way	598	11:00 – 39		15:00 – 63		17.8%	Dec 2004
Leathley Street	Moosambi Street to Trig Street	300	10:00 – 23		15:00 – 25		27.7%	Nov 2004
Madigan Road	500m east of Great Northern Highway *	52	10:00 – 6		16:00 – 3		3.6%	Sep 2004
McGregor Street	West of Crawford Street **	2,159	10:45 – 182		16:15 – 189		10.8%	2018
Moosambi Street	Between Pennell Street and Draper Street	967	11:00 – 76		16:00 – 71		25.0%	Mar 2016
	Between Pings Street and Poowah Street	1,521	10:00 – 87		16:00 – 100		30.1%	Mar 2016
	East of Pings Street	1,327	09:00 – 90		15:00 – 101		17.9%	Feb 2017
Moore Street	West of Jacoby Street **	106	09:15 – 13		12:30 – 11		22.6%	2018
Murdoch Drive	East of Captains Way Roundabout *	4,834	11:00 – 313		16:00 – 419		7.9%	Sep 2016
North Circular West	East of Hamilton Road *	4,948	11:00 – 313		17:00 – 439		11.4%	Apr 2017
	East of Parker Street *	5,909	11:00 – 376		17:00 – 515		3.4%	Apr 2017

Road Name	Location of Traffic Count	Vehicles per Day (VPD)	Vehicles per Peak Hour (VPH)				Heavy Vehicle % <i>If HV count is Not Available, are HV likely to be in higher volumes than generally expected?</i>	Date of Traffic Count
			AM Peak Time	AM Peak VPH	PM Peak Time	PM Peak VPH		
Pinga Street	South of Hematite Drive	6,263	06:00 – 541		16:00 – 462		N/A	Dec 2016
	South of Mangence Street	7,479	06:00 – 549		16:00 – 549		N/A	Dec 2016
	North of Pinnacles Street	4,065	06:00 – 291		16:00 – 314		20.5%	Jan 2017
	South of Great Northern Highway	4,092	07:45 – 285		16:30 – 279		29.1%	2015
Powell Road	West of Hamilton Road	2,260	05:00 – 336		17:15 – 319		20.2%	2015
	East of Hamilton Road	4,991	05:45 – 404		16:45 – 469		32.8%	2009
	West of Pinga Street	4,191	05:45 – 357		16:30 – 368		19.4%	2009
	East of Pinga Street	9,191	08:45 – 691		16:30 – 840		29.2%	2012
Robinson Street	East of Thompson Street	605	07:45 – 41		17:00 – 61		7.6%	2018
Schilliaman Street	East of Pinga Street	1,495	06:00 – 113		16:00 – 122		11.0%	Feb 2017
	Between Peawah Street and Peawah Street	962	06:00 – 83		17:00 – 69		38.9%	Mar 2016
Utah Point Road	West of Great Northern Highway	3,628	05:15 – 396		17:15 – 354		41.1%	2015
Wallwork Road	South of Great Northern Highway	12,052	06:00 – 1,013		17:00 – 1,063		N/A	Mar 2011
	South of Great Northern Highway	16,449	07:30 – 1,151		16:30 – 1,582		15.8	2011
	South of Quarry Road	9,427	06:00 – 731		16:45 – 747		16.9%	2012
	South of Pinga Street	10,574	07:30 – 736		16:30 – 987		11.0%	2016
Wilson Street	South of Cooke Point Road	11,722	07:30 – 887		17:00 – 1,069		12.3%	2016
	West of Short Street	6,986	05:15 – 631		17:00 – 604		16.6%	2016
	East of Short Street	5,566	11:30 – 442		12:00 – 434		19.7%	2016
	North of Great Northern Highway	11,605	06:45 – 867		15:45 – 1,059		11.7%	2016
	West of Cooke Point Road	9,167	07:45 – 673		17:15 – 808		15.2%	2015

^aNote: These traffic counts were received from the Town of Port Hedland

^bNote: These traffic counts were obtained from the Main Roads WA Traffic Map

Crash Data

Main Roads WA provide crash data for a rolling 5-year period.

In the current reporting period (01/01/2014 – 31/12/2018), 606 incidents were reported within the Town of Port Hedland local government area.

As per the image below, 15 fatal crashes occurred within this time frame and a total of 146 casualty crashes (involving injury of humans). Approximately 75% of fatality crashes occurred during daylight hours on dry surface. Only 25% of fatality crashes occurred at an intersection and more than 50% of fatality crashes occurred on Great Northern Highway.

Period of crash data collection

01/01/2014 – 31/12/2018

Road / Intersection Name	SLX	Functional Classification	Road Hierarchy	Speed Limit	Crash Statistics			
					No of KSI Crashes	No of Medical Attention Crashes	No of PDO Major Crashes	No of PDO Minor Crashes
Great Northern Highway	1502.97 – 1611.27	Inter Capital City Highway	Primary Distributor	80kph	0	1	2	1
Wilson Street (Port Hedland Road)	0.00 – 10.38	Urban Highway / Inter Capital City Highway	Primary Distributor	80kph / 90kph	4	1	11	3
Great Northern Highway / Powell Road	N/A	Inter Capital City Highway / Rural Local Road	Primary Distributor / Regional Distributor	80kph / 80kph	1	0	0	0
Great Northern Highway / Pinga Street	N/A	Inter Capital City Highway / Rural Local Road	Primary Distributor / Local Distributor	80kph / 70kph	1	0	1	0
Hamilton Road / North Circular Road West	N/A	Rural Local Road / Rural Local Road	Local Distributor / Regional Distributor	50kph / 80kph	0	0	1	4
Hamilton Road / Forrest Circle	N/A	Significant Urban Local Road / Rural Local Road	Local Distributor / Local Distributor	50kph / 60kph	0	0	3	1
Powell Road / Hamilton Road	N/A	Rural Local Road / Rural Local Road	Regional Distributor / Regional Distributor	80kph / 50kph	0	4	4	1
Powell Road / Pinga Street	N/A	Rural Local Road / Rural Local Road	Regional Distributor / Local Distributor	80kph / 70kph	1	0	3	1
Wilson Street (Port Hedland Road) / Gray Street	N/A	Urban Highway / Rural Local Road	Primary Distributor / Access Road	90kph / 50kph or State Limit	1	0	0	0
Wilson Street (Port Hedland Road)	N/A	Urban Highway / Rural Local Road	Primary Distributor / Local Distributor	90kph / 80kph	1	1	1	0
Road / Cooke Point Road								
Wilson Street (Port Hedland Road) / McGregor Street	N/A	Urban Highway / Significant Urban Local Road	Primary Distributor / Local Distributor	80kph / 60kph	0	0	3	2
Wilson Street (Port Hedland Road) / Short Street	N/A	Urban Highway / Rural Local Road	Primary Distributor / Local Distributor	70kph / 50kph	0	0	2	0
Wilson Street (Port Hedland Road) / Hardie Street	N/A	Urban Highway / Rural Local Road	Primary Distributor / Access Road	70kph / 50kph	0	0	2	1

Figure 35. Crash severity distribution - Town of Port Hedland

Current data shows that less than half crashes occurred at the intersection (42%), while 58% of all recorded crashes occurred mid-block.

While less than half crashes occurred at the intersection, distribution of types of crashes shows that right turn movements are the most problematic at the intersections.

Approximately 25% of incidents involved a utility vehicle while less than 10% of incidents involved a larger heavy vehicle (truck, road train, etc)

Main Roads WA data base shows sections of road and intersections which are prequalified for the Black Spot Program (have 3 or more casualty crashes within the reporting period). These are listed below:

Table 19 – Intersections currently prequalified for Black Spot Consideration

Ranking	Intersection Name	Total Crash Count	Casualty Crash Count
1	Powell Rd & Hamilton Rd	9	4
2	Pinga St & Moorambine St	7	1
3	Hamilton Rd & North Circular Rd West	5	0
4	Powell Rd & Pinga St	5	1
5	Murdoch Dr & Forrest Cir & Wise Tce & Daylesford Rd	5	0
6	Port Hedland Rd & McGregor St	5	0
7	Murdoch Dr & Captains Wy	4	2
8	Hamilton Rd & Forrest Cir	4	0
9	Port Hedland Rd & Cooke Point Dr	3	2
10	Hamilton Rd & Hedditch St	3	1
11	Forrest Cir & Cottier Dr	3	1
12	Port Hedland Rd & Hardie St	3	0

Restricted Access Vehicle (RAV) Network

The Town of Port Hedland has an extensive Restricted Access Vehicle Network enabling a freight-based economy. Great Northern Highway, Wilson Street, Pippingarra Road, Marble Bar Road and Utah Road form key portions of the RAV 10 network enabling road trains up to 53.5m in length to travel through the Pilbara and access port facilities. In addition to this, there are several concessional networks approved across this corridor. In this section, Great Northern Highway is also a High-Wide Load corridor.

The majority of roads in Wedgefield belong to the RAV 10 network. Detailed route assessment is required in this case as it is evident that in some locations overhead power lines restrict access to road trains, and road widths and intersections are non-compliant with MRWA standards.

Wallwork Road, Altitude Road and a number of roads branching off Altitude Road are approved as RAV 2 network allowing access to B-Double trucks not exceeding 27.5m in length.

With new industrial areas being planned, new roads will need to be added to the RAV network.

There is potential that a portion of Great Northern Highway in the vicinity of PHIA may be realigned in the future. Main Roads WA stipulated this is just an option explored and that there is no certainty if this project will proceed any further.

Heavy Vehicle Access Strategy

The Town has commissioned the preparation of a Heavy Vehicle Access Strategy (HVAS) to address current deficiencies in the RAV network and potential funding mechanisms to support future upgrades. The HVAS identifies required enhancements to the existing RAV network to allow it to function as designated as well as opportunities to expand the existing network.

Other key recommendations of the HVAS include:

- develop a Town traffic monitoring program;
- develop an asset register and asset management plan to document asset condition to inform future maintenance and cost sharing arrangements;
- progress land use permissibility changes to the established part of Wedgefield to address the deficient RAV network and land use conflicts;

- potentially reclassify the RAV network in the established part of Wedgefield upon land use transition over time to light industry;
- develop and implement an engagement plan with transport industries in Wedgefield;
- develop a funding strategy to upgrade heavy vehicle road network and its assets;
- evaluate mining tenements and Crown leases and negotiate road maintenance with industry on impacted roads; and
- monitor industry development and consider developing a strategy for application of Smart Technologies in freight.

12.5.2 Rail

There are four (4) privately operated freight railway lines that connect mining operations to port facilities in Port Hedland. Two railway lines are owned and operated by BHP Billiton: the Goldsworthy Line and the Mount Newman line. The Goldsworthy Line connects Finucane Island to Yarrie (200 kilometres east of Port Hedland) and is 208 kilometres long. The Mount Newman line connects Newman to Nelson Point and is 426 kilometres long. Fortescue Metals Group owns and operates a 280-kilometre railway line which connects its mining operations at Cloud Break to its port facilities at Anderson Point. Roy Hill owns and operates a 344km stretch of standard gauge, single line, built to transport iron ore from the Roy Hill mine to the dedicated Roy Hill stockyard area within the Port Hedland port.

There are no public freight or passenger railway lines that operate in Port Hedland.

12.5.3 Port

The Port of Port Hedland is the world's largest bulk export port, exporting approximately 518 million tonnes in the 2017-18 financial year. Iron ore exports comprise almost all trade through the port (approximately 98%).

At present there are a total of 19 berths within Port Hedland harbour, with 4 berths designated for public use and the remainder in the private ownership of resource-industry giants – BHP, Fortescue Metals, and Roy Hill Infrastructure.

Recent studies by the PPA indicate new and increasing trade such as lithium, livestock and ammonium nitrate will lead to congestion across Pilbara Ports Authority's three common-user berths at the Port of Port Hedland in the short-term.

Expansion of trading goods in lithium (and related products) and livestock is likely to require expansion of port facilities.

The proposed Lumsden Point General Cargo Facility in Port Hedland will be designed to facilitate increased trade growth of general cargo and mineral concentrates across the common-user berths. The proposed facility is located in the inner harbour and will capitalise on land reclaimed during previous port expansion projects, as well as the realignment of the Great Northern Highway in 2014. Land remediation works and initial dredging completed in 2018, has led to the development of a 35 hectare landside area. The proposed ultimate development will consist of two new general cargo wharves, lay-down areas and a 95-hectare logistics hub.

At present there are no passenger terminals in Port Hedland although many strategic plans suggest that this line of trade should be developed.

12.5.4 Other Sea Transport

Recently a Master Plan for the Spoilbank Marina was developed by the Town of Port Hedland and Department of Transport. This plan will see recreational boating separated and physically removed from port facilities.

12.5.5 Aviation

The PHIA is located in the locality of Port Hedland, between the South and Port Hedland Town centres. The Town has recently leased the PHIA to a consortium comprising AMP Capital and Infrastructure Capital Group. As part of this lease arrangement, the consortium has committed to spend \$40 million over the next five years on upgrades to the airport.

The PHIA provides for regular passenger transport and general aviation air services. PHIA consists of two runways, one at 2,500 metres long and the other at 1,000 metres long, and an interconnecting taxiway.

Up to 50 commercial flights are offered per week from PHIA, with direct services to Bali, Brisbane and Perth. In 2017, there were over 4,600 aeroplane movements and 350,000 passenger movements from the airport. PHIA also provides for international freight services, charter and flight training facilities, a dedicated heliport facility and the region's Royal Flying Doctors'

Service. The main driver of the passenger market for Port Hedland is the mining sector and in particular, iron ore and base metals.

Airlines currently operating regular flights are: Qantas, Qantas Link and Virgin Australia. Furthermore, charter flights are offered by Skippers, Alliance Airlines, Polar Aviation and Aviair. Tourist scenic flights and aviation training are offered by Polar Aviation and Aviair.

PHIA features long and short-term parking facilities. Charter buses and car rentals allow movement of passengers to and from the airport. Introducing a public transport line, connecting the PHIA to key nodes in Port Hedland and South Hedland could be considered as a possibility.

The PHIA Master Plan 2018-2038 establishes a vision for the upgrade to PHIA infrastructure as well as establishing a precinct-based approach to future land use and development of vacant land within the PHIA grounds which are not required for aviation operational requirements. The Master Plan establishes the following vision for PHIA:

“PHIA Op Co has a vision for PHIA to be a leading regional Australian airport and a modern, well-serviced airport which is a major domestic and international gateway airport for Western Australia. It will be the gateway to the Pilbara and a major intermodal hub”.

The Master Plan identifies a staged delivery of key PHIA infrastructure to accommodate forecast growth in flights and customers.

The Master Plan establishes six land use precincts as follows:

- Airside Precinct (309.4 ha)
- Northern Precinct (107.6 ha)
- Terminal and General Aviation Precinct (24.5 ha)
- Freight Precinct (8.4 ha)
- Highway Precinct (89.3 ha)
- Airport Industrial Park Precinct (278.3 ha)

Recent upgrades pertain to addition of runway and upgrade of terminal facilities. Port Hedland Aviation Authority is looking to expand air freight movements as passenger travel is highly dependent on the economic outlook.

12.5.6 Mining Aerodromes (LPS Part 2)

Mining Aerodromes / airstrips can be approved under a number of legislative mechanisms including through land tenure negotiations under the *Land Administration Act 1997*; mining tenement applications under the Mining Act; and development approvals granted by the WAPC or local government pursuant to the Planning Act. The majority occur under the Mining Act and are referred to local government under Section 120 for advice in order that Government can take account of the provisions of the Scheme as they apply to the land subject to the tenement.

Statutory assessment processes and the detail of information provided to support an application varies depending on the type of mining tenement under which an application is made. An objection under Section 120(2) pertaining to an application for an aerodrome under a Mining Lease or General Purpose Lease activates an additional stage of consideration by the Minister for Mines in consultation with the Minister for Planning, whereas an objection to an application under Section 91(10) for a Miscellaneous Licence does not.

The Town, along with the operators of the PHIA, Karratha and Broome Airports, have expressed concern regarding approval of aerodromes in close proximity to designated regional Regular Public Transport (RPT) airports. Principally, the withdrawal of passenger (and freight) traffic and the potential reduction in economies of scale and escalation in airfare pricing. Higher airfare costs can have significant adverse socioeconomic impacts on communities, including social disconnection and affecting small to medium business viability.

The Town has also raised concerns about the capacity of aerodromes to undermine infrastructure investment in regional RPT airports; the size and service footprint of aerodrome operations; statutory inequities in operating requirements between aerodromes and regional RPT airports; and legislative and process constraints on the Town's capacity to effectively assess local government referrals for aerodrome approval under mining tenements.

Recommendation 13 of the Economics and Industry Standing Committee of the Parliament of Western Australia's *Inquiry into Regional Airfares in Western Australia*, July 2017,

recommended that aerodromes be an approval decision of Cabinet on advice from the Aviation Ministerial Council. Government responded by agreeing to consider the matter under the State Aviation Strategy.

Government released a draft WA State Aviation Strategy 2020 (Aviation Strategy) and associated supporting papers. The Aviation Strategy acknowledges the importance of Government considering community views when decisions are made by State Government about the location of new mining airstrips. The Aviation Strategy recommends that DPLH outline the requirements for the Development of Airstrips under the Mining Act, Planning Act and associated regulation and identify the role of the local planning framework in the planning and development of mining airstrips.

Where local planning schemes identify a policy regarding mining airstrips within the municipality, this effectively activates Section 120 of the Mining Act, allowing the Minister for Mines, Mining Registrar or Warden to consider that policy. This provides a degree of flexibility regarding approval of aerodromes, despite the potential significance of socioeconomic impacts.

12.5.7 Public Transport

The Public Transport Authority (PTA) manages TransRegional, which provides intra town and inter town public bus services in regional Western Australia. There are currently three bus routes that serve the Port Hedland townsite, operated under the 'TransHedland' brand by a private contractor.

Route 870 operates between the localities of Port Hedland and South Hedland. The route services the west end and east end of Port Hedland, before traveling south along Wilson Street and Great Northern Highway and terminating at the South Hedland town centre. Routes 871 and 872 are circular routes that services South Hedland, operating in a clockwise and anticlockwise direction respectively. During weekdays, services operate at a frequency of every one-to-two hours. On Saturdays, services operate at a decreased frequency of every four hours. No services are operated on Sundays and public holidays.

Since September 2018, additional services for routes 870 and 871 have been operated as part of a trial conducted by the PTA. The trial also

involves a route change for route 870, with selected weekday services deviating through the Wedgefield industrial estate.

In addition, the Town is serviced by three inter town public bus routes, operated by private contractors on behalf of TransRegional. The Perth to Broome route makes stops at Port Hedland and South Hedland, as well as Geraldton, Carnarvon, Exmouth and Karratha. There are also two Perth to Port Hedland routes; one operates via Tom Price, with the other via Meekatharra. These routes operate up to three times weekly in each direction.

The Port City Growth Plan identifies opportunities for the expansion and diversification of public/community transport offerings within the Town, particularly with regard to meeting the needs of the local Indigenous population. The Port City Growth Plan identifies a need to increase service provision and improve connectivity between residential areas and centres of activity and employment, including the Wedgefield industrial estate and Boodarie SIA.

12.5.8 Cycling Facilities

Port Hedland features modest cycling facilities. A Cycling Master Plan was prepared in 2008 and some of the proposed items were actioned. Given the change in standards, some of the paths which were constructed per recommendations from the Master Plan as shared paths, do not comply with current standards for shared paths.

Port Hedland does not feature dedicated cycling lanes on any of the roads. Most notable, shared paths are placed along the coastline (along Sutherland Street, Counihan Crescent), POS areas and along key distributor roads in South Hedland (Hamilton Road, Forest Circle etc.)

A proposed shared path connecting South Hedland and Port Hedland along Wallwork Road, Great Northern Highway and Wilson Street is only partially constructed – it currently connects South Hedland to the access road to Dampier Salt facilities.

Similar to the pedestrian network – the cycling network generally lacks continuity and permeability.

It is understood that this issue will be addressed through the Town's preparation of the Pilbara Cycling Strategy 2040, which will guide the provision of new key cycle linkages and infrastructure.

12.5.9 Pedestrian Access

Most streets in Port Hedland and South Hedland feature a pedestrian path on one side. Pedestrian paths are mostly placed near carriageways, while some sections meander closer to the lot boundary. Often, existing paths are not continuous, even on the same block. This lack of connection limits permeability of the network.

Many paths in Port Hedland do not appear to feature a pram ramp, or the existing pram ramp is not up to current standards of accessibility (too steep, insufficient landing space).

Wedgefield does not have pedestrian or cycling facilities.

Walkscore rates Port Hedland as a completely car-dependent neighbourhood where different neighbourhoods score between 25 and 38 points out of 100 within this category.

It is our understanding that Port Hedland is looking to develop tourist walking routes along various trails. A Trails Master Plan has been prepared and endorsed to guide the provision of walking trails; however, to date this infrastructure has not been provided.

Formal pedestrian access to the coast is quite limited therefore many informal trails were developed over time.



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Acronyms

AHD	Australian Height Datum
ANEF	Australian Noise Exposure Forecast
ATSI	Aboriginal and Torres Strait Islander
BOM	Bureau of Meteorology
BRM	Basic Raw Materials
CALD	Culturally and Linguistically Diverse
CCNA	Community Consultation and Needs Analysis
CHRMAP	Coastal Hazard Risk Management and Adaptation Plan
CPTED	Crime Prevention through Environmental Design
DBCA	Department of Biodiversity, Conservation and Attractions
DC	Development Control Policy
DCP	Development Contribution Plan
DFES	Department of Fire and Emergency Services
DPLH	Department of Planning, Lands and Heritage
DWER	Department of Water and Environmental Regulation
EPA	Environmental Protection Authority
ES	Extraction Sites
FIFO	Fly-in, Fly-out
FTE	Full Time Equivalent
GDP	Gross Domestic Product
Ha	Hectare
IP50	Improvement Plan No 50
LGA	Local Government Authority
LIA	Light Industrial Area
LPP	Local Planning Policy
LPS	Local Planning Strategy
LPS5	Local Planning Scheme No 5
LPS7	Local Planning Scheme No 7
LUMP	Port Hedland Land Use Master Plan

MRWA	Main Roads Western Australia
MT	Mega Tonne
NBN	National Broadband Network
OBRM	Office of Bushfire Risk Management
PECD	Organisation for Economic Co-operation and Development
PCS	Pilbara Conservation Strategy
PDC	Pilbara Development Commission
PDWSA	Public Drinking Water Source Area
PHIA	Port Hedland International Airport
PHIC	Port Hedland Industries Council
PHVBS	Port Hedland Voluntary Buyback Scheme
POS	Public Open Space
PPA	Pilbara Ports Authority
PPIF	Pilbara Planning and Infrastructure Framework
PTA	Public Transport Authority
RAV	Restricted Access Vehicle
RPT	Regular Public Transport
SCP	Strategic Community Plan
SGS	Significant Geological Supplies
SHISC	South Hedland Integrated Sports Complex
SPP	State Planning Policy
SPS	State Planning Strategy 2050
SRP	Strategic Resource Plan
TI	Telecommunications Infrastructure
TO	Traditional Owners
Town	Town of Port Hedland
TPDP	Tourism Product Development Plan
WAPC	Western Australian Planning Commission
WSUD	Water Sensitive Urban Design
WWTP	Waste-Water Treatment Plant

