

PART 2 - BACKGROUND INFORMATION AND ANALYSIS

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01



INTRODUCTION

The purpose of Part 2 is to detail the relevant background information and analysis which supports the planning directions and actions outlined within Part 1 of the Local Planning Strategy (LPS).

Sections 2 and 3 provide a summary of the relevant State, regional and local planning documents and contexts, and include the implications for the Shire of Carnarvon LPS direction.

Section 4 of this volume includes the local government profile which delivers the background information and analysis relating to the current demographic profile, urban growth and settlement patterns, environment and heritage, economy and employment and infrastructure position in the Town. The key planning opportunities and issues this analysis raises that will influence future development and land use of the Town are described, to underpin the LPS direction and actions.



Coral Bay



Gascoyne River

02

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STATE AND REGIONAL PLANNING CONTEXT

2.1 STATE PLANNING STRATEGY 2050

The State Planning Strategy (SPS) provides the strategic context and basis for the coordination and integration of land use planning and development across Western Australia, regional and local levels. It contemplates a future in which high standards of living, improved public health and an excellent quality of life are enjoyed by present and future generations of Western Australians.

The SPS proposes that diversity, liveability, connectedness, and collaboration must be central to achieving the vision of sustained growth and prosperity, and establishes principles, strategic goals, and directions to ensure the development of the State progresses towards this vision.

The Shire of Carnarvon is located within the Gascoyne region of the Central Sector, and the SPS acknowledges the following which may be relevant for the Shire of Carnarvon:

- + The central sector has a diverse economy underpinned by mining, horticulture and pastoralism, green energy, fisheries and tourism, contributing significantly to the Western Australian economy. The sector is set to further contribute to the nation's mining, scientific, technological, research and innovation industries by 2050.
- + This sector encompasses some of the most iconic landscapes and diverse climatic conditions in Australia. The Ningaloo Coast includes one of the longest near-shore reefs in the world. On land the site features an extensive karst system and network of underground caves and water courses, which support a variety of rare species that contribute to the exceptional biodiversity of the marine and terrestrial site.
- + Carnarvon is identified as a regional centre that offers strong lifestyle alternatives to Perth and have substantial growth potential with the investment of appropriate infrastructure. It also contains some of the most remote settlements in the State, where infrastructure and services will continue to be difficult to deliver.
- + Irrigated horticulture and agriculture are significant contributors to regional and export economies and food security within the Gascoyne region. The Carnarvon irrigation district is set to undergo a 30% increase in its cultivated area in the near future.

2.2 STATE PLANNING POLICIES

State Planning Policies (SPP) are prepared under Part 3 of the Planning and Development Act 2005 and provide the highest level of planning policy control and guidance in Western Australia. SPP's considered to be specifically relevant to the Shire are outlined and described in **Table 1**.

Table 1: State Planning Policies

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
SPP 10 – State Planning Framework (November 2017)	<p>SPP 10 restates and expands on the key principles of the State Planning Strategy in planning for sustainable land use and development. It brings together existing State and regional policies, strategies, and guidelines within a central State Planning Framework, which provides a context for decision making on land use and development in Western Australia.</p> <p>The Framework informs the WAPC, local government and others involved in the planning process on State level planning policy, which is to be taken into consideration, and given effect to, in order to ensure integrated decision making across all spheres of planning.</p> <p>The Framework identifies relevant policies and strategies used by the WAPC in making decisions and may be amended from time to time. The framework is the overarching SPP. Additional SPPs set out the WAPC's policy position in relation to aspects of the State Planning Strategy principles.</p>	<p>The updated Strategy will need to address the vision and principles of the State Planning Strategy.</p> <p>Refer to relevant SPPs below which set out the WAPC's policy position in relation to aspects of the State Planning Strategy principles.</p>
SPP 20 – Environment and Natural Resources Policy (June 2003)	<p>SPP 20 is a broad sector policy and provides guidance for the protection, management, conservation, and enhancement of the natural environment. The policy promotes responsible planning by integrating environment and natural resource management with broader land use planning and decision-making. SPP 20 outlines general measures for matters such as water, air quality, soil and land quality, biodiversity, agricultural land and rangelands, basic raw materials, marine resources, landscapes, and energy efficiency. These general measures should be considered in conjunction with environmentally based, issue-specific State planning policies which supplement SPP 20.</p>	<p>The Strategy should build upon the Scheme provisions relating to environment and natural resources. This could include but not be limited to identify risks and responses to key natural areas and resources</p> <ul style="list-style-type: none"> + Identify public drinking water source (PDWSA) areas + Ensure no encroachment near public drinking water sources. + Identify relevant separation distances between incompatible land use and development + Identify responses to areas at risk of flooding and coastal inundation + Protect areas of agricultural and cultural significance.

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
<p>SPP 2.4 – Planning for Basic Raw Materials (July 2021)</p>	<p>SPP 2.4 seeks to ensure basic raw materials (BRM) and extractive industries matters are considered during planning and development decision-making, to facilitate the responsible extraction and use of the State's BRM resources. The policy establishes objectives relating to recognising the importance of BRM early in the planning process; protecting BRM through avoiding encroachment from incompatible land uses; efficient use of BRM; identifying BRM extraction opportunities through sequential land use and ensuring BRM extraction avoids, minimises, or mitigates impacts on the community and the environment.</p>	<p>The policy encourages the recognition of significant basic raw materials resources within the planning framework, and includes provision 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.</p> <p>It will be necessary to identify the potential sources of basic raw materials within the Shire of Carnarvon, and where necessary establish appropriate protection mechanisms.</p>
<p>SPP 2.5 – Rural Planning (December 2016)</p>	<p>SPP 2.5 applies to rural land and rural land uses as well as land that may be impacted by rural land uses. SPP 2.5 seeks 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. SPP 2.5 includes policy measures aimed at protecting rural land while encouraging a diversity of compatible rural land uses.</p>	<p>The Strategy will recognise the importance of rural lands and provide appropriate recommendations. The Shire's area of rural land comprises a combination of private ownership and Crown reserves. Future land use planning in rural zones, will consider:</p> <ul style="list-style-type: none"> + Designation and protection of priority agricultural land and significant environmental assets. + The interface with any rural living zones. + Separation distances and/or buffers. + Green Energy Carbon Capture Scheme

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
<p>SPP 2.6 – State Coastal Planning (July 2013)</p>	<p>SPP 2.6 provides for the long-term sustainability of Western Australia's coast and is relevant to those local governments that contain coastal areas. The purpose of the policy is to provide guidance for decision-making within the coastal zone including managing development and land use change, establishment of foreshore reserves and protecting, conserving, and enhancing coastal values. SPP 2.6 outlines criteria for the consideration of development and settlement arrangements, including building height limits, within local planning frameworks and management of water resources. It further acknowledges the importance of coastal planning strategies, coastal hazard risk management approaches, coastal foreshore reserves and community participation in coastal planning.</p>	<p>The SPP 2.6 Guidelines determines that the Strategy will need to outline considerations that need to be addressed for land to be rezoned. This will help guide the review of statutory local planning schemes.</p> <p>Coastal planning in the Strategy should be guided by a Coastal Hazard Risk Management and Adaptation Planning (CHRMAP), a process which the Shire has commenced. This will help determine the relevant subdivision and development requirements at the highest level of strategic planning.</p> <p>The Strategy should reflect and build on the existing Scheme provisions relating to coastal planning and consider the following: Coastal setbacks need to be properly considered as part of planning decisions – this needs to be recognised in strategies and actions. Future urban coastal development will need to generally take place immediately around the Carnarvon and Coral Bay townsites rather than more generally along the coast. Consideration of coastal implications for infrastructure including roads and boating facilities. Conservation considerations will need to be balanced with demand for commercial, tourism and infrastructure. Strong emphasis on ecotourism will be important in achieving this balance. The guidelines should be applied at the earliest appropriate stage of the planning process, e.g. rezoning of the land. This should be recognised in the Strategy. Coastal hazard risk management and protection should be addressed within the Strategy through the establishment of appropriate reserves, zones, or special control areas. The boundary of any coastal protection area is to be determined in the early stages of planning and in consultation with DPLH.</p>

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
<p>SPP 27 – Public Drinking Water Source (June 2003)</p>	<p>The purpose of SPP 27 is to inform decision-makers of those aspects of state planning policy concerning the protection of Public Drinking Water Supply Areas throughout the State. It is intended that this be implemented through the preparation of strategic plans, regional and local planning schemes, conservation and management strategies, and other relevant plans or guidelines, as well as through decision-making on subdivision and development applications.</p>	<p>The Strategy should further build on the identified water resources that offer significant economic, social and/or environmental values.</p> <p>The Strategy should describe how future Scheme revisions should be afforded for an appropriate level of protection under the Scheme.</p> <p>Drinking Water Source Protection Plan – Carnarvon Town Water Supply outlines recommendations that will achieve the protection of water quality and ensure the contribution of a reliable, safe drinking water supply to consumers.</p> <p>There is a single proclaimed PDWSA in the Shire: the Carnarvon Water Reserve along the Gascoyne River which is a Priority 1 water source. The Strategy and scheme should protect this water source from any impacts of future expansion or incompatible land uses through a Special Control Area.</p>
<p>SPP 29 – Planning for Water (August 2021)</p>	<p>SPP 29 seeks to ensure that planning and development considers water resource management and includes appropriate water management measures to achieve optimal water resource outcomes. The policy establishes objectives relating to improving environmental, social, cultural, and economic values of water resources; protecting public health through appropriate water supply and wastewater infrastructure; sustainable use of water resources and managing the risk of flooding and water related impacts of climate change on people, property, and infrastructure.</p>	<p>The need for an integrated approach to land use/water planning should be recognised in the Strategies approaches/actions.</p> <p>The Strategy should identify all important water sources and development scenarios should consider the implications of these assets.</p> <ul style="list-style-type: none"> + Protection of important water sources through appropriate mechanisms such as special control areas or reserves should be considered through the Strategy. + The Strategy may need to recognise the need for an effective water management planning framework that is relevant to the local area. + Consider the need for the preparation of a District Water Management Plan covering the Carnarvon Townsite.

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
<p>SPP 3.0 – Urban Growth and Settlement (May 2006)</p>	<p>SPP 3.0 is a broad sector policy that sets out the principles and considerations which apply to planning for urban growth and settlement in Western Australia. The purpose of the policy is to facilitate sustainable patterns of urban growth and settlement by setting out the requirements of sustainable settlements and communities and the broad policy for accommodating growth and change. SPP 3.0 outlines general measures to create sustainable communities, plan liveable neighbourhoods, coordinate services and infrastructure, manage rural-residential growth and plan for aboriginal communities. These general measures should be considered in conjunction with issue-specific urban growth and settlement state planning policies which supplement SPP 3.0.</p>	<p>The Strategy should reflect and build on the urban growth and settlement policies set out in the regional strategies and seek to identify sufficient land to meet future population and housing needs for at least the next decade.</p> <ul style="list-style-type: none"> + The Strategy will need to recognise the factors that should be considered in the identification of areas for future housing. + The importance of providing a diversity of housing choices needs to be recognised in the Strategy. + Infill of existing urban areas should be considered, where practical and appropriate. + Retail, community, and commercial areas should be concentrated where possible. + Sewerage treatment <p>There is a need to foster the local identity through land use planning, particularly in the Carnarvon townsite. Planning for arrange of residential densities should be considered in detail through the preparation of structure plans.</p>
<p>SPP 3.2 – Aboriginal Settlements (May 2011)</p>	<p>SPP 3.2 applies to the planning and development of Aboriginal settlements throughout Western Australia. The purpose of the policy is to provide for the recognition of Aboriginal settlements through local planning schemes and strategies and to collaboratively plan for the orderly and coordinated development of Aboriginal settlements. SPP 3.2 acknowledges that Aboriginal settlements are often remote from service and economic centres and have developed without formal town planning or the coordinated provision of essential services. Aboriginal settlements may range from seasonal camps to small towns and include areas within gazetted towns that have certain characteristics but does not apply to mining camps, tourism sites, or working pastoral settlements. The policy sets out the arrangements for the preparation, consultation, and endorsement of Layout Plans and emphasises the need for all Aboriginal settlements to have a WAPC-endorsed Layout Plan.</p>	<p>The Shire currently has a single Aboriginal Settlement community (for the purposes of the SPP) being the Mungullah Settlement.</p> <p>This settlement has been incorporated into the Shire's local planning framework, zoned R20 Residential in LPS13.</p>

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
<p>SPP 3.4 – Natural Hazards and Disasters (April 2006)</p>	<p>SPP 3.4 encourages local governments to adopt a systemic approach to the consideration of natural hazards and disasters. The objectives of this policy are to include planning for natural disasters as a fundamental element in the preparation of planning documents, and through these planning documents, minimise the adverse impacts of natural disasters on communities, the economy, and the environment. SPP 3.4 sets out considerations for decision makers in relation to hazards including flood, bush fire, landslides, earthquakes, cyclones, and storm surges. Consideration of these hazards should be undertaken in conjunction with issue-specific state planning policies which supplement SPP 3.4.</p>	<p>The cyclone season officially runs from 1 November to 30 April each year, with flooding and bushfires of particular relevance.</p> <p>The Strategy may identify areas that may be subject to natural hazards, and consider these in setting forth development scenarios.</p> <p>Strategies and actions may identify appropriate mechanisms for protecting development from cyclones, flooding, coastal storm surge and bushfire.</p>
<p>SPP 3.5 – Historic Heritage Conservation (May 2007)</p>	<p>SPP 3.5 sets out the principles of sound and responsible planning for the conservation and protection of Western Australia's historic heritage. The policy seeks to conserve places and areas of historic heritage significance and to ensure development does not adversely affect the significance of heritage places and areas. SPP 3.5 primarily relates to historic cultural heritage noting that aboriginal heritage and natural heritage are protected by other legislative instruments. Historic cultural heritage includes heritage areas, buildings and structures, historic cemeteries and gardens, man-made landscapes and historic or archaeological sites with or without built features.</p> <p>The policy contains development control principles and considerations for decision-makers for where development is proposed within a heritage place and heritage area. The policy also states that care should be taken by decision-makers to minimise the extent to which land use zoning and other planning controls conflict with, or undermine, heritage conservation objectives</p>	<p>The role of the Strategy will be to minimise the extent to which land use zoning and other planning controls conflict with, or undermine, heritage conservation objectives.</p> <ul style="list-style-type: none"> There are currently 11 places within the Shire that are currently on the State Heritage Register. The Shires Town Planning Scheme includes 17 heritage places under its Heritage List. The Shire currently has 78 Heritage Listings on its Municipal Heritage Inventory (which is now known as the Local Heritage Survey). <p>The current municipal Heritage Inventory is outdated and should be reviewed. A formal Heritage List may be included in the new Scheme along with provisions for the assessment and inclusion of new heritage places on the list. The new Scheme should include provisions for the creation, adoption, and review of the Heritage List – this may be reflected in the recommendations contained in the Strategy.</p> <p>Strategy to consider if amendments to scheme provisions and local planning policy framework should be developed to provide further guidance with regard to heritage places.</p>

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
<p>SPP 3.6 – Infrastructure Contributions (April 2021)</p>	<p>SPP 3.6 sets out the principles and requirements that apply to the establishment and collection of infrastructure contributions in new and established areas. The policy establishes objectives to coordinate the efficient and effective delivery of infrastructure to support population growth and development, provide clarity on the acceptable methods of collecting and coordinating contributions for infrastructure and provide the framework for a transparent, equitable, and accountable system for apportioning, collecting, and spending contributions.</p>	<p>New development and associated population within the Shire of Carnarvon will put pressure on existing utilities and community infrastructure.</p> <p>The appropriateness of potentially establishing development contribution arrangements to facilitate the timely and equitable delivery of infrastructure will need to be considered over time, including in the Strategy.</p> <ul style="list-style-type: none"> A cautious approach should be taken to the establishment of any DSP, having regard for the financial risks involved. A Scheme amendment will be required if the Shire considers it appropriate to implement a Development Contribution Area and Development Contribution Plan.
<p>SPP 3.7 – Bushfire (November 2024)</p>	<p>SPP 3.7 provides a framework for implementing effective, risk-based land use planning and development outcomes that prioritise the protection of life, property and infrastructure from bushfire. The policy requires bushfire risks to be identified and considered at every stage of the planning and development process, while balancing bushfire risk management with biodiversity conservation and environmental protection. It applies to all land designated as bushfire prone by the Fire and Emergency Services Commissioner, as well as land proposed for development that may introduce or increase bushfire hazard.</p>	<p>The majority of land within the Shire is identified as being Bushfire Prone. Any land proposed for urban development in the Strategy will need to have consideration for relevant bushfire hazards in accordance with SPP 3.7.</p> <p>In Rural areas the Strategy needs to consider provisions to seek a balance between bushfire risk mitigation measures and the associated adverse environmental impacts associated with the clearing of remnant vegetation.</p> <p>The policy introduces a distinction between Area 1 (Urban) and Area 2, with more detailed bushfire assessment requirements applying in Area 2. Accordingly the Strategy and Local Planning Scheme should recognise this distinction and ensure planning responses reflect the level of bushfire risk present.</p> <p>Ensure that subdivision, development, and land use proposals take into account bushfire protection requirements and include specified fire protection measures.</p> <p>The Shire will be responsible for administering development controls in accordance with the Local Planning Scheme, with due regard to SPP 3.7.</p>

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
SPP 4.1 – Industrial Interface (November 2017)	<p>Draft 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. The policy encourages the use of statutory buffers, facilitating industrial land uses with offsite impacts within specific zones and compatible interface between strategic/general industry zones and sensitive zones. Draft SPP 4.1 supports land use conflict being addressed as early as possible in the planning process. It is also expected that land use conflict will be subsequently considered at each stage of the planning framework, increasing in detail at each level. The policy recognises the overlap of various environmental, health and safety regulations, and guidelines and outlines considerations for decision-makers in this regard.</p>	<p>The Strategy should ensure that industrial sites of State or local strategic significance are protected from encroachment through use of buffers or careful interface treatment. Conflicts between industrial land and sensitive land uses should be minimised.</p> <p>Industries which generate off-site impacts should be located in relevant industrial zones and ensure that off-site impacts can be contained within these zones.</p>
SPP 5.2 – Telecommunications Infrastructure (September 2015)	<p>SPP 5.2 recognises telecommunications infrastructure as an essential service and aims to balance the need for this infrastructure and the community interest in protecting the visual character of local areas. The policy aims to provide clear guidance pertaining to the siting, location and design of telecommunications infrastructure and sets out specific exemptions for where the policy requirements do not apply. Decision-makers should ensure that telecommunications infrastructure services are located where it will facilitate continuous network coverage and/or improved telecommunications services to the community whilst not comprising environmental, cultural heritage, social and visual landscape values.</p>	<p>Telecommunications maintains a critical role in modern society, particularly in regional areas.</p> <p>The Scheme should retain existing provisions in the Scheme pertaining to telecommunications as currently identified within the Shire's Planning Framework.</p>
SPP 5.4 – Road and Rail Noise (September 2019)	<p>SPP 5.4 provides guidance for the performance-based approach for managing and mitigating transport noise associated with road and rail operations. This policy applies where noise sensitive land uses are located within a specified distance of a transport corridor, new or major road or rail upgrades are proposed or where works propose an increase in rail capacity resulting in increased noise. The policy also sets out specific exemptions for where the policy requirements do not apply. SPP 5.4 supports noise impacts being addressed as early as possible in the planning process to avoid land use conflict and achieve better land use planning outcomes. Considerations for decision-makers include ensuring that the community is protected from unreasonable levels of transport noise, whilst also ensuring the future operations of transport corridors. SPP 5.2 is supplemented by the Road and Rail Noise Guidelines.</p>	<p>Local planning strategies help guide land-use and infrastructure planning, by distinguishing the type and function of transport corridors and the desired land-uses to avoid land-use conflict from the impact of transport noise.</p> <p>The Strategy will need to clearly identify and map the transport corridors to which the policy applies; and the surrounding areas potentially impacted by transport noise.</p> <p>NWCH is identified as primary freight route and therefore development in proximity to the NWCH needs to consider noise implications early in the planning process.</p>

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
SPP 6.3 – Ningaloo Coast (August 2004)	<p>SPP 6.3 is a regional based policy relevant to the Shires of Carnarvon, Exmouth, and Ashburton. The policy seeks to provide stakeholders with clear guidance regarding acceptable and sustainable development within the Ningaloo Coast policy area. The objectives of the policy include maintaining the Ningaloo coast as an all-seasons recreation and nature-based tourism destination, preserving, and protecting the natural environment and consolidating future development within the towns of Carnarvon and Exmouth. The policy recognises the environmental significance of the Ningaloo Coast policy area and outlines several guiding principles along with criteria for decision-makers to consider when determining applications.</p>	<p>Ningaloo Coast is and will remain a global tourism destination for future generations. The Shire will need to consider the future planning of Ningaloo in both the Strategy and Scheme.</p> <p>The role of the Strategy will be to build on existing and understand how they will integrate.</p> <ul style="list-style-type: none"> Clear guidance regarding acceptable and sustainable development on the Ningaloo coast. Strategy to recognise the Ningaloo coast as an all-seasons recreation and nature-based tourism destination and limit growth with managed staged development, to ensure that the community continues to enjoy a remote and natural experience. Planning framework to encourage preservation and protection of the natural environment and should seek to enhance and rehabilitate degraded areas. Continued focus to consolidate future residential, commercial, higher-impact tourism and industrial development in the townsite of Carnarvon provide strategic directions for its future growth.
SPP 7.0 – Design of the Built Environment (May 2019)	<p>SPP 7.0 is a broad sector policy relevant to all local governments. The policy sets out the objectives, measures, principles, and processes which apply to the design and assessment of built environment proposals through the planning system. It is intended to apply to activity precinct plans, structure plans, local development plans, subdivision, development, and public works. The policy contains 10 design principles which set out specific considerations for decision makers when considering the above proposals. These include, context and character, landscape quality, built form and scale, functionality and build quality, sustainability, amenity, legibility, safety, community, and aesthetics. The policy also encourages early and on-going discussion of design quality matters and the use of design review. These principles should be considered in conjunction with the range of supporting State Planning Policies that provide design quality guidance for specific types of planning and development proposals.</p>	<p>Implications of SPP 7.0 include:</p> <ul style="list-style-type: none"> Application of principles in planning instruments. LPP policy considerations. Statutory development standards <p>The ten principles of good design sufficiently address the formulation of future design-related policies or precinct planning exercise. The principles should also be considered when proposing any new development areas.</p>

2.3 REGIONAL PLANNING

The WAPC prepares various regional planning instruments to guide land use and development at the regional and sub-regional level, including:

- + Regional Strategies;
- + Regional Planning Schemes; and
- + Regional and Sub-regional planning strategies and structure plans.

Regional planning instruments relevant to the Shire are described in **Table 2**.

Table 2. Regional Planning

REGIONAL PLANNING INSTRUMENT	OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
Gascoyne Regional Planning and Infrastructure Framework (February 2015)	The Gascoyne Regional Planning and Infrastructure Framework informs the decisions of the WAPC by establishing the regional context for land-use planning in the Gascoyne through an overview of the major regional economic, social, cultural, and environmental issues and their associated opportunities. It identifies the priority actions required to enable comprehensive regional planning and the priority regional infrastructure projects to facilitate economic and population growth.	<p>The Strategy should establish clear strategies and actions to assist in working towards the vision for the Gascoyne Region.</p> <p>The framework establishes a settlement hierarchy for the Gascoyne Region and identified the following for the Shire:</p> <ul style="list-style-type: none"> + Regional Centre – Carnarvon + Tourism Centre – Coral Bay + Tourism Node – Quobba, Blowholes, Gnaraloo Station (including Three Mile and Gnaraloo homestead), Bush Bay, Gladstone, Red Bluff, Warroora + Service Centre – Wooramel, Minalya <p>The settlement hierarchy proposed in the Strategy should be consistent with the settlement hierarchy proposed in the regional planning and infrastructure framework.</p> <p>The important role Carnarvon performs as a regional centre needs to be recognised in the Strategy and identified actions.</p> <p>The salt mining that takes place in the local area needs to be recognised in the Strategy.</p> <p>The delivery of wastewater infrastructure shall form part of the critical considerations in the planning for individual development/Structure Plan areas.</p>

STATE PLANNING POLICY (SPP)	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
SPP 72 – Precinct Design (February 2021)	SPP 72 provides guidance for precinct planning with the intent of achieving good planning and design outcomes for precincts within Western Australia. The policy recognises that there is a need to plan for a broader range of precinct-based contexts and conditions to achieve a balance between greenfield and infill development. Objectives of the policy include ensuring that precinct planning, and design processes deliver good-quality built environment outcomes that provide social, economic, and environmental benefit to those who use them. Precinct types include activity centres, station precincts, urban corridors, residential infill, and heritage precincts. These areas are recognised as requiring a high-level of planning and design focus in accordance with a series of precinct outcome considerations as outlined in the policy. The policy also encourages the use of design review.	<p>Subject to the Shire's wants and needs to activate key existing precincts to stimulate redevelopment and infill, this policy will be the primary guidance tool in facilitating these outcomes.</p> <p>The Strategy will need to identify these areas, providing the strategic rationale for where and why precinct structure planning should occur.</p>
Residential Design Codes Volumes 1 and 2 (April 2024)	The Residential Design Codes (the R-Codes) Volume 1 and 2 provides the basis for the control of residential development throughout Western Australia for single houses, grouped dwellings and multiple dwellings. The purpose of the policy is 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. The policy outlines various objectives for residential development, planning governance and development process and sets out information and consultation requirements for development proposals. The policy also makes provision for aspects of specified design elements to be varied through the local planning framework.	<p>Where appropriate, the local planning framework should be consistent with the R-Codes. If necessary, the new Strategy could identify if variations to the R-Codes should be considered due to regional or climatic factors.</p>

REGIONAL PLANNING INSTRUMENT	OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
<p>Gascoyne Regional Planning and Infrastructure Framework (Cont)</p>	<p>Different scenarios of population, decline/stabilisation/growth need are intrinsically linked with a wide range of other matters, including business investment confidence, access to education, healthcare, and housing etc.</p> <p>These identified goals should be identified in the Strategy and in the future Local Planning Scheme.</p> <p>A number of key existing transport and health infrastructure projects need to be acknowledged in the Strategy. The focus of the Strategy on diversifying the economic base of the Region should be reflected in the Strategy, with clear strategies and actions established for all sectors including:</p> <ul style="list-style-type: none"> + Horticulture + Tourism + Salt mining + Fishing + Industrial <p>The focus on infrastructure improvements should be reflected in the Strategy, recognising both the direct and indirect impacts of such investment on economic development and community wellbeing.</p>	<p>The important and diverse functions of the regional road network need to be recognised in the Strategy. A collaborative and holistic approach is required to infrastructure planning – including but not limited to matters such as road safety. A movement network plan should be established in the Strategy.</p> <p>It is not anticipated that within the Shire of Carnarvon that there is likely to be any significant additional demands on the regional road network, however the opportunity for further improvements (such as overtaking lanes)</p> <p>The Strategy needs to encourage careful coastal development control and provides focus on conservation of wilderness coast.</p> <ul style="list-style-type: none"> + Strategy to inform Scheme to restrict Carnarvon townsite. + Strategy to inform Scheme to restrict provision of tourism and tourism related zoned land outside of identified nodes.
<p>Gascoyne Regional Strategies for Significant Local Government Roads (2022)</p>	<p>The aim of the Regional Strategies for Significant Local Government Roads is to identify and develop a significant road network to support and facilitate the development of the Gascoyne Region</p>	<p>The Strategy is a third-tier strategic planning document, being preceded by the Western Australian State Planning Strategy (WAPC, 2014) and the Gascoyne Regional Planning and Infrastructure Framework (2015).</p> <p>The Strategy will also inform Federal and State Government whilst guiding local governments in the development or review of local planning strategies and schemes.</p>
<p>Ningaloo Coast Regional Strategy Carnarvon to Exmouth (2004)</p>	<p>The Ningaloo Coast Regional Strategy is a 30-year strategic land use plan that sets the framework of planning and sustainable tourism and land use on the Ningaloo Coast.</p>	<p>The Strategy is a third-tier strategic planning document, being preceded by the Western Australian State Planning Strategy (WAPC, 2014) and the Gascoyne Regional Planning and Infrastructure Framework (2015).</p> <p>The Strategy will also inform Federal and State Government whilst guiding local governments in the development or review of local planning strategies and schemes.</p>

REGIONAL PLANNING INSTRUMENT	OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
<p>Future Directions for the Ningaloo Coast Regional Strategy – Carnarvon to Exmouth (January 2019).</p>	<p>The Ningaloo Coast Regional Strategy Carnarvon to Exmouth (NCRS) was released by the WAPC in 2004. The NCRS is a strategic land use plan that sets a planning framework for sustainable tourism and land use within the Ningaloo coast study area (Figure 1). Since its release, there has been significant advancement in the regional and local planning frameworks in the Gascoyne.</p> <p>Future directions for the NCRS was prepared in response to relevant actions from the Gascoyne Regional Planning and Infrastructure Framework (WAPC, 2015) and Gascoyne Coast Sub-Regional Strategy (WAPC, 2018) that propose to consider the future direction of the NCRS. As part of this overall objective, this paper examines the current effective status of the applicable components of the NCRS in the context of the current planning framework applicable to the study area.</p> <p>The Primary Industries Plan 2020-2024 supports the vision of a more diverse and globally competitive sector. The plan has the focus on growth and expansion into targeted markets which complements the State's economic blueprint Diversity WA.</p> <p>The objectives of this plan are to set clear priorities for investment and to establish a platform for strengthened collaboration between government and primary industries.</p>	<p>Consultation with DPLH is recommended to understand the future review and direction of the Ningaloo Coast Regional Strategy, and the relation of the Scheme to the Strategy.</p>
<p>Department of Primary Industries and Regional Development Primary Industries Plan 2020-2024 (2020)</p>	<p>The purpose of this strategy is to: provide the sub-regional context and guiding principles for land-use planning in the Gascoyne Coast</p> <p>consider a range of population growth scenarios, and within this context analyse the capacities of settlements to accommodate growth;</p> <p>identify strategic directions to guide local planning processes; and</p> <p>provide guidance for the preparation of amendments to local planning strategies and schemes.</p>	<p>The Plan identifies five strategic themes with supporting initiatives to drive growth in the State's primary industries by guiding and aligning State Government, Commonwealth Government and Industry action.</p> <p>This Strategy can incorporate these strategic initiatives into planning actions.</p>
<p>Gascoyne Coast Sub-Regional Strategy (June 2018)</p>	<p>The purpose of this strategy is to: provide the sub-regional context and guiding principles for land-use planning in the Gascoyne Coast</p> <p>consider a range of population growth scenarios, and within this context analyse the capacities of settlements to accommodate growth;</p> <p>identify strategic directions to guide local planning processes; and</p> <p>provide guidance for the preparation of amendments to local planning strategies and schemes.</p>	<p>The Strategy is a third-tier strategic planning document, being preceded by the Western Australian State Planning Strategy (WAPC, 2014) and the Gascoyne Regional Planning and Infrastructure Framework (2015).</p> <p>The Strategy will also inform Federal and State Government whilst guiding local governments in the development or review of local planning strategies and schemes.</p>

2.4 DEVELOPMENT CONTROL AND OPERATIONAL POLICIES

The WAPC prepares various regional planning instruments to guide land use and development at the regional and sub-regional level, including:

- + Regional Strategies;
- + Regional Planning Schemes; and
- + Regional and Sub-regional planning strategies and structure plans.

Regional planning instruments relevant to the Shire are described in **Table 3**.

Table 3. Development Control & Operational Policies

POLICY	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
WAPC DC 1.1 Subdivision of Land – General Principles	This policy seeks to control subdivision of land, number, size and arrangement of lots within the framework of the relevant legislation, regulations, and policy.	The Strategy identifies the broad zoning framework to guide where subdivision and development may be supported, including land set aside for environmental protection and future growth areas. The Strategy maps and this Planning Strategy have identified areas where future developments are suitable.
WAPC DC 1.7 General Road Planning	This policy brings together in one document all those operational planning policies of the WAPC which apply generally to the planning of roads. The policy refers to the functional road classification system in Liveable Neighbourhoods (2009). The policy establishes requirements for land contributions and the construction of various categories of roads and outlines principles that apply to aspects of the planning and provision of all types of roads. It also clarifies the role of roads as service corridors for public utilities.	The Local Planning Strategy identifies opportunities for future road infrastructure, including consideration of a potential sealed road linking the Quobba Blowholes to Gnaraloo Bay, as highlighted in the Tourism Strategy. In addition, the Economic Development Strategy recognises the Shire's role in supporting the growth of the renewable energy sector, where strategic road planning will be essential to enabling access, investment, and long-term development.
WAPC DC 2.2 – Residential Subdivision	This policy sets out the Western Australian Planning Commission's requirements for the subdivision of land into residential lots. It is related to the site area per dwelling standards contained in the R-Codes, and to other State Policies and Development Controls. Historical lot size differences and application of contemporary R-Coding results in some lots not aligning with allocated R-Code minimum and average lot sizes. Lot size variation under this policy is intended to facilitate flexibility to complete subdivision of these lots as intended under the local planning framework.	The Strategy reviews existing residential density patterns and will guide future planning investigations, including potential changes to R-Coding informed by detailed structure planning.

POLICY	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
WAPC DC 3.4 – Subdivision of Rural Land	This policy sets out the principles used to determine applications to subdivide rural land. It aligns with the policy objectives set out in SPP 2.5 and identifies special circumstances in which rural subdivision may be considered by the WAPC.	The Shire contains extensive areas of land zoned for rural purposes. In accordance with WAPC Development Control Policy 3.4, subdivision of rural land should only be considered in exceptional circumstances. The Local Planning Strategy, together with the broader local planning framework, should prioritise the retention of rural land and limit further fragmentation to protect its long-term agricultural and landscape values.
WAPC DC 4.1 – Industrial Subdivision	This policy sets out the principles and objectives that guide the subdivision of industrial land. It seeks to ensure that the State can deliver on its industrial needs with a full range of industrial services, supported by efficient movement networks, public open space and considerations for amenity impacts of adjacent uses.	The Shire has multiple future industrial expansions. This DC 4.1 ensures that the development will be well designed industrial areas serving the full range of general and special industrial needs throughout the State.

2.5 POSITION STATEMENTS AND GUIDELINES

Position statements are prepared by the WAPC to set out its policy position or advice on a particular planning practice or matter. Guidelines provide detailed guidance on the application of WAPC policies. Those WAPC position statements or guidelines considered relevant are included in **Table 4**.

Table 4. Position Statements and Guidelines

POSITION STATEMENT / GUIDELINE	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
Residential Accommodation for Ageing Persons (December 2020)	This Position Statement has been prepared by the WAPC to outline the requirements to support the provision of residential accommodation for ageing persons within Western Australia's local government planning framework. The position statement seeks to achieve consistent strategic planning consideration of residential accommodation needs for ageing persons in local planning strategies and consistent statutory planning guidance to standardise land-use definitions and zoning permissibility for residential accommodation for ageing persons in local planning schemes.	The position statement provides specific guidance for the assessment and investigation of the residential accommodation needs that should be considered in the preparation of the Strategy. The Strategy may identify sites for aged care accommodation which are not zoned and require further liaison with government agencies and authorities.
Container deposit scheme for infrastructure (September 2020)	The position statement has been prepared by the WAPC to outline how container deposit scheme (CDS) infrastructure should be considered and assessed in the Western Australian planning system. The position statement seeks to ensure: <ul style="list-style-type: none"> • a coordinated approach to the provision of CDS infrastructure throughout WA • that appropriate locations are chosen for the installation of CDS infrastructure • the timely roll-out of infrastructure in support of the scheme's establishment and ongoing operational needs • minimum development requirements are established to exempt certain CDS infrastructure from requiring planning approval, for adoption by local governments. 	Identification of recycling initiatives has been identified in the Shires Strategic Community Plan as a long-term vision. The Strategy should consider the position statement and future planning to facilitate recycling and container deposit scheme initiatives.

POSITION STATEMENT / GUIDELINE	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
Renewables for energy facilities (March 2020)	This position statement has been prepared by the WAPC to outline the requirements to support the consistent consideration and provision of renewable energy facilities within Western Australia. The position statement seeks to: <ul style="list-style-type: none"> • guide the establishment of renewable energy facilities to support the State Energy Transformation Strategy (March 2019) • outline key planning and environmental considerations for the location, siting and design of renewable energy facilities • promote the consistent consideration and assessment of renewable energy facilities • facilitate appropriate development of renewable energy facilities while minimising any potential impact upon the environment, natural landscape, and urban areas • encourage informed public engagement early in the renewable energy facility planning process. 	The WAPC's Position Statement promotes renewable energy initiatives. To help implement this, the local planning framework can effectively manage the location and development assessment of renewable energy facilities and enable this important future energy source for communities. <ul style="list-style-type: none"> • The Strategy can, in a broad sense, strategically identify areas where renewable energy facilities could be considered. • In a statutory sense, 'renewable energy facility' is already included as a land use in the Scheme. Development controls can then be implemented either through Special Control Areas or a Local Planning Policy.
Workforce Accommodation (January 2018)	The workforce accommodation position statement has been prepared by the WAPC to assist users of the planning system in understanding the land use planning considerations for workforce accommodation. The purpose of this Position Statement is to: <ul style="list-style-type: none"> • Outline the development requirements for workforce accommodation under the Planning and Development Act 2005 and associated regulation • Provide guidance to local governments on the role of the local planning framework in the planning and development of workforce accommodation. 	Workforce accommodation is a key issue in many regional areas. The Strategy should investigate how future workforce accommodation can be facilitated in future to meet the needs of the economy of the Shire.

POSITION STATEMENT / GUIDELINE	POLICY OVERVIEW	LOCAL PLANNING STRATEGY IMPLICATIONS
<p>Dark sky and Astrotourism (December 2020)</p>	<p>Dark sky is night sky that is free from light and dust pollution to allow astronomical observation. Light pollution often appears as an orange smog which obscures the night sky, as artificial and natural light reflect off moisture and dust particles in the sky.</p> <p>As there are several observatories in Western Australia including in Carnarvon, their continued operation relies upon a dark night sky free from light and dust pollution.</p> <p>The dark sky and astrotourism details the WAPC position on the provision and designation of dark sky locations, and the subdivision and development implications throughout Western Australia. It is intended to be used by all planning decision-makers.</p>	<p>The Position Statement provides specific guidance in the preparation of regional schemes across Western Australia. The Strategy should consider the following:</p> <ul style="list-style-type: none"> + Preserve and protect the night sky for future generations in planned dark sky locations. + Establish a set of dark sky principles to be implemented through land use planning mechanisms. + Facilitate astrotourism through flexible local planning framework
<p>Planning for tourism and short-term rental accommodation (November 2023)</p>	<p>The intent of the planning for tourism and short-term rental accommodation is to guide the appropriate location and management of tourism and short-term rental accommodation land uses through the planning framework and:</p> <ul style="list-style-type: none"> + Facilitate acceptable development of new and evolving tourism opportunities + Provide a high-level of amenity in tourism areas + Deliver quality land use planning outcomes. 	<p>The position statement provides specific guidance to all tourism and short-term accommodation proposals within all regions of Western Australia. The Strategy should respond to future tourism enhancements and support opportunities for tourism enhancements within the Town and consider the following:</p> <ul style="list-style-type: none"> + The existing tourism accommodation options in Carnarvon and the wider area will need to be considered as part of the Strategy, in accordance with the Tourism Planning Guidelines. + The Strategy may identify any sites in the Carnarvon townsite that may be appropriate for intensification or infill tourist development

2.6 OTHER RELEVANT STRATEGIES, PLANS & POLICIES

The purpose of this section is to briefly outline any other strategies, plans and policies that have been prepared by the State that have relevance to the Strategy (see **Table 5**).

Table 5: Other Relevant Strategies, Plans and Policies

DOCUMENT	PURPOSE	LOCAL PLANNING STRATEGY IMPLICATIONS AND RESPONSE
<p>Western Australian Climate Policy (November 2020)</p>	<p>This Position Statement has been prepared by the Department of Water and Environmental Regulation to outline the requirements the Western Australian Climate Policy sets out the State Government's plan for a climate-resilient community and a prosperous low-carbon future. The policy underscores a commitment to adapting to climate change and working with all sectors of the economy to achieve net zero greenhouse gas emissions by 2050.</p> <p>The policy sets out the high-level priorities the State Government will implement to support a more climate-resilient community. The approach to climate adaptation recognises exposure to climate impacts, the diversity of the regions and the existing capability to manage and adapt to climate change. The policy outlines actions to guide the response by business, the community, local governments and State Government agencies to develop well-informed, timely and practical adaptation responses.</p>	<p>The Strategy should set out a direction for climate change adaptation, sustainable waste solutions, alternative energy applications, and the preservation and management of bushland and coastal reserves.</p> <p>Specifically relating to infrastructure planning, responsive planning and control of land use, climate change adaptation, sustainable water solutions, and alternative energy applications.</p>
<p>Gascoyne Development Commission Strategic Plan 2022-26 (January 2022)</p>	<p>+ The Commission Strategic Plan 2022-26 (Plan 26) is a broad framework that support the Commission's vision in supporting the Gascoyne Region. Plan 26 identifies the range of strategies and initiatives to drive economic and social development in the Gascoyne region over coming years.</p>	<p>The Strategic Plan consists of multiple initiatives requiring the Strategy's facilitation particularly in addressing the issues for housing, and workers accommodation.</p>



Carnarvon Townsite & Gascoyne River

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LOCAL PLANNING CONTEXT

3.1 STRATEGIC COMMUNITY PLAN 2022-2032

The Shires Strategic Community Plan was adopted in 2022. Key themes and outcomes which are relevant to land use planning are outlined in **Table 6**.

Table 6: Strategic Community Plan Alignment

OBJECTIVES	FOCUS	OPPORTUNITIES FOR CHANGE	ACTIONS/PROJECTS RELEVANT TO THE STRATEGY
Community Involvement	<ul style="list-style-type: none"> + Address anti-social behaviour by engaging with the community to figure out permanent solutions; encourage school attendance, engage with parents, and promote positive examples rather than chasing up the negative. + Focus on the safety outcomes for vulnerable members of the community such as the young and the elderly. + Seek to change attitudes towards crime and anti-social behaviour through education, particularly related to juvenile offenders. 	<ul style="list-style-type: none"> + Community perceptions towards crime and anti-social behaviour through programs and youth engagement 	<ul style="list-style-type: none"> + Carnarvon Youth Patrol and Hostel/ Sage.
Investment and productivity	<ul style="list-style-type: none"> + Encourage and promote new and existing businesses by encouraging longevity of tourism and transient visitors through the Town. + Focus on the improvement and protection of public amenities in the Town, such as the quality and number of public toilets, waste disposal, streetlights etc. + Strong desire to enhance tourism, while protecting the local environment and community. 	<ul style="list-style-type: none"> + Improve public image and promote key Shire tourist destinations through public artwork, tree planting, clean public amenities etc. 	<ul style="list-style-type: none"> + Massey Bay Rejuvenation and Coastal Attractions (investigate capital works and maintenance costs for works in Massey Bay and conduct soil environmental study). + Carnarvon RV Friendly Park (investigate capital works and maintenance costs for conversion / explore funding opportunities). + Whitlock Island Development & Fascine Waterway (identify key short- and long-term stages to stimulate economic development, tourism, and employment). + Gascoyne River Path and Parks investigate and improve ways to facilitate tourism and collaboration with key industry partners.

OBJECTIVES	FOCUS	OPPORTUNITIES FOR CHANGE	ACTIONS/PROJECTS RELEVANT TO THE STRATEGY
Sustainable Communities	<ul style="list-style-type: none"> + Focus on improving the availability, accessibility, quality, and livability of housing and take measures to increase protection from natural disasters. 	<ul style="list-style-type: none"> + Childcare investment to improve quality, access, and affordability. 	<ul style="list-style-type: none"> + Investigate / advocate for funding from Federal / State Government and Shire to facilitate the development of public services that can be used in the event of natural disasters. + Review and recommend changes to the local planning framework to facilitate improved built form outcomes suitable for the region.
Healthcare	<ul style="list-style-type: none"> + Focus on localised government health assistance and improved access to specialised medical services. + Strong desire to protect the coastline including beaches, sand dunes with the intent to rejuvenate them for future generations. 	<ul style="list-style-type: none"> + Continually seek funding from the State Government to improve access and quality to health care. 	<ul style="list-style-type: none"> + Review and respond to how the local planning framework can facilitate improved healthcare outcomes. + Rangers and Indigenous Rangers (investigate and advocate to Government owners of Ranger programs)
Environment	<ul style="list-style-type: none"> + Focus on creating more and diverse job opportunities for a variety of skills and education levels. + Focus on providing more and diverse education/training opportunities in Town. + Need to provide support for families such as childcare and other essential services. 	<ul style="list-style-type: none"> + Identify ways to increase school attendance, review and improve truancy programs. + Seek to involve police presence in community events to educate and promote the benefits they play in the community. 	<ul style="list-style-type: none"> + Carnarvon Childcare Centre (investigate / advocate for funding from Federal / State Government and Shire provision / upgrades of venues).

3.2 PREVIOUS LOCAL PLANNING STRATEGY

A local planning strategy is a fundamental component of the local planning framework. It sets out the long-term strategic planning directions for a local government. The Shire’s previous Local Planning Strategy was endorsed by the WAPC in 2017.

The local government is required to prepare a local planning strategy under the *Planning and Development (Local Planning Schemes) Regulations 2015* which shall set out the long-term planning directions for the local government. apply to any state or regional planning policy that is relevant to the strategy, and provide the rationale for any zoning or classification of land under the local planning scheme.

The following key principles, issues and opportunities and directions are identified in the previous Strategy, which will be reviewed in the preparation of the new Strategy (See **Table 7**)

Table 7. Previous Strategy Principles

SECTION	OUTCOMES
Key Principles	<ul style="list-style-type: none"> + Facilitating opportunities for steady population growth, particularly within the Carnarvon township and surrounds. + Continuing to provide support for economic development, recognising the value of building a diverse economic base with potential opportunities for growth in the areas of tourism, horticulture and residential growth – taking advantage of the climate, lifestyle and access to a variety of natural assets. + Generally seeking to put Carnarvon as a town on the map as a place with a positive future. + Facilitating the protection of natural assets through appropriate land tenure and management arrangements recognising that sometimes, competing demands are being placed on these areas. + Continuing to provide support for ongoing pastoral activities while recognising the potential opportunities for a diversification of activities. + Acknowledging and celebrating the history of the area and the areas cultural diversity. + Facilitating the orderly and proper planning of the area, including the establishment/advancement of appropriate planning frameworks (structure plans, local planning policies and similar). + Facilitating a focus on shared responsibilities through partnerships, collaboration and stakeholder engagement.

OBJECTIVES	FOCUS	OPPORTUNITIES FOR CHANGE	ACTIONS/PROJECTS RELEVANT TO THE STRATEGY
+ Infrastructure	+ Identification for improved public infrastructure and facilities such as new playgrounds for both kids and youth, skatepark, basketball courts, barbecues, and outdoor exercise equipment.	+ Invest in public facilities such as new playgrounds, outdoor amenities such as BBQ’s to promote community cohesiveness	<ul style="list-style-type: none"> + Carnarvon Industrial/Manufacturing Precinct/Hub (explore and identify future land that can be used to support this outcome of the Strategic Community Plan). + Recycling and Processing Centre (explore and identify other regional local government and outline strengths and weaknesses for incorporation into the Strategy). + Airport Relocation and Upgrade (The Strategy should facilitate ongoing studies for feasibility and planning which includes funding from State and Federal Governments).
History and Heritage	+ Keen interest to maintain and protect existing facilities including heritage, such as the Town library, Art Gallery, Space and Technology Museum, Carnarvon Heritage Precinct and Gwoonwardu Mia – Aboriginal Heritage and Cultural Centre.	+ Continually promote the importance of the history and heritage of the Shire to promote tourism and funding opportunities.	+ Review and respond to how the local planning framework can facilitate improved healthcare outcomes
Community Engagement	+ Increase active engagement with the community and between key services to promote community involvement in the decision-making process of the Town.	+ Identify opportunities to improve communication channels to members of the community.	+ Review and respond how the local planning framework can facilitate active engagement within the community to yield community focused planning outcomes for small and large-scale projects.

SECTION	OUTCOMES
Key/Issues and Opportunities	<ul style="list-style-type: none"> + Accommodating future population growth. + Planning for the expansion of tourism activities. + Ensuring that the quality and quantity of housing meets the needs of the local community. + Ensuring appropriate access to health services. + Ensuring appropriate access to education and training. + The ability for people to be able to 'age in place'. + Overall community spirit and moral. + Expansion of horticultural activities. + Management of coastal areas. + Effective infrastructure delivery. + Foster emerging industries such as hydrogen energy. + Supporting economic development. + Planning for transport networks. + Integrating water resources into the planning process. + Recognising the value of culture and heritage.
Directions	<ul style="list-style-type: none"> + Retaining population and achieving steady growth + Encourage the growth and retention of tourism opportunities to strengthen the tourism industry. + New development and subdivision are appropriately identified and planned for in a logical manner. + Health care, education and training opportunities meet the needs of the current and future local community. + Road & infrastructure planned for future growth + Recognise the economic and social importance of the Shire's pastoral and horticultural industry to ensure it can continue as a major land use in the Shire. + The local community is offered a diverse range of local business and employment opportunities within settlements. + The Shire has a safe, logical and efficient movement network. + The Shire's future population growth, tourism activities and industries will be supported by necessary infrastructure. + Existing and future development in the Shire acknowledged the impacts of climate change and plans for the appropriate response to the issues it raised for the local community. + The Shire is appropriately protected from the effects of severe weather events and make efficient use of water resources. + The local community celebrates local character, culture and heritage and inspires civic pride and a sense of place. + To recognise the potential of resource-based industries to deliver local and regional benefits, as part of a broad economic base for the area.

The primary matters and changes in planning direction to consider since preparation of the former Local Planning Strategy include:

- + The introduction of the Local Planning Strategy Guidelines (WAPC) to guide the manner and form, changing the structure and content of the new Strategy;
- + Rapid changes in technology that are driving community demand and expectations on the services and infrastructure provided by government;
- + Continued slow economic growth which has resulted in an uncertain economic climate where spending has slowed and job security in many sectors has declined;
- + Impact of a stagnant or declining population, with difficulties in attracting and retaining a local workforce;
- + Housing affordability, and difficulties delivering appropriate and timely housing in regional areas, including workers accommodation;
- + Strong focus on climate change adaptation and mitigation as part of working towards greater environmental sustainability; and
- + Rise of creative industries - in recent years, employment structures have been shifting, which has seen more people working as freelancers or taking on multiple roles in different areas, with a particular focus on creative expression.
- + Increased interest in Carnarvon from the resource industry necessitating workforce accommodation and logistical routes

3.3 LOCAL PLANNING SCHEME NO.13

Local Planning Scheme No.13 (LPS13), gazetted in 2020 is the primary document for controlling land use and development within the Shire. A new local planning strategy is to be prepared to align with LPS13 and plan for future scheme amendments.

3.4 LOCAL PLANNING POLICIES

Local Planning Policies (LPP) may be prepared by the Shire in accordance with Division 2 of Schedule 2 of the LPS Regulations in respect of a particular class or classes of matters specified in the policy, and may apply to the whole scheme area or part of the scheme area.

The Shire currently has 1 operational LPP's (see **Table 8**).

Table 8: State Planning Policy Overview and Local Planning Strategy Implications

NAME OF LPP	DATE OF APPROVAL	PURPOSE OF LPP	LOCAL PLANNING STRATEGY IMPLICATIONS AND RESPONSES
Property Fences	22/02/2022	This LPP is to prescribe what is a 'sufficient fence' for the purposes of the Dividing Fences Act. Provide guidance on the style, height and location of fencing. Minimise adverse impacts that undesirable fences can have on the streetscape and neighbourhood amenity.	Proposed to retain this LPP. No implications for the Strategy identified.

3.5 STRUCTURE PLANS

Structure plans (including standard structure plans and precinct structure plans) can be prepared in accordance with Division 2 of Schedule 2 of the Regulations for land within the Scheme area to provide the basis for zoning and subdivision of land. An overview of the structure plans within the Shire, and implications for the Strategy are provided in **Table 9**

Table 9: Structure Plans

NAME OF STRUCTURE PLAN	DATE OF APPROVAL	PURPOSE OF STRUCTURE PLAN	LOCAL PLANNING STRATEGY IMPLICATIONS AND RESPONSES
Babbage and Whitlock Island Structure Plan	28 October 2014	Development of Babbage and Whitlock islands will reflect community sentiment and take into account the unique location of the islands, coupled with their environment. To achieve this, development will occur in a sustainable and eco-friendly manner – concepts which form the basis of the structure plan.	Long term expansion applied for Babbage and Whitlock Island Structure Plan. This structure plan has been extended to expire in October 2035.
Carmarvon Airport Precinct Structure Plan Report	August 2014 (no Gazetted date)	The Structure Plan will provide a strategic basis for land use planning decisions within the Structure Plan area over the next 20 years and assist the Shire and the Western Australian Planning Commission in assessing subdivision applications and development proposals. The airport site represents a large tract of land which is strategically located near the town and its infrastructure and is not impacted by flood risk (subject to further mitigation). It is envisaged that new development around the airport will act as the catalyst to drive economic and population growth within the town.	Long term expansion applied for Carmarvon Airport Precinct Structure Plan Report. This structure plan has been extended to expire in October 2035.
Northwater Structure Plan Stages 4 and 5	July 2025	This Northwater Carmarvon structure plan is prepared to guide the subdivision and development of land fronting the Carmarvon Fascine, situated between Jaaga Cove and Babbage Island Road.	Development and subdivision under this structure plan is to be delivered by Development WA.
Carmarvon Brockman Park Structure Plan	19 October 2017	The objective of the Brockman Park Structure Plan is to facilitate the development of the Structure Plan Area for aged person's accommodation and a limited range of complementary commercial and community land uses and public open space.	Due to expire 19 October 2027 Subject site yet to be developed. It is expected that this structure plan will be extended.

3.6 LOCAL DEVELOPMENT PLANS

Local development plans (LDPs) can be prepared in accordance with Division 2 of Schedule 2 of the Regulations for land within the Scheme area to provide guidance for future development in relation to site and development standards and any exemptions from the requirement to obtain development approval. An overview of the LDPs within the Shire, and implications for the Strategy are provided.

Table 10: Local Development Plans

NAME OF LDP	DATE OF APPROVAL	PURPOSE OF LDP	LOCAL PLANNING STRATEGY IMPLICATIONS AND RESPONSES
Lot 9500 Robinson Street, Bayview Coral Bay	25/07/2023	The Lot 9500 Robinson Street LDP includes the development proposal for workers accommodation on site.	The Ningaloo Coast Resort LDP was endorsed by the Shire in 2023 and will remain a key guiding document for the area until 2033. The Strategy should consider the key objectives and/or limitations of the LDP for implementation where possible for subsequent incorporation into the Scheme, upon next review.
Ningaloo Coast Resort	11/03/2011	The Ningaloo Coast Resort Overall Development Plan seeks approval from the Shire of Carnarvon and the Western Australian Planning Commission for the proposed Ningaloo Coast Resort, a four-star resort with associated facilities to be located on Lot 10 Banksia Drive in Coral Bay, Western Australia.	The Ningaloo Coast Resort Overall Development Plan is ultimately a strategy document and is nearly 14 years old. A revised Ningaloo Coast Resort Overall Development Plan should be updated to reflect the changes to which have occurred in the area and future goals to be achieved.
Carnarvon Christian School Lot 560.562 & 1046	28/2/2020	The Carnarvon Christian School LDP guides the development of Carnarvon Christian School – an “Educational Establishment”.	The Carnarvon Christian School Local Development Plan was endorsed by the Shire in 2020 and will remain part of the local planning framework until 2030. The Strategy should consider the key objectives and/or limitations of the LDP for implementation where possible for subsequent incorporation into the Scheme, upon next review.
Coral Bay Beach House Estate	25/5/2021	The Coral Bay Beach House Estate LDP guides the development along Shellfish Drive, Coral Bay.	The Coral Bay Beach House Estate Local Development Plan was endorsed by the Shire in 2021 and will remain part of the local planning framework until 2031. The Strategy should consider the key objectives and/or limitations of the LDP for implementation where possible for subsequent incorporation into the Scheme, upon next review.
Babbage Island Holiday Park	28/4/2023	The Babbage Island LDP seeks to guide future development to the existing Babbage Island Holiday Park.	The Babbage Island LDP was endorsed by the Shire in 2023 and will remain part of the local planning framework until 2033. The Strategy should consider the key objectives and/or limitations of the LDP for implementation where possible for subsequent incorporation into the Scheme, upon next review.

NAME OF STRUCTURE PLAN	DATE OF APPROVAL	PURPOSE OF STRUCTURE PLAN	LOCAL PLANNING STRATEGY IMPLICATIONS AND RESPONSES
Coral Bay Settlement Structure Plan 2014	2014 (an update of Coral Bay Settlement Plan 2004)	The aim of the Coral Bay Settlement Structure Plan is to establish a clear direction for the future planning, development, and infrastructure coordination for the settlement over the next 25 years. Consideration has been given to the projected growth of Coral Bay as one of Western Australia's premier tourist destinations on the coastline of Ningaloo Reef World Heritage Area. An additional objective of the Coral Bay Settlement Structure Plan Review is to identify statutory and strategic inconsistencies that exist within the planning framework for Coral Bay and to recommend changes to ensure a functional and robust planning framework is established at the State level and guides the development of the future Shire of Carnarvon Local Planning Scheme No. 13.	Due to expire 19 October 2028. Short term expansion applied for Coral Bay Settlement Structure Plan. A review of the bed cap component of the Structure Plan was undertaken in 2024. The Shire intends to prepare a precinct structure plan in due course.
Gascoyne Food Bowl District Structure Plan	23 May 2017	The Gascoyne Food Bowl District Structure Plan allows for the creation of new horticultural land within the Carnarvon region as contemplated under the Gascoyne Food Bowl Initiative. The Gascoyne Food Bowl District Structure Plan is premised on best-practice planning principles that provides a guide to the scheme amendments required to facilitate horticultural activity and the future land use and development of the land.	Due to expire 2027. It is expected that this structure plan will be extended.
Blowholes Reserves Management Plan	September 2014	The Blowholes Reserve Management Plan provides a framework to guide future planning, development and management of recreation and tourism at the Blowholes Reserves. Specifically, the Management Plan sets out guidance until the year 2036 as the Blowholes transitions from shacks to new chalets with formal leases and enhanced management.	The management plan can allocate a tenure that reflects the Reserve's importance for recreation and tourism and facilitates balanced appropriate environmental outcomes. The Shire will continue to implement the State endorsed Blowholes Reserve Management Plan.

3.7 OTHER RELEVANT STRATEGIES, PLANS & POLICIES

The purpose of this section is to briefly outline any other strategies, plans and policies that have been prepared by the Shire that have relevance to the Strategy (See **Table 11**)

Table 11: Other Relevant Strategies, Plans & Policies

NAME OF STRATEGY, PLAN, POLICY	DATE APPROVED	PURPOSE	IMPLICATIONS FOR STRATEGY
Shire of Carmarvon Corporate Business Plan	2024	<p>The Shire's Corporate Business Plan is structured around community desires, specifically:</p> <ul style="list-style-type: none"> + Community feels sage and harmonious + Shire's livelihoods are thriving + Lifestyles are sustainable + Education establishments are sustained with continuous investment + Community engagement is inclusive and supportive. 	<p>The Corporate Business Plan will be used in numerous ways, specifically relating to the Strategy by providing guidance on assessing a new project and/or opportunity. The Strategy should consider the community objectives the Corporate Business Plan and detail how they can be achieved through planning reform.</p>
Shire of Carmarvon Economic Development Strategy	2022	<p>The Economic Development Strategy aims to ensure the Shire realises its future potential and in turn delivers a more enriched lifestyle for local residents and businesses:</p> <ul style="list-style-type: none"> + Community + Energy + Foundation Projects and Infrastructure + Visitor Economy + Food Production 	<p>The Economic Development Strategy will be used by providing guidance on key economic drivers for the Shire to support growth and the overall direction of the Shire to achieve sustainable success. The Strategy should consider the five key drivers identified for economic development and detail and they can be achieved through key planning changes.</p>
On our Horizon – Profiling nine of the major projects planned in the Shire of Carmarvon and their impact on population and services	Updated in 2024	<p>The On Our Horizon report profiles a selection of nine of the major projects in the pipeline to examine their impact on social services and infrastructure in the Shire of Carmarvon noting that there are other projects which will also provide new employment opportunities in the Shire and place even more pressure on social infrastructure.</p>	<p>The On Our Horizon Report will be used to guide the Strategy in facilitating the nine major projects. The Strategy should consider how the identified projects facilitate and respond to other key strategies and objectives within the Shire to foster employment opportunities and improve essential infrastructure.</p>

NAME OF STRATEGY, PLAN, POLICY	DATE APPROVED	PURPOSE	IMPLICATIONS FOR STRATEGY
Carmarvon Water Reserve Drinking Water Protection Plan	Jun 2010	<p>The Carmarvon townsite's water supply is sourced from a bore field that extends for approximately 40 km along the bed and banks of the Gascoyne River.</p> <p>In 1999 the Water and Rivers Commission (now the Department of Water) prepared the Carmarvon Water Reserve water source protection plan. This drinking water source protection plan updates and replaces the 1999 publication.</p>	<p>The Carmarvon Water Reserve Drinking Water Source Protection plan will be used to guide the Strategy to ensure the protection of key water sources for the region. The Strategy should consider the existing water supply system, water treatment, catchment details, future water supply requirements, existing water supply requirements and how these can be protected through planning reform and key planning changes.</p>
Carmarvon Tourism Strategy and Action Plan 2012	2012	<p>The Shire of Carmarvon and the Tourism Alliance jointly developed and implemented an action plan to guide improvements to Carmarvon's tourism performance.</p> <p>The primary purpose of the tourism strategy was to determine Carmarvon's realistic tourism potential and identify what enhancements, additions, actions and messages were required for Carmarvon to reach its tourism potential.</p>	<p>The Strategy provides an overview and recommendation of land planning within Carmarvon as it relates to tourism:</p> <ul style="list-style-type: none"> + Promote more mixed to enable a combination of tourism, commercial and residential across Carmarvon. + The action plans proposed the following objectives to be considered in the Strategy: <ul style="list-style-type: none"> + Enhance and beautify the drive and entrance into Carmarvon. + Reduce seasonality of visitors. + Develop a marketing plan to enhance Carmarvon as a destination. + Increase and improve the range of activities in Carmarvon. + Increase and improve the range of facilities in Carmarvon. + Develop a business culture in Carmarvon that values tourism. + Promote Carmarvon as a place to live and work.



Carnarvon Country

04



LOCAL GOVERNMENT PROFILE

The profile of the Shire of Carnarvon is presented and analysed in this section to provide robust, appropriate background and rationale for the strategic path outlined in Part 1. The Local Government Profile is organised under the following headings:

- + Demographic profile and population forecast
- + Community, urban growth and settlement
- + Economy and Employment
- + Environment
- + Infrastructure

Trends, issues, opportunities and constraints detailed within the Local Government Profile are addressed in the strategy directions, actions and mapping found in Part 1. Where relevant the information for the Shire is provided and contrasted with regional or WA benchmarks. The intent is to highlight the key issues which form the basis for the planning principles underlying this strategy and its associated planning scheme.

4.1 DEMOGRAPHIC PROFILE & POPULATION FORECAST

4.1.1. DEMOGRAPHIC PROFILE

Population

The Shire covers a large geographic area in the Gascoyne region of Western Australia, located approximately 900km north of Perth. The Shire covers an area of 46,664 km² and has a current population of 5,259 (2021 ABS Census Population Data). Carnarvon, the administrative and regional hub within the Shire is a key population centre with approximately 4,162 people in 2021. This makes up 79% of the Shire's population with the remaining population distributed through rural areas and smaller towns.

Population Trends

Figure 1 illustrates that the Shire has experienced a significant population decline in the last 20 years, dropping from over 8,941 people in 2001 to only 5,681 people in 2006 due to a major mining company staff layoff. Although population has been declining in the past 10 years, the changes have been relatively low and stable.

The Shire accounts for 62% of the Gascoyne Region's population in 2011 but declines to 55% by 2021 (**Figure 2**). In the same period, the Shire's population declines by 535 people. The rate of population decline in the Shire was constant between 2011-2016 and 2016-2021 at -5% per five-year period. Within the wider Gascoyne Region, the population increase is largely due to growth in the Shire of Exmouth.

Although the Shire's population has declined over the long term, it is worth noting that there was a slight population increase between 2006 and 2011, likely due to regional investments and government initiatives.

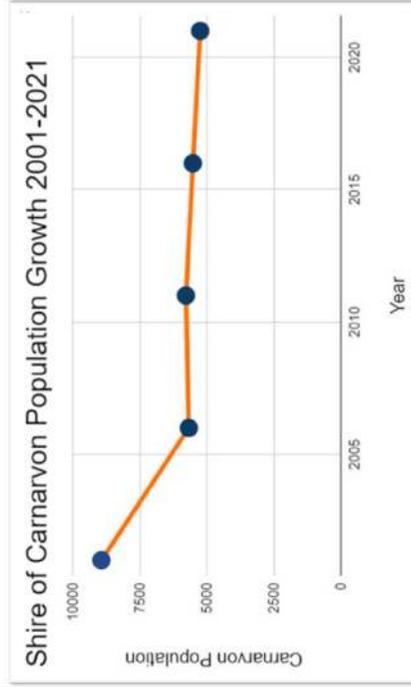


Figure 1: Carnarvon Population Growth Since 2001 (ABS Census)

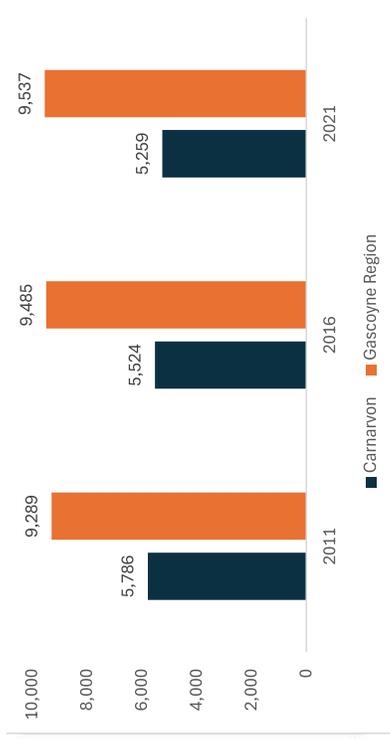


Figure 2: Population Change in Carnarvon and the Gascoyne Region (ABS Census)

Western Australia Tomorrow 12 (WAT12) population projection growth rates (Central) were applied to 2021 ABS Census population data to forecast the Shire's population by 2036 (**Figure 3**). The projections show the Shire's population is expected to experience a -3% change between 2021 and 2036, reaching a population of 5,345. The Shire is the only LGA in the Gascoyne Region expected to experience negative population growth. Population decline in regional areas is often related to an underprovision of key amenities and infrastructure and education and job opportunities. Identifying key economic opportunities and services that the Shire may be able to influence will be critical in retaining and potentially growing population. Note that there are a number of forecast scenarios, based on strategic opportunities, which are discussed in more detail in **Section 4.1.4 Population Forecast**

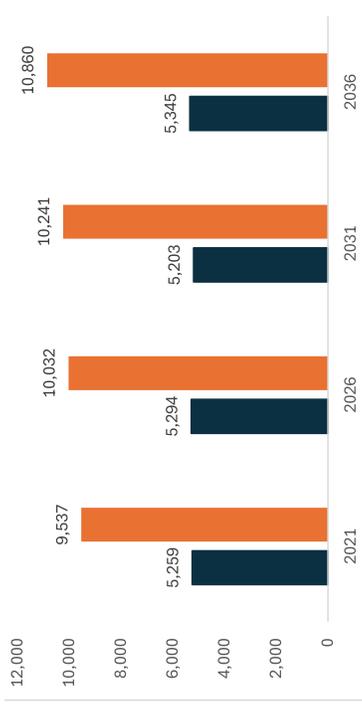


Figure 3: Population Forecast in Carnarvon and Gascoyne Region

Age and Life Stages

The Shire of Carnarvon has a comparatively old population with a median age of 40 years (above the WA median of 38 years), and this is evidenced by the significant higher proportion of older workers and retirees (>50 years) and the lower proportion of young age groups of the Shire, in comparison to Gascoyne Region and WA (Figure 4).

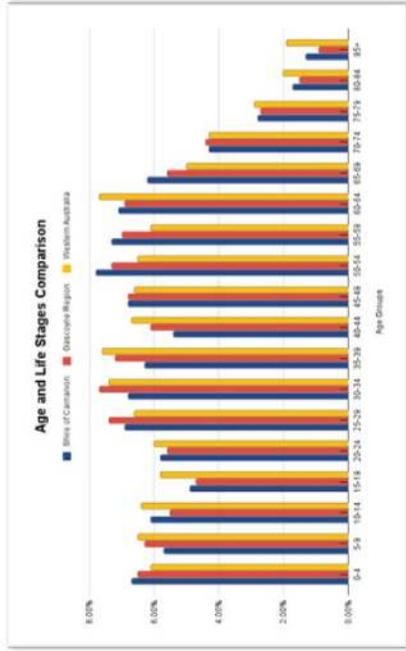


Figure 4: Age and Life Stages Comparison (ABS Census)

Further, Figure 5 demonstrates the proportional changes of age groups over the last decade. The 0-14 age group has seen significant decrease, where the over 50 age group has seen a consistent and significant increase. Worth mentioning is the significant decrease of the 35-49 age group, meaning that the availability of workers has reduced.

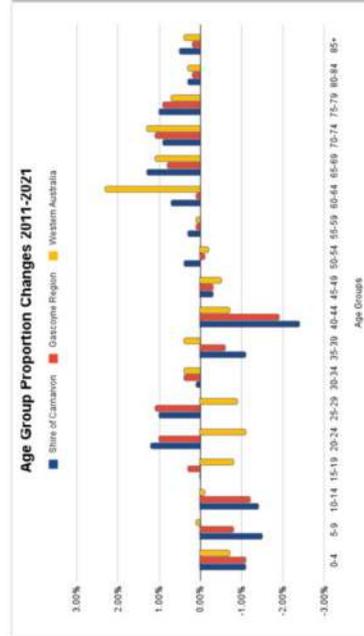


Figure 5: Age Group Proportion Changes 2011-2021 (ABS Census)

These proportion changes indicate the following:

- + The economy and number of working opportunities have reduced thus forced the local workforce to seek works elsewhere;
- + The reduction of young age groups also suggests that key facilities and services such as schools and higher education may be inadequate, and local workforce will have a shortage in the future;
- + The older age groups will likely put significant pressure on the Shire for the demand of age care and community facilities and services.

These gaps present opportunities for the Shire to focus economic and community development efforts that can retain population and allow residents to age in their community.

Education

Education institution attending data reflects the age structure of the population, as it is influenced by the number of children attending school. Proximity to tertiary education can mean young adults leaving home to be nearer to educational facilities and the degree to which people are seeking out educational opportunities in adulthood, especially in their late teens and early twenties.

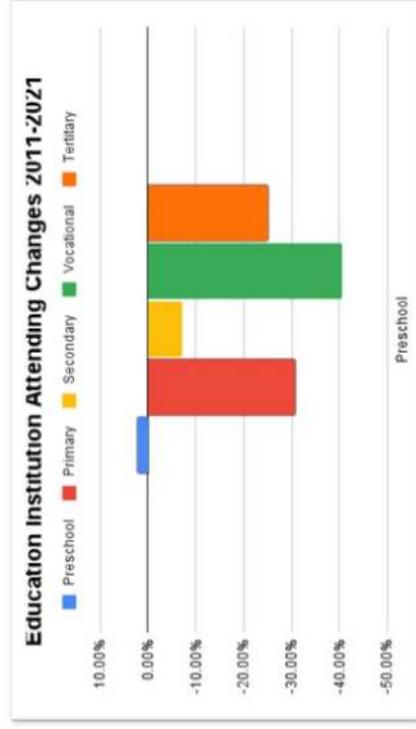


Figure 6: Education Institution Attending Changes (ABS Census)

The changes of people attending education institutes over the last decade strongly suggests that education opportunities are severely limited in the Shire thereby forcing school age children and teens to relocate for education (See Figure 6). The significant reduction of people attending vocational education such as TAFE could also imply first, that there has been limited vocational education opportunities in the Shire. Consequently, young people in the Shire could find difficulties transitioning from schools to further education and employment, it can further lead to unemployment, underemployment and social exclusion.

Cultural Diversity

The Shire of Carnarvon's cultural diversity was analysed using country of birth data against Greater Perth and the Gascoyne Region (Figure 7). Australia is a larger country of birth for the Shire (78%) compared to the Gascoyne Region (69%) and Greater Perth (62%). The United Kingdom is the next largest country of birth for the Shire (4%), the Gascoyne Region (11%) and Greater Perth (10%). There are lower levels of Culturally and Linguistically Diverse (CaLD) population in the Shire compared to Greater Perth. The Shire has a similar cultural diversity composition to the Gascoyne Region whereas Greater Perth has a higher proportion of people born in African and Asian regions. Attracting CaLD communities is an opportunity to address sparse population and skill shortages while generating benefits for both the local community and those newly settled in the area.

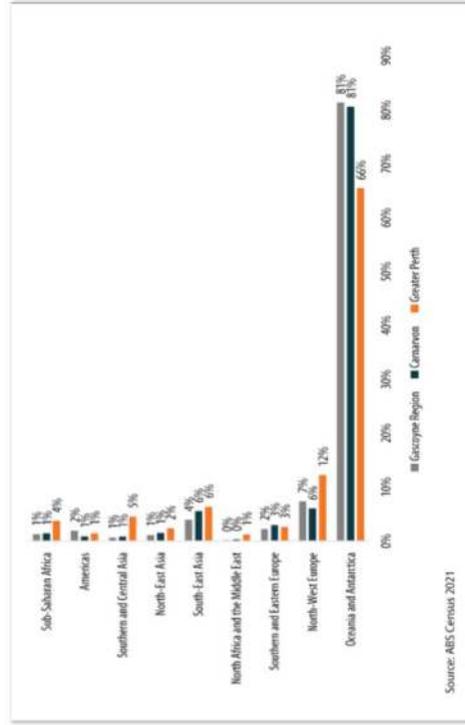


Figure 7: Ethnicity (ABS Census)

Aboriginal Population

Both the Shire of Carnarvon and the Gascoyne have a significantly higher proportion of Aboriginal people compared to Western Australia as a whole, with Carnarvon having a greater proportion than the Gascoyne.

The Shire accounted for 857 of the Gascoyne Region's 1,143 Aboriginal people in 2021, falling from 81% of the Region's Aboriginal population in 2011 to 75% in 2021 (Figure 8). These demographic trends highlight the importance of ongoing considerations, particularly when combined with other data, in order to effectively address the needs and priorities of the Aboriginal population in the region. There may be the need for additional culturally relevant services to be provided to support the Shire's Aboriginal population.

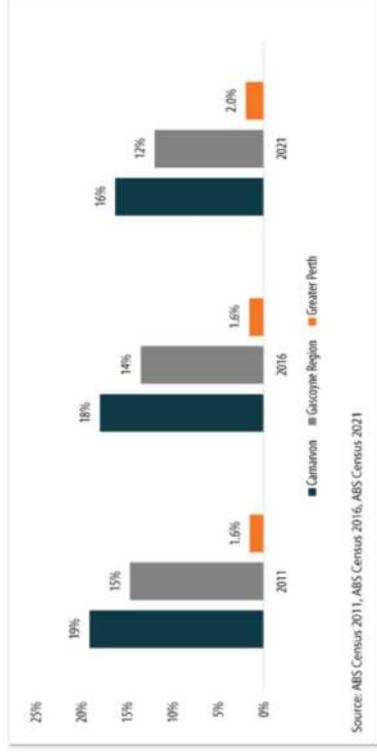


Figure 8: Aboriginal Population

4.1.2. HOUSEHOLD PROFILE AND HOUSING TYPES

The Shire of Carnarvon household structure was examined by household composition against Greater Perth and the Gascoyne Region (Figure 9). Visitor-only households account for a greater proportion of households in the Shire of Carnarvon and the Gascoyne Region relative to Greater Perth (39% and 47% versus 1%). The Shire's high proportion of visitor-only households is likely accounted for by vacation or summer homes and has grown since 2016. Lone-person households (a sub-division of non-family households along with group households) account for 21% of total households in the Shire. Lone-person households and visitor-only households are the only household compositions to have positively changed between 2016 and 2021.

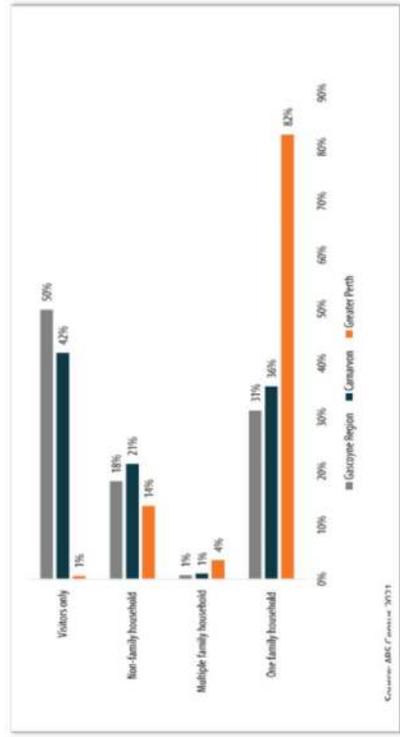


Figure 9: Household Profile Structure

Dwellings

Unlike population, the dwellings in the Shire increase from 3,758 in 2011 to 3,763 in 2021 (0.13% change) (Figure 10). The Shire accounted for 54% of dwellings across the Gascoyne Region in 2011 which remained approximately the same in 2016 and 2021. The declining quantum of dwellings changes from 2011 to 2016 (-1% change) may be attributable to slowing economic conditions which were revitalised by an increase in domestic tourism following border closures in 2021.

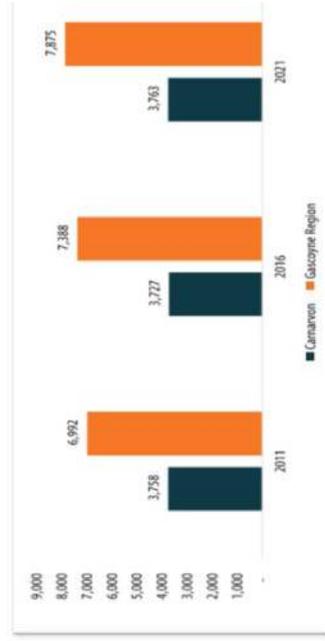


Figure 10: Number of Dwellings

Dwelling Structure

The Shire's household structure was also examined by the number of bedrooms per dwelling (Figure 11). A larger proportion of dwellings in the Shire can be attributed to no-bedroom dwellings relative to Greater Perth (15% versus 0.2%). However, the Gascoyne Region has a greater proportion of no-bedroom dwellings (18%) and one-bedroom dwellings (26% versus 25%). No-bedroom and one-bedroom dwellings can likely be attributed to mining workforce accommodation. This aligns with the Shire's smaller share of 14- to 24-year-old age group and non-family-oriented demographic as dwellings with two or more bedrooms represent a smaller proportion of total dwellings relative to Greater Perth and Gascoyne Region. Both household structure and the number of bedrooms indicate that the number and composition of dwellings in the Shire are determined by the extent of the mining industry and a small family-oriented population.

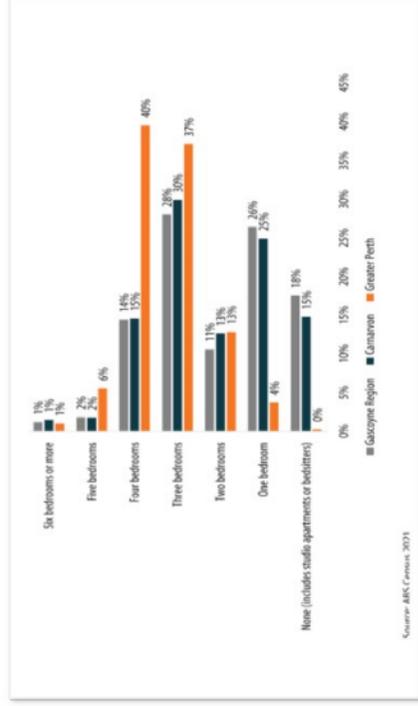


Figure 11: Dwelling Structure

Housing Tenure

Tenure data indicates that the Shire is home to both a mobile working-age population and an older, permanent population (Figure 12). The Shire has a greater proportion of dwellings that are rented compared to Greater Perth (35% versus 26%), these are more likely to be taken up by working age persons who may be living in the Shire for a defined period. Approximately 42% of homes are owned outright, significantly higher than Greater Perth (24%), and likely correspond to longer term residents. The lower proportion of homes owned with a mortgage are an indication that people moving to the Shire are not intending to stay long term.

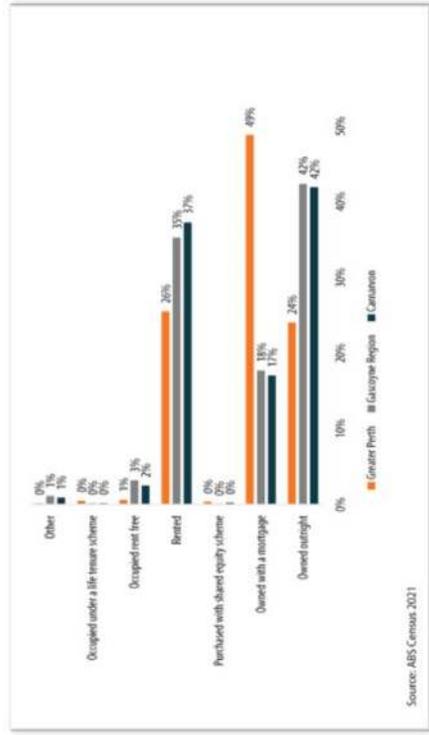


Figure 12: Housing Tenure

4.1.3. INCOME PROFILE

Household Income

Households in the Shire have been equally distributed into five levels of weekly income. Generally, lower income quintiles spend a higher proportion of their income on basic goods and services, while upper-income quintiles have more disposable income available to spend on luxury items. Incomes in the Shire have a lower representation than Greater Perth across the first (17% versus 21%), third quintiles (20% versus 26%) and fifth quintiles (12% versus 17%) with a higher proportion of households in the second (28% versus 20%) and fourth quintiles (23% versus 16%) (Figure 13). This would indicate that households in the Shire generally have a lower level of discretionary spending relative to Greater Perth. A similar conclusion can be found in comparison with the Gascoyne Region.

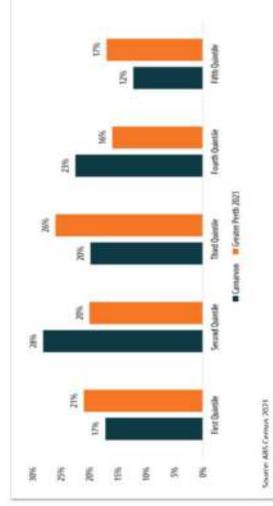


Figure 13: Household Income

The analysis has also been completed with 2016 data to examine income without the effects of COVID-19 and over time (Figure 14). Incomes within the Shire do not appear to have been significantly impacted by COVID-19 as the fourth- and fifth-income quintiles increased from 2016 to 2021 with the third quintile remaining at 20% and the first two income quintiles decreasing. This may be associated with higher levels of domestic tourism. If this is the case, there may be the opportunity to maintain higher levels of visitation through appropriate initiatives such as improved accommodation, marketing, and new tourist activities/ attractions.

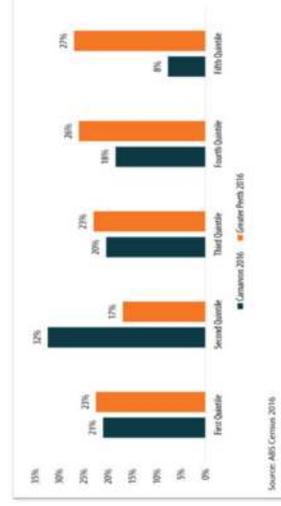


Figure 14: 2016 Household Income

Worker and Resident Income

ABS Census 'Place of Work' data has been compared against 'Place of Usual Residence' to compare the income distribution of residents against workers for the Shire of Carnarvon (Figure 15). 'Place of work' data typically refers to the address of the main job the census respondent had in the week prior to the Census and 'place of usual residence' refers to where a person usually lives. The Shire has a greater proportion of residents in the low-income brackets (up to \$500-\$649 per week) compared to workers that are not usual residents. Those who work but do not live in the Shire make up a greater proportion of the medium to high income brackets. This reflects FIFO and potentially a misalignment of local skills. Vocational training and reskilling opportunities may assist locals in entering higher paying jobs and may help retain the youth population by providing better pathways to paid employment.

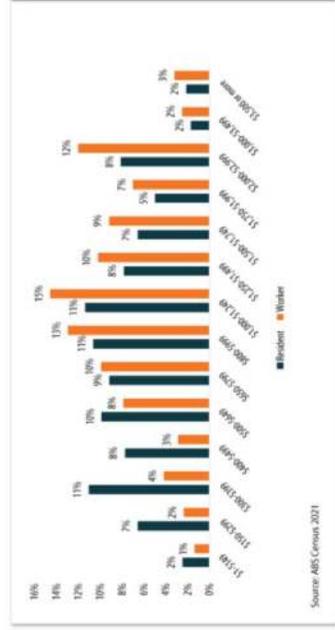


Figure 15: Worker Versus Resident Income

4.1.4. POPULATION FORECAST

Central to the Strategy is estimating the future population that will reside in the Shire, to ensure appropriate land supply and housing to accommodate growth. The population forecast should be used along with economic projections to inform possible future demand in planning for infrastructure, land supply, townsite capacity and other considerations that require a medium to long term time frame for planning and construction.

The Gascoyne Coast Sub-Regional Strategy (2018) proposed a range of population scenarios to consider potential future populations for the region and the Shire of Carnarvon. This includes scenarios based on the WA Tomorrow population forecasts, as well as more aspirational population targets.

The aspirational population scenarios for the Shire have been developed through a consultation process that engaged the Gascoyne Development Commission (GDC) and the four Gascoyne local governments. These regional targets were proposed following consideration of all feedback received from local governments regarding their future population aspirations at local and regional levels, in addition to further advice from GDC. These targets are considered by GDC to be in general alignment with their vision for the region. From a planning perspective, it is important that the magnitude of itinerant and transient populations occurring in addition to an area's permanently based resident population is considered, as this invariably creates additional pressure on local and regional infrastructure. Thus Scenario 5 (Estimated peak population) has been given to incorporate to capture transient/temporary population.

The below bullet points provide explanation for the different scenarios:

- + Scenario 1 – Central band (median forecast band) WA Tomorrow 12 population forecasts for the Gascoyne Coast local government areas
- + Scenario 2 – Upper band (high-growth forecast band) WA Tomorrow 12 population forecasts for the Gascoyne Coast local government areas
- + Scenario 3 – The Sub-Regional Strategy's aspirational population scenario A – reflects a 'more conservative' aspirational population figure proposed by the GDC in their Gascoyne Regional Investment Blueprint (GDC, 2015).
- + Scenario 4 – The Sub-Regional Strategy's aspirational population scenario B – reflects the original regional aspirational population targets resulting from the process described above.
- + Scenario 5 (Estimated peak population) – Estimated based on Scenario 4 (permanent population base) and the additional population (i.e. the difference between the estimated peak population figure and the assumed permanent population base) has been estimated based on an interpretation of economic data considering the impacts of itinerant and transient populations, such as fly-in fly-out workers, seasonal workers, and tourists.
- + Our Horizon Scenario – This population forecast scenario will see an increase in population from around 5,000 people in 2021 to a peak of 6,450 people in 2029-30, before softening to around 6,000 people by the end of the estimated period at 2032. The forecast increase includes the construction and operational employees associated with in the nine major projects and their partners and dependent children that are expected to be relocated to the Shire of Carnarvon. No seasonal workers were included.

The Shire's population scenarios have been further broken down and are presented in Table 12.

Table 12: Population Forecast Scenarios

SCENARIO	2031	AAGR 2019-31(%)	2036	2051	AAGR 2031-51 (%)
Scenario 1 WA Tomorrow - Central band (median forecast band)	5,470	-0.5%	5,345	6,654	1.0%
Scenario 2 WA Tomorrow – Upper band (high-growth forecast band)	6,105	0.5%	6,245	10,168	1.9%
Scenario 3 Aspirational population scenario A	9,612	4.7%	10,284	13,696	1.4%
Scenario 4 Aspirational population scenario B	12,403	7.4%	14,015	23,820	2.6%
Scenario 5 Estimated peak population	15,903	n/a	17,515	27,320	N/A
On Our Horizon Scenario	6,000	1.9%	N/A	N/A	N/A

4.1.15. DWELLING YIELD ANALYSIS

Draft Land Capacity Analysis By DPLH

In line with the Local Planning Strategy Guidelines, a dwelling yield analysis should be undertaken before considering new areas for residential intensification or expansion. This analysis aims to determine if there is sufficient capacity across the Shire to accommodate increased dwelling yields to accommodate population forecasts. Importantly, the analysis explores existing opportunities for infill and greenfield development without altering the existing planning framework at both the local and state levels.

The draft Regional North Land Capacity Analysis – Shire of Carnarvon (2024) provides an overview of existing and future land capacity based on forecast population growth for settlements in the Shire of Carnarvon. It examines the land identified for residential, tourist, commercial, industrial and rural residential uses that are capable of substantial development.

The current and future land use categories were determined according to a collection of strategic planning documents, structure plans, growth plans and planning schemes where relevant. The following planning instruments have informed the settlement land-use mapping:

- + Shire of Carnarvon Local Planning Scheme No.13
- + Shire of Carnarvon Local Planning Strategy 2017
- + Babbage and Whitlock Islands Structure Plan 2014
- + Carnarvon Airport Precinct Structure Plan 2014
- + East Carnarvon and Kingsford Structure Plan 2015
- + Coral Bay Settlement Structure Plan (2014).

The draft land capacity analysis establishes the potential population yield of current and future residential lands for each relevant settlement, and then considers possible implications for the local government area's land supply situation in the context of the Western Australia Tomorrow population forecasts and other desirable population growth scenarios. Significantly, the scenarios present a point of comparison for interpreting the potential capacities of residential land as determined through this analysis.

In interpreting the outputs of the analysis presented, it is important to note that additional capacity is assumed to be accommodated exclusively on current and future residential land that is considered to be capable of substantial further development.

Carnarvon Townsite - Estimated Residential Capacity

The potential capacity for current and future residential land identified in the settlement land use plans (see **Figure 16**) of the Regional North Land Capacity Analysis – Shire of Carnarvon (2024) considers three scenarios that are based on being fully developed at different average residential densities (R10, R20 and R30). Under these density scenarios, potential additional lot and population yields have been calculated. From this, an overall potential population and dwelling capacity has been estimated for each of the three density scenarios. **Table 13** provides the development status of residential land within Carnarvon settlement land-use plan.

Table 13: Residential Land Availability

LAND USE	TOTAL (HA)	DEVELOPED (HA)	CAPABLE OF SUBSTANTIAL FURTHER DEVELOPMENT (HA)
Residential	293	263	30
Future Residential	545	0	545
Residential & Future Residential	838	263	575
Rural Residential	72	54	18
Future Rural Residential	0	0	0
Rural Residential & Future Rural Residential	72	54	18

The analysis identifies 293 hectares of zoned existing Residential land in Carnarvon of which 30 hectares is considered to be capable of substantial further development. Residential land around the town centre is mostly developed. However, there are considerable undeveloped centrally located parcels fronting the fascine at Brockman, and between the existing residential area of South Carnarvon and the boat harbour.

Eastern areas of the settlement, particularly East Carnarvon, Kingsford, and Brown Range, are where most Carnarvon's undeveloped and under-developed Residential-zoned land is situated. Despite their status in the local planning scheme zoned as 'Residential', more intensive development in some of these areas will require provision of essential service infrastructure and further structure planning, the supply of currently zoned land 'capable of substantial further development' is highly constrained by lack of infrastructure provision. There is also currently limited supply of appropriately zoned land within the Local Planning Scheme No.13 for a 'residential' purpose.

There is an additional 545 hectares of Future Residential land identified, while there are significant areas identified within the Shire's strategic documents (local planning strategy/ structure plans) for 'future residential' land supply. These areas are not yet zoned appropriately, or subject to further studies and investigations. There is a further 54 hectares of rural residential-zoned land, nearly all of which is developed. This is all located in the Kingsford area. There are no rural smallholdings land in Carnarvon.

In summary, although the capacity analysis identifies a large amount of land 'capable of substantial further development', this is mostly 'future residential land supply'. Whilst in theory this land could accommodate a large population increase, it is still subject to a number of constraints (including infrastructure provision, environmental and heritage issues). These issues combined likely mean that in practice, the land is not able to be developed in the short to medium term, without significant investment.

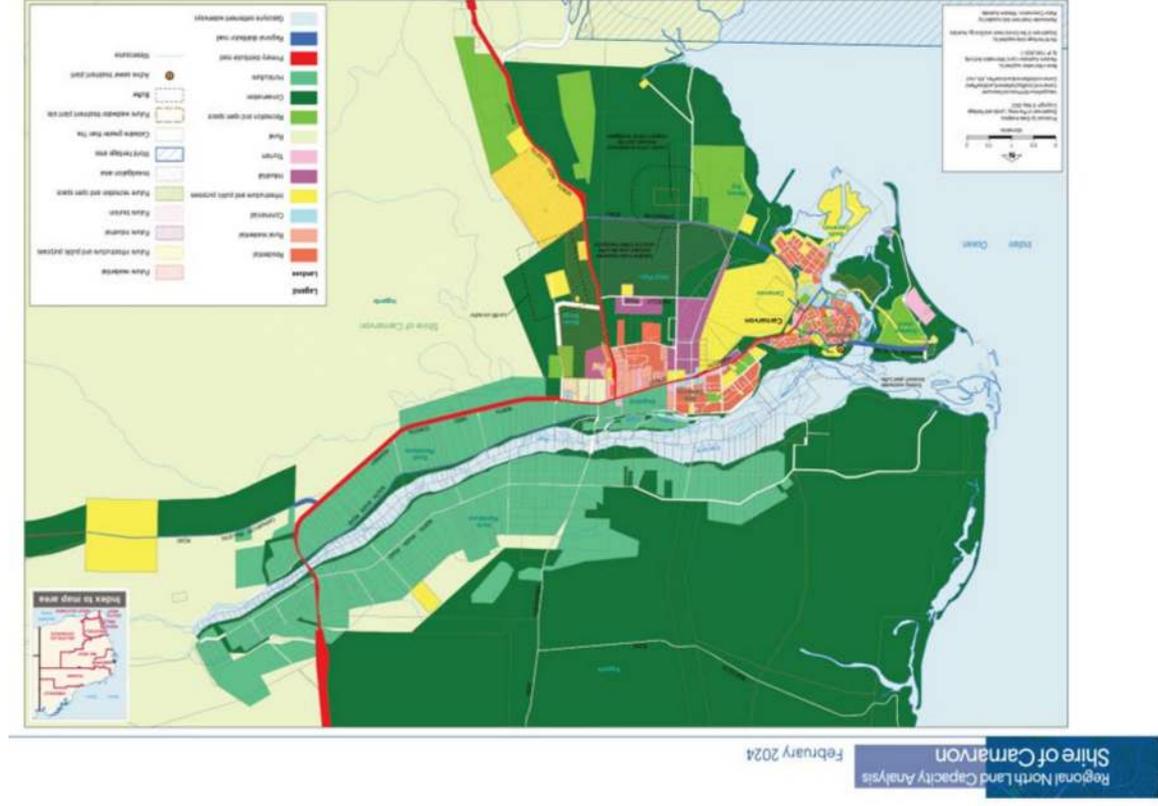


Figure 16: Shire of Carnarvon Settlement Land Use Plan

Coral Bay Townsite - Estimated Residential Capacity

The estimated land capacity of Coral Bay was also determined; however the primary purpose of Coral Bay's land uses is to facilitate for tourism activities. Although the analysis indicated Coral Bay has large area of land capable for further development, however, for an environmentally sensitive area as such, actual capability for development can only be determined through further studies and structure planning guidance.

Table 14: Coral Bay Settlement Undeveloped Land

LAND USE	TOTAL (HA)	DEVELOPED (HA)
Tourism	9001	261285 m ² (66128 ha)
	Lot 3 Rac	5,115 m ² (0.511 ha)
	Lot 2 Bac	4,021 m ² (0.402 ha)
	Strata Lot 6 (f6) Trevally Court, Coral Bay	17,786 m ² (1.779 ha)
	Strata Lot 7 (7) Marlin Court, Coral Bay	
	Lot 10 (f6) Robinson St, Coral Bay	27,901 m ² (2.790 ha)
	Total Tourism	422,198 m ² (42.21 ha)
	Lot 800 (79) Banksia Dr, Coral Bay	106,090 m ² (10.609 ha)
	Total Tourism	422,198 m ² (42.21 ha)
Service Commercial	Lot 62	10,096 m ² (1.010 ha)
	Total Service Commercial	10,096 m ² (1.010 ha)
Enterprise	Lot 320 (Partially Zoned Enterprise)	14,544 m ² (1.454 ha)
	Total Enterprise	14,544 m ² (1.454 ha)
Public Purpose	Lot 307	15,076 m ² (1.508 ha)
	Lot 64	14,844 m ² (1.484 ha)
	Lot 501	160,377 m ² (16.038 ha)
	Total Public Purpose	190,297 m ² (19.03 ha)
Infrastructure Services	Lot 316 (Partially Outside Of The Coral Bay Locality Boundary)	157,789 m ² (15.779 ha)
	Total Infrastructure Services	157,789 m ² (15.779 ha)

Aligning with WA Tomorrow Forecasts

Section 4.12 on Population Forecast discusses the WA Tomorrow's and the Shire's aspirational population forecast and provides a standard of comparison for interpreting the potential capacities of residential land as determined through this analysis. **Table 15** provides the estimated capacity of residential and future residential land identified in comparison to the forecast scenarios listed in previous section.

Based on Shire of Carnarvon Regional North Land Capacity Analysis (2024), estimated total population figures for the Shire of Carnarvon are provided for low, medium and high density (R10-R30) development scenarios which are presented in **Table 15**. Each scenario considers two subsets (A & B):

- + 'A' considers the potential additional population yield of all residential, rural residential and rural smallholdings land capable of further development at the average density or lot sizes attributable to that particular scenario; and
- + 'B' considers the potential additional population yield of all residential, future residential, rural residential, future rural residential, rural smallholdings land capable of further development at the average density or lot sizes attributable to that particular scenario.

Table 15: Shire of Carnarvon - Aligning Capacity with Population Forecasts

FORECAST SCENARIO	2036 TARGETED POPULATION	2051 TARGETED POPULATION	CAPACITY SCENARIO	ESTIMATED TOTAL POPULATION	ALIGNMENT 2036		
					2036	2051	
Scenario 1 WA Tomorrow - Central band (median forecast band)	5,345	6,654	R10	1A	5,726	No	No
				1B	14,232	Yes	Yes
			R20	2A	6,204	Yes	No
				2B	23,218	Yes	Yes
			R30	3A	6,689	Yes	Yes
				3B	32,208	Yes	Yes
Scenario 2 WA Tomorrow - Upper-band (high-growth forecast band)	6,245	10,168	R10	1A	5,726	No	No
				1B	14,232	Yes	Yes
			R20	2A	6,204	No	No
				2B	23,218	Yes	Yes
			R30	3A	6,689	No	No
				3B	32,208	Yes	Yes
Scenario 3 Aspirational population scenario A	10,284	13,696	R10	1A	5,726	No	No
				1B	14,232	Yes	Yes
			R20	2A	6,204	No	No
				2B	23,218	Yes	Yes
			R30	3A	6,689	No	No
				3B	32,208	Yes	Yes

FORECAST SCENARIO	2036 TARGETED POPULATION	2051 TARGETED POPULATION	CAPACITY SCENARIO	ESTIMATED TOTAL POPULATION	ALIGNMENT		
					2036	2051	
Scenario 4 Aspirational population scenario B	14,015	23,820	R10	1A	5,726	No	No
				1B	14,232	Yes	No
			R20	2A	6,204	No	No
				2B	23,218	Yes	No
			R30	3A	6,689	No	No
				3B	32,208	Yes	Yes
Scenario 5 Estimated peak population	17,515	27,320	R10	1A	5,726	No	No
				1B	14,232	No	No
			R20	2A	6,204	No	No
				2B	23,218	No	No
			R30	3A	6,689	No	No
				3B	32,208	Yes	Yes

ALIGNING WITH OUR HORIZON FORECASTS

An alternative population forecast was provided from Our Horizon in 2022. This forecast considers the pipeline of major projects planned for the Shire of Carnarvon in the tourism, mining, agriculture, aquaculture, housing, retail, food and beverage, and infrastructure sectors over the decade from 2022 to 2032. The commencement and construction of these projects will provide transformational benefits to the Shire in terms of jobs, business opportunities and the attraction of new permanent population.

The population of the Shire has been declining since 2010-2011. Although the rates of declining have slowed and became stable, the current rate 1.6 percent still represents a loss of nearly 100 people per year which could equate to a loss of 40 families per year from the Shire.

If the existing residential population in the Shire remains stable, the major projects are projected to cause the population to grow from about 5,000 people in 2021 to a peak of 6,450 people by 2029-30. After reaching this peak, the population is expected to decrease slightly to around 6,000 people by the end of the forecast period. This represents an annual growth rate of approximately 19 percent over the projection period.

The projected population growth over the decade leading up to 2032 accounts for the construction and operational employees, as well as their partners and dependent children, who are expected to move to the Shire of Carnarvon due to the nine major projects. This analysis does not include seasonal workers.

The following table (Table 16) provides the alignment of Our Horizon population forecast and Shire of Carnarvon land capacity analysis.

Table 16: Shire of Carnarvon - Aligning Capacity with Our Horizon Forecasts

FORECAST SCENARIO	2036 TARGETED POPULATION	2051 TARGETED POPULATION	CAPACITY SCENARIO	ESTIMATED TOTAL POPULATION	ALIGNMENT		
					2036	2051	
On Our Horizon	6,450	6,000	R10	1A	5,726	No	Yes
				1B	14,232	Yes	Yes
			R20	2A	6,204	No	Yes
				2B	23,218	Yes	Yes
			R30	3A	6,689	Yes	Yes
				3B	32,208	Yes	Yes

4.1.6. DEMOGRAPHIC PROFILE AND POPULATION FORECAST SUMMARY

The key issues and opportunities identified in the Demographic Profile and Population Forecast theme are provided in **Table 17**.

Table 17: Demographic Profile and Population Forecast - Issues and Opportunities

LAND USE	TOTAL (HA)
Demographic Profile	<ul style="list-style-type: none"> + Shire's population has been declining in the past decade. Specifically, young age groups (0-14) and mature workers (35-49) have seen significant decline while aged groups (over 50) have seen large increases. This imbalance of population changes imply the Shire's population is aging and will lack workforce in the future. + Education institution attending data has significantly declined indicating the high inadequacy of education institutions in the Shire at all level. + High aboriginal population in comparison to greater Perth. These demographic trends highlight the importance of ongoing considerations, particularly when combined with other data, in order to effectively address the needs and priorities of the Aboriginal population in the region. + There are lower levels of Culturally and Linguistically Diverse (CaLO) population in the Shire compared to Greater Perth (consistent with the Gascoyne region). Attracting CaLO communities is an opportunity to address sparse population and skill shortages while generating benefits for both the local community and those newly settled in the area. + The Shire's population also consists of a range of different age groups. Therefore, planning considerations for this Shire will include a varied set of issues including providing the right housing types, education and aged facilities. + Those who work in the Shire make up a greater proportion of the medium to high income brackets. This reflects FIFO and potentially a misalignment of local skills. Vocational training and reskilling opportunities may assist locals in entering higher paying jobs and may help retain the youth population by providing better pathways to paid employment. + Household cost of living has increased. Housing costs and availability remain one of the key challenges in growing the workforce and population.
Population Forecast	<ul style="list-style-type: none"> + The Shire's population fluctuates largely due to seasonal tourism. Sustained and incremental population growth is a key objective, supported by local economic development. + The Shire's population is forecast to decline in the long term according to the State government's WA Tomorrow 12 Central Band projections. Population decline in regional areas is often related to an underprovision of amenities, education opportunities and job opportunities. Identifying key economic opportunities and services that the Shire may be able to influence will be critical in retaining and potentially growing population. + Under the Our Horizon Scenario, population forecast will reach to its peak of 6,450 people around 2030 before dropping to around 6,000 people in 2032. + Different scenarios of population, decline/stabilisation/growth need are intrinsically linked with a wide range of other matters, including business investment confidence, access to education, healthcare, and housing etc. The population projects prepared by the ABS for the Department of Housing (now Department of Communities), show continued population growth in the Shire is considered to be achievable, desirable and a suitable basis for moving forward with land use planning.
Dwelling Yield Analysis	<ul style="list-style-type: none"> + Although the dwelling capacity analysis identifies significant dwelling and population capacity exists within Shire to accommodate projected population increase from WA Tomorrow, the majority land is constrained by infrastructure requirements. + Although there is significant space for future redevelopment, more intensive development in some of these areas will require provision of essential service infrastructure and further structure planning.

4.2 COMMUNITY, URBAN GROWTH AND SETTLEMENT

4.2.1. URBAN GROWTH AND SETTLEMENT

We recognise and acknowledge the Yinggarda and Baijuru people as Traditional Owners of the land within the Shire of Carnarvon. Carnarvon town is located on Yinggarda Country, whose people named this area Gwoonwardu long ago, meaning 'neck of water'.

The first European settlement was established in 1876 setting up the pastoral station known as "Brickhouse station". Then it was known as Mungarra Squatting Co. In 1883 the townsite of Carnarvon was gazetted. The town and its population would really take off however at the turn of the century with the completion of the Carnarvon Jetty in 1899 and then the gold rush in the early 1900s would see Carnarvon boom into a centre of activity in the region. With the conclusion of World War I there was a shift of focus in the region's industries. With the incoming settlers of the soldier relocation scheme came a boom in horticultural practices including the growing of the now famous bananas and tomatoes all along newly plotted out lands on the banks of the Gascoyne River. Throughout the first half of the twentieth century this trend would continue with the horticultural growers continuing to thrive and grow while the traditional pastoralist and whaling industries suffering under the effects of the great depression, which would continue in the region until the 1940's.

In the second half of the century the region began to modernise and develop. In the 1960's the roads to Geraldton were bituminised which opened up the region to both economic and population booms. The most rapid development period occurred between the years of 1961-1980. Communication and transport was vastly improved by the bituminising of roads and efficient regular air service, helping to break down the physical isolation of the township and the Shire's pastoral stations. The bituminising of the Northwest highway also opened this region to tourism, encouraging the growth of caravan parks and the like as people escaped the southern winter. Tourism became an industry which has continued to grow from the 1960s. With an estimated regional population of 11,195 in 1970, the rest of this period saw a rise in the number of people moving from rural areas to the town and by 1976 there was a regional population of 12,837. Such development included the construction of Mungallah Village, the first substantial residential development for Aboriginal people.

The commercial viability of the agricultural industry has been well established and appreciated by Perth markets and by 1984 there were 163 active plantations. The invasion of salt water caused significant problems, with some plantations being abandoned as the bores became saline. In 1984, the Port Harbour was closed completely for use as a cargo jetty, with the State Government and the Carnarvon Shire agreeing to finance maintenance of the Carnarvon jetty for tourism. Tourism became the new economic contributor and coexisted with a growing pattern of retirement settlement, which has promoted residential development within the town. As the commercial centre of the region, Carnarvon was stimulated by industry development and probably most influenced by transport and communication, which permanently altered Carnarvon's sense of existence in isolation.

Tourism continues to be a key economic driver within the region. Gwoonwardu Mia was developed in 2009 as the Gascoyne Aboriginal Heritage and Cultural Centre which recognises and celebrates Aboriginal culture within the region. The settlement of Coral Bay remains the primary tourist node for the Shire of Carnarvon with its future development guided by the Coral Bay Settlement Structure Plan.

Settlement Hierarchy

The Gascoyne Coast Sub-Regional Strategy 2018 outlines the settlement and activity centre tiers for the region according to the Gascoyne Regional Planning and Infrastructure Framework 2015. The hierarchy of settlements and centres in the Shire of Carnarvon has been summarised (**Table 18**). The functions of regional settlements and activity centres have been broadly aligned with the functions of State Planning Policy 4.2 – Activity Centre's (SPP4.2)

classifications. The Gascoyne Coast Sub-Regional Strategy indicates that the key opportunities and issues facing activity centres are accommodating future population growth and developing the sub-region's settlements to be sustainable and liveable communities.

A hierarchy of centres is proposed to manage issues associated with access and services, and this is consistent with The Gascoyne Regional Planning and Infrastructure Framework. **Figure 18** provides a spatial distribution of these activity centres and settlements.

Table 18: Settlement/ Activity Centres Hierarchy

TIER	SPP 4.2 ALIGNMENT	DESCRIPTION	SETTEMENT/ CENTRE
Regional Centre	Secondary Centre	Regional centres are significant centres of economic activity, employment and population and form important hubs for regional industry, commerce, and civic administration functions, including government offices and services. They generally provide comparative retail as well as higher-order education, recreation, and health services.	+ Carnarvon
Tourism Centre	Neighbourhood Centre	Tourism centres have a small population base, and their local economies are focused on tourism. These centres experience significant fluctuations in population due to the seasonal influxes of tourists, and as such are generally service and experience oriented with some associated retail functions.	+ Coral Bay
Tourism Node	NA	Tourism nodes contain a negligible population base and as such the functions they provide cater exclusively for the needs of tourists. Tourism nodes primarily accommodate overnight visitors and generally contain the necessary infrastructure to facilitate this function. Tourism nodes in the Gascoyne Coast sub-region currently include caravan parks remote from other activity centres	+ Gnaraloo + 3 Mile camp + Quobba Station + Blowholes + Rocky Pool + Gladstone Beach + Warroora + Red Bluff
Service Centre	NA	Service centres are generally located on major State arterial roads and offer basic roadhouse facilities, including minor vehicle repair and servicing. Service centres may play an important role in inter and intra-regional travel, particularly in more remote areas of the State.	+ Miniya Roadhouse + Wooramel Roadhouse

TIER	SPP 4.2 ALIGNMENT	DESCRIPTION	SETTEMENT/ CENTRE
Specialised Centre	NA	Specialised Centres are essentially centres of employment that concentrate on a specific type of activity. They can be but are not necessarily, located within relatively close proximity to other activity centres that contain a permanent population and typical urban functions.	+ Port mining facilities associated with Cape Cuvier + Any operating mine sites + Future centres: + Former Overseas Telecommunications Centre site, Brown Ranges + Proposed mine sites + Bejaling Port
Conservation Areas	NA	Conservation areas encompass World Heritage areas and State managed conservation parks and reserves (including the conservation and recreation reserves and marine reserve system), and privately managed conservation lands.	+ Earl of Carnarvon Conservation area

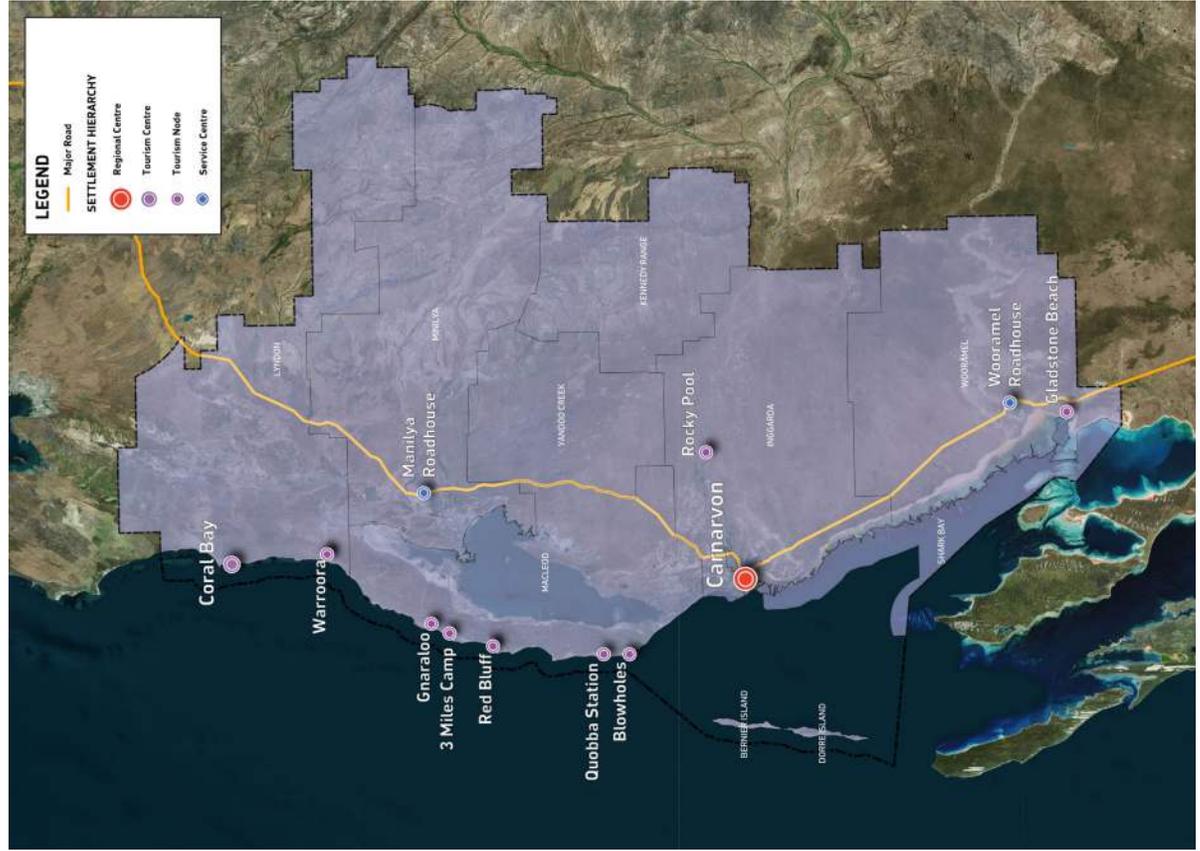


Figure 17: Shire of Carnarvon Settlement Hierarchy

Regional Centre – Carnarvon Townsite

Carnarvon is recognised in this Strategy as a Regional Centre. Being the most substantial urban area between Geraldton and Karratha, it is generally recognised as being the main administrative centre for the Gascoyne region. Situated at the mouth of the Gascoyne River, the town is adjacent to one of Western Australia's most significant horticultural districts. Carnarvon is also an important service centre for the pastoral operations of the surrounding hinterland. Much of the town's growth historically has been associated with the prosperity and development of the agricultural sector; however other industries including fisheries and tourism are important to the local economy. With its relatively mild climate, proximity to two World Heritage areas and horticultural precinct, and recently redeveloped waterfront and town centre, there is potential for further development of Carnarvon's tourism sector in particular.



Carnarvon Townsite in 2001

Carnarvon Townsite in 1961



Carnarvon Townsite Currently

Carnarvon Townsite in 2010

Figure 18: Regional Centre – Carnarvon Townsite Growth

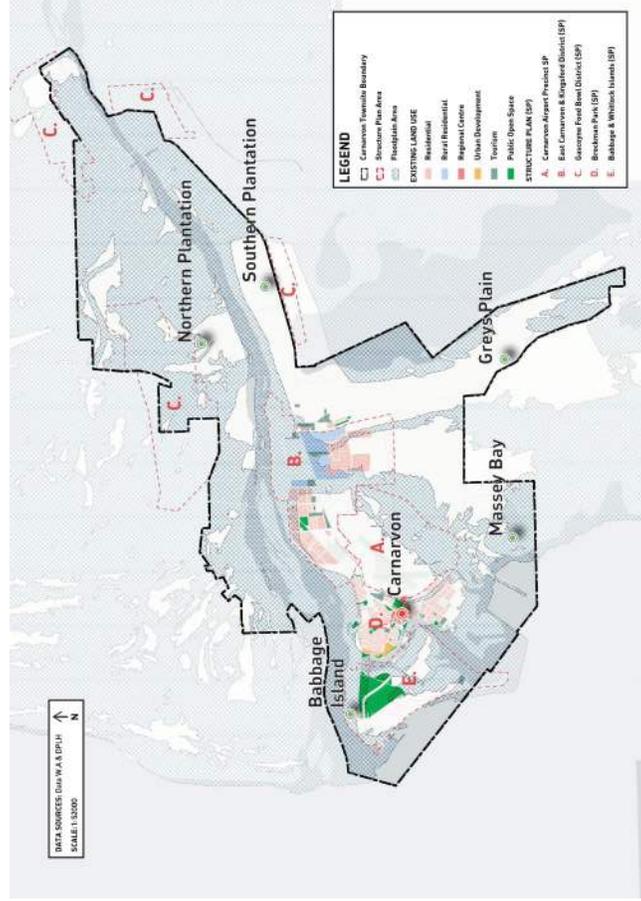


Figure 19: Carnarvon Townsite Existing Residential

Tourism Centre - Coral Bay Settlement

The settlement of Coral Bay is located approximately 1200km north of Perth within the State of Western Australia. Regionally, Coral Bay lies some 120km south of Exmouth and 50km north of the tropic of Capricorn within the Gascoyne Region and Shire of Carnarvon municipality. Coral Bay is a coastal tourist settlement situated at the southern extent of the Ningaloo fringing coral reef. The Ningaloo Reef is a World Heritage listed area.

The majority of the Coral Bay Settlement is covered by the Coral Bay Settlement Structure Plan. The structure plan study area is approximately 275 hectares. The structure plan area includes all land parcels, roads and reserves contained within the Coral Bay settlement and also includes land south of the Sanctuary Road end including Lot 301 on Plan 47762 (water treatment facility), part Lot 301 on Plan 53813 (Unallocated Crown Land) and land west of Monck Head Drive including Lot 511 on Plan 53813 (Unallocated Crown Land), part Crown Reserve 40079 (Lot 146 on Plan 240276) and the infrastructure comprising the boat launching facility at Monck Head.

The current Local Planning Strategy identifies Coral Bay as a key tourism hub for the Gascoyne Region and that the Coral Bay Settlement Structure Plan will continue to guide tourism development in Coral Bay (Figure 21).

The current Coral Bay Settlement Structure Plan is almost 10 years old and has become somewhat restricted in its requirement for orderly planning of the Coral Bay settlement area. Pursuant to the Planning and Development Regulations (Local Planning Schemes) 2015, the Coral Bay Settlement Structure Plan will expire in 2028, therefore early review is required to ensure that coordinated orderly and balanced planning of the settlement can continue. A key instrument within the current Coral Bay Settlement Structure Plan (2014) is the use of a 'bed number cap' across the settlement. This was initially used within the first Coral Bay Structure Plan (2004) and was increased to 4800 beds with allowance for 500-day use visitors in the current Coral Bay Settlement Structure Plan. A review of the bed cap component of the Structure Plan has been undertaken in 2024, and the Shire intends to progress a Precinct Structure Plan in due course.



Coral Bay in 1970.



Coral Bay in 2000.



Coral Bay in 2010.



Coral Bay currently

Figure 20: Coral Bay Settlement Growth



Figure 21: Coray Bay Existing Land Use

Aboriginal Settlements

The Mungullah Aboriginal Settlement (see **Figure 22**) is a Town Based Community in the Shire of Carnarvon. The settlement is also known as the Mungallah Aboriginal Village. It is of importance as the first substantial residential development for Aboriginal people in the East Carnarvon Area. The settlement is of interest for its association with the work of the early missionaries in the district.

The village contains residential dwellings, a community health shop and recreation facilities. Mungallah Village was developed after the Carnarvon Aboriginal Reserve and its infrastructure was washed away in the 1980 flood leaving many of its inhabitants without a home. Mungallah Community is located 7 km from Carnarvon in the remote Gascoyne region of WA and is a self-managed Aboriginal Corporation under the auspices of ORIC (Federal Office of the Registrar of Aboriginal Communities). The community houses some 150 people many of whom are children. The community is deeply cultural and has very strong language and cultural ties with the Gascoyne region as well as the greater WA. Within the community there are traditional elders and custodians of the land around Mt Augustus (the biggest rock in the world) and the Kennedy ranges a significant land mass in WA. Mungallah is working its way towards being a much stronger, more self-sufficient organisation providing for the needs of local Aboriginal people and providing security and greater life choices for its members. The community were originally located on the Gascoyne River nearer to Carnarvon but were shifted in the eighties to new housing and a purpose-built community at Greys Plains to overcome the regular seasonal flooding of the river. Mungallah has a basketball court, community hall and office space.



Figure 22. Mungallah Aboriginal Settlement

Future Settlement Patterns

Main drivers for future growth in Carnarvon are expected to include a major expansion of the horticulture precinct as part of the State Government's Gascoyne Foodbowl Initiative, and the continued provision of regional services. The sustained growth of tourism along the Gascoyne Coast and the diversification of economic activities on pastoral leases in the surrounding hinterland may also be important factors for future growth.

In addition, the Gascoyne Development Commission has also identified that potential could exist for the development of service and logistics hub for resource sector industries in Carnarvon, given its strategic location between Perth and the Pilbara region (GDC, 2015).

Ultimately, the long-term urban expansion of the Carnarvon settlement is physically constrained by the fascine and Indian Ocean to the west, the Gascoyne River and horticultural precinct to the north, the elevated topography of Brown Range to the east and various Crown Land Reserves to the south. However, there is a considerable amount of developable land identified for urban and industrial land uses and this is expected to be sufficient to cater for demand in the long-term. The existing Carnarvon Airport site constrains expansion of the town centre; however, the proposed relocation of airport infrastructure and redevelopment of the current site (as proposed in the Carnarvon Airport Precinct Structure Plan 2014) would allow an opportunity for a substantial expansion of the townsite in a central and highly accessible location.

Inundation of areas in the existing townsite and immediate surrounds has historically posed a major constraint to development, especially in eastern parts of Carnarvon. However, the recent completion of major flood-mitigation infrastructure works in recent years should make a significant improvement in this regard.

The previous Shire of Carnarvon Local Planning Strategy (2017) identifies an opportunity for more mixed-use development and increased density around the area around the Carnarvon town centre. Intensification around the town centre is supported where sites are adequately serviced by requisite infrastructure.

Investigation Areas

'Investigation areas' relate to areas that may be considered for alternative and/or more intensive land uses than those presently identified. They have been identified through relevant strategic planning processes as being where alternative future land uses may be considered subject to further investigation. The exact nature and extent of any alternative future land use within each individual area is subject to further investigation. The final nature and extent of future land uses should be resolved through the review of local planning strategies and schemes.

There are specific considerations at various sites, the resolution of which may significantly impact the future land supply situation in Carnarvon. For example, this includes the proposed rationalisation of land at Carnarvon Airport and the residential development zone at Brown Range. These sites and others are specifically identified in the Sub-Regional Strategy as 'investigation areas' and are subject to further planning processes. The seven investigation areas are shown in **Figure 23** with further details provided in the section below. These investigation areas will likely become 'Planning Areas' as described in the Local Planning Strategy Guidelines.



Figure 23. Gascoyne Coast Sub-Regional Strategy – Investigation Areas

Investigation Area 1 – Carnarvon Airport

The Carnarvon Airport Precinct Structure Plan 2014 (CAPSP) proposes a number of future land use changes within the existing Carnarvon airport site. The investigation area identified in the Sub-Regional Strategy aligns with the CAPSP boundary. The area is currently designated as strategic infrastructure zone in LPS13, and identified as 'public purposes and utilities' and 'industrial' land uses with the Sub-Regional Strategy.

Under the CAPSP, the proposed land use changes would include residential and industrial land uses, and public open space. Also proposed is the relocation of airport infrastructure within the precinct, including runways and terminals, to the east of the existing facility. Many of the proposed land use changes would be dependent on this relocation, which is something that would require significant capital investment. In this regard, realising the vision of the CAPSP is considered a longer-term outcome, and as such the precinct is identified as an 'investigation area'.

Investigation Area 2 – Kingsford floodplain

This investigation area comprises of two parts, including flood-affected land in the Kingsford area that has been identified for non-rural land uses in various strategic planning documents. In particular, the East Carnarvon Structure Plan (ECSP) and Kingsford District Structure Plan (KDSP) propose land uses including special residential, industrial, and service/commercial purposes. These areas are considered as an 'investigation area' as they are identified in the previous Carnarvon Local Planning Strategy as being within a watercourse floodplain and are therefore constrained.

Investigation Area 2 includes land that is currently zoned 'rural', 'tourism', and reserved for 'special use' under LPS13. This land is also identified in the Sub-Regional Strategy as 'rural residential', 'residential', 'industrial' and 'public purposes and utilities'. To the south of Boor-Sireet, the subject area is majority all undeveloped Crown land, whereas to north it generally contains development commensurate with its current zoning.

Given the above constraints, it is considered that the final extent and nature of future land use and development within Investigation Area 2 will require further resolution. In particular, given the areas' location within a floodplain, hydraulic modelling and/or assessment may be required by the Department of Water and Environmental Regulation.

Investigation Area 3 – Greys Plain

Investigation Area 3 is predominantly identified in the Sub-Regional Strategy as 'public purposes and utilities' and is currently a public purposes reserve under LPS13. A small portion located in the extreme north-western corner of the investigation area is zoned 'general industry'. The area, which is entirely Crown land, is currently undeveloped.

The previous Local Planning Strategy (2017) identifies this area as being a long-term investigation area and as a potential industrial expansion area. In particular, the considerable size of unconstrained land in this area and its location within close proximity to key transport networks may be advantageous for light industrial and commercial uses. Further investigation is required to determine the nature and extent of any future change in land use, including through structure planning where required. Future planning will also need to consider current and potential buffers and constraints affecting the investigation area. This includes buffers associated with the Mungullah power station affecting eastern parts of the investigation area and potential buffer requirements for the proposed relocated wastewater treatment plant, which may affect southern parts of the site. The western portion of the investigation area is affected by a watercourse floodplain, a consequence of which may be that future development is likely to be dependent on additional flood mitigation works.

Investigation Area 4 – Brown Range

This investigation area is predominantly zoned 'environmental conservation reserve' in LPS13 but given its large area it includes a number of other designations, including 'residential', 'commercial' and 'tourist accommodation' zones, and 'public purposes' reserves. Within it, the area contains a number of public purposes uses and utilities,

including a waste disposal site, power station, telecommunications and water infrastructure, and the former Overseas Telecommunications Centre (OTC) site. Nearly all of the investigation area identified as 'residential' is developed to R10 density.

The East Carnarvon and Kingsford Structure Plan has largely been normalised in the LPS13 and upon its expiration in 2025, its unlikely to be extended. On the eastern side of North West Coastal Hwy there is capacity for some large, low density, residential lots, however the zoning already permits this to occur. For this reason, it is not recommended this investigation area is progressed any further.

Investigation Area 5 – Carnarvon Boat Harbour

This investigation area is identified in the Sub-Regional Strategy as 'boat harbour' and 'public purposes and utilities', and under LPS13 is currently reserved 'strategic infrastructure'. The subject area accommodates a variety of activities including the Carnarvon Boat Harbour, Carnarvon Yacht Club, and a range of commercial enterprises mostly associated with the boat harbour.

The previous Strategy identifies the area (the yacht club and commercial boat harbour in particular), as having potential for future mixed use and tourism development. It is considered that further investigation is required to determine the exact nature and extent of any land use changes, including through structure planning as appropriate. Any process should have regard to existing uses and development. An amendment to the local planning scheme will be necessary for any eventual change in zoning, which may require an environmental assessment to be undertaken by the Environmental Protection Authority.

Investigation Area 6 – Massey Bay

Investigation Area 6 is identified in the Sub-Regional Strategy as 'recreation' and 'public purposes and utilities', with respective extents currently reserved under LPS13 as 'public purposes - recreational'. The area currently contains a golf course the Carnarvon Race Club (horse racing) and vacant Crown land. The previous Strategy identifies this site as a long-term investigation area and notes the potential to redevelop the existing golf course. The area may be impacted by potential buffer requirements associated with the relocated wastewater treatment plant, which is proposed to be located on an adjacent site. Further investigation is required to determine the nature and extent of any future change in land use, including through structure planning as appropriate.

The Shire of Carnarvon Strategic Community Plan identifies the Massey Bay Rejuvenation and Coastal Attractions big idea, including improving the untidy old tip site at Massey Bay to increase the number of sites around Carnarvon for land-based fishing that is accessible to all. Redesign might include improved paths and fishing points with signage and design to reflect local history and use of recycled products in design and operation. Upgrades may require clearance permits and cultural heritage approvals.

Investigation Area 7 – Broadcast Australia Site

This investigation area is identified in the Sub-Regional Strategy as 'public purposes and utilities' and is currently a public purposes reserve in LPS13. The area, which is situated between the Northwest Coastal Highway and Brown Range contains some telecommunications infrastructure but is otherwise undeveloped. The previous Strategy identifies this site as a long-term investigation area, potentially for low density development. The area may be impacted by potential buffer requirements associated with existing telecommunications infrastructure. Further investigation is required to determine the nature and extent of any future change in land use. An amendment to the local planning scheme will be necessary for any eventual change in zoning, which may require an environmental assessment to be undertaken by the Environmental Protection Authority.

Whitlock Island Development & Fascine Waterway

In addition to the 7 investigation areas described above, the Shire of Carnarvon Strategic Community Plan identifies the following big ideas relating to future growth and development for the future of Carnarvon summarised in **Table**

19. Boat harbour and Pelican Point Spit dredging has been completed, but other actions are still to commence.

Table 19: Strategic Community Plan Big Ideas – Future Growth and Development

BIG IDEA	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Whitlock Island Development & Fascine Waterway	Continue the Fascine development including boat harbour spit, Pelican Point spit, overall dredging, improvement of the area adjacent to the Northwater-Brockman area towards the causeway. These improvements can occur step by step starting immediately. Combine with redevelopment of Whitlock Island to a luxury resort with accommodation, restaurants, a golf course, and gated residential community (equivalent to Cable Beach as a premier beach front destination).	Boat harbour and Pelican Point Spit and dredging has been completed. Other actions are still to commence. Development associated with the luxury resort will require development approvals, cultural heritage approvals, clearance permits, etc. No Strategy implications have been identified.

4.2.2. HOUSING

Housing Overview

Housing is key to unlocking economic growth and development in Carnarvon. Housing choices that are suitable to attract and retain key workers in both existing industries and for major planned investment in the region will be the key focus of Shire's housing development. The affordability of housing has significant flow-on impacts on community wellbeing and the economy. For example, local businesses rely on housing affordability as this increases employee recruitment and retention. Further, housing affordability contributes significantly to attracting and retaining future and existing residents, as they are better able to match their needs to the range of housing that is available. Overall, the availability of affordable housing indirectly affects many other aspects of the local community including vibrancy, access to services and community spirit and morale.

Regional housing markets are typically influenced by a range of variables such as local population and economic trends, the cost and availability of capital, policy controls, investment returns, infrastructure capacity and others. As such, issues of affordability and the supply of quality housing in key areas can limit the economic and social development of the region. It's been previously demonstrated that the Shire has an ongoing housing crisis due to high costs of land and housing construction, lack of construction workforce, low property values, lack of critical infrastructure and high prevalence of older, dilapidated housing stock. Only 15 dwellings were constructed in Carnarvon over the last decade.

The Gascoyne Region is rich in resource and investment opportunities with an economy founded on quality horticulture, pastoral and fishery production, resources, and tourism. Accommodation shortages are a national issue which is heightened in regional WA due to its remoteness and associated cost escalations of construction. Increasing the supply of housing in the Shire is critical to the success for all pillars in this strategy. The provision of sufficient, fit-for-purpose housing will play a key role in attracting and retaining a suitably qualified permanent workforce in the Shire to meet industry labour demands.

A key attribute of the housing market in the Gascoyne region is the high level of informal rental accommodation. This includes rental arrangements through friends/family, informal tenancy agreements, employer-provided housing, and short-stay accommodation, and semi-permanent residents in caravan parks. As a result, there is a relatively low level of housing in the region available through real estate agents. The available dwelling stock is primarily limited to three and four-bedroom homes, with few options for residents to downsize or for singles/couples seeking smaller homes. These factors contribute to the unique housing challenges faced by residents in the Gascoyne region. Regional housing shortages have been further exacerbated by the COVID-19 pandemic, through regional migration, labour market constraints, international supply chain disruptions and increased local demand in the hospitality and tourism sectors.

The dwellings in the Shire accounted for 48% of dwellings across the Gascoyne Region in 2021 which have seen a decline from the 57% in 2011. The slight decline in dwellings from 2011 to 2021 may be attributable to slower economic conditions and population growth in comparison to other local government areas in the Region.

The average value of new homes approved in the Gascoyne was approximately \$430,000 over the 12 months to April from 2022, compared to \$283,000 in Perth over the same period. This significant difference in average values estimates that costs are typically 50-60% higher in the Gascoyne compared to Perth. Several factors contribute to these higher costs, including competition from the mining sector for labour, building standard requirements for cyclone-affected areas, and a relatively small home construction workforce in the region. Additionally, like many regional towns in north-west WA include a high portion of housing stock that is either owned or managed by the Department of Communities which are in poor condition, not maintained, or made attractive to potential investors or workforces, which lead to supply constraints and cost escalations. These factors combine to create a challenging environment for housing affordability and construction in the Gascoyne.

Four key reports have been prepared to address the housing issues in Carnarvon and the wider Gascoyne area:

- + **Gascoyne Housing Action Plan** – An action plan developed by the GDC in 2021 to address housing shortages, including 11 key actions.
- + **On Our Horizon** – prepared by the Shire of Carnarvon in 2022, this report outlines nine major projects planned within the Shire and the likely impacts on population and housing.
- + **Gascoyne Worker Housing Action Plan** – Urbis was commissioned in 2022 by the GDC to alleviate the shortage of residential and worker housing in Gascoyne.
- + **Carnarvon Housing Solutions: A Plan for the Next 100 Houses** – Urbis was engaged to work collaboratively with the shire of Carnarvon and the Gascoyne Development Commission to identify preferred options to support additional housing (2024)

Housing Market Analysis

The Shire has been experiencing population decline over the past decades, and this decline has a significant influence on housing demand and has likely been a key factor of low activities of residential development and the ageing housing stock – a large number of homes are unoccupied 20.1% in 2021 up from 13.4% in 2011 (Urbis, 2024). Another noticeable demographic trend is the aging population, with the population over the age of 65 increasing by 4% from 2010/11 to 2020/21.

The Shire has major projects in various stages of development that are expected to contribute to demand for workers and accommodation. Significant construction and operation are required prior to employing workers directly and indirectly. Particularly, for mineral processing, and low carbon/ renewable industries, they have relatively higher operational workforce profile than traditional extraction industries meaning the demand for transient workers accommodation will increase.

The following summarises the housing market analysis findings from the Carnarvon Housing Solution report (Urbis, 2024):

- + High proportion detached dwellings: most dwellings are larger homes with 3-4 bedrooms
- + Less formal rental market: the Shire has a relatively smaller formal rental market, and this corresponds with a substantially larger informal rental market (accounting for 10% of the housing across LGA).
- + Low proportion of dwellings owned with a mortgage
- + Significant proportion of public housing: there is a significant level of social housing (17% as at 2021 Census) in Carnarvon and large concentrations of social housing.

In summary, the housing market in the Shire is largely homogeneous in terms of dwelling structure with a unique mix of tenure compared to the rest of the state.

The housing market conditions were examined to understand how market conditions over time might translate to future demand. Although housing prices have bounced back from 2019/20 low points, the lack of capital growth and investment has been a large barrier to encourage new development in Carnarvon, with numerous examples of properties selling for less than values in the early and mid-1990s. These factors extend to home improvements and repairs, with a disincentive to invest capital into a dwelling which might cause negative capital growth. Consequently, the lack of activity leads to a lack of capacity for trade in the region.

To encourage more market driven development, house values would need to increase significantly alongside reductions in the cost of developing land and housing. Capacity building in the construction industry is also a key factor.

The number of approvals for dwellings in the Shire has been significantly low over the last decade. New development has drastically declined over the last seven years, and these observations have significant implications for the capacity of the local construction workforce. Additionally, even with buildings being approved, many of these

approvals were not implemented – only 15 new dwellings have been constructed over the past 10 years. One critical factor influencing the construction activity of the Shire is building costs and the lack of local residential buildings (only 1 residential builder in the Shire). Also, the absence of critical infrastructure and services increases development costs.

Government Housing

Social Housing holds a significant proportion of the overall housing stock comparatively, and this high level of social housing and ageing social housing stock presents several challenges for Carnarvon. Given that the spatial organisation of social housing units is generally clustered in the town, it could be suggested this contributes to the prevalence of and perceptions anti-social behaviour, which has caused low demand for lots at Northwater estate and other parts of the town.

The latest Public Housing Stock data from the Department of Communities indicates a significant uptake in the number of void (vacant) properties requiring maintenance repairs before they can be offered to individuals on the Public Housing waitlist. Constraints on the supply of public housing stock risk flow on effects to other areas of the residential market, as well as potentially leading to increased social issues and demands on other services such as healthcare.

The GROH program is provided by the Department of Communities as a self-funded housing program for most State Government agencies employees and departments. The program employs local agents to acquire new dwelling stock on an as needs basis and in some scenarios purchases/ constructs new dwellings.

Data from Department of Communities in 2022 revealed a relatively substantial unmet need for GROH housing in Carnarvon (approximately 19 dwellings). Advice from local stakeholders indicates that there is still substantial unmet demand in Carnarvon.

Aged Care/ Retirement Housing

The Shire currently has a 38-room age care facility in Carnarvon located on the Carnarvon Health Campus and provided by WACHS-Midwest. There are also independent living units (ILUs) for aged persons with 15 additional homes completed in 2017. The ageing population in the Shire will likely increase the demand for aged care and retirement housing in the future. Engagement suggested that there is currently a shortfall in aged care/retirement accommodation with nowhere for the aging population to downsize.

Homelessness

The ABS Homelessness Estimation data indicated a significant increase from 2016-2021 for the Shire of Carnarvon (increase by 54), particularly for the categories of “people living in severely crowded dwellings” and “people in supported accommodation for the homeless”.

Housing Challenges

Unprecedented housing shortages exist across the Gascoyne, with recent construction and housing data for Carnarvon shows continued pressure on property and rental markets, including:

- + Low rental vacancies. Carnarvon experienced a 23% decline in the number of rental listings between 2021 and 2022.
- + Increasing rental prices. Carnarvon experienced a 2.9% increase in median asking rental price for houses over the 12 months to May 2022 (following a 0% increase over the preceding 4 years)
- + 65 property sales in the 12 months to May 2022, representing 6.2% of stock on the market, and a 4.3 % increase in median sales price in the 12 months to May 2022.

Regional housing shortages have been further exacerbated by the COVID-19 pandemic, through regional migration.

labour market constraints, international supply chain disruptions and increased local demand in the hospitality and tourism sectors.

In June 2021, URBIS was engaged to review residential housing availability and market conditions in the Gascoyne. The report, finalised in January 2022, recommended three priority areas to drive increased worker housing availability and create conditions for increased private sector investment.

- + **Unlock private capital.** Support private sector investment in new construction and renovations to increase housing stock.
- + **Optimise government assets:** Enhance the utilization of public and government regional officer housing and land assets to provide additional housing options.
- + **Innovate the home.** Stimulate alternative housing options to cater to the diverse needs of the workforce and residents in the region.

These recommendations aim to address the shortage of residential housing and workforce accommodation across the Gascoyne region, particularly in key industry sectors like horticulture, tourism, and hospitality.

The Carnarvon Housing Solution report (Urbis, 2024) identifies the following key challenges (**Table 20**) to providing housing in Carnarvon.

Table 20: Carnarvon Housing Challenges

KEY HOUSING ISSUE	DESCRIPTION
Infrastructure	<ul style="list-style-type: none"> + Period of decline in population / development has led to recent investment in housing stock or supporting infrastructure + Sewer constraints requiring significant upgrades will need to be resolved to unlock future development potential
Builder Capacity	<ul style="list-style-type: none"> + Lack of development pipeline results in minimal capacity to facilitate residential development
Lack of market Driven Development	<ul style="list-style-type: none"> + In the past 10 years, just over a dozen dwellings have been delivered in Carnarvon
Feasibility	<ul style="list-style-type: none"> + Soaring construction costs for low dwellings with low sale values and rents conclude that residential development is largely infeasible + Substantial funding support required to make residential development viable
Capital Growth	<ul style="list-style-type: none"> + Social issues impact population growth and correlate to stagnant house price growth which has drastically fell behind rising development costs.
Housing Quality	<ul style="list-style-type: none"> + Deterioration of housing stock remains a key concern for Carnarvon and is influenced by the lack of market driven development in the area

Source: Carnarvon Housing Solution Report Urbis 2024

Land Supply Analysis

Section 4.13 of DPLH’s draft Land Capacity Analysis generally indicates that there are abundant supply of land for residential purpose, however, the majority of these potential sites are highly constrained by infrastructure supply, flood and services. As an extension of DPLH’s analysis, GDC and the Shire have suggested a number of site opportunities for residential development across the Carnarvon townsite. The sites range in size, ownership and current use but all represent potential opportunities for residential development.

A high-level assessment of infrastructure, ownership and other key considerations have been undertaken by Urbis and an engineering consultant to understand if there are any potentially significant constraints. The following table provides the analysis and overview of selected sites.

Housing Solutions

The Carnarvon Housing Solution Report (2024) (the report) highlights the importance of combining advocacy with practical actions to address housing challenges in Carnarvon. Advocacy priorities focus on ensuring the timely repair, maintenance, and redevelopment of public housing to increase available stock. Similarly, the prioritisation of below-ground infrastructure, such as sewage systems, is essential for unlocking land for future development by both the public and private sectors.

In terms of ‘on the ground’ actions, the Shire can take proactive steps to support key initiatives. A priority is to foster the development of building and construction skills within the local labour force to facilitate growth in the Carnarvon market. Although partially reliant on advocacy to the State Government, managing the social housing situation with community housing providers is crucial in meeting the need for affordable, social, community, and crisis housing. Finally, the report recommends de-risking long-term development sites by mapping pathways for future projects, including addressing infrastructure requirements. The report outlines development areas identified and appropriately zoned; most of them are considered as ‘development ready’ to address the need for additional housing.

The Carnarvon Housing Solution Report undertook housing investigations of a number of sites throughout the Carnarvon townsite with factors such as lot size, ownership, current land use, location, and the cost of development all influencing the feasibility of progressing a site for development. Four critical sites selected for further analysis through hypothetical development scenarios. A summary of key findings is outlined in **Table 21**.

Table 21: Carnarvon Housing Challenges

SCENARIO	STRATEGIC CONSIDERATION
Cleaver Street (School Site)	The school sites provide an attractive opportunity as they are government owned, near amenities in Carnarvon and of sufficient size to deliver a substantial number of lots (up to 69 and 48 lots respectively). Additionally, there are no major infrastructure challenges. The cost to demolish and remediate the site versus the expected return on the land holding has limited the Department of Education from advancing any disposal plan.
Egan Street (School Site)	This development could provide the opportunity to de-centralise social housing at Brockman whilst also delivering required new housing choice.

SCENARIO	STRATEGIC CONSIDERATION
Brockman Park	Located close to the foreshore and amenities in Carnarvon, Brockman Park provides an opportunity to deliver up to 73 lots. Whilst there are potentially challenges regarding sewer connections and capacity, these can be tested and further addressed. Development of this site has the opportunity to influence the desirability of Brockman (the suburb more broadly) and neighbouring North Water estate by delivering new housing investment. To truly achieve this goal, time and resources would need to be deployed to support a diversity of housing and community infrastructure in the area that suits the needs of the community.
South Carnarvon (infill)	Resolving infrastructure constraints in South Carnarvon is considered a significant opportunity for unlocking private investment over the medium and longer term, with man underutilised or vacant blocks in the residential area. Sewer infrastructure would enable lots in South Carnarvon to be redeveloped – potentially into duplex, triplex or batteaxe developments.

Source: Carnarvon Housing Solution Report, Urbis 2024

Workforce Accommodation and Housing

The shortage of residential housing and workforce accommodation is a significant barrier to development in all of the Gascoyne region’s key industry sectors. This shortage poses a particular challenge for the horticultural, tourism, and hospitality labour markets, where the availability of suitable accommodation for workers is crucial. The COVID-19 pandemic has further exacerbated these issues, particularly during peak seasons in areas such as Coral Bay. Additionally, the pandemic has contributed to new shortages of residential accommodation in other parts of the region. Addressing these accommodation shortages is essential for supporting the growth and sustainability of the region’s key industries and ensuring the well-being of its workforce.

This shortage, estimated at up to 350 houses over the next decade as indicated in the Worker Accommodation Developments Business Case (2023), affects the ability of local businesses to attract, and retain workers, limiting not only immediate service delivery, but also long-term business planning. Worker accommodation insecurity is a major barrier to business expansion and future investment.

Engagement indicated that current mining operations were currently investigating additional workers accommodation within Carnarvon, with a community preference to locate workers accommodation within the Carnarvon townsite, dispersed throughout the community.

4.2.3. BUILT FORM AND CHARACTER

Carnarvon Residential

The residential housing character of the Shire is mixed in terms of architectural style and quality. The housing character of Carnarvon can be described as a blend of climate-adapted, low-density, and suburban styles, influenced by its semi-arid environment and coastal location. Here are the key features:

- + Climate-responsive features with housed designed to handle the hot, dry climate with features like wide eaves and verandas to maximize shade and ventilation. Houses also have to be built to a minimum cyclone rating.
- + The town predominantly features single-storey low density homes, with some select examples of medium density grouped dwellings and walk-up apartments. Two storey development is often limited to areas with high amenity and views over the water.
- + Large gardens, patios, sheds and pergolas are common, allowing residents to enjoy outdoor living in the warm climate and accommodate boats, caravans and trailers.
- + The housing stock includes both historic homes with classic Australian architectural elements and modern houses with contemporary designs and materials.
- + The residential areas are characterized by wide streets with generous parking.



Figure 24. Carnarvon Typical Residential Developments

Carnarvon Heritage Character

The residential housing character of the Shire consists of strong heritage character, which is reflective of its key settlement periods. Many early residential houses in Carnarvon are of Federation style which can be categorised by their large verandas, detailed roof lines, leadlight windows and intricate brickwork. Olivia Terrace is an exemplar street showcasing the vernacular architecture from the period of many of the early pastoral pioneers within the locality.

Many heritage buildings in the Shire have been preserved and repurposed for commercial uses. Like many residential buildings in the area, the prominent styles of these commercial buildings can be categorised as Federation style. These buildings have high social value recognised by community and cultural groups, and they have been a focus for social and commercial activities.

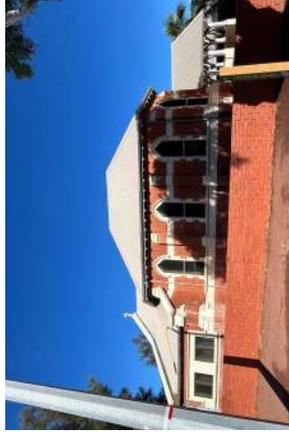


Figure 25. Carnarvon Heritage Character

Carnarvon Commercial Character

The commercial character of Carnarvon is varied, with a mix of heritage and older commercial building in the town centre, and more industrial commercial buildings towards East Carnarvon.



Figure 26: Carnarvon Commercial Character

Coral Bay Character

The majority of buildings in Coral Bay are for tourism uses (caravan parks, holiday homes and units/chalets), with a small amount of commercial and workers accommodation. Coral Bay's built form character is strongly reflective of the settlement area's tourism purposes and coastal landscape. These houses typically have a raised foundation and large verandas.



Figure 27: Coral Bay Character

4.2.4. RURAL LAND USE

As established in SPP 2.5 Rural Planning Guidelines, rural zones are highly flexible and can cater for a wide range of land uses including intensive and extensive agriculture, primary production, animal premises, basic raw material extraction, biodiversity conservation, natural resource management, tourism, regional facilities and public purposes including waste infrastructure. Rural zoned land may also contain land with significant environmental values, provide species habitat, have regional and local landscape values and carry a range of land management responsibilities for matters such as bushfire. Rural land in the Shire consists of the majority (65%) of the Shire under LPS13, and the majority of the Rural land is on pastoral lease which gives the lessee the right to graze authorised livestock on the natural vegetation. Three categories of rural land uses under LPS13 are:

- + Rural Land
- + Rural Residential
- + Priority Agricultural

The purpose of these three categories of rural land uses is described in **Table 22** and indicated on **Figure 28**. Where rural zoned land in LPS13 would accommodate a land use which may require buffering/separation, or protection this should be identified in the Local Planning Strategy and addressed through appropriate provisions within LPS13. Examples of major land uses that may require additional planning controls are referred to in the State Planning Policy 2.5 Rural Planning Guidelines. When a strategy is being prepared the major land uses in a local government area should be reflected. Consideration should be given to the location of:

- + Existing rural land uses that may require separation from proposed sensitive land uses such as intensive agriculture, poultry farms, waste infrastructure and etc.
- + Remnant vegetation, waterways, wetlands or known environmental values that are on private land and therefore not reserved in the scheme; and
- + Known tourist developments or tourist land uses such as holiday houses and bed and breakfast accommodation.

Priority agricultural land in the Shire is of State and regional significance for agriculture and food production. The Shire and the State has made significant investment in food production and horticulture. The extent or relative significance of priority agricultural land needs to be addressed in a strategy or scheme. Consideration of the appropriate planning control to achieve the direction of the strategy and scheme will be necessary.

Renewable Energy Facilities (REF) are an emerging major land use on Rural land, with more information provided in Section 4.5.7.

More discussion on resource management, agricultural and horticultural land uses will be covered in Section 4.3.7.

Table 22: Rural Land Uses

RURAL LAND USE CATEGORY	PURPOSE/ DESCRIPTION (LPS 13)
Rural	<ul style="list-style-type: none"> + To provide for the maintenance or enhancement of specific pastoral and rural character. + To protect pastoral and broad acre agricultural activities and intensive agricultural uses as primary uses, with other rural pursuits and rural industries as secondary uses where compatibility with the primary use is demonstrated. + To maintain and enhance biodiversity, the landscape character, remnant vegetation, soils, and water bodies and to protect wetlands and other ecologically sensitive areas. + To provide for the operation and development of existing, future, and potential rural land uses by limiting the introduction of sensitive land uses in the Rural zone. + To provide for a range of non-rural land uses where they have demonstrated benefit and are compatible with surrounding rural uses.
Rural Residential	<ul style="list-style-type: none"> + To provide for lot sizes in the range of 1ha to 4ha. + To provide opportunities for a range of rural uses, including horticulture, and related ancillary pursuits where those activities will be consistent with the amenity of the locality and the conservation and landscape attributes of the land. + To set aside areas for the retention of vegetation and landforms or other features which distinguish the land.
Priority Agricultural	<ul style="list-style-type: none"> + To identify land of State, regional or local significance for food production purposes. + To retain priority agricultural land for agricultural purposes. + To limit the introduction of sensitive land uses that may compromise existing, future, or potential agriculture production. + To protect and enhance wetlands and other ecologically sensitive areas.

Carbon Farming

Human Induced Regeneration (HIR) provides a new revenue stream for pastoralists and Aboriginal groups which allows for rehabilitation of degraded landscapes and contributes to Western Australia's ongoing prosperity and economic diversification. HIR involves the regeneration of native vegetation due to changes to pastoral practices, in particular the timing and extent of livestock and feral animal grazing. By reducing grazing pressure and ceasing clearing, native forest is able to regenerate from lignotubers and natural seed stocks. HIR does not involve new plantings or a requirement to de-stock.

There are large areas of carbon sequestration projects located south to Bush Bay (refer to **Figure 28**).

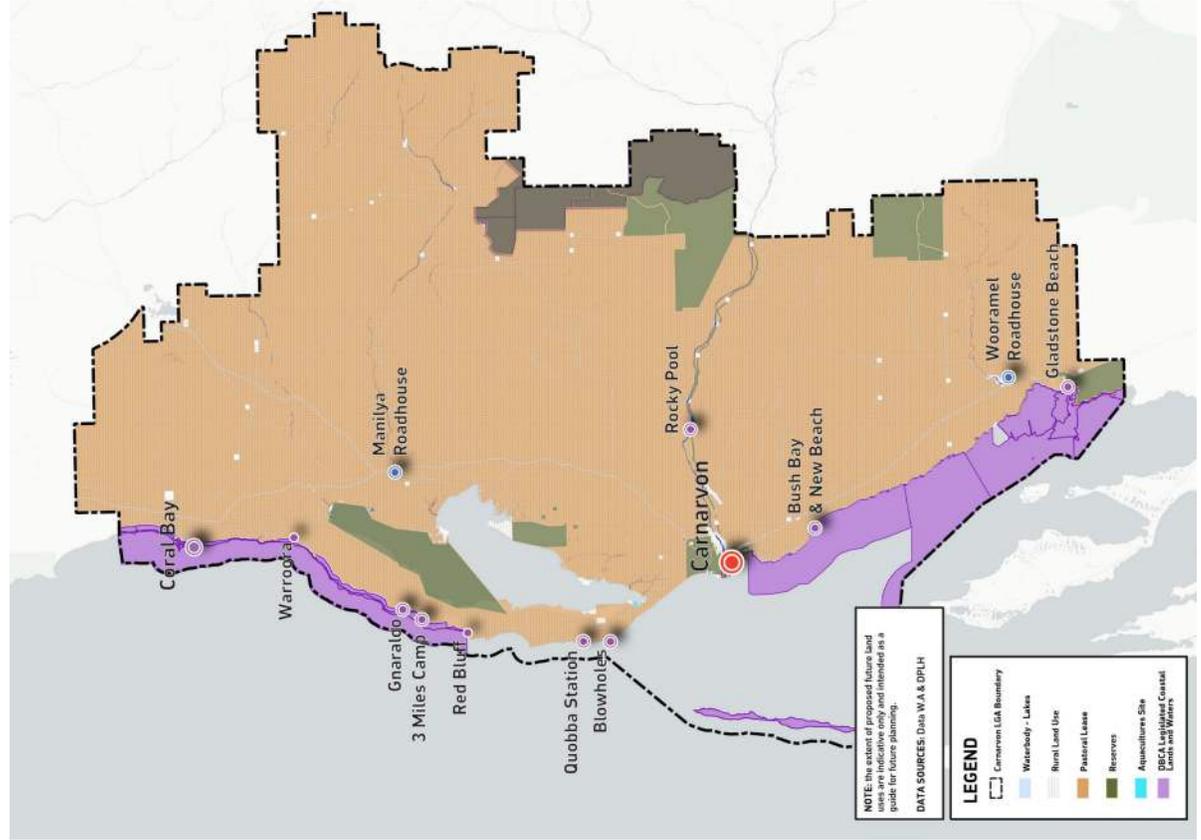


Figure 28: Shire of Carnarvon Rural Land Use

4.2.5. CULTURE AND HERITAGE

The Shire of Carnarvon has a number of Aboriginal, State and Local heritage sites, which are identified on **Figure 29**.

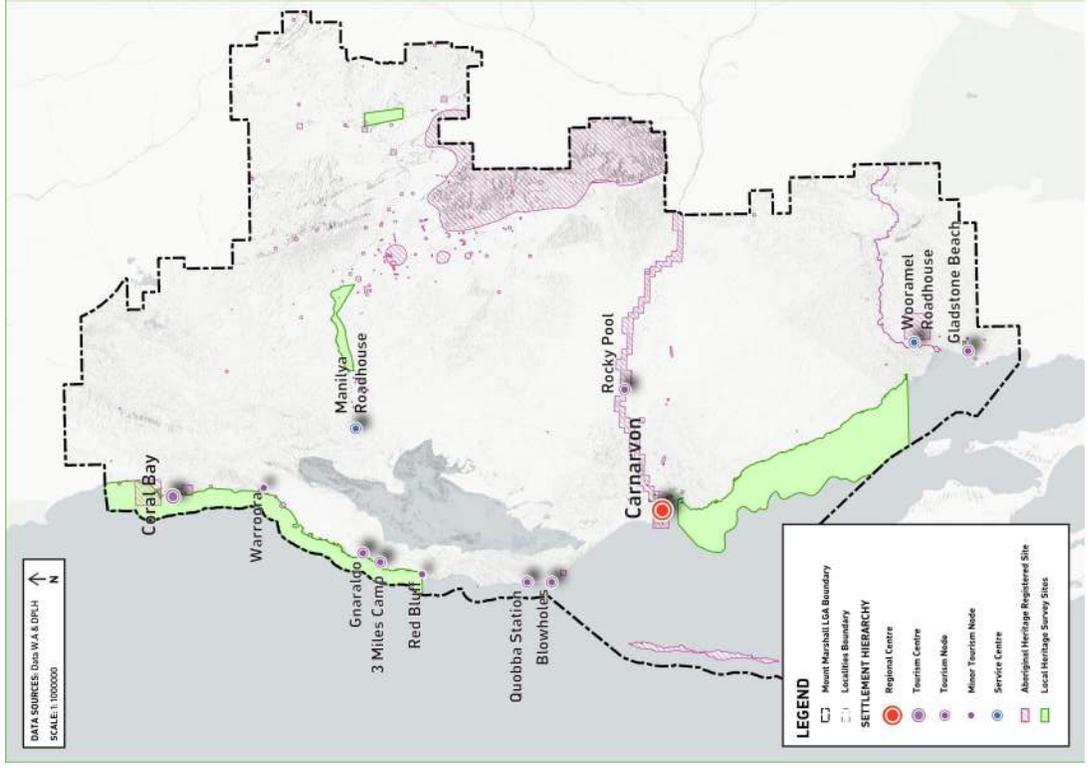


Figure 29: Shire of Carnarvon Heritage Map

Aboriginal Culture and Heritage

We recognise and acknowledge the Yinggarda and Baijuru people as Traditional Owners of the land within the Shire of Carnarvon. Carnarvon town is located on Yinggarda Country, whose people named this area Gwoonwardu long ago, meaning ‘neck of water’.

Gwoonwardu Mia is a multipurpose Cultural Centre hosted on Yinggarda Country that celebrates and recognises the five Aboriginal language groups of the Gascoyne Region, Yinggarda, Baijuru, Malgana, Thadgari and Thalanyji with a vision to create: “a common meeting place for the people of the Gascoyne Region where lives are enriched, Aboriginal culture is recognized and practiced, quality employment and business enterprises operate and where youth are actively engaged in creating their own future”.

The Lock Hospitals operated on Bernier and Dorre Islands via Carnarvon between 1908 and 1919. Several hundred Aboriginal people across Western Australia were forcibly removed from their families and country to the lock hospitals. Many family members who were separated during the lock hospital scheme never saw each other again. It is conservatively estimated that more than 200 people died on the islands. The prisoner patients were said to have the non-specific diagnosis of ‘venereal disease’, although there are many questions about the reliability of this diagnosis.

Non-Indigenous people with venereal diseases were not subject to such measures. These lock hospitals were part of a wider history of racially based medical incarceration of Aboriginal and Torres Strait Islander people in Australia that took place in Western Australia, the Northern Territory and Queensland for almost a century from the late 1800s.

Aboriginal Cultural Heritage

There are numerous sites within the Shire registered as Aboriginal Cultural Heritage places (shown on **Figure 29**) including the Carnarvon and Lyons Rivers, the Kennedy Range and Coral Bay Skeleton. As of October 2014, there were 216 registered Aboriginal heritage sites within the Shire of Carnarvon that had been assessed by the Department of Aboriginal Affairs (now Department of Planning, Lands and Heritage) and were identified on its Aboriginal Heritage Enquiry System. Most of the sites were artefacts / scatter, and the remaining sites included engravings, paintings, and skeletal material as well as those of a ceremonial and mythological nature.

Native Title

Native title is recognised under Australian law. Indigenous Australians can apply for a native title determination seeking recognition of native title rights and interests under the Native Title Act 1993.

The native title determination was made for the Thudgari People (WCD 2009/002) in 2019. The determination recognised non-exclusive native title rights and interests over 10,500 square kilometres of pastoral country in the Upper Gascoyne. The determination covers a North-east portion within the Shire of Carnarvon boundary as well as areas of the Shires of Upper Gascoyne and Ashburton. As part of the determination, 14 indigenous land use agreements (ILUAs) were signed to determine access rights to the various pastoral stations covered by the determination. The representative for all the applications and the determination is the Yamaji Marlpa Aboriginal Corporation.

The native title determination was made for Gnuli (WC 1997/028) in 2019. The Gnuli native title claim covers approximately 82,708 km² of land and sea in the Yamaji Region. It lies in the Shires of Ashburton, Carnarvon, Exmouth and Upper Gascoyne. In Western Australia, the Aboriginal Heritage Act 1972 (AH Act 1972) protects places and objects customarily used by, or traditional to, the original inhabitants of Australia.

The Malgna Shark Bay Peoples Application (WC 1998/017) covers the determination area of approximately 28,000 km² of land and waters in the southern Gascoyne region of Western Australia, roughly around Shark Bay. Determination was made in 2018 with the outcome as native title exists in parts of the determination area.

The Budina People (WC2004/005) Application was determined in 2017 with the determination outcome as native title exists in parts of determination area (refer to **Figure 30**).

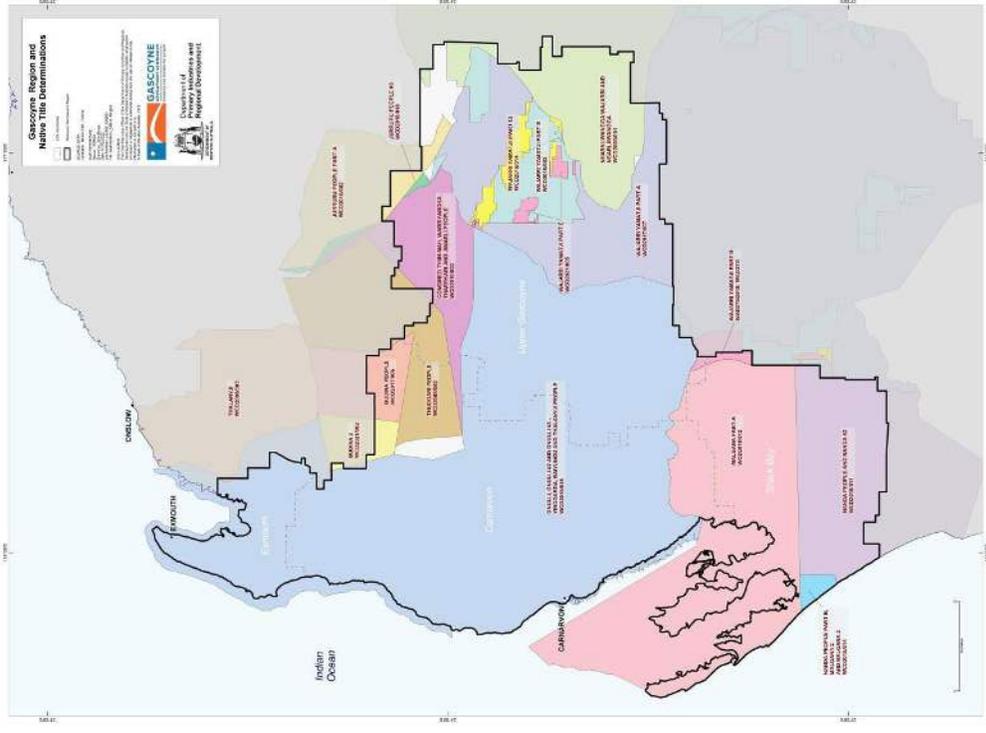


Figure 30: Shire of Carnarvon Native Title

Other Heritage

State Heritage

The Heritage Council of Western Australia (HCWA) is responsible for the conservation of places that have significance for the cultural heritage of the state. Within the Shire of Carnarvon, there are 13 places of state-heritage value that are on the State Register of Heritage Places. State registered heritage sites in the Shire of Carnarvon are provided in **Table 23**.

Table 23: State Registered Heritage Sites

PLACE NUMBER	PLACE NAME	LOCATION
460	St George's Anglican Church	10 Francis St, Carnarvon
461	St Mary's Star of the Sea Church	21 Johnston, Carnarvon
462	Carnarvon Lighthouse Keeper's Cottage (fmr) [Babbage Island Lighthouse]	Annear Pt, off Binning Rd, Babbage Island
463	Gascoyne River Bridge (fmr) - Site	North West Coastal Hwy over Gascoyne River, Carnarvon
465	ANZ Bank Building	16 Robinson St, Carnarvon
467	One Mile Jetty	Babbage Island, Carnarvon
468	Homeswest Building	30 Robinson St, Carnarvon
472	Overseas Telecommunications Satellite Earth Station	Mahony Av, Brown Range
4566	One Mile Jetty and Tramway	Carnarvon
4590	Babbage Island Causeway Bridge	Babbage Island Rd, Carnarvon
6839	Gascoyne Research Station	South River Rd on Research Rd, Carnarvon
25484	Babbage Island Lighthouse	Annear Pt, Babbage Island
26316	Tramway Bridge and Tramway	off Olivia Terrace, Carnarvon

Local Heritage Survey

The Shire of Carnarvon has Municipal Heritage Inventory, which is now known as the Local Heritage Survey, that was last updated in June 2015 and is a document that refers to buildings and places that have cultural heritage significance. A total of 80 sites are listed on the Local Heritage Survey.

4.2.6. PUBLIC OPEN SPACE

The Shire offers a range of recreation opportunities and public open space (POS) which caters for people of all ages. The Shire provides parks, ovals/playing fields, playgrounds, facilities and areas for informal recreation (walking, cycling and horse riding). The majority of POS is concentrated around the residential settlement in Carnarvon particularly around the Town Centre.

The Carnarvon Town Site Public Open Space Strategy (refer **Figure 31**) is supported by an Open Space Network Plan (OSN) which promotes the use of existing Parks and Recreation reserves to capture and promote diversity of parkland type and function. The Network Plan recognises the adequate allocation of well-distributed parklands serving the Carnarvon Townsite. An audit of POS has been undertaken for the Shire of Carnarvon, and they have been classified into the following hierarchy ensuring that all users can access the open space assets, and the values are distributed equitably throughout the community.

For an optimal use of the public open spaces, the development of a connected movement and parks network is required by providing connections through a linked open space and street network, and for these spaces to be accessible via safe and green pedestrian and cycle networks. Revitalisation is also a key recommendation to ensure park spaces meet the hierarchy needs. Where there is an oversupply and underutilisation of parkland, the strategy recommends land rationalisation.

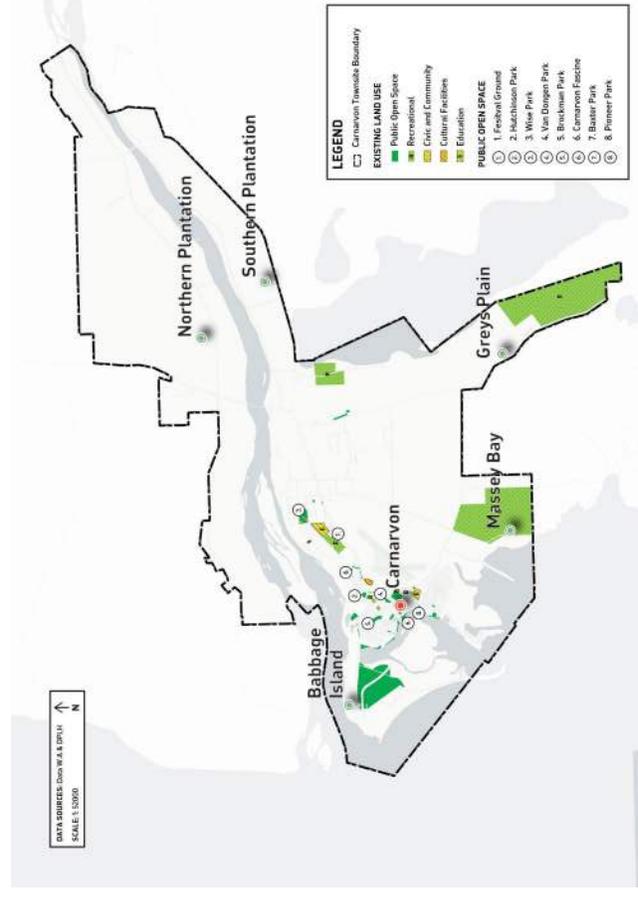


Figure 31: Public Open Space within Carnarvon Townsite

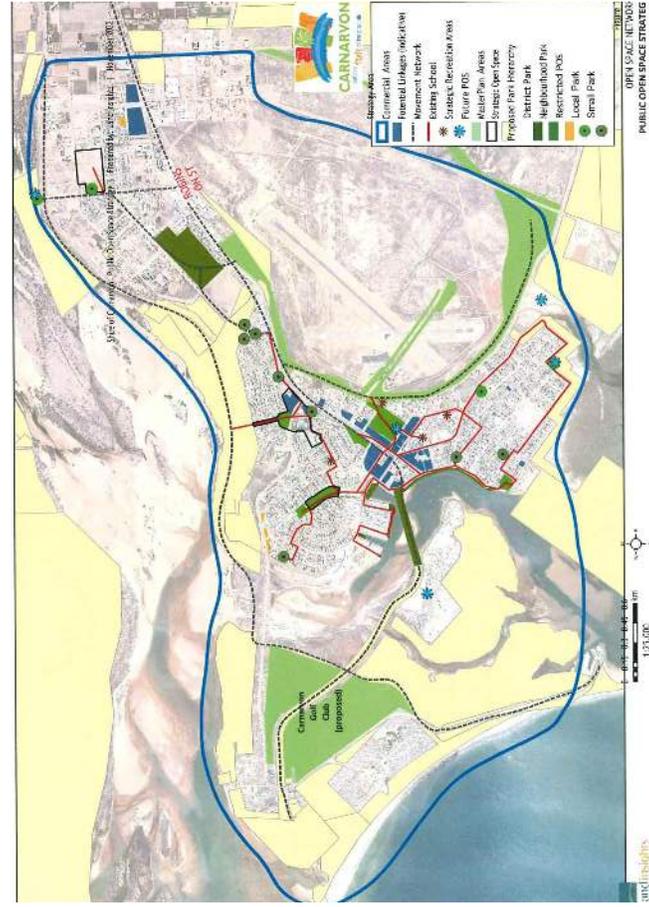


Figure 32: Open Space Network (Carnarvon Townsite Public Open Space Strategy 2022) Townsite

4.2.7. COMMUNITY INFRASTRUCTURE

Community and social infrastructure are essential and required to ensure that the Shire can meet the health, education, sport and recreation, and other social needs of its population. Often population loss in regional areas is attributed to inadequacy of community infrastructure and services. Ageing infrastructure, lack of adequate childcare services, insufficient sporting facilities and schooling, means the region has limited ability to grow socially and economically unless addressed through this strategy.

With regard to provision of community infrastructure, health and education facilities are typically delivered by the State government (or private entities) and are primarily population driven, the role of the Strategy will be to ensure that current facilities are fit-for purpose and whether new facilities are required.

Community infrastructure may include:

- + Arts and cultural facilities (performance spaces, museums, and galleries)
- + Community facilities (civic centres, libraries, lifelong facilities)
- + Early childhood and family support facilities (childcare and preschool)
- + Education facilities
- + Justice and emergency services (law courts, police, fire, and ambulance stations)
- + Sport and recreation (indoor and outdoor spaces and facilities including pavilions, gyms, swimming pools and walking cycling paths).

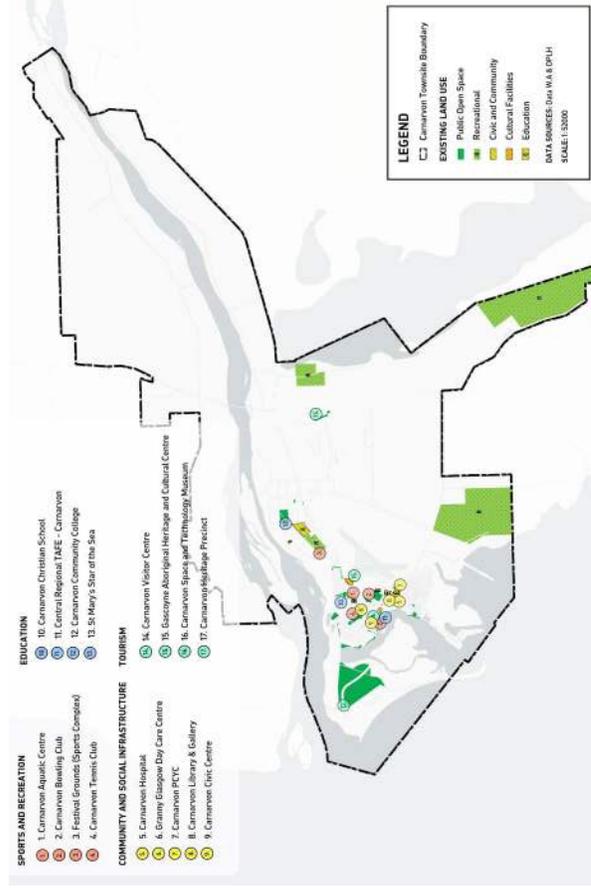


Figure 33: Open Space Network (Carnarvon Townsite Public Open Space Strategy 2022) Townsite

Sport and Recreation Facilities

Sport and recreation activities play a critical role in the lifestyles of people living in regional Western Australia. The coordinated delivery of sport and recreation infrastructure is important in ensuring that opportunities for these activities meet the needs of local and regional communities. Beyond formal sports facilities, there is a need to encourage active living more generally to raise health standards and outcomes, which can be supported through townsite design and layout.

The Shire currently has a range of sport and recreation facilities and clubs listed in **Table 24**.

Table 24: Sport and Recreation Facilities and Clubs

SPORT AND RECREATION FACILITIES AND CLUBS	
Carnarvon Horse and Pony Club	St George’s Anglican Church 10 Francis St, Carnarvon
Carnarvon Speedway	St Mary’s Star of the Sea Church 21 Johnston, Carnarvon
Carnarvon Yacht Club	Carnarvon Lighthouse Keeper’s Cottage (fmr) [Babbage Island Lighthouse] Annear Pt, off Binning Rd, Babbage Island
Carnarvon PCVC	Gascoyne River Bridge (fmr) - Site North West Coastal Hwy over Gascoyne River, Carnarvon
Carnarvon Bowling Club	ANZ Bank Building 16 Robinson St, Carnarvon
Carnarvon Golf Club	One Mile Jetty Babbage Island, Carnarvon
Carnarvon Race Club	Homeswest Building 30 Robinson St, Carnarvon
Carnarvon Rifle Club	Overseas Telecommunications Satellite Earth Station Mahony Av, Brown Range
Carnarvon Tennis Club	One Mile Jetty and Tramway Carnarvon
Carnarvon Eight Ball Association	Babbage Island Causeway Bridge Babbage Island Rd, Carnarvon
Carnarvon Junior Cricket Association	Gascoyne Research Station South River Rd cnr Research Rd, Carnarvon
Carnarvon Cyclones Rugby Club	Babbage Island Lighthouse Annear Pt, Babbage Island
Carnarvon Motorcycle Club	Tramway Bridge and Tramway off Olivia Terrace, Carnarvon

The big ideas relating to sports and recreation for the future of Carnarvon identified in the Shire of Carnarvon Strategic Community Plan are summarised in **Table 25**.

Table 25: Strategic Community Plan Big Ideas – Sports and Recreation Facilities

BIG IDEA	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Gascoyne River Path and Parks	Convert the land beside the Gascoyne River at Chairman’s Pool and all along to a tourist and resident friendly space with amenities. Put park benches inside the area, fix the roads, make a bike trail, make it an inviting space that people want to visit for picnics, afternoon walks etc. Work with Bushfire Brigade and Tree Society to create functional tracks for tourist use and compliment bushfire mitigation (i.e. ‘Safe’ Fire pit areas, Fire Danger Rating signage). Add toilets (self-contained/environmentally friendly) and interpretive signage regarding flora/fauna/cultural significance. Use sustainable materials on trails to prevent erosion, but also have no impact on river system if flooded.	Shire currently working on this, with the Council endorsing the Carnarvon Trails Project as a Priority Project for 2024. Consider tourism and recreation upgrades as an action of the Strategy.

Community and Social Infrastructure

Social Infrastructure is the interdependent mix of facilities, places, spaces, programs, projects, services and networks that maintain and improve the quality of life in a community (WA State Planning Strategy 2050). Social infrastructure can provide focal points for community activity and places for people to meet and connect. Likewise, social infrastructure can activate place, encouraging people to live in or visit a particular area. Given that a key component of a sustainable community is diversity, providing a range of quality community facilities can help to attract/retain a more diverse population – social infrastructure should be provided to suit different ages, cultures, abilities and socio-economic backgrounds.

Although the Shire’s population will likely decline, however, the demographic composition has shifted towards an aging population. Accordingly, there will be a review, upgrade, extend and possibly rationalise the provision of social infrastructure including those provided by the Shire based on changing demographics and community needs particularly around aged care facilities.

The Shire currently has a range of social infrastructure and facilities listed as follows:

- + Carnarvon Family Support Services Incorporated – Women’s Refuge, Sobering Up Centre, Counselling
- + Helping Minds
- + Silverchain
- + Carnarvon Police Community and Youth Centre
- + Ngala
- + Department of Communities – Housing, Child Protection and Emergency Relief
- + Centcare
- + Mission Australia
- + Real Future

- + Carnarvon Outreach Services
- + Geraldton Aboriginal Medical Services

The big ideas relating to community and social infrastructure for the future of Carnarvon identified in the Shire of Carnarvon Strategic Community Plan are summarised in **Table 26**.

Future opportunities for community and social infrastructure will be established through future planning and consideration of the Shires strategic community plan and further detailed planning through Part 1.

Table 26: Strategic Community Plan Big Ideas – Community and Social Infrastructure

BIG IDEA	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Carnarvon Youth Patrol and Hostel/ Safe Place	A youth patrol combined with a temporary accommodation facility to provide options for young people engaged in antisocial behaviour at night. This will allow for at-risk children to have a safe place to sleep either short-term or long-term. Requires cooperation between Shire, State Departments, schools, and youth programs to and passionate stakeholders who have deep experience.	No Strategy implications identified.
Carnarvon Childcare Centre	Build a childcare centre that offers long day care and out of school care. It can also become a site for collaboration between CCC & TAFE for work experience and hospitality/ childcare certificates, youth worker certificates. Also, a site for NGALA, PCYC & Youth Hub for their young parent and after school programs. Can provide secured childcare spots for non-local workers, to assist long-term employment. Will also require more industry workers, greater government subsidies and conversations with existing provider.	Childcare was identified as a lacking service during community engagement. A site has not yet been identified.

Health

Access to health care is a basic need for local communities and ultimately impacts both directly and indirectly on community wellbeing. Several studies, investigations and research by various State Government agencies has been undertaken to determine a suitable service plan for the Gascoyne Region. Key priorities have previously been identified, as detailed in the 'Service Plan 2010-2020: Gascoyne Health District (WA Country Health Service – Mid-west)', to be as follows:

- + Aged care, residential and home care needs
- + Patient assistance travel scheme
- + Drug and alcohol prevention programs
- + Dental services
- + Ambulance service
- + Mental health services
- + Accessibility of care and delivery of at home care

The Shire currently has a range of health facilities listed as:

- + The Carnarvon Health Campus which includes hospital facilities and a GP clinic
- + WA Cardiology
- + Geraldton Medical Service Aboriginal Corporation (GRAMS)

- + St John - Sub Centre Carnarvon
- + Carnarvon Medical Centre
- + Silverchain - Carnarvon Service Centre
- + Centacare Family Services
- + Dental clinic

The Carnarvon Multi-Purpose Health Service is the primary health care provider within the Shire of Carnarvon. Other services available to the community and the Region more widely include the Multi-Purpose Service in Exmouth, nursing posts in Coral Bay and Burringurrah, a Silver Chain nursing posts in Denham and Carnarvon. Further, there are various community-based services that are also available. The Carnarvon Medical Service Aboriginal Corporation (CMSAC) is also a key health provider to Aboriginal people residing in Carnarvon and surrounding areas.

An alcohol and drug treatment facility has also recently opened, located at the Carnarvon Multipurpose Health Service site. That facility provides a dual purpose – a 'sobering up' service combined with a community drug service team that offers specialist counselling and prevention services. This facility is also the base for the Mid-West Community Drug Service team.

It is also important to consider the role of Carnarvon as a regional service hub and its ability to meet the needs of wider Region.

There is an identified need to diversify the health care options available as well and to better integrate health services that are already being provided within the Shire. In Carnarvon, community and primary health services are provided from different areas of the multi-purpose health service, and given the design constraints of the current building, they cannot be amalgamated.

Due to the level of remoteness, it is challenging to attract and retain specialists for high care and to obtain the necessary funding for the improvements to existing care facilities. It is therefore likely for the foreseeable future that highly acute patients will continue to be transferred to larger regional centres such as Perth, where specialised services and medical equipment is available. The integration and amalgamation of health services, wherever possible will assist in capitalising on the shared use of medical facilities and equipment, resulting in additional funds being allocated to diversifying the health offer.

Specialised services such as physiotherapy, mental health, rehabilitation aged care, hydrotherapy pools, etc. have also been raised by the local community as being key gaps within the health care sector. Where possible the Shire and other stakeholders are encouraged to work with Government agencies in gaining funding to provide specialised community services that can be provided in the local area through existing facilities.

A key barrier currently facing the Shire is providing satisfactory health care opportunities to the ageing population. This is having a direct impact on population retention as the elderly and sometimes the entire family are forced to relocate to larger regional centres to gain the care and specialised services they require. It will be important the Shire continues to support Government agencies, seek funding where available and form partnerships with service providers to ensure that a more integrated approach is undertaken in delivery health care.

Education

Education plays an important role in maintaining and strengthening a skilled community. The availability and offering of post-secondary education within a community is commonly linked to population trends due to education and labour migration.

The Shire currently has a range of education facilities listed as follows:

- + Granny Glasgow Education Care

- + St Mary Star of the Sea
- + Central Regional TAFE – Carnarvon
- + Carnarvon Community College
- + Carnarvon Christian School
- + Carnarvon School of the Air
- + Bundilgoo Mia Education Centre (Carnarvon Health Campus)

Although there are some emerging opportunities for education and training, some challenges remain for the Carnarvon area – some are common to regional towns across Western Australia and others are more localised. Access to various senior–secondary and post–secondary education opportunities remain limited. There are particular challenges associated with providing quality education opportunities from school years 7 onward.

Access to limited to education and training opportunities (particularly senior–secondary and tertiary) has the potential to result in significant direct and indirect costs to both the family and the local community. Chief among these costs are young people and their families potentially leaving the Shire to pursue education in larger urban centres such as Geraldton and Perth.

The Gascoyne Region is the only Region in Western Australia without immediate access to university education. It is therefore not surprising that post compulsory education participation rates in the Gascoyne Region are well below the State's average. The only post–secondary education facility offered in Carnarvon is provided by Central Regional TAFE in Carnarvon. A new campus is proposed within Carnarvon which will enable the Institute to expand its range of courses. Future courses that may be offered include trades training, in areas such as construction, mining and automotive; health and community services; hospitality; agriculture; computing etc. The expansion of this post–secondary education opportunity will be important in developing a more comprehensive education offer to the local and wider community, with a reduced need to travel to major urban centres. As of 2024, this is yet to be finalised.

The Carnarvon Community College commenced in 2009, resulting from the merger of the Carnarvon Senior High School, East Carnarvon, and Carnarvon Primary Schools. The State Government funded amalgamation was intended to eventually provide students with better access to a wider range of programs, courses, and facilities.

It has been identified that both St Mary's and the Carnarvon Christian College are nearing capacity. Looking into the future, it is important that land use planning and service delivery are suitably progressed to accommodate growth into the future – particularly with an increased focus on providing senior–secondary opportunities.

Providing flexible, responsive, and innovative education and training enables people to develop skills necessary for them to reach their full potential. One challenge facing young people has been the lack of access to vocational education and employment and training opportunities, particularly for Aboriginal kids. Opportunities may also exist for increased coordination and liaison with Commonwealth funded initiatives, such as the Remote Jobs and Communities Program providers who provide specialised training for job seekers, work experience and job placement services in remote Australia.

There are employment and career opportunities within the local area associated with the agricultural sector. Other major employment industries are tourism, health care, education, and training. Having a diverse economic base for the local area should be considered as a strength and opportunity looking into the future. Achieving alignment over time between education/training and local employment opportunities remains both a challenge and opportunity. There is potential for to develop life skills training for students that will provide students with job-readiness skills to prepare for their transition into the workforce and extracurricular activities that target youth development and readiness. The Agriculture College network could potentially extend into Carnarvon to meet this educational need.

Increased opportunities for 'distance education' may deliver some benefits for the local community, when considered as part of an overall suite of education and training initiatives that potentially allow young people to

stay in the local area. Existing education and training institutions must recognise the limited career opportunities available to rural youth. In particular, it is important the existing education and training institutions provide sufficient support and opportunities to gain skills that could be used in a career path in their local community.

4.2.8. COMMUNITY, URBAN GROWTH AND SETTLEMENT SUMMARY

The key issues and opportunities identified in the Community, Urban Growth and Settlement theme are provided in **Table 27**.

Table 27: Community, Urban Growth and Settlement – Issues and Opportunities

ISSUES AND OPPORTUNITIES	
Urban Growth and Settlement	<ul style="list-style-type: none"> Seven 'Investigation Areas' have been identified for alternative future land development. These areas will be considered as Planning Areas for alignment with the Local Planning Strategy Guidelines. The lack of infrastructure and services could hinder development and the availability of new housing in these Investigation Areas. Airport relocation provides a major long-term opportunity for increased residential development. New tourism and recreation opportunities are being proposed for Babbage and Whitlock Islands. Opportunities and issues facing activity centres involve accommodating future population growth and developing the sub-region's townsites and settlements to be sustainable and liveable communities.
Housing	<ul style="list-style-type: none"> Dwelling capacity analysis demonstrates an adequate amount of residential land to accommodate more houses. Housing shortage still occurs due to infrastructure, builder capacity, market conditions, feasibility, aging housing stock and lack of public and private investment. The lack of infrastructure and services is a major barrier for residential development. Workforce accommodation shortage is a significant barrier to development in Gascoyne region's key industry sector. Opportunities provide greater flexibility through land use planning The cost of building new houses is increased by the need to satisfy building requirements associated with cyclone wind ratings (typically adding 6% to the construction cost). Additionally, the construction cost for new homes is further increased by the unavailability of local builders, labour and materials. There is a general shortage of public housing, particularly for aged care. In addition, the existing public housing stock comprises a significant number of dwellings built greater than 30-40 years ago and are in need of replacement. The Shire has a vacancy rate of 13.1% of the total dwelling stock which may be attributed to holiday homes and the like. However, a proportion of unoccupied dwellings are attributed to the poor quality/standard of some housing. Land release within structure planned areas such as East Carnarvon can cater to any housing demand. However, the key barrier will be the delivery of required infrastructure.
Built Form and Character	<ul style="list-style-type: none"> New developments to consider existing built form heritage and character (if applicable).

ISSUES AND OPPORTUNITIES	
Rural Land Use	<ul style="list-style-type: none"> Rural land consists of the majority landholdings in the Shire Key priority production areas should be identified for further preservation. Major land uses likely to locate on Rural land should be identified in the Strategy where they require special land use controls, such as buffering/separation, or protection.
Culture and Heritage	<ul style="list-style-type: none"> Continued recognition of Heritage sites as identified in the Local Heritage Survey and State Register. Opportunity to improve the wider community understanding and integration of Aboriginal cultural heritage values and connection to country. Strong heritage-built form character for the Shire of Carnarvon. Opportunities to identify and preserve existing clusters of heritage characters such as Olivia Terrace.
Public Open Space	<ul style="list-style-type: none"> Opportunities to provide connections through a linked open space and street network and for these spaces to be accessible via safe and green pedestrian and cycle network. Land rationalization has been recommended when there is an oversupply and underutilisation of parkland.
Community Infrastructure	<ul style="list-style-type: none"> There are limited secondary and tertiary education options to local residents within the Shire of Carnarvon and this is representative within the lower than State average percentage of residents who have some form of tertiary education. The amalgamation of the Carnarvon Senior High School, East Carnarvon Primary School and Carnarvon Primary School has formed the Carnarvon Community College. The allocation of sufficient funding to advance the education offered in the Shire of Carnarvon has been identified as a concern for local stakeholders. This is reflected in the stakeholder engagement analysis. While medical services are provided in Carnarvon, residents remain concerned about the wait times to access GP services, access to tertiary and specialist care and the cost of travel to access such services. Meeting demand for medical services at the Region's key tourist nodes (such as Coral Bay) is a key challenge, with unprecedented numbers of visitors. Carnarvon has access to (pre-school aged) early childhood education services, although demand exceeds the availability of places. The demographic composition is transitioning into an aged population. More consideration should be given towards aged-care facility provisions. The under-provision of sport and recreation in regional towns is not uncommon and is an opportunity to provide supporting infrastructure for the Shire's under-represented under 14 years old population. The services offered by the Medical and Other Health Care Services industry can be considered under-provided with an employment concentration below 1. This likely represents a gap given the Health Campus acts as a regional hub for health services. Opportunities to support increased health services may involve additional local training and employment pathways.

4.3 ECONOMY & EMPLOYMENT

This section provides economic and employment analysis to guide local government policies and market demands to be incorporated into the planning framework for the Shire to facilitate employment and lifestyle opportunities. The economy and employment component of the Strategy is aimed at facilitating trade, investment and innovation, employment, and community betterment for the local government. This economic and employment analysis reviews existing planning frameworks to establish the Shire's current activity centres hierarchy and issues and opportunities. Historical data for the Shire's labour force, employment by industry, business entries and exits and employment quality have been analysed to provide an overview of recent trends and changes in the local community. Industry analysis employed a Shift-Shared model to calculate the size, growth, and local concentration of industries in Shire to determine emerging trends and issues.

4.3.1. ECONOMIC CONTEXT

The Shire of Carnarvon's current economic position was analysed using labour force information, business entries and exits, employment quality and residents' industry of employment to provide an overview of recent trends and changes in the community. This section provides a summary of analysis undertaken by Pracsys in 2024, with the full report providing more detail provided in **Appendix 2**.

Labour Force Status

The proportion of the Shire's employed population to its total population has remained stable since 2011 (decreasing from 44% to 43% over 10 years) (**Table 28**). Both the unemployment rate and the labour force participation rate in the Shire have not changed since 2011 (5% and 68%, respectively).

Table 28: Carnarvon Labor Force

STATUS	2011	2016	2021
Employed	44% (2,538)	42% (2,344)	43% (2,273)
Unemployment Rate	5% (132)	7% (167)	5% (122)
Labor Force Participation Rate	68% (2,670)	67% (2,511)	68% (2,395)
Not in the Labor Force	32% (1,248)	33% (1,215)	32% (1,141)

Source: ABS Census 2011, ABS Census 2016, ABS Census 2021, Pracsys 2024

The labour force status for Greater Perth and the Gascoyne Region have been calculated as benchmarks to compare against the Shire (**Table 29**). While accounting for a significant proportion of the Gascoyne Region's labour force, the Shire has higher rates of unemployment with a lower proportion of the population employed or participating in the labour force. The same can be said for the Shire with reference to the Greater Perth labour force. The labour force outcomes are likely a result of high competition for local jobs because of skilled and experienced persons temporarily moving to the Shire, forcing young persons to look elsewhere for both education and work.

Table 29: Greater Perth and Gascoyne Region Labour Force

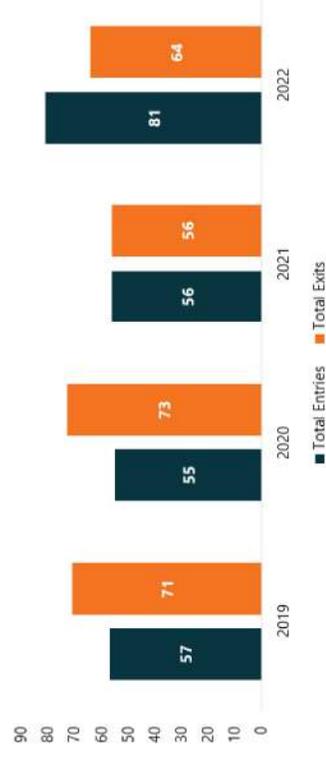
STATUS	GASCOYNE REGION		GREATER PERTH	
	2011	2016	2011	2016
Employed	47% (4,344)	45% (4,238)	48% (4,539)	47%
Unemployment Rate	4% (192)	6% (257)	4% (174)	8%
Labor Force Participation Rate	70% (4,536)	69% (4,495)	71% (4,713)	68%
Not in the Labour Force	30% (1,979)	31% (2,033)	29% (1,934)	32%
				31%

Source: ABS Census 2011, ABS Census 2016, ABS Census 2021, Pracsys 2024

Business Entries and Exits

Total business entries have increased from 57 to 81 between 2019 to 2022 (12% average growth per year; see **Figure 34**). Total business exits were greater than entries in 2019 and 2020, stabilising during COVID-19 in 2021 and improving in 2022. As major industries such as mining were contracting during this period, the growth in business entries likely reflects expansion in domestic tourism resulting from the prohibition on international travel in 2021. On a more detailed level, non-employing businesses account for 71% business entries in 2022 followed by businesses employing 1-4 employees (25%). Non-employing businesses account for 70 of business exits in 2022 followed by businesses employing 1-4 employees (22%).

Figure 34: Carnarvon Business Entries and Exits 2019-2022



Source: ABS Data Explorer 2023

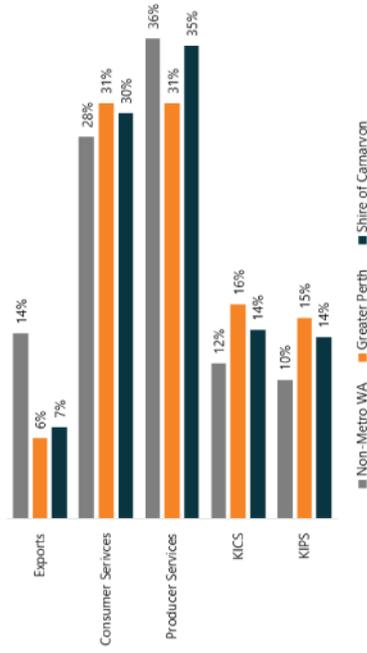
4.3.2. EMPLOYMENT QUALITY

Employment quality can be described by considering industry uses and the required level of knowledge. The Employment quality covers four types:

- + Consumer services (CS) include retail, real estate agents, travel agents, shoe repair, dry cleaning services and beauty salons.
- + Producer services (PS) include manufacturing, construction, and distribution.
- + Knowledge-intensive consumer services (KICS) include general practitioners, accountants, veterinarians and legal services.
- + Knowledge-intensive producer services (KIPS) include engineers, architects, medical scientists and computer software developers.
- + Export-oriented activity (Exports) include strategic industries such as mining, oil and gas and defence.

The Shire of Carnarvon has an employment quality breakdown broadly in line with that of Greater Perth (Figure 35). It does however have higher levels of producer services. Strategic employment combines exports and supporting knowledge-intensive producer services (KIPS). The levels of producer services and knowledge-intensive producer services (KIPS) are greater than that of Greater Perth, this identifies that the region has higher than average business to business related employment. The Shire has greater KICS, KIPS and consumer services relative to regional WA which can likely be attributed to high levels of tourism that support amenities and infrastructure beyond what would be generally be achieved by regional populations. Export related employment is less in the Shire than regional WA which is predominantly related to the scale of mining operations locally.

Figure 35: Carnarvon and Greater Perth Employment Quality

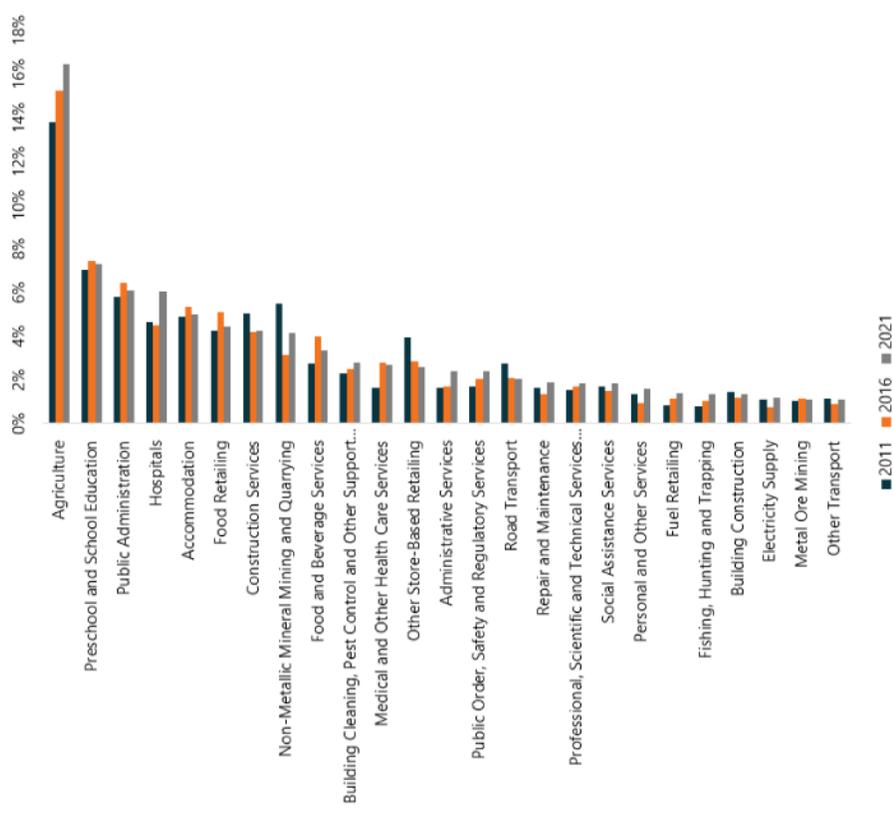


Source: ABS Census 2021

4.3.3. INDUSTRY EMPLOYMENT

Dominant industries in the Shire of Carnarvon were examined by the proportion of workers the industry employs (Figure 36). Agriculture, Forestry and Fishing have employed the greatest, and a growing, proportion of residents since 2011 (15%, 18%, 19%). On a more detailed level, Agriculture (16%), Preschool and School Education (7%), Public Administration (6%), Hospitals (6%) and Accommodation (5%) account for the greatest proportion of workers. These five key industries have all experienced increases in the proportion of workers employed.

Figure 36: Proportion of Workers by Industry 2011-2021



Source: ABS Census 2011, ABS Census 2016, ABS Census 2021

Local Economic Frameworks

In 2023, the Shire released an Economic Development Strategy 2023-2028 to provide guidance on key economic drivers for the Shire. Critical to the strategy's success will be the attraction of Government and corporate business investment to the Shire to support global initiatives in the renewable energies sector, and to utilise the available land in the region which in turn will aid the creation of a thriving business community. Carnarvon plays a key role in providing essential services for the Gascoyne region. Critical to economic sustainability of the Shire is a return of regionally located social and health services to community requirements. **Table 30** provides an overview of the opportunities and issues.

In addition to the Economic Development Strategy, the Shire's Corporate Business Plan 2023-2027 and the GCD have identified further opportunities and issues, outlined in **Table 31**.

Table 30: Economic Development Strategy – Opportunities and Issues

OPPORTUNITIES	ISSUES
<ul style="list-style-type: none"> + Established Industries – The Shire's concentration of mining and agriculture resulting from its rich location represents an opportunity for new businesses in the renewable and extractive industries. Food production and agriculture play a significant role in the Shire's economy and Western Australian consumers. The goods produced in the industry represent a constant need and the Shire has the capacity to grow production. + Existing Infrastructure – The extent of existing infrastructure catered towards FIFO industries means the Shire is well-established for commercial business. The Shire also hosts essential services such as health, social services and satellite government offices. As the Shire's industries are export-oriented, supply chain networks are well-established. + Tourism – The Shire is uniquely situated between the Ningaloo Coast, the Shark Bay World Heritage Areas and the Kennedy Range National Park making it the primary location for visitors to the region. Promoting and investing in the LGA's culture and natural attractions to increase the visitor length of stay and spend represents an economic opportunity for the Shire. + Tourism Investment and Development – Trails development as a way of connecting cultural and natural assets in the Shire. Register Coral Bay as an Astro Tourism Town to diversify the Shire's tourism offerings. + CBD Activation – Implementation of a place-based approach to foster economic growth at a local level in the Carnarvon CBD by creating vibrant and active spaces. + Investment Attraction – Implement an economic development strategy that encourages private investment in tourist accommodation and infrastructure. Seek out funding opportunities from 3rd parties such as partnerships, sponsorships and grants. 	<ul style="list-style-type: none"> + Seasonality – Fluctuations in the population are driven by tourism in the warmer months against colder months. This presents a challenge for economic planning. Growth in tourism will put pressure on local and regional infrastructure with off-season lows reducing the feasibility of investments. + Infrastructure and Skilled Workforce – Accommodation shortages represent a heightened issue in regional WA including in the Shire due to the escalated costs associated with remoteness. Without critical infrastructure such as housing, the Shire cannot attract and retain a qualified workforce relative to the demand for skilled workers. The lack of necessary infrastructure and amenities limits the extent of population and economic growth. The Shire's ageing infrastructure and lack of childcare, sports and school facilities means the region does to have the capacity to retain or attract population. + Lack of Investment – Visitation plays an important role in the diversity and success of the Shire's economy. The lack of investment in new and existing tourism products limits the growth of visitation. The Shire's concentration in primary industries faces fluctuations as they compete in the global market. This makes attracting investment and increasing the confidence of stakeholders and the government to support industries and the community in the Shire challenging. + A Gap in Key Service Delivery – A number of programs, providers and organisations operate to assist different parts of the community with no way of understanding where services are appropriately delivered or where there are gaps.

Gascoyne Development Commission – Economic Development Opportunities for the Gascoyne region associated with Resource Sector Investment and Expansion

Table 31: GDC Economic Development Opportunities – Opportunities and Issues

OPPORTUNITIES	ISSUES
<ul style="list-style-type: none"> + Industrial Sector – The development of a deep-water port facility would be advantageous for the region and provide sustainable economic and employment stimulus. Redevelopment damaged petrol stations, expand heavy-duty maintenance repair industry, allocate sufficient zoned land for heavy industry and develop supporting infrastructure for a road transport hub. + FOFI / DODI Residential Base – Establish the Shire as a FOFI / DODI residential base for off-shore oil and gas and on-shore mining and exploration nodes. + Tourism Development – Encourage the development of additional high-end accommodation, resort development and attraction offerings. Such as the restoration of the jetty, development of trails, restoration of the OTC site and encouragement of private sector investment in Coral Bay. Creation of a policy to encourage workers to stay a night or two in the Shire prior to or after their stay on site to increase local expenditure. + Education and Training Precinct – establish a link between the mining and resource sector and Indigenous training and employment outcomes in the sector. Develop a school campus and a Trade Training Centre. Include the delivery of mining and resource sector-specific training. The size of the population would support trade enrolment to a greater extent than other regional towns. 	<ul style="list-style-type: none"> + Industrial Sector – Insufficient demand to develop a port on this scale. Consultation indicates that servicing at the point of use (e.g. in the Pilbara) is preferred. Labour shortages in Carnarvon may prohibit the development of a resilient heavy-duty maintenance cluster. + FOFI / DODI Residential Base – Current airport infrastructure capacity is insufficient to meet the demands of offshore oil and gas. A limiting factor is the cost and feasibility of establishing a workforce based in the Shire. + Tourism Development – The lack of existing signage and entrance statements decreases the rate of stop-over visitation from passing traffic on the highway. Different understanding of responsibility between stakeholders with locals believing the FIFO workforce represents an opportunity to increase tourism and resource sectors suggesting they play no role.

On Our Horizons

'On Our Horizon' outlines nine of the major projects (**Table 32**) planned in the Shire of Carnarvon and their impact on population and services. They include major transformational projects in the energy and tourism sectors that will bring jobs and economic growth. It is intended that these will be complemented by investments in housing, retail, and commercial development.

The projects are anticipated to deliver:

- + Capital Spending Of Over \$30 Billion. And
- + 9,000 Construction Jobs With Peak Construction In 2029.
- + Operations Staff Will Be Required From 2022 And By 2032 Over 3,500 Enduring Operations Jobs Will Be Created.
- + The Project Proponents Indicate A Preference For Locally Based Employees. This Means That At The Peak Workforce Demand In 2029 There Will Be An Additional 600 Construction And Nearly 200 Operations Workers And Their Families Living In The Shire.
- + By 2032 With All Nine Major Projects In Operation As Many As 400 Operations Workers And Their Families Will Be New Residents To Carnarvon Increasing The Population Of The Shire By 750 People.

Based On This Snapshot Of The Nine Major Projects, Conservative Future Population Estimates Will Place Additional Demand On Social Services And Infrastructure In The Shire Of Carnarvon.

- + Education - A Further 80 Kindergarten To Year 12 Children Attending Schools In The Shire Requiring Around Four New Primary And Two New Secondary Teachers.
- + Police - The Need For Another Four To Five Police Officers To Maintain The Current Population To Police Ratio In The Shire.
- + Childcare - Requirement For A Further 55 Childcare Places To Meet The State Average For Childcare Provision.
- + Housing - Demand For Updated Housing Stock And An Additional 350 Dwellings In Carnarvon Over And Above Those Planned For The Shire Over The Next Ten Years And Including Those Needed For Government Employees.
- + Air Services - Creating Demand For An Additional 26 Commercial Flights Between Perth And Carnarvon Each Year To Maintain The Current Inbound Passenger To Population Ratio In The Shire.
- + Health - A Need For Around Four To Five New Hospital Beds, One New Gp, And One New Gp Nurse To Maintain Current Health To Population Ratios In The Shire.

Table 32: On Our Horizon Major Projects

PROJECT	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Old Justice Precinct Revitalisation (DGcorp)	In a prime location, overlooking the Fascine, the Old Justice Precinct site is set to be redeveloped into a mixed use residential, retail, and commercial area known as The Pier. It will employ around 100 construction workers and 40 workers in operation.	A proposal went to the JDAP on 20 January 2023 for a mixed use development (residential, retail office, restaurant/bar, and short-stay/tourism accommodation) with associated amenities, to be developed in 3 stages over a period of 2 – 4 years. This has since been approved by the Shire. As the land is already zoned Regional Centre, there are no implications for the Strategy.
Gascoyne Food Bowl	The creation of 278ha of horticultural land will boost the Carnarvon horticulture district by almost one quarter. Table grape producer Fruitco; local melon producer DurmoQuality Produce; and vegetable grower 4 Ways Fresh will develop the land with the first production expected in late 2022. The project will represent around 37 local jobs as well as 240 seasonal jobs.	The Gascoyne Food Bowl Structure Plan was implemented in 2017 to allow for the creation of new horticultural land as part of the Carnarvon Food Bowl Initiative, however no horticultural activity has not commenced yet. Major barriers have been identified as water availability, the identification of the Gascoyne River as an Aboriginal Cultural Heritage site and implications from the proposed Aboriginal Heritage Act 2021 (which has now been repealed), and the risk of flooding. As the Structure Plan is due to expire in 2027, it is recommended that the structure plan is review to further investigate and remove any barriers to implementation.
Yangbana Rare Earths Project (Hastings Technology)	The \$658 million Yangbana rare earths project is located 250km north east of Carnarvon. Construction is expected to begin late 2022 requiring 500 construction jobs over two years. Production is scheduled for 2024, and will require more than \$200 million per annum of expenditure and ongoing employment of 250 staff.	This project is reported to be evolving slowly, but not a surety of proceeding. As the land is outside the Shire of Carnarvon LGA, there are no implications for the Strategy.

PROJECT	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Green Hydrogen Project (Province Resources)	The HyEnergy renewable energy project plans to take advantage of Carnarvon's optimum climate. The project will be located on development sites adjacent to town and will supply renewable hydrogen to the export and domestic markets. It will be a major employer requiring a peak of 4,000 construction workers and around 1,500 operations staff.	Scheme Amendment 10 is underway to facilitate this project. As the land is already going through a Scheme Amendment process, there are no implications for the Strategy, other than identifying the area on the Strategy Map.
Gnaraloo Green Energy (Fortescue Future Industries)	Fortescue Future Industries is currently investigating a green hydrogen project including a renewable energy generation hub comprising wind turbines and in-fill solar arrays, and nearby port facilities. It represents as many as 4,000 construction workers and around 1,500 jobs in its operation phase.	This project is unlikely to go ahead, as tourism is emerging as the key industry from this area. Therefore, there are no implications for the Strategy.
Ningaloo Reef Resort Staff Accommodation Village (RAC)	The upgrade of the Ningaloo Reef Resort will require \$40 million of construction spending over two years and will provide jobs for 250 workers. At peak times, there will be 55 staff required to run the resort who will be housed in the accommodation village.	This project was complete in 2023. There are no implications for the Strategy.
Ningaloo Reef Resort (RAC)	The \$8.6 million accommodation village will house key service workers employed in Coral Bay's tourism sector. The village will take 6 months to construct and will create 100 construction jobs.	The development was approved in January 2024, with construction having recently commenced. Estimated completion date of 2026.
Babbage Island Resort (Halsall & Associates)	The planned phased development of accommodation units, caravan park and camping ground at Babbage Island in Carnarvon will create 332 accommodation sites as well as resort style facilities creating around 100 construction jobs and 40 ongoing operations jobs.	This project is likely to go ahead, with the developer currently in negotiations with State government on land tenure arrangements. As the land is already zoned for tourism, there are no implications for the Strategy.
Carnarvon Barge Loading Facility (Stratland Investments)	The planned \$10 million barge loading facility will cater for projects in the Gascoyne region and parts of the Pilbara and Mid-West regions. Construction will create 20 local jobs and a further 20 local workers will be required to maintain the facility.	This project has been incorporated into the Bejalung Multiuser Port project driven by Province Resources as part of their HyEnergy Project mentioned above. Scheme Amendment 10 is currently underway to create appropriate zoning for future port and associated facilities. As the land is already going through a Scheme Amendment process, there are no implications for the Strategy, other than identifying the area on the Strategy Map.

Industry Analysis

Industry employment data from the ABS was analysed to identify key growth industries and/or industries that are under-represented locally. The analysis considered industry size, growth, and local concentration; the final set of opportunities and emerging industries will be used to inform engagement with key stakeholders. This section provides a summary of analysis undertaken by Pracsys in 2024, with the full report providing more detail provided in **Appendix 2**.

FIFO Employment Change

Industry employment was compared against those who work in the Shire and those who reside there. The difference between these two populations provides an indication of the extent of fly-in, fly-out (FIFO) work undertaken in the Shire. FIFO accounted for a significant proportion of mining jobs in 2016 however, mining jobs appeared to decrease in 2021, largely accounted for by a decrease in FIFO employment. The positive change in FIFO rates for Accommodation and Food Services and Administrative and Support Services appears contradictory as both these industries typically have a complementary relationship to other FIFO-based industries such as mining. Negative changes in population-driven service industries such as Retail Trade, Real Estate Services and Arts and Recreation align with population decline in the Shire. At the same time, other population-driven services such as Other Services, Health Care and Social Assistance and Electricity, Gas and Water Services experience positive change which may be associated with increased domestic tourism.

Employment Concentration Factors

Employment concentration factors (ECFs) measure the concentration of an industry's employment within a study area relative to a benchmark, indicating the local specialisation of an industry and its exportability.

WA state employment and Regional WA employment were selected as benchmarks for this analysis to identify the strength of the Shire of Carnarvon's industries relative to the benchmark averages. A high ECF indicates that the industry is producing more goods and services than the local population can consume, making it possible to service or export to markets beyond the local area. Industry strengths and gaps can provide an understanding of economic development opportunities.

Agriculture (and Support Services), Aquaculture, Non-Metallic Mineral Mining and Quarrying, Other Transport, Fishing, Hunting and Trapping are the top industries by ECF compared to the State benchmark and may present opportunities for economic development through expansion and supply chain development. Accommodation, Heritage Activities, and Other Transport have the opportunity to expand based on tourism demand.

Employment in many strength industries is more closely aligned with Regional WA resulting in lower ECFs. Agriculture, Forestry and Fishing Support Services, Aquaculture and Agriculture no longer appear in the top ten; Electricity Supply, Gambling Activities and Defence emerge in the top-ten ECFs. The Shire's high concentration of Fishing, Hunting and Trapping and Other Transport remains when compared to Regional WA.

The analysis indicates that the Shire's strengths are in relevant agriculture and tourism activities.

Gap Industries

Gap Industries are opportunities to attract investment in industries where there might be a local gap in provision, and they are typically assessed by the criteria of concentration levels, size and shift share scores. A set of 10 industry gaps have been identified through these criteria (**Table 33**).

Table 33: Gap Industry in the Shire against WA.

ANZSIC 2 INDUSTRY SUB-DIVISION	JOBS	SCORE	ECF	GROWTH
Personal and Other Services	36	1	0.70	16
Road Transport	35	3	0.79	-12
Medical and Other Health Care Services	66	2	0.71	-2
Food Product Manufacturing	16	2	0.69	-11
Sports and Recreation Activities	13	2	0.66	-2
Food and Beverage Services	85	2	0.63	-12
Preschool and School Education	148	2	0.99	0.97
Social Assistance Services	43	2	0.57	8
Other Store-Based Retailing	58	3	0.55	-4
Professional, Scientific and Technical Services	35	2	0.25	2

Source: Source: ABS Census 2016, ABS Census 2021, Pracsys 2024

Identified opportunities include:

- + Social assistance and personal services are particularly relevant in the Shire due to the identified level of disadvantage in Section 4.1. Providers of social assistance in the Shire include Regional Alliance West, HelpingMinds, Carnarvon Family Support Service and more. There may be an opportunity to expand the provision in the Shire to achieve an appropriate provision compared to the State.
- + Sports and Recreation Activities and Food and Beverage Services have low ECFs (0.66 and 0.63) and represent industries that commonly support liveability and tourism opportunities. Compared to Non-metro WA, the Shire has a sufficient concentration of Sports and Recreation Activities (ECF of 1.29) but a low ECF for Food and Beverage Services (0.75). The under provision of sport and recreation in regional towns is not uncommon and is an opportunity to provide necessary infrastructure for the Shire's under 14 years old population. Food-related services will likely expand based on direct intervention and because of growth in population or tourism.
- + Medical and Other Health Care Services has a low ECF compared to both benchmarks (0.71 against WA and 0.98 against Non-metro WA) but employs a relatively large amount of employment (66 jobs). The services offered by this industry can be considered under-provided with an employment concentration below 1. This likely represents a gap given the Health Campus acts as a regional hub for health services. Opportunities to support increased health services may involve additional local training and employment pathways.

Tourism Industries

Abs Tourism Satellite Account Was Used To Identify Which Industries Are Tourist Industries (Table 34). Where There Was A Decline Between 2016 And 2021, The Decreases In Education And Training And Ownership Of Dwellings Are Unlikely And Can Be Attributed To Low Quality Census Data. The Effects Of Covid-19 And Population Decline Are Likely The Reason For The Decline In Jobs In Other Retail Trade And Cafés, Restaurants, And Takeaway Food Services.

Employment In These Industries Was Summed To Examine The Shire's Tourism Sector In Comparison To The Benchmark Populations. Tourism Industries In The Shire Employ 29% Of The Working Population And Experienced Negative Growth Between 2016 And 2021. The Shire Has An Above-Average Concentration Of Tourism Industries Relative To Both Wa (EcF Of 1.09) And Regional Wa (EcF Of 1.24). Within The Tourism Sector, Accommodation, Food Retailing And Preschool And School Education Are The Largest Employers. Tourism Industries That Experienced Growth Include Fuel Retailing, Travel Agency And Tour Arrangement Services And Heritage Activities. Industries That Experienced Negative Growth Include Preschool And School Education, Food Retailing And Cafés, Restaurants And Takeaway Food Services. The Analysis Of The Tourism Sector Was Also Undertaken Without Education And Training Industries As Regional Areas Often Have An Untreatable Gap In Education Due To Labour Shortages And Isolation. The Concentration Of The Tourism Sector In The Shire Increases Without Education And Training Component Of Tourism, Reinforcing Extent Of The Shire's Strength In The Tourism Sector. The Strong Tourism Economy Should Be Leveraged To Support Opportunities In Retail, And Food And Beverage Opportunities. This May Be Achieved By Applying Economic Principles Of Activation To Maximise Exposure Of Businesses To Both Visitors And Residents.

Table 34. Tourism Industry Trends

CHARACTERISTICS AND CONNECTED TOURISM INDUSTRIES	ANZSIC INDUSTRY	2016 JOBS	2021 JOBS
Accommodation	Accommodation	140	140
Ownership of dwellings	Residential property operators	10	0
Cafes, restaurants, and takeaway food services	Cafes, restaurants, and takeaway food services	70	52
Clubs, pubs, taverns, and bars	Pubs, taverns, and bars	23	25
	Clubs (hospitality)	0	3
Taxi transport	Taxi and other road transport	0	0
Other road transport	Interurban and rural bus transport	0	0
	Urban bus transport (including tramway)	8	0
Air, water, and other transport	Rail passenger transport	0	0
	Water passenger transport	0	0
	Air and space transport	8	8
	Scenic and sightseeing transport	19	22
Transport equipment rental	Passenger car rental and hiring	0	0

CHARACTERISTICS AND CONNECTED TOURISM INDUSTRIES	ANZSIC INDUSTRY	2016 JOBS	2021 JOBS
Travel agency and information centre services	Travel agency and tour arrangement services	21	30
	Other Administrative Services	0	0
Cultural services	Heritage activities	10	14
	Creative and performing arts activities	0	0
Casinos and other gambling services	Gambling activities	5	3
Sports and recreation services	Sports and recreation activities	15	13
Automotive fuel retailing	Fuel retailing	23	38
Other retail trade	Motor vehicle and motor vehicle parts retailing	33	19
	Food retailing	120	101
	Other store-based retailing	62	58
	Non-Store Retailing and Retail Commission-Based Buying and/or selling	0	0
Education and training	Preschool and school education	170	148
	Tertiary education	14	11
	Adult, community, and other education	13	11
Total		764	696

Source: ABS Tourism Satellite Account 2023

Emerging/ Strength Industries

Shift-Share analysis have been undertaken to understand historical employment growth to identify the industries that have recently been most competitive in the region. Employment growth is broken down into different components to determine the share of growth that is attributable to the broader national economy and particular industry, with the remainder then assumed to result from competitive strengths developed in the region. Under this approach, local industry performances can be defined under the following four categories:

- + high growth locally in a high growth industry
- + low growth locally in a high growth industry
- + high growth locally in a low growth industry
- + low growth locally in a low growth industry

Industries that score high in the shift share are likely to be key investment attraction opportunities as they are concentrated locally and experiencing high growth. The shift share analysis has been conducted using Western Australia employment and Regional WA employment as the comparison.

Table 35: Existing Strength Industry in the Shire against WA

ANZSIC 2 INDUSTRY SUB-DIVISION	JOBES	SCORES	ECF	GROWTH
Fishing, Hunting and Trapping	43	4	20.3	20
Other Transport	26	4	13.8	7
Electricity Supply	29	4	3.2	7
Administrative Services	58	4	1.7	17
Building Cleaning, Pest Control and Other Support Services	63	4	1.5	12
Agriculture	363	3	7.9	5
Food Retailing	101	3	1.35	1.45
Accommodation	140	3	6.5	0
Hospitals	144	2	1.4	27
Non-Metallic Mineral Mining and Quarrying	87	2	13.2	-136
Metal Ore Mining	75	2	0.6	-112
Fuel Retailing	38	1	4.4	15

Source: ABS Census 2016, ABS Census 2021, Praisys 2024

The industries identified present strategic employment opportunities and are likely to play an important part in the ongoing success of the Shire's economy. Agriculture-related strengths may have the opportunity to increase production by addressing constraints and promoting the adoption of new practices and technology. There may also be the possibility of supply chain development, for example increased food product manufacturing.

Tourism and population related strengths could benefit from both increased tourism promotion and initiatives that support population retention. There is also the opportunity to use activity centre planning and principles of economic activation to improve business viability. Mining activities are likely fixed based on resources available at the Carnarvon oil and gas basin; the main opportunity for the Shire is to increase the number of mining workers who live in the Shire.

The same criteria were applied in comparison with Regional WA and the results were the same.

SWOT Analysis

The strengths, opportunities, weaknesses and threats associated with the economic-related stakeholder feedback acquired by Hames Sharley and from the analysis undertaken are summarised below.

- + **S Strengths** - Feedback that relates to a particular local advantage
- + **W Weaknesses** - Feedback that notes an area of interest that is affected by a particular local constraint
- + **O Opportunities**- Feedback that outlines new or developing opportunities
- + **T Threats** - Feedback that identifies a threat to a local opportunity or a strength that may not be realised locally if certain threat is not addressed

Table 36: Economic SWOT Analysis

Type	Description	Industry
S	The Shire of Carnarvon is rich in natural resources which gives it a strategic advantage in primary and resource industries. The Shire's key drivers of economic activity include horticulture, fishing, pastoral and mining activities. Engagement noted that the community strongly agree that agriculture and horticulture play an important role in the economy. This is reinforced by the analysis, which indicates that the Shire has significant concentration, and growing amount of employment in fishing and agriculture.	Mining, Agriculture, Forestry and Fishing, Tourism
S	The extent of the Shire's existing heavy industrial infrastructure such as road networks, industrial areas, marine infrastructure and complementary mining services supports future economic development opportunities. This is evident through high ECF's in industries such as: Fuel Retailing Other Transport Electricity Supply The efficiencies gained from existing shared services and multi-use infrastructure increases the viability of proposed projects and may be used to encourage investment.	Mining, Transport, Electricity Supply
W	Housing affordability, viability and variety are noted by both community and industry stakeholders as a constraint to economic development. Restricted housing opportunities are reinforced by, and generate, other concerns listed in this SWOT such as workforce shortages and a reduction in services.	Construction Services
W	Both in the feedback and in the analysis, the Shire is identified to have gaps in important essential services such as retirement/ aged care, childcare, other health care (e.g. maternity facilities), education opportunities and recreation infrastructure. This is noted as a particular concern for Coral Bay, because of its transient population. Without these essential services, the Shire cannot support a permanent population or local workforce leading to reduced viability of investment and economic development.	Health Care Services, Education, Arts and Recreation Services, Construction Services
W	Engagement feedback noted that the provision of infrastructure in industries such as childcare and education are restricted by worker shortages. Analysis reinforces that some of these industries have experienced declines in employment since 2016. Community engagement indicated there was also a shortage in labourers such as electricians, plumbers and builders.	Health Care Services, Education, Construction Services

Type	Description	Industry
W	The Shire's agricultural sector faces constraints such as sufficient water, land restrictions under Aboriginal and Torres Strait Islander Heritage Act, flooding risks from poor maintenance and encroachment of other land uses. In this sense, the Shire's limited productive agricultural land is a constraint to further expansions to food production, 60% of the community strongly agreed for the protection of agricultural land including addressing the encroachment of other land uses.	Agriculture
O	New and expanding strategic and tourism projects are currently underway and will support new jobs and economic stimulation in the Shire: <ul style="list-style-type: none"> + Acquisition of Lake Macleod Salt Mine is expected to support 70 new staff + Emergence of green energy industry with HyEnergy's Green Hydrogen and Ammonia Project + GDC investigating viability of a deep-water port, barge loading facility + Development of tourism facilities on Babbage Island There may be the opportunity to leverage these projects to increase the viability of local retail and service related industries and potentially grow employment in these industries.	Mining, Electricity, Gas, Water and Waste Services, Tourism
O	Engagement indicated that there is an opportunity to support commercial and retail variety in the Shire. Strategically zoning desirable areas as potential locations for cafes and restaurants will support the activation of these uses. Desirable areas include locations that support both visitor and local activity.	Retail Trade
O	There is the opportunity to support increases in key services such as child care and aged care to support population retention and a sufficient local workforce. This will function as a foundation for further investment and economic development. Housing policy, commercial rent incentives (i.e. LGA owned property), land contributions, are examples of potential interventions that could be used to influence development of these industries.	Health Care Services, Education, Arts and Recreation Services
O	Engagement revealed that there are many opportunities to support tourism including: <ul style="list-style-type: none"> + Protection of environmental and cultural assets such as One Mile Precinct, Blow Holes, Ningaloo Reef, Gascoyne River, Bibawarra Bore and tramway + Clean up or redevelopment of Bibbawarra Bore and One Mile Jetty + Carefully provide more services in Coral Bay such as accommodation, waste, health + Review camping cost and capacity The Shire should look to support and facilitate communication between key stakeholders to progress these potential opportunities.	Tourism
O	There is an opportunity to provide new and higher quality sports and recreation infrastructure and job opportunities. This long-term opportunity would support the Shire's underrepresented under-14 years old population.	Arts and Recreation Services
O	Engagement noted that expanding the Shire's aviation provision will allow for bigger planes to land and increase the size of the FIFO workforce. This opportunity would support the employment in the extractive industries as well as allow for air freight services. <p>Notably, the State and Federal government have not indicated interest in supporting expansions to the airport at this point in time. Further advocacy for this project may be necessary as this opportunity can make the Shire more competitive.</p>	Transport, Mining

Type	Description	Industry
T	Project development across housing, community infrastructure and private enterprise in regional areas face escalated costs. High construction costs associated with vast distances can often be compounded by limited local workforce, significant challenges in attracting workers, extreme weather conditions and greater maintenance costs. These factors contribute to a low level of viability and overall, less investment in the Shire. Engagement revealed that new lots sell for almost half as much as they cost to develop. <p>Stakeholder feedback outlines that this process is cyclical with low investment in housing creating a limited local workforce and a limited local workforce contributing to higher construction costs and thus lower investment.</p> <p>The Shire should look to work / negotiate with major project stakeholders to ensure that a strategic approach is taken including government and private sector contributions to provide housing and infrastructure to support the employment and services required to maintain liveability as the workforce grows.</p>	Construction Services
T	Contrary to analysis findings, engagement indicated that government services in the Shire have experienced centralisation and contraction with State Government services listed as one of major rural services that is missing. Discussion indicated that a reduction in government services is a factor in population decline. <p>The Shire should lobby for provision of state government services that relate to major projects: the potential synergies may increase the likelihood of a positive outcome.</p>	Public Administration
T	Analysis indicated that there had been a decrease in mining activity in the Shire from 2016 to 2021 which can largely be attributed to a decrease in FIFO rates in mining. This decrease in one of the Shire's major industries threatens the stability of the population and essential services. In the same period, FIFO rates and employment for Arts and Recreation, Wholesale Trade, Real Estate Services, Retail Trade and Accommodation and Food Services decreased. <p>It is unclear what factors have contributed to this trend and it may relate to COVID-19 pandemic lock downs and census data collection. The Shire should monitor workforce numbers and engage with relevant stakeholders to understand what is contributing to the identified trends.</p>	Mining, Arts and Recreation, Real Estate Services, Retail Trade, Accommodation Services
T	Feedback from the Shire has indicated that tourism visitation has decreased. The analysis supports this finding with employment across tourism-related industries decreasing from 2016 to 2021. Business entries since 2021 indicate a potential increase in tourism activity, however, it is unclear if this is an ongoing trend as borders have now opened to international travel. <p>The Shire should monitor workforce numbers and engage with relevant stakeholders to understand what is contributing to the identified trends.</p>	Tourism

4.3.4. EMPLOYMENT PROJECTIONS

Employment projections have been developed to inform the Strategy (refer **Appendix 2**). The projections have been developed based on a combination of:

- + WA Tomorrow population growth rates
- + On Our Horizon population growth rates
- + Analysis and engagement findings in this report

2021 ABS Census population and WA Tomorrow 12 population growth rates were used to determine a Base Case scenario for the Shire of Carnarvon (**Table 37**).

Table 37: Population Growth Rates

PERIOD	2021–2026	2026–2031	2031–2036	2036+
Compound Annual Growth Rate	1.002	0.997	0.995	1.000

Source: WA Tomorrow 2025, Pracsys 2026

The population was assumed to remain constant post-2036 which is conservatively greater than the extrapolation of WA Tomorrow Middle projections. This assumption has been made because it is unrealistic to apply a continuing downward trend when the short-term projection is positive. The following scenarios detail the mitigative impact of future employment opportunities on population decline in the Shire.

Population has been projected to 2041 and applied to the breakdown of labour force status; approximately 43% of people in the Shire are considered employed. This leads to an estimated 2,201 workers and 5,085 people by 2041 (**Table 38**).

Table 38: Base Case Projections

COMPONENT	2026	2031	2036	2041
Employment	2,292	2,252	2,201	2,201
Population	5,294	5,203	5,085	5,085

Source: WA Tomorrow 2025, Pracsys 2026, ABS Census 2021

Three scenarios have been developed in addition to the base case based on benchmarks and key findings from stakeholder engagement:

- + Scenario 1. Base Case with the addition of employment gaps in key service industries (childcare, aged care and general medical services) benchmarked against the regional WA average
- + Scenario 2. Scenario 1 with the addition of local employment generated by key tourism projects according to the Shire's On Our Horizon report
- + Scenario 3. Scenario 2 with the addition of local employment generated by key strategic projections according to the Shire's On Our Horizon report

An increase in employment creates a virtuous cycle; more residents, leads to additional demand for services, creating an increase in demand for employment and so on. It is assumed that the initial increase in service orientated employment in Scenario 1 is sufficient to support the current and future populations that would result in each scenario. This is due to the fact that regional areas tend to be under-serviced and the additional increases

in population in each scenario are of a scale that could increase the viability for businesses where there is slightly greater demand than supply.

Scenario 1

Scenario 1 builds on the base case by adjusting employment in key essential service industries based on benchmarks. Essential services were identified during stakeholder engagement and in analysis, these services are critical to attracting and retaining a permanent population base in the Shire. It is unlikely that the local population generated by the major projects outlined in Scenarios 2 and 3 will occur without at least meeting the level of demand for essential services in the current local population.

The Shire has a gap of 7 childcare workers, 21 aged care workers and 17 general health care workers based on the size of its population relative to the regional WA benchmark. This gap of 45 workers is assumed to be addressed gradually over six years from 2026, accounting for the implementation of the Strategy and other community and economic development initiatives.

Scenario 1 estimates 2,244 workers and 5,164 people in 2036 (**Table 39**). The additional employment generated in Scenario 1 is representative of a foundation of essential services that will be necessary to support growth in other industries such as in the tourism and strategic sectors.

Scenario 2

Scenario 2 is based on the Shire being able to grow tourism employment through key projects. The Shire's On Our Horizon report outlined four major tourism-related projects and the local employment likely generated by each project.

- + Ningaloo Reef Resort Staff Accommodation Village
- + Ningaloo Reef Resort
- + Old Justice Precinct Revitalisation
- + Babbage Island Resort

The development status of each project has been updated by Hames Sharley and an approximate first year of operation has been assumed where required. With the additional jobs in Scenario 1, the 147 tourism-related jobs will contribute to 2,375 workers and 5,421 people in 2036 (**Table 39**).

Scenario 3

Scenario 3 incorporates strategic industry employment that may eventuate through major resource and energy projects.

- + Green Hydrogen Project
- + Carnarvon Barge Loading Facility
- + Other

Hydrogen-related projects are expected to generate approximately 225 local jobs with tourism-related employment accounting for 147 jobs. Engagement undertaken by Hames Sharley was utilised to provide an updated list of strategic projects as well as an expected year of operation based on information initially outlined in the Shire's On Our Horizon report. Scenario 3 is estimated to contribute to 2,596 workers and 5,834 people in 2036 (**Table 39**).

Scenario Summary

The following table summarises the employment and population scenarios (**Table 39**). Scenario 1 population projections are a result of addressing key gaps in essential services. Population projections in Scenarios 2 and 3 are reliant on the completion of essential services which will be necessary to support the local workforce and population generated by tourism and resource projects.

Table 39: Employment and Population Scenarios

SCENARIO	COMPONENT	2026	2031	2036	2041
Base Case	Employment	2,292	2,252	2,201	2,201
	Population	5,294	5,203	5,085	5,085
Scenario 1	Employment	2,299	2,296	2,244	2,244
	Population	5,307	5,285	5,164	5,164
Scenario 2	Employment	2,361	2,431	2,375	2,375
	Population	5,423	5,548	5,421	5,421
Scenario 3	Employment	2,361	2,657	2,596	2,596
	Population	5,423	5,972	5,836	5,836

Source: Procsys 2026

Land Analysis

Benchmarking and stakeholder engagement has been utilised to undertake a high-level estimate of the quantum and location of floorspace and land required to support the additional employment identified in Scenario 1. Scenarios 2 and 3 are not assessed as the details of the planned tourism and strategic projects are highly specific and not publicly available. Their land and floorspace requirements will be developed based on the market opportunity and not based on population provision ratios.

Approximately 1,952m² of floorspace and 13,615m² of land will be needed to provide the appropriate level of essential services for the population of the Shire and to support growth in other industries such as tourism and energy (**Table 40**).

The additional land required to support childcare, aged care and medical services can be attributed to the Carnarvon townsite in its entirety. Planning restrictions currently prevent the development of essential services in Coral Bay despite stakeholder and community feedback identifying a need for it. If the tourism projects identified in Scenario 2 proceed, it is likely that demand for essential services like childcare and medical care in Coral Bay will grow along with visitation.

The capacity of commercial land has been identified in **Table 41**, with 1ha of Commercial land capable of substantial further development. Childcare and aged care are also able to be developed in the Regional Centre. Residential and Tourism zones, as set out in LPS13, suggesting that there is adequate zoned land available in Carnarvon to accommodate the required floorspace.

Table 40: Floorspace and Land Requirement for Scenario 1.

INDUSTRY	ADDITIONAL EMPLOYMENT	FLOORSPACE (M ²)	LAND (M ²)
Childcare	7	294	2,053
Aged Care	21	915	6,384
Medical Services	17	742	5,178
Total	44	1,952	13,615

Source: Procsys 2024

4.3.5. COMMERCIAL

Carnarvon is a well-established and well positioned to be the northern centre for commercial business transactions. Currently, Carnarvon hosts essential services including emergency, health, social services, and some satellite State Government offices and is the central point for business in the Gascoyne area.

Commercial Land

Table 41: Commercial Land Availability

LAND USE	TOTAL (HA)	DEVELOPED (HA)	CAPABLE OF SUBSTANTIAL FURTHER DEVELOPMENT (HA)
Carnarvon	31	30	1
Commercial	0	0	0
Future Commercial	31	30	1
Commercial and Future Commercial			
Coral Bay	2	1	1
Commercial	0	0	0
Future Commercial	2	1	1
Commercial and Future Commercial			

This Regional North Land Capacity Analysis (2024) identifies 31 hectares of zoned commercial land in Carnarvon, of which only 1 hectare is considered to be capable of substantial further development.

Current commercial land identified in Carnarvon include those areas zoned in the LPS13 as 'commercial', and special use zones 3, 4 and 5, which allow for a range of commercial uses (see **Section 4.1.5 Figure 16 Settlement Land Use Plan**). Most of the commercial zoned land is situated along Robinson Street and/or in the central business district. There are additional commercial nodes at East Carnarvon, and at roadhouse sites on North West Coastal Highway. While most commercial land in Carnarvon is developed, there may be opportunities for consolidation, particularly within the town centre, to make more effective use of commercial land.

This Strategy identifies 33 hectares of future commercial land in East Carnarvon. This includes the consolidation of the existing service commercial strip along Robinson Street, a precinct that comprises some areas currently zoned for light industry. Other future commercial sites identified include mixed use nodes at either end of Marmion Street as proposed in the East Carnarvon and Kingsford District Structure Plan 2015.

Retail & Office

Carnarvon is recognised as the Regional Centre for the Gascoyne Region and range of retail offerings are provided within the Carnarvon Township, commensurate with its role as a regional centre. The Town Centre and commercial centre of Carnarvon is identified on the previous strategy map as the area to the south of the intersection of Babbage Island Road and Robinson Street, and it continues to the south until Robinson Street meets the foreshore. It extends as far west as Olivia Terrace and as far east as Cleaver Street.

Key retail precincts in Carnarvon Township include:

- + Carnarvon Central: opened in 1985 and owned by Charter Hall, a listed Australian property group. Carnarvon Central is a neighbourhood centre anchored by Woolworths (4,002 m²). Other tenancies include eight speciality stores (1,027 m²) and four offices. Parking for over 50 vehicles is available on-site.
- + Carnarvon IGA: Comprising of a local IGA (1,800 m²) bakery and Bottlemart for the East Carnarvon residents
- + Carnarvon Business Centre: comprising seven speciality shops (934 m²), tenants are mainly service providers (accountants, lawyers, estate agents and civil servants), and
- + Detached tenancies in the vicinity of Robinson Street: including food and beverage offers, petrol stations, grocery and liquor retailers and other general discretionary/specialty retailers. One of the larger examples is the Gascoyne Office Supplies on Alexandra Street. The Shire is struggling to attract big businesses and the gap in the market is being met by retailers situated in Geraldton or online.

Service Commercial/Bulky Goods

Service Commercial is largely located along Robinson St in East Carnarvon, providing a range of offices, medical hardware, agriculture and vehicle related businesses. The Service Commercial zoned areas typically:

- + Accommodate commercial activities requiring good vehicular access and large sites.
- + Provide for a range of wholesale sales, showrooms, trade and services which are generally not appropriate in central areas, shops and offices or industrial zones.

4.3.6. INDUSTRIAL

Industrial Land

Table 42: Industrial Land Availability

	LAND USE	TOTAL (HA)	DEVELOPED (HA)	CAPABLE OF SUBSTANTIAL FURTHER DEVELOPMENT (HA)
Carnarvon	Industrial	173	71	102
	Future Industrial	7	0	7
	Industrial and Future Industrial	180	71	109
Coral Bay	Industrial	4	3	1
	Future Industrial	0	0	0
	Industrial & Future Industrial	4	3	1

Carnarvon's main industrial-zoned areas are located on the eastern side of the airport, and the light/service industrial area along Robinson Street in East Carnarvon. Another area of industrial zoned land exists at the Carnarvon Boat Harbour, however this is identified in the settlement land-use plan as the 'boat harbour' land use. This particular precinct is entirely developed with enterprises predominantly associated with the operations of the boat harbour.

Of the 173 hectares of current industrial land identified in Carnarvon, some 102 hectares is considered to be capable of substantial further development. Virtually all of this is located immediately to the south of the established industrial area, on the eastern periphery of the airport site. It is also noted that numerous other large sites are proposed for potential industrial areas, subject to further investigation.

The future growth of industries in Carnarvon, particularly the expansion of the horticulture area, may require additional suitably located and serviced industrial and commercial land to accommodate associated service providers. Further research on this issue will be required in conjunction with any proposal.

The big ideas for the future of Carnarvon identified in the Shire of Carnarvon Strategic Community Plan are summarised in **Table 43**.

Table 43: Strategic Community Plan Big Ideas – Industrial

BIG IDEA	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Carnarvon Industrial/Manufacturing Precinct/Hub	To set up manufacturing in Carnarvon to produce value and build future global value for in-demand products using rapidly advancing technologies. Utilise renewable power/hydrogen from P Province, metals from Hastings, mineral sands from Strandline, industrial salt from Lake Macleod, natural gas from pipeline and proposed deep-water port/international airport facilities. [State/Federal] Government to come on board with private companies.	No action has been taken on this yet. Two locations for the Carnarvon Industrial/Manufacturing Precinct/Hub have been identified: 1. in the area of the Multiuser port, as part of Scheme Amendment 10; 2. or in general industry zone.

4.3.7. TOURISM

The Shire's competitive advantages include being the major regional town situated between two World Heritage areas (the Ningaloo Coast and Shark Bay World Heritage Areas) and the Kennedy Range National Park, offering visitors a year-round summer climate, a seasonal marine mammal population and a well-established town offering a range of tourism facilities, especially accommodation.

The Shire has a rich background in culture and heritage with one of Western Australia's leading cultural centres – Gwoonwardu Mia, the Carnarvon Space and Technology Museum and the HMAS Sydney.

The Shire experiences significant seasonal fluctuation in population during Western Australia's winter months due to its warmer climate, attracting a major boost in tourist numbers to the area. This is particularly evident in Coral Bay, where demand for accommodation far outstrips supply during peak seasons. In Carnarvon, constraints on accommodation availability is further exacerbated by the alignment of horticultural harvest and the tourism high season.

Growth in this area will add additional pressure on local and regional infrastructure and consideration of this population impact will play an important role in the economic planning.

Lack of investment in new and existing tourism products is stymying growth in the tourism industry. Events and effective marketing and promotion of assets including surf breaks, station stays, and culture and history trails will increase the appeal of the Shire attracting new markets and in turn will ensure visitors stay longer and spend more.

Tourism Land

The Regional North Land Capacity Analysis – Shire of Carnarvon (2024) identifies six hectares of tourism zoned land in Carnarvon that is considered to be capable of substantial further development, and 41 hectares in Coral Bay.

Tourism development in Coral Bay is currently restricted not only by the zoning of land, but also through a bed cap limit in accordance with the Coral Bay Settlement Structure Plan. A separate process is currently underway to determine the development capacity of Coral Bay through the review of the structure plan.

Table 44: Tourism Land Availability

LAND USE	TOTAL (HA)	DEVELOPED (HA)	CAPABLE OF SUBSTANTIAL FURTHER DEVELOPMENT (HA)
Carnarvon	67	66	1
Tourism	5	0	5
Future Tourism	72	66	6
Coral Bay	62	21	41
Tourism	0	0	0
Future Tourism	62	21	41
Tourism and future tourism			

Tourism Attractions

Carnarvon

Tourism offerings in Carnarvon townsite is limited to a range of heritage, cultural, natural and built attraction, this Local Planning Strategy seeks to promote a focus on higher order tourism developments in Carnarvon and Coral Bay areas.

Geographically, Carnarvon townsite is well placed to access a number of significant tourism drawcards including the Ningaloo Coast, Coral Coast Highway and Kingsford Smith Mail Run. However, Carnarvon has struggled to establish itself as the hub and compete with other destinations.

Other Carnarvon competitive advantages are service-supply base, favourable year-round climate, mangrove creeks and town features including restaurants, pubs, hospital, repair shops, etc. Most of these advantages are under-exploited.

The main struggle to tourism for the Shire includes the difficulty, distance and cost of access. Typically, in the Gascoyne region, the distance between attractions means that tourist access is difficult for those without access to a private motor vehicle and can become costly due to distance travelled by those access to vehicles.

Inadequate accommodation supply to satisfy demand is also an impediment in peak season. Previous studies have noted the highly seasonal nature of tourism in the Region and that this has been an impediment to developing new tourist accommodation. This is evident within the Shire of Carnarvon, particularly at Coral Bay.

There has been recommendation regarding the delivery of additional higher end accommodation within the Carnarvon townsite at the waterfront. However, the feasibility and tourist demand are still questionable and requires further studies.

The big ideas for the future of Carnarvon identified in the Shire of Carnarvon Strategic Community Plan are summarised in **Table 45**.

Table 45: Strategic Community Plan Big Ideas – Tourism

BIG IDEA	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Massey Bay Rejuvenation and Coastal Attractions	Improve the untidy old tip site at Massey Bay to increase the number of sites around Carnarvon for land-based fishing that is accessible to all. Redesign might include improved paths and fishing points with signage and design to reflect local history and use of recycled products in design and operation. Install a boat ramp in Violet Creek and give access to Teggs Channel. Upgrade the roads to Bush Bay and New beach. In the longer term upgrade the road to Miaboolya Beach and extend the road further north.	No action has been taken to date.
Carnarvon RV Friendly Park	Convert part of the Town Oval into a long vehicle and RV friendly space for day parking to encourage lingering in town. Parking will be spaced out and surrounded by playgrounds, EV charger, waterwise plantings, amenities, and tourist information about local features and upcoming local events. After community consultation on design there will be significant communication and advertising with the travelling/ RV community.	This project is at concept design stage, pending funding availability.

In addition to the above, the On Our Horizons document identifies the Babbage Island Resort as a major project

relating to tourism which is discussed in more detail in Local Economic Frameworks.

Coral Bay

Coral Bay is located 1,200km north of Perth on the southern end of the Ningaloo Reef, the largest fringing coral reef in the world. The settlement has remained principally a series of holiday accommodation facilities and businesses offering tours and catering for tourists and holiday makers. Impact on coral health has been recorded adjacent to Coral Bay, with coral death attributed largely to natural causes. The region is highly regarded for its biodiversity, and natural and recreation values.

Accommodation remains a significant issue for Coral Bay where capacity is at its limit particularly during peak season. New tourism development is currently in progress with the construction of the Ningaloo Reef Resort, the most significant development to occur in Coral Bay. The Coral Bay Settlement Structure Plan and LPS13 control development through land use and bed cap limits, which is currently under review.

Station Tourism

Station tourism throughout the Shire of Carnarvon offers a unique experience into the Australian outback and its pastoral heritage with large-scale cattle or sheep stations that cover expansive areas of land. These stations often provide a low-cost accommodation option, allowing access to the coast for fishing, surfing, diving, snorkelling etc. Accommodation is provided through a range of homestead stays and camping grounds. Most stations require 4WD access. Key tourism Stations include:

- + Warroora Station – Range of homestead and camping accommodations
- + Quobba Station – Accommodation and camping is available at the Quobba homestead and Red Bluff which is managed by Quobba Station.
- + Gnaraloo Station – Accommodation and camping are offered at the Gnaraloo Homestead and 3 Mile Camp.
- + Yaringa Station – Gladstone Bay Wilderness camping
- + Wooramel Station – Wooramel provides a comprehensive station stay with camping, glamping tents and homestead accommodation

Station tourism should be incidental to a primary agriculture use and is to remain low impact tourism in that it does not detract from the rural and natural amenity of the locality by way of scale of development, impact on vegetation and location.

Dark Sky Tourism

Dark Sky Tourism or as Astrotourism integrates tourism opportunities with astronomical observation, photography and the environment in areas which are free from light and dust pollution.

The State Government's Dark Sky and Astrotourism Position Statement sets out objectives which apply to the preparation of planning documents, including local planning strategies. Specifically the position statement establishes a set of dark sky principles to be implemented through land use planning, including:

- + Eliminate light spill
- + Avoid over-lighting
- + Use energy-efficient bulbs
- + Ensure lights are not directed towards reflective surfaces
- + Use warm white colours.

The Shire of Carnarvon has some of the best locations in Western Australia for dark sky activities. Some key dark sky viewing locations in the Shire of Carnarvon are:

- + Quobba lighthouse
- + Dwyers leap
- + The OTC dish – OTC satellite earth tracking station
- + Cardabia Station

The dark sky principles included within the Dark Sky Tourism Position Statement should be implemented through land use mechanisms relating to areas where dark sky tourism is undertaken.

Other Tourism

The blowholes campground provides a range of campsites and shacks managed by the Shire, in accordance with the Blowholes Reserves Management Plan.

A number of other camping locations are provided by the Shire, notably Bush Bay a popular camping and fishing areas. The area is managed by the Shire of Carnarvon and may at times have an honorary camp manager to collect fees and rubbish.

There are also a number of 24 hour rest stops throughout the Shire, available for people to stay overnight.

4.3.8. RESOURCE MANAGEMENT

Agricultural And Horticulture

The industrial economy in Carnarvon is bolstered by long-standing industries in tourism, fishing, mining, agriculture, and horticulture. The region's climatic advantages allow growers to meet out-of-season demand in national and overseas markets, providing a variety of fresh produce year-round. Key crops include bananas, tomatoes, grapefruit, mangoes, and grapes. This continuous supply of fresh produce contributes significantly to the region's economic stability and growth.

State Planning Policy 2.5 Rural Planning gives context to the importance of planning for priority agricultural land. The guidelines state that priority agricultural land is land that is of State, regional or local significance for agricultural and/or food production purposes due to its comparative advantage in terms of soils, climate, water (rain or irrigation) and access to services.

The identification of priority agricultural land is based on land evaluation standards utilising high-quality agricultural land data, removing land required for existing and future urban/development areas, public use areas and land required for environmental purposes. The land capability assessment considers the ability of land to support the land use without causing damage. It thus considers both the specific requirements of the land use, e.g. rooting depth or soil water availability, plus the risks of degradation associated with the land use, e.g. phosphorus export hazard or wind erosion.

Horticulture

Carnarvon's main economic driver is food production. Produce from the horticultural, pastoral and fishing industries are sold directly and indirectly to the public. The Shire is a major supplier of food produce to Western Australian consumers. The sector is not reliant on tourism or visitation as food is a staple for all consumers. The Shire has the ability to grow and expand its global offering and distribution with improved promotion, effective marketing, and transport logistics.

Although the majority of Shire's land is zoned as 'Rural', the more intensively used agricultural land (zoned as 'Priority Agriculture') is primarily located within the Townsite of Carnarvon, with approximately 2,845 ha zoned for this purpose (Figure 37).

The Carnarvon Horticulture District, situated along the Gascoyne River's fertile delta, is known for its productivity in horticulture. This irrigated area ranks among Western Australia's most productive regions, yielding a diverse range of fruit and vegetable crops. These include bananas, table grapes, mangoes, melons, tomatoes, capsicums, and green beans, among others. The district's vegetable production is particularly noteworthy, with the majority taking place during the winter months. Carnarvon's abundant sunlight and favourable temperatures during this period create ideal conditions for vegetable cultivation, contributing significantly to the region's agricultural output.

There are approximately 170 plantations in the Carnarvon Horticulture District, cultivating an average of 1,200 hectares of land annually. In 2019, the district produced 39,150 tonnes of produce valued at over \$94 million. Efforts are underway to investigate land for future expansion, with plans to make it available in the near future. The district relies on irrigation water from aquifers beneath and adjacent to the Gascoyne River. This river is ephemeral, flowing only during high rainfall events in the inland catchment, which recharge the aquifers. Scheme water is provided by the Gascoyne Water Cooperative through an allocation and water trading scheme. Growers use water from the scheme and individual Department of Water and Environmental Regulation licensed bores for irrigation. Drip irrigation is the primary method used, maximizing water use efficiency.

Most of the produce is transported approximately 1000 kilometres south by trucks to serve the local Perth market. A smaller portion is shipped further to interstate and overseas markets.

The Gascoyne Food Bowl Initiative and the Gascoyne Food Bowl District Structure Plan (GFBDSP) allows for the creation of new horticultural land within the Carnarvon region. The GFBDSP facilitates horticultural activity and the future land use and development of the land. The development of additional land for horticultural purposes provides opportunities to diversify and cultivate the Carnarvon horticultural industry, matched with the appropriate allocation of water resources and infrastructure.

The GFBDSP covers approximately 600 ha of largely undeveloped land and is surrounded by existing northern and southern plantations, and vacant crown land. The GFBDSP allows for creation of approximately 22 lots.

Community engagement suggested that some diversification of the horticulture industry could assist in attracting visitors to Carnarvon through ancillary uses such as breweries, distilleries or farm stays.

Mining

The strategic location of the Carnarvon oil and gas basin presents considerable opportunities for the towns with the region to act as logistics and supply chain hubs to this critical Western Australian industry.

Neighbouring local government areas such as Exmouth plays a supporting role for the oil and gas sector, providing accommodation and services for residential and fly-in flyout workers as well as limited supply chain inputs to major projects. Expanding these supply chain opportunities into the mining sector and capturing a greater share of capital, operational and maintenance expenditure in the local economy will underpin economic growth in the region.

According to Minedex (DNIRS-001) data, the Shire has 255 mineral deposit sites in total. However, only 41 (16%) sites are under operation, and they are mainly located around Lake MacLeod, Lyndon and Carnarvon. The majority of the mineral deposit sites are still undeveloped, accounting for 175 sites (68%). The following table provides a summary on the quantity of mineral deposits sites and their development stage.

Table 46: Mineral Deposit Sites Summary

DEVELOPMENT STAGE	TARGET COMMODITY	COMMODITY	QUANTITY
Undeveloped	Potash	Industrial Mineral	1
Undeveloped	Salt	Industrial Mineral	1
Undeveloped	Tungsten - Molybdenum	Steel Alloy Metal	1
Undeveloped	Heavy Mineral Sands	Speciality Metal	2
Undeveloped	Bismuth	Speciality Metal	2
Undeveloped	Gem & Semi-Precious Stones	Industrial Mineral	2
Undeveloped	Construction Materials	Construction Material	2
Undeveloped	Limestone - Limesand	Construction Material	4
Undeveloped	Coal	Energy	4
Undeveloped	Silica - Silica Sand	Industrial Mineral	4
Undeveloped	Gem & Semi-Precious Stones	Precious Mineral	5
Undeveloped	Gypsum	Industrial Mineral	6
Undeveloped	Silver	Precious Metal	7
Undeveloped	Clays	Industrial Mineral	10
Undeveloped	Barite	Industrial Mineral	10
Undeveloped	Gold	Precious Metal	13
Undeveloped	Phosphate	Industrial Mineral	19
Undeveloped	Uranium	Energy	21
Undeveloped	Diamond	Precious Mineral	27
Undeveloped	Copper - Lead - Zinc	Base Metal	34
Shut	Gypsum	Industrial Mineral	1
Shut	Copper - Lead - Zinc	Base Metal	1
Shut	Limestone - Limesand	Construction Material	2
Shut	Gem & Semi-Precious Stones	Precious Mineral	3
Shut	Construction Materials	Construction Material	5
Shut	Gold	Precious Metal	7
Proposed	Construction Materials	Construction Material	1
Proposed	Other	Energy	1
Proposed	Unassigned	Other (Minedex Non-Minerals)	2
Operating	Petroleum	Energy	1
Operating	Gem & Semi-Precious Stones	Precious Mineral	2
Operating	Diatomite - Spongolite	Industrial Mineral	2

DEVELOPMENT STAGE	TARGET COMMODITY	COMMODITY	QUANTITY
Operating	Gypsum	Industrial Mineral	3
Operating	Salt	Industrial Mineral	4
Operating	Limestone - Limesand	Construction Material	6
Operating	Construction Materials	Construction Material	23
Care And Maintenance	Limestone - Limesand	Construction Material	1
Care And Maintenance	Gem & Semi-Precious Stones	Precious Mineral	2
Care And Maintenance	Construction Materials	Construction Material	13

The Shire is yet to be the subject of a major mining activity that would put pressure on the transport network, land supply, facilities, and amenities in the district. However, as mining activities occur in the Shire in future, economic contributions should be considered and made by the mining industries to support the delivery of roads and infrastructure to facilitate this. These are longer term challenges securing future mining investment that will need to be proactively addressed to encourage the greatest benefits within the community and population growth.

In the short term, the provision of temporary housing for mining workers will be a high priority. Some temporary accommodation could initially be planned at caravan park sites, which will require the identification of appropriate land to expand wastewater servicing and infrastructure. In the long-term caravan parks should retain their primary function as a tourist facility through the limiting of permanent residential occupancy of visitor accommodation through appropriate planning controls. Findings from feasibility studies into the Shire’s mining potential will inform whether a longer-term investigation of permanent housing supply is necessary.

Pastoralism

In Western Australia, a pastoral lease is an agreement that allows for the leasing of Crown land for the primary purpose of grazing livestock, such as sheep, cattle, and goats, on the natural vegetation (refer **Figure 28 in Section 4.2**). These leases grant rights only to the natural surface of the land, meaning lessees do not gain rights to the soil or timber. Besides grazing, pastoral purposes can also include agricultural, horticultural, or other supplementary land uses that are essential to, inseparable from, or normally carried out in conjunction with grazing. Activities related to these uses, including the production of stock feed, are permitted under a pastoral lease. Additionally, there are provisions for activities ancillary to grazing and related agricultural activities.

Pastoral farming spans extensive areas of the Gascoyne region, playing a crucial role in its economic landscape. The ability of these pastoral lands to support livestock fluctuates with the changing seasons, heavily influenced by rainfall patterns and the condition of the grazing land. Enhancing productivity within this sector is dependent on the ongoing advancement of land management techniques. Practices such as rejuvenating native plant life in areas that have suffered degradation, augmenting the moisture content of the soil by reducing runoff, and implementing other restorative methods are vital for the sector’s enduring growth.

In pastoralism, this means protecting natural capital through regenerative land management practices while leverage new opportunities in carbon farming. The Shire currently has carbon farming projects (**Figure 28 in Section 4.2**).

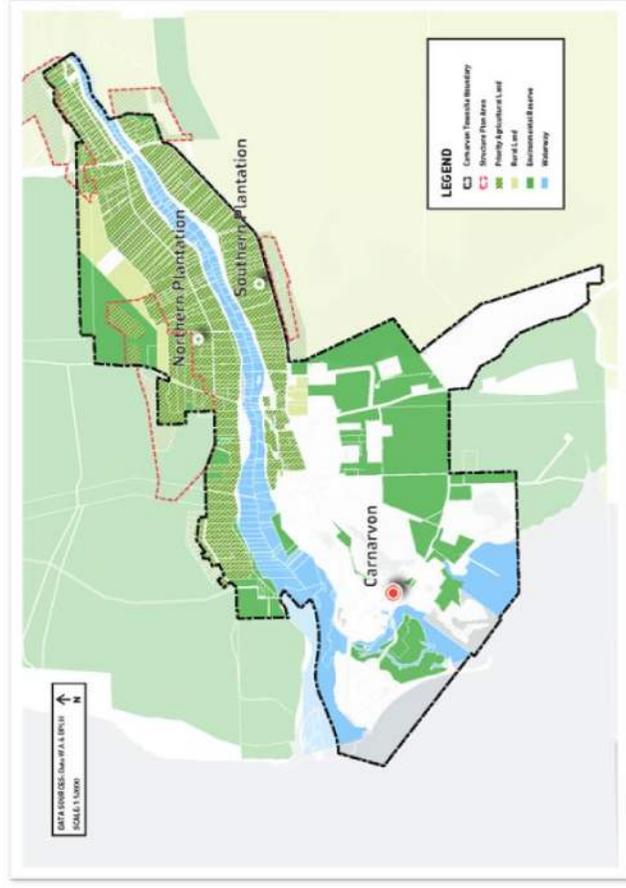


Figure 37: Agriculture and Horticulture

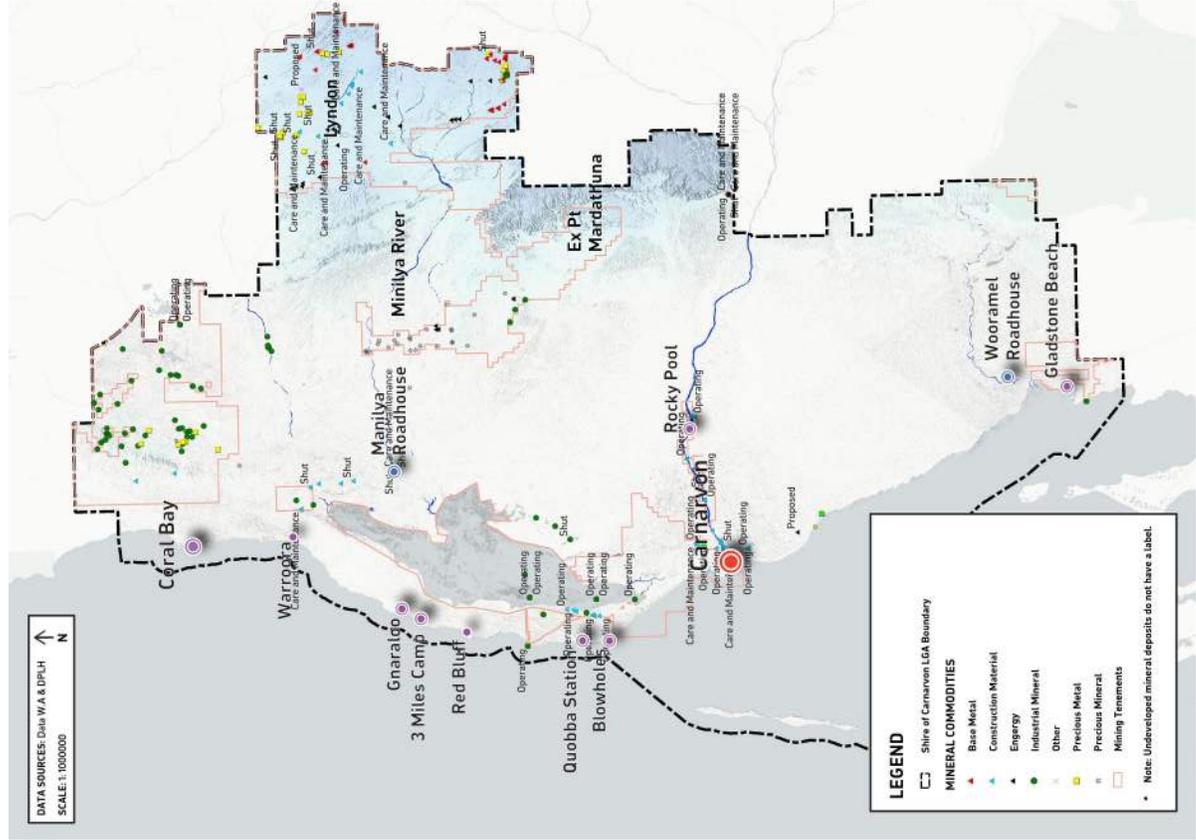


Figure 38. Mining and Mineral Commodities

Renewable Energy

The Shire’s strategic location, largely under explored, presents a considerable opportunity for new entrants into renewable and extractive industries. Carnarvon’s unique geographic location and climate provide prospects for the development of renewable and clean energy projects:

- + Abundant sunshine
- + Easy to access landscape
- + Proximity to existing infrastructure
- + Access to sea
- + Minimal rainfall
- + 4th windiest location in WA

These local specifics are already attracting the attention of companies such as Province Resources and Fortescue Future Industries, looking to invest in the development of renewable and clean energy projects such as renewable green hydrogen.

The Shire of Carnarvon is selected as the designated location for the groundbreaking HyEnergy® Project, a venture set to revolutionize the green energy landscape in Western Australia.

- + Town Common area to the north of the Carnarvon townsite will be used for the downstream processing facility, port facility, light industrial area, renewable energy facilities (wind and solar), incidental temporary workforce accommodation and associated infrastructure; and,
- + Pastoral Stations to the east and south of the Carnarvon townsite will be used for renewable energy facilities (wind and solar) and associated infrastructure.

Renewable Energy Facilities (REF) are an emerging major land use on Rural land and DPLH encourages local governments to address REFs via the local planning framework. Development controls may be flagged in the Strategy, and subsequently applied via both the local planning scheme and a local planning policy. Department of Primary Industries and Regional Development (DPIRD) have provided advice that regional local governments have a ‘REF ready’ local planning framework, as proposals may arrive with the Shire in an advanced state, putting pressure on assessors and decision-makers, particularly in the context of the new Significant Development Pathway projects.

The extent of Crown Land under Pastoral Lease in the Shire of Carnarvon is also significant, as proposals on Crown Land may be progressed via the ‘Lands’ section of DPLH, under the Land Administration Act, in the initial stage (e.g. via the Crown land enquiry process, and Section 91 licenses), this can mean that by the time they submit a planning application, a proponent has already progressed in their planning, and may be unwilling to modify their proposal. DPIRD have recommended having a local planning policy (LPP) in place, and requiring a planning application for REFs, as a way for Shire to prepare for future REF proposals. As an example, the Shire of Northampton designates REF as an ‘A’ use in their Rural zone, and they have a guiding LPP.

The big ideas for the future of Carnarvon identified in the Shire of Carnarvon Strategic Community Plan are summarised in **Table 47**.

Table 47: Strategic Community Plan Big Ideas – Renewable Energy

BIG IDEA	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Aim toward 100% Renewable Energy	The Shire to aim towards using 100% renewable energy plan in all its operations. Probably through multiple mechanisms such as executing a contract with Horizon Power to only use energy from renewable sources for lighting, facilities temperature control, pumping etc. Other routes might involve funding electric fleet or hybrid vehicles or installing solar panels to run specific buildings such as the aquatic centre.	Work with relevant stakeholders to identify opportunities for electric vehicle routes and charging locations.

Water Resource

The key water assets located in the Carnarvon consist of seasonally flowing surface water as well as groundwater sources.

The primary surface water source within the Carnarvon area is the Gascoyne River, which is the longest river in Western Australia, stretching out to 865 kilometres. The Gascoyne River is what is known as an upside-down river which conveys surface flows for 120 days of the year on average. Throughout the remainder of the year, the water is confined to underground flows.

The Gascoyne River has experienced flooding in past, with the 2010 flood being regarded as the most severe flood to take place along the river in Western Australia on record. As more and more seasonal changes occur, it will become increasingly important to ensure that suitable actions are taken to reduce the impacts of potential flooding. The Local Planning Scheme provides a basis for minimising loss of property and life from potential flooding by including ‘Special Control Area’ provisions. In general terms, the floodplain and floodway boundaries are defined in accordance with the 1 in 100-year flood levels and associated mapping produced by the Department of Water and Environmental Regulation.

Based on the significance of past flood events (most recently in 2000 and 2010), and substantial damage to buildings/ property specific design standards are required for flood prone areas, with such standards to be enforceable and negate or reduce the risk of loss to the property owner; increased height of flood water on adjoining property, and liability of injurious affection on land owners and the local government. The Department of Water uses the following guiding principles to assess whether proposed development in flood prone areas is acceptable with regard to major river flooding:

- + Proposed development has adequate flood protection from a 1 in 100 AEP flood event.
- + Proposed development does not detrimentally impact on the existing 1 in 100 AEP flooding regime of the general area.

For groundwater, the Shire of Carnarvon is wholly located within the Gascoyne Groundwater Area, which is a proclaimed management area under the Rights in Water and Irrigation Act 1914. The groundwater assets within the Shire comprise the Carnarvon Artesian Basin, which contains the Birdrong Aquifer. The area Birdrong Aquifer is roughly 50,000 square kilometre’s making it Western Australia’s most geographically extensive aquifer.

There is a single proclaimed Public Drinking Water Source Protection Area within the Shire of Carnarvon which comprises the Carnarvon Water Reserve. There is also a single un-proclaimed Public Drinking Water Source Protection Area: the Coral Bay Water Reserve. The Carnarvon Water Reserve water source protection plan is under review while the protection plan for the Coral Bay Water Reserve is in preparation.

4.3.9. ECONOMY AND EMPLOYMENT SUMMARY

The key issues and opportunities identified in the Economy and Employment theme are provided in **Table 48**.

Table 48: Economy and Employment - Issues and Opportunities

THEMES	ISSUES AND OPPORTUNITIES
Economic Context	<ul style="list-style-type: none"> + In post-covid period, disruptions in the supply chain have significantly affected the availability of both imported goods and domestically produced, value-added products. This has led to a notable shortage of materials for building and construction. Additionally, this scarcity has been exacerbated by a surge in demand within the construction sector, largely fuelled by unprecedented levels of post-covid government stimulus. + Gascoyne’s small population remains a key challenge. Efforts to improve living standards are central to attracting people to live and work in the region. Government services, accessibility via road and air infrastructure, amenity, and employment opportunities for resident populations are key. + Securing and retaining a suitable workforce will continue to be critical for most industries and employers. The shortage of residential housing across the region is a major barrier to development in all the Gascoyne’s key industry sectors. Cost of living and access to high quality essential public services including health care and education (including early childhood education) are key challenges. + The lack of variety and affordability in housing were noted as weaknesses of Shire. These factors contribute to, and are caused by other, mutually reinforcing weaknesses such as gaps in important essential services and worker shortages. + Issues in realising these opportunities are seasonal visitation and the lack of investment in new tourism products, the lack of necessary industrial infrastructure and workforce and skills shortages. + The cost of construction was identified in stakeholder feedback as a threat to economic opportunities as high costs reduce the viability of investment.

ISSUES AND OPPORTUNITIES	
Industry Analysis	<ul style="list-style-type: none"> + Agriculture (and Support Services), Aquaculture, Non-Metallic Mineral Mining and Quarrying, Other Transport, Fishing, Hunting and Trapping are the top industries and may present opportunities for economic development through expansion and supply chain development. + Agriculture, Preschool and School Education, Public Administration, Hospitals and Accommodation industries have high employment concentration factors and are growing. + Changes in FIFO employment appeared contradictory. Mining (the primary FIFO dominant industry) experienced negative change while employment in complementary FIFO industries such as accommodation and administration increased. + The Shire has strengths in relevant agriculture and tourism activities compared to all of WA and regional WA. However, tourism industries in the Shire employ 29% of the working population and experienced negative growth between 2016 and 2021. + Agriculture related strengths may have the opportunity to increase production by addressing constraints and promoting the adoption of new practices and technology. There may also be the possibility of supply chain development, for example increased food product manufacturing. + Tourism and population related strengths could benefit from both increased tourism promotion and initiatives that support population retention. There is also the opportunity to use activity centre planning and principles of economic activation to improve business viability (see Appendix 2). + Accommodation, Heritage Activities, and Other Transport have the opportunity to expand based on tourism demand. + The tourism economy should be leveraged to support opportunities in retail, and food and beverage opportunities; this may be achieved by applying economic principles of activation to maximise exposure of businesses to both visitors and residents. + Social assistance and personal services are particularly relevant in the Shire due to the identified level of disadvantage in Section 4.1 Demographic Profile & Population Forecast. There may be an opportunity to expand the provision in the Shire to achieve an appropriate provision compared to the State. + The Shire's comparative advantage in resource and energy industries. This is compounded by the efficiencies gained by the extent of existing heavy industrial infrastructure such as road networks, industrial areas, marine infrastructure. + Further developing the Shire's aviation industry to support extractive industries and FIFO-related infrastructure is an established economic opportunity for the Shire. Tourism development is also outlined an important opportunity that captures the Shire's comparative advantage. + Engagement indicated that projects such as the Lake Macleod Salt Mine, HyEnergy's Green Hydrogen, Babbage Island Resort, and Ningaloo Reef resort will create local employment opportunities in the Shire. + Emerging industries in the Shire will play a role in industry growth including dark sky tourism and the space sector and associated supporting industries such as position, navigation and timing, earth observation, communications technologies and services, space situational awareness and debris monitoring, leapfrog R&D, robotics and automation on Earth and in space and access to space.

ISSUES AND OPPORTUNITIES	
Commercial	<ul style="list-style-type: none"> + The majority of the existing commercial land is developed. There may be opportunities for consolidation, particularly within the Town centre to make more effective use of commercial land. + The Gascoyne Coast Sub Regional Strategy (2018) identifies 33 hectares of future commercial land at East Carnarvon. This includes the consolidation of the existing service commercial strip along Robinson Street, a precinct that comprises some areas currently zoned for light industry. Other future commercial sites identified include mixed use nodes at either end of Marmion Street as proposed in the East Carnarvon and Kingsford District Structure Plan 2015. Ensure future commercial land is identified in the Strategy.
Industrial	<ul style="list-style-type: none"> + Of the 173 hectares of current 'industrial' land identified in Carnarvon, some 102 hectares is considered to be capable of substantial further development. Virtually all of this is located immediately to the south of the established industrial area, on the eastern periphery of the airport site. It is also noted that numerous other large sites are proposed for potential industrial areas, subject to further investigation. + The future growth of industries in Carnarvon, particularly the expansion of the horticulture area, may require additional suitably located and serviced industrial and commercial land to accommodate associated service providers. Further research on this issue will be required in conjunction with any proposal.
Tourism	<ul style="list-style-type: none"> + There are a number of local tourist attractions, particularly focused on the natural landscape which surrounds the Carnarvon Township. + There is the potential to strengthen and expand the tourism offer through improved and broadened accommodation and exploration of unique tourism experiences that put Carnarvon 'on the map'. New tourism experiences such as AstroTourism Aboriginal cultural tourism, Staiton Stays, Self Drive Coastal adventures are key opportunities.
Resource Management	<ul style="list-style-type: none"> + Consideration to be given to the availability of water as the horticultural industry grows. + Mining and resource extraction activities are likely fixed based on resources available at the Carnarvon oil and gas basin; the main opportunity for the Shire is to increase the number of mining workers who live in the Shire. + The Gascoyne Region is strategically positioned to facilitate the development of new mineral resource, and renewable industry projects. Carnarvon currently serves as a crucial hub within the resource sector supply chain, supporting offshore oil and gas activities in the Carnarvon Basin, high-value salt operations at Useless Loop in the Shire of Shark Bay, and at Lake MacLeod in the Shire of Carnarvon. Additionally, the region offers substantial potential in rare earths, gypsum, limestone, and other essential raw materials. + The Carnarvon area is a prime location for renewable energy. Carnarvon has among the State's best locations for wind and solar energy generation, with consistent wind and sun. Ensure the planning framework is 'REF' ready to facilitate a smoother approval process for renewable energy projects. + The development of additional land for horticultural purposes in the long term may be required to provide opportunities to diversify and cultivate the Carnarvon horticultural industry, matched with the appropriate allocation of water resources and infrastructure.

4.4 ENVIRONMENT

4.4.1. CLIMATE

Climate

The Shire experiences an arid to semi-arid climate characterised by hot dry summer months and cooler winter months, making Carnarvon ideal for the growth of tropic and sub-tropical fruit and vegetables.

The hottest months occur between January and March with average temperatures ranging between 29.3°C (20.6°C) in December and 32.5°C (23.4°C) in February. In 2007, the Bureau of Meteorology recorded Australia's hottest March temperature at Carnarvon Airport with a maximum of 47.8°C. During the winter months, the average maximum temperature is a cooler 23°C between June and August with the average minimum temperature ranging between 10.9°C and 12.3°C.

The Shire receives an average of 226.9mm of rainfall yearly with the majority occurring during May, June, and July. There are occasions where tropical cyclones occurring during the summer months bring heavy rainfall and strong winds. Despite Carnarvon's location within an identified cyclone Region, the last cyclone to make landfall at Carnarvon was Cyclone Frank, a Category 3 cyclone which occurred in 1995.

Climate Change

Climate change has rapidly become an important consideration for Australia and presents a particular challenge in regional areas. The Gascoyne Region, including Carnarvon is expected to be impacted by climate change, including:

- + Increasing sea levels
- + Changing wind and rainfall patterns
- + Increases in the frequency and severity of tropical cyclone events
- + Increases in average temperature of up to 1°C by 2030
- + Increases in the rate of evaporation of surface water sources
- + Increase in drought due to the combination of lower rainfall and high evaporation.

The effects of climate change are likely to have a significant impact on the Shire of Carnarvon, which relies on its climate for key economic activities such as horticulture and fishing.

Planning proposals in areas subject to coastal vulnerability in the CHRMAP study (currently in progress) should address the policy measures of State Planning Policy 2.6 – State Coastal Planning Policy.

4.4.2. NATURAL AREAS

The Shire of Carnarvon, along with the Shires of Exmouth, Upper Gascoyne, and Shark Bay, is one of four Local Government areas which comprise the Gascoyne Region of Western Australia. The Shire is located centrally within the Gascoyne Region, bound by the Shire of Exmouth to the North, The Shire of Ashburton to the North-east, the Shire of Upper Gascoyne to the East, the Shire of Shark Bay to the South and the Indian Ocean to the West. The Carnarvon Local Government area is located approximately 900 kilometres North of Perth and spans an area of 46,663 square kilometres.

The Carnarvon Local Government area comprises a diverse range of landscapes, natural habitats, flora, fauna, and wetlands and not least of all is the gateway to two World Heritage sites, being Shark Bay and the Ningaloo Coast. Combined with the local climate, these features form the key natural assets which contribute to the inclusion of

the Carnarvon Local Government area within one of Australia's 15 National Biodiversity Hotspots (Department of Environment, 2014).

Topography

Using topographical data derived from Geoscience Australia's online database, National Map, the Shire of Carnarvon area is found to sit in location where land elevation ranges from -5mAHD to 640mAHD (Geoscience Australia, 2024).

Interim Biogeographic Regionalisation For Australia (Ibra)

The Interim Biogeographic Regionalisation for Australia (IBRA) is a biogeographic regionalisation of Australia developed by the Australian government's Department of Sustainability, Environment, Water, Population, and Communities. It was developed for use as a planning tool, for example for the establishment of a national reserve system.

All 89 Australian bioregions have some representation in the National Reserve System, with 62 bioregions having more than 10 per cent protected and 27 bioregions currently at less than 10 per cent. Some bioregions already have much of their total area protected, while other bioregions, such as those with large tracts of cleared land, have very little area protected. The bioregions and subregions are the reporting unit for assessing the status of native ecosystems and their level of protection in the National Reserve System. In this way, IBRA is used as a dynamic tool for monitoring progress towards building a comprehensive, adequate and representative CAR reserve system. Such information assists governments to decide how to best prioritise funding to meet national protection targets. IBRA is also used in the monitoring and evaluation of the Australian Government's natural resource management initiatives.

Carnarvon is an Interim Biogeographic Regionalisation for Australia (IBRA) region in Western Australia (Thackway & Cresswell, 1995). The area is also referred to as the Carnarvon Basin. It has two subregions:

- + Wooramel Sub Region
- + Cape Range Sub Region.

Soils And Regional Geology

The soils in the Gascoyne Region have many features that are common to semi-arid soils elsewhere in Australia. Most obvious is the red colouration of the soil which is due to soil particles covered by oxides of iron. Towards the coast, sandy calcareous soils are often lighter in colour due to littoral shell fragments and oxide leaching. Further, the browner calcareous earths differ again due to the high concentrations of carbonates and lower concentrations of iron oxides. Organic matter is low and concentrated within the top few millimetres. The alluvial soils of the Carnarvon plantation area are loamy fine sands or silty loams. They are well drained and alkaline. Fertility is high and only small amounts of nitrogen fertiliser are required for high yields.

Acid Sulfate Soils

Acid sulfate soils (ASS) are naturally occurring sediments that contain iron sulphides and are common within mangrove and saltmarsh areas. Left undisturbed, these soils do not pose a risk, however when they are exposed to oxygen, they react and create sulphuric acid which can impact water quality, flora and fauna and corrode metals. Regional ASS risk mapping indicates that the Shire of Carnarvon has 7232.9 ha of land that is considered to be a "high to moderate risk" of Acid Sulphate Soils and 224871.5 ha of land that falls within the "moderate to low risk" category. These areas are along the coastal area of the Shire.

Wetlands

Shark Bay East, McNeil Claypan System and Lake MacLeod are three of the wetlands of importance within the Shire of Carnarvon. The Lake MacLeod wetland is classed as a Priority 4 wetland and is under threat from mining and has two priority listed flora associated with it. The Shark Bay East wetland extends from the Shire of Carnarvon into the Shire of Shark Bay. This wetland has 4 priority flora associated with it and is under threat from recreational activities and pollution. The McNeil Claypan System is a smaller wetland north of the Shark Bay East wetland and is under threat from broad scale clearing that has occurred in the vicinity.

Rivers

The Gascoyne River is the longest river in Western Australia (865km). The river has its source between Meekatharra and Newman in the Robinson Ranges west of the Gibson Desert and flows into the Indian Ocean at Carnarvon. The Gascoyne River catchment covers an area of about 80,400 km².

The Gascoyne River flows for about 120 days of the year and for the rest of the year the river flows underneath the dry riverbed. The sandy riverbed acts as a huge water storage system and the water table (river's aquifers) lie below the desert sands. The river flows through many permanent pools that are valuable to both stock and native species. The river has enormous economic value to the region as it supports the Carnarvon Horticultural District. Horticulture is an important contributor to Western Australian production of fresh fruit and vegetables for both local and export markets. It is well placed geographically, offering short sea freight delivery times to many Asian and Middle East markets.

The Gascoyne River mouth has particular natural value in that it encompasses bird refuge and watching areas, fish habitat, and filtration for water entering into the World Heritage Areas and seagrass beds at Wooramel, Lorna Glen/Erahedy and the surrounding area is known for its unique biodiversity values. The native vegetation along the river upstream primarily consists of scattered perennial shrubs of various types amongst a very scattered acacia overstorey and supports an extensive pastoral industry.

Erosional features are widespread throughout the Gascoyne River catchment however and have increased over time. It is almost certain that these features have developed as a result of loss of groundcover since European settlement. It is known that vegetative groundcover reduces erosion, and it is clear that erosion would be much less if the catchment was in better condition. Improving catchment condition (perennial groundcover) is an important aim that will likely reduce the impact of minor and moderate flood events, in particular soil erosion. This will require long periods with greatly reduced grazing pressure and interventions at critical control points in the landscape. It is likely that future high rainfall events will continue to result in localised flooding, soil loss and damage to infrastructure unless catchment condition is improved.

The Gascoyne River has cultural significance to Aboriginal people who continue to undertake customary activities such as hunting, teaching, and carrying out religious responsibilities. Europeans discovered the river in 1839 by the explorer Lieutenant George Grey, who named it after a friend, Captain John Gascoyne. Captain Gascoyne was a member of the London Association for the Protection of the Interests of the Colony.

Flora And Fauna

The Carnarvon Basin is identified as one of Australia's 15 National Biodiversity Hotspots and provides various habitats for a diverse range of terrestrial and marine life. Most of the Carnarvon Local Government area remains uncleared apart from isolated areas within and surrounding settlements. However, as a result of historical grazing and pastoral activities occurring across much of the Shire, land outside of the Carnarvon Town Site has become degraded.

The natural vegetation within Carnarvon and the wider Gascoyne Region comprises of Spinifex, Wattle and Poverty Bush varieties. Closer to the coastal and wetter areas of the Shire, the vegetation variety diversifies significantly. Along the rivers and adjacent flood plains, several varieties of Eucalypt grow, together with Paperbarks. On the

alluvial flats, shrubs present are of the Bluebush and Saltbush species, while on wetter sites, the shrub Halosarcia is present. Around the coastal areas there is predominately mangroves.

The wide variety of both terrestrial and marine environments provides important habitat for diverse range of species. There are 66 species listed as threatened under the Environment Protection and Biodiversity Conservations Act, 1999 that have been identified within the Carnarvon area comprising of **(Table 49)**:

- + 33 Birds
- + 14 Mammals
- + 3 Plants
- + 1 fish
- + 9 Reptiles
- + 6 Sharks

Further, the various habitats within the Carnarvon area support 74 migratory species as well as 104 listed marine species. The Shire of Carnarvon area is home to a single Threatened Ecological Community (TEC), and three threatened plant species.

Table 49: Matters of National Significance

CATEGORY	DETAILS
Listed TECs	Subtropical Temperate Coastal Saltmarsh (Vulnerable)
Listed Threatened Species	<ul style="list-style-type: none"> + 33 Birds + 14 Mammals + 3 Plants + 9 Reptiles
Listed Migratory Species	74 species
Listed Marine Species	104 species
Commonwealth Land Parcels	20 (50346, 51881, 51885, 51883, 51882, 50266, 50352, 52235, 51433, 51097, 50363, 50362, 50367, 51095, 50361, 50365, 50366, 51096, 50364)
Projects within the Shire of Carnarvon that have had EPBC Act Referrals	<ul style="list-style-type: none"> + Boating Facility (controlled action) + Mauds Landing Marina (Controlled Action) + Boating Facility (Not Controlled) + Carnarvon Power Station Project (not controlled) + Flood Management Works (not controlled) + Rabbit Biocontrol (not controlled) + Northern Looping Project (not controlled) + Stomatolites Sampling (not controlled, particular) + Power Station (Referral Decision)
Nationally Important Wetlands	<ul style="list-style-type: none"> + Hamelin Pool + Lake Macleod + McNeill Claypan System + Shark Bay East

Due to the dominance of pastoral activity across the Shire, it has resulted in significant effects on the natural bushland and the condition of vegetation. Further, the introduction of goats, sheep and other livestock has had significant effects on the native flora and threatened environmentally sensitive sites and fencing is identified as a serious issue with management of livestock.

Environmentally Sensitive Areas

The Department of Water and Environmental Regulation (DWER) maintains a dataset of Environmentally Sensitive Areas (ESA) prescribed and regulated under the Environmental Protection (Clearing of Native Vegetation) Regulations 2004. ESAs are areas of land deemed to support conservation, heritage or marine environment value, or an area protected through existing State policy. ESAs include the following:

- + Declared World Heritage Property.
- + An area that is registered on the Register of National Estate.
- + Within 50m of a defined wetland.

- + The area covered by vegetation within 50m of flora declared as Rare under the Biodiversity Conservation Act 2016 and Biodiversity Conservation Regulations 2018.

- + An area covered by a TEC.

ESAs are only applicable when a clearing permit is required under these regulations. Where a clearing permit is required for an area that is situated within an ESA, none of the exemptions pursuant to the regulations apply. These areas have been identified in order to protect the native vegetation values of areas surrounding significant, threatened, or scheduled ecosystems or communities.

Examples of areas that are ESAs within the Shire of Carnarvon include:

- + Kennedy Range National Park
- + Hamelin Pool Marine Nature Reserve
- + Shark Bay Marine Park
- + Lake MacLeod
- + Ningaloo Marine Park

Coastline

There is nearly 400 kilometres of coastline within the Shire of Carnarvon. While representing a significant asset and presenting various opportunities, there is a need to acknowledge there may be competing economic, social and environmental demands that need to be carefully considered as part of planning for the future.

For the planning for the Shire of Carnarvon with a 10-15-year horizon, there are several key considerations including but not limited to the following:

- + The existing policy context
- + Land management responsibilities, including interactions with pastoral lease
- + The planning for settlements
- + The planning for tourism
- + Specific recommendations for the preparation of a new or amendment to the local planning scheme

Remote wilderness experience and exceptional climate are the main attributes that draw visitors to the Gascoyne. While the visitor's desire to "get away from it all" and "escape the cold" are key motivators, it is the unique natural attractions of the Region that are the undeniable drawcard.

Coastal Protection

In line with SPP2.6 Coastal Planning, all coastal areas in Western Australia must develop a Coastal Hazard Risk Management and Adaptation Plan (CHRMAP) for a 100-year time frame. The CHRMAP vulnerability findings may affect the planning strategy based on the modelling projection of coastal erosion and inundation.

The CHRMAP study is currently underway. The CHRMAP process includes a community engagement process. The CHRMAP essentially set the framework for the assessment of coastal risk over time, and by identifying coastal hazards, to analyse the vulnerability for specific assets. It will then provide a basis for the community through the Shire to identify and prioritise management and adaptation responses as part of an implementation plan. The CHRMAP process will provide strategic guidance for coordinated, integrated and sustainable land use planning and management decision-making by the Shire on behalf of the community. The CHRMAP will also guide necessary changes to the Shire's Local Planning Strategy, Local Planning Scheme, future amendments to the Coral Bay Structure Plan and other relevant strategies and local planning policies.

Marine Parks, National Parks And Reserves

Marine Parks, National Parks and Reserves help to conserve marine biodiversity and provide special places for people to enjoy, appreciate and learn about WA's natural landscapes and life. They all should be prioritised for protection. **Figure 39** provides an overview of the marine Parks, National Parks and Reserves within the Shire of Carnarvon.

Ningaloo Marine Park and World Heritage Area

The Ningaloo Marine Park is an 'A' Class reserve which follows the coastal strip of the Shire. The Park is vested in the Marine Parks and Reserves Authority and managed by the Department of Biodiversity, Conservation and Attractions (DBCA) and includes the 40m of land above high-water mark (adjacent to pastoral leases North of Amherst Point). The 'C' Class terrestrial reserve adjacent to the Coral Bay settlement is vested in the Conservation Commission of Western Australia and managed by DBCA for foreshore management. The conservation significance of Ningaloo Reef and surrounding marine areas has been recognised by State and Commonwealth governments and the marine park is noted for its diversity of ecosystems and habitats.

The Ningaloo Coast World Heritage Area was inscribed on the World Heritage List in June 2011. This creates an obligation on the Commonwealth and State Governments to ensure the world heritage values of the area are conserved. Accordingly, the Environment Protection and Biodiversity Conservation Act 1999 (the EPBC Act) regulates actions that will, or are likely to, have a significant impact on the world heritage values of a declared world heritage property. This includes relevant actions that occur outside the boundaries of a world heritage area.

Since July 2015, coastal portions of pastoral leases adjacent to the Ningaloo Marine Park have been excluded from the leases and managed by DBCA as additions to the conservation reserve system. The coastal portion of the Cardabia lease has been excluded and is currently vested as Unallocated Crown Land. The Strategy should continue to note additions of these areas to the conservation reserve system. This will ensure consistent protection strategies are applied across the entirety of the coastal environment and for the benefit of the general community.

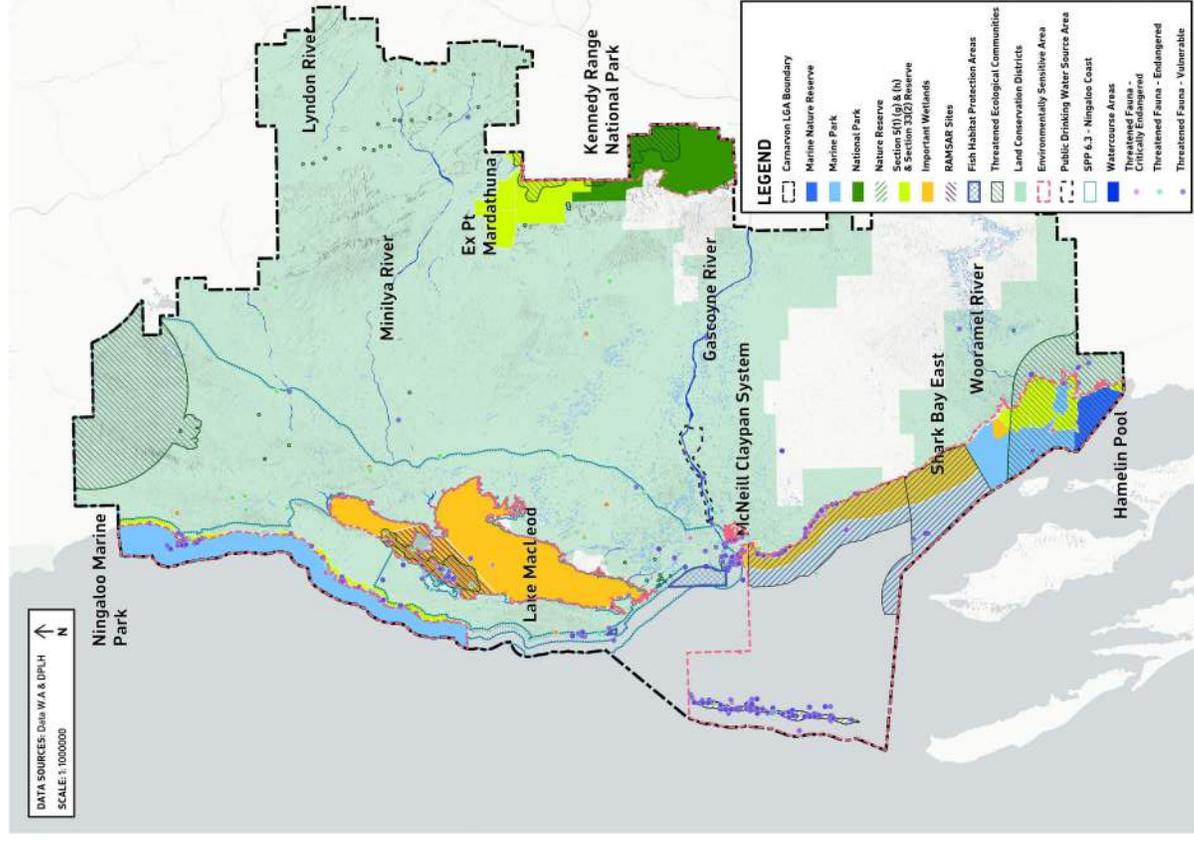


Figure 39: Marine parks, National Parks and Reserves

Shark Bay Marine Reserves and World Heritage Area

The Shark Bay coastline is a fragile land system of roughly 1000km encompassed by the Shark Bay Marine Park and the Hamelin Pool Marine Nature Reserve, both 'A' Class reserves. Government, landholders, and lessees have mixed responsibilities for managing these shores which have become the focus of intensifying recreational use. It is important that recreation and access to the marine reserves are facilitated on suitable areas of this coast. Shark Bay is an example of a relatively undisturbed ecosystem which displays significant geological and biological processes in its functioning. As well as the conservation values, the Shark Bay area displays several other important qualities including:

- + Cultural values (the coastline can contain remnant camp sites associated with early primary industry)
- + Recreational values (recreational and commercial fishing, camping, day use).
- + Educational and scientific values (the unusual geomorphology and range of fauna, flora and ecosystems provide extensive opportunities for public education and scientific and technical research)

The Shark Bay World Heritage Area was inscribed on the World Heritage List in 1991. The EPBC Act regulates the protection and maintenance of the values of the Shark Bay World Heritage Area. Any proposed action which will, or has the potential to, adversely impact on the world heritage values must be referred to the Shark Bay World Heritage Advisory Committee and the Commonwealth Government.

The Shire of Carnarvon includes several coastal sections of the Shark Bay Marine Park, including:

- + The Wooramel Special Purpose Zone (seagrass protection)
- + Gladstone Special Purpose Zone (dugong protection)
- + Disappointment Reach Sanctuary Zone
- + Around a third of the eastern coastline of the Hamelin Pool Marine Nature Reserve (the only marine nature reserve in the State)
- + Reserve 30885 (an 'A' Class Reserve for the Preservation of Sedimentary Deposits)
- + The Bernier and Dorre Islands Nature Reserve.

A 40m wide strip of unallocated crown land exists along much of the shoreline between the marine reserve boundaries and the pastoral lease boundaries. It is necessary for visitors to cross this area to access the marine park and this area is subject to increasing pressure and degradation from recreational use.

The Wooramel seagrass bank covers about 1,030 square kilometres and is the largest structure of its kind in the world. The bank structure is a major part of the Shark Bay ecosystem and is recognised as an essential nursery area for important fish and invertebrates, as well as an important area for dugongs. The bank contains various habitats for seagrass, molluscan fauna and mangrove and microbial mat communities in the inter-tidal and supra-tidal zones of the coast. The seagrass is vital to the nutrient cycles of Shark Bay.

The Gladstone area contains Halodule seagrass which is highly nutritious for dugongs and is likely why high numbers of cow/calf groups congregate in the summer months. The area is used mostly in the winter months by recreational line and net fishers who camp in the Gladstone area. During the summer months visitor use is restricted to local users who fish in the channels.

World heritage listing recognised that natural processes occurring in Hamelin Pool are of major ecological significance. Stromatolites, microbial communities, and other marine features around the tidal zone of Hamelin Pool are extremely fragile and sensitive to disturbance. Use of this coastline should be limited and controlled. The Shark Bay World Heritage Area also encompasses the Bernier and Dorre Islands and waters to the east. The shallow waters east of Bernier and Dorre Islands provide rich seagrass and coral habitats for many species including turtles and dugongs and many commercially fished species.

Lake MacLeod

The Lake MacLeod catchment covers an area of roughly 52,682 square kilometres. The coastal Lake wetland itself covers an area of 2,072 square kilometres and is separated from the Indian Ocean by coastal dunes and outcrops of limestone rock. At the furthest points, Lake MacLeod is 110km long and 40km wide.

Lake MacLeod is regionally and nationally significant due to its unique saline-freshwater habitat and is listed in the Directory of Important Wetlands in Australia. In 2006 the Northern Ponds were submitted for a Ramsar Convention listing, meeting five of the eight criteria required for a permanent listing. While no Ramsar site has been declared so far at Lake MacLeod, consultation is continuing with key stakeholders.

The Lake is a large evaporate pan and recognised wetland in the Carnarvon locality and has regionally significant environmental, social, and cultural values. The Lake has a Conservation Category status and is considered significant for migratory bird species. While the Lake is mainly dry, the episodic flooding by the Lyndon, Minilya and immediate tributaries following heavy rains provides great diversity to plant and animal species dependent on the changing habitat. The Region of the Lake holding water all year (irrespective of rainfall) is the Northern Ponds and overflow from the ponds also provides a source of water to the broader Lakebed.

Bernier, Dorre & Koks Islands

The vision for Bernier, Dorre & Koks Islands is to protect the unique natural and significant cultural values. Therefore, consistent with the recommendations from the Shark Bay Terrestrial Reserves Management Plan (2000), only low-key recreational day use may be provided, and camping will continue to be prohibited, except for research and management projects.

The following vegetation associations have been identified on Bernier and Dorre Islands:

- + On Bernier Island, open hummock grassland of spinifex (*Triodia plurinervata*) with mallée (*Eoraria*, *E. obtusiflora* subsp. *dongarraensis*) and *Melaleuca cardiophylla*, *Thryptomene baeckeacea*, *Acanthocarpus preissii* and *Beyeria cinerea* shrubs;
- + On both islands thicket shrubland of *Acacia* (*A. ligulata*, *A. sclerosperma*, *A. tetragonophylla*) shrubs over chenopods and shrubs of *Atriplex bunburyana*, *Ptilotus obovatus* and *Scholtzia leptantha*;
- + On the west coastline dwarf scrub open heath of *Diplolaena dampieri*, *Scaevola crassifolia* and *Westringia rigida*; and patches of drift sand, rocky outcrops, and samphire.

In 1986 Bernier and Dorre Islands were registered as protected areas under the Aboriginal Heritage Act 1972 and listed on the Register of the National Estate by the Australian Heritage Commission in 1985, based on the islands' natural values, and in 1987 the area's cultural heritage significance was added to the listing.

Kennedy Range National Park

The Kennedy Ranges National Park is a significant landscape feature, representing an isolated remnant of an older land surface. Beyond its remarkable geology and scenic beauty, the park is valued for a variety of natural attributes. One of the key priorities and projects for the Gascoyne Region until 2020 is the development of the Mt. Augustus and Kennedy Range National Parks as tourist attractions. This development includes plans to offer tourism accommodation and facilities in close proximity to these parks, aiming to enhance their accessibility and appeal to visitors.

The natural values include:

- + Representative of a remnant of an older surface, much of which has remained relatively intact due to the geology, relative isolation, difficulty of access and lack of permanent water over much of the area
- + Springs and soaks that provide important habitats for invertebrates that do not occur elsewhere in the region or do so only rarely

- + Mooka Spring and its associated creek represent a regionally significant aquatic system and an unusual ecological community
 - + A diverse mix of predominantly arid flora of southern affinities and with outliers more common in the south-west
 - + Diverse geology that is richly fossiliferous, including rare semiprecious gemstone and fossil occurrences, which helps unravel Australia's recent geological evolution
 - + Vegetation of top of the range that has been subjected to minimal livestock grazing
 - + Qualities of remoteness and naturalness not readily available elsewhere in the Carnarvon Bioregion.
- Cultural values include:
- + 187 Aboriginal sites have been recorded, to date, in and around the planning area
 - + An important part in the mythological history of the region Historic features such as the disused Binthalya Homestead and the relics of the old Merintleigh Homestead provide evidence of the former rich pastoral history in the planning area.

Management Objectives for Nature Reserves and National Parks

According to section 56(1) of the Conservation and Land Management Act 1984 (CALM Act), the Conservation Commission must aim to achieve or promote the purpose for which the land is reserved when preparing a management plan. For national parks and conservation parks, the plan should meet the demand for recreation by the public while maintaining and restoring the natural environment, protecting indigenous flora and fauna, and preserving any features of archaeological, historic, or scientific interest. For nature reserves, the plan should focus on maintaining and restoring the natural environment, protecting, and promoting the study of indigenous flora and fauna, and preserving any features of archaeological, historic, or scientific interest.

Additionally, when preparing a proposed management plan for any land, the Conservation Commission must aim to protect and conserve the value of the land to the culture and heritage of Aboriginal persons. This requirement underscores the importance of recognizing and preserving the cultural significance of the land to Aboriginal communities. The Strategy recognises the value of management plans under the CALM Act as valuable sources of info relevant to environmental, cultural, heritage and recreational values.

Contaminated Sites

Three contaminated sites are found within the Shire of Carnarvon which have management requirements, summarised below (DWER 2024, **Table 50**).

Table 50: Contaminated Sites

CATEGORY	DETAILS
Contaminated – remediation required	Parcel ID: 59274 Lot Number: 338 ON PLAN 256495
Contaminated – restricted use	+ Parcel ID: 9149 + Lot Number: 547 ON PLAN 205438
Remediated for restricted use	Parcel ID: 18149

4.4.3. NATURAL HAZARDS

There are a number of natural hazards which could impact the future planning and development in the Shire.

These primarily include coastal vulnerability, flooding, heatwaves, cyclones, and bushfire risk. Coastal vulnerability is addressed in **Section 4.4.2** Coastal Protection, this section focusses on hazards associated with bushfire, cyclones, and flooding.

Bushfire

Bushfires are a natural and periodic event in the Australian landscape, with many native flora and fauna species adapted to fire and often requiring it as part of their life cycle. The frequency and occurrence of fires within the Shire are influenced by various factors, including seasonal rainfall conditions, the accumulation of flammable materials such as vegetation and leaf litter, ignition sources like lightning or human activities, and the type of land use (urban, rural, pastoral, mining, amenity).

Among these factors, the availability of flammable material is a key determinant that affects the intensity, extent, and frequency of fires. Areas with intact remnant vegetation are at higher risk of bushfires, particularly when dwellings and infrastructure are located within 150 meters of such vegetation. It is crucial for the Town to consider these factors when assessing bushfire risk and implementing strategies to mitigate and manage potential fire hazards.

Future planning will need to consider natural hazards including bushfire risk, and further land use intensification in bushfire prone areas will be avoided unless risks have been adequately assessed and can be mitigated in accordance with SPP 3.7 Bushfire. The majority of the Shire is classified as a bushfire prone area according to the state-wide Map of Bush Fire Prone Areas designated by the Fire and Emergency Services Commissioner. This designation includes areas of existing development, primarily within the Town Centre. It is crucial to ensure that bushfire risk is appropriately considered in any future development to protect future residents and infrastructure from the unacceptable risk of bushfire. Implementing measures to mitigate this risk, such as strategic planning, appropriate building design, and vegetation management, is essential to ensure the safety and resilience of the community against bushfires.

Cyclones

Tropical cyclones are low-pressure systems that form over warm tropical waters which becomes a cyclone when there are wind gusts of more than 90km/h around its centre. When the wind gusts reach 165km/h, it's categorised as a severe tropical cyclone. In Western Australia, cyclones occur between November and April, however, can occur outside these months with an average of five cyclones each tropical cyclone season. Although located outside the most cyclone-prone region in Australia, The Shire is still susceptible to these intense weather events, such as cyclone Herbie in 1988.

Flooding

In 2015, the Government of Western Australia constructed flood levels to mitigate the impacts of large flooding events, such as those experienced in March 2000 and December 2010, on the horticultural district adjacent to Carnarvon. Despite the region's arid climate, Carnarvon has a history of regular flooding, which can be unpredictable and destructive. These floods can occur even without rainfall, affecting areas including Carnarvon and Coral Bay. The flooding is primarily caused by heavy rainfall associated with tropical lows and cyclones; however, the flow of water can originate from as far inland as the eastern side of the Great Northern Highway, between approximately 140km south of Newman and 160km north of Meekatharra.

The Minitya, Wooramel, Lyndon, and Gascoyne rivers are known to flood, on average, every ten years. These floods can result in injuries, fatalities, damage to infrastructure, disruption of essential services, and isolation of communities. They can also cause destruction of property and livelihoods.

The Gascoyne River, the longest river in Western Australia, has a catchment area of about 79,000 km2. It extends approximately 550 km inland to the east, near Three Rivers Homestead, and flows to the coast at Carnarvon. Understanding the risks associated with flooding and implementing measures to mitigate these risks are crucial for the safety and resilience of the communities in the region.

Recently, LIDAR survey results have been used to inform 3D modelling, and a flood study by GHD which should result in future flood maps. Up to date flood risk mapping should be included in the Strategy.

4.4.4. ENVIRONMENT SUMMARY

The key issues and opportunities identified in the Environment theme are provided in **Table 51**.

Table 51: Environment - Issues and Opportunities

ISSUES AND OPPORTUNITIES	
Climate	<ul style="list-style-type: none"> + The effects of climate change are likely to have a significant impact on the Shire, which relies on its climate for key economic activities such as horticulture and fishing. Therefore, it is important that sustainable approaches become the focus of economic development and diversity within the context of climate change.
Natural Areas	<ul style="list-style-type: none"> + There is a need to identify what natural assets are important to the Shire to ensure they are appropriately protected. + The consideration of environmental assets as part of planning processes should be guided by EPA Guidance Statement No33, which identifies environmental factors including but not limited to fauna and flora, marine parks and wetlands, water sources, soils, air quality, heritage sites. + Give consideration to the preparation of a Local Biodiversity Strategy that is relevant and practical in local context. + Access to and management of valued natural assets is a growing concern in ensuring the protection of these areas. + The protection of the coast and conservation reserve systems (through a Coastal Management Strategy or the like) will be an ongoing consideration for the Shire of Carnarvon. Further, the dealing and managing of those areas excised from pastoral leases will need to be addressed by the Shire in conjunction with the Department of Planning, Lands and Heritage and other relevant Government agencies. + Ensure the outcomes of the CHRMAP currently under preparation are integrated into the Strategy and Strategy Maps.
Natural Hazards	<ul style="list-style-type: none"> + Natural hazards are prominent throughout Western Australia and will remain a key consideration in both urban and regional areas. Although adjacent to the most cyclone prone region in Australia and considered a heavily prone bushfire area, the main concerns identified with natural hazards and mitigation measures in Carnarvon primarily relate to flooding. + Ongoing risk from cyclones, bushfires, flooding, and other extreme weather events further accessible by climate change. + More extreme weather events resulting from further changes to the climate. + A flood study has been prepared by GHD using LIDAR survey results to inform 3D modelling. Ensure Strategy includes up to date flood risk mapping.

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4.5 INFRASTRUCTURE

4.5.1. TRANSPORT NETWORK

Rail Network

There are no public transport or freight rail services that operate within the Carnarvon Region.

Bus Network

The bus network within the Shire of Carnarvon is limited, with services only operating within the Carnarvon town site. These bus services are managed and operated by TransCarnarvon. Only three bus services are available within the town site with the route description and service frequency summarised in **Table 52**.

Table 52: TransCarnarvon Routes

ROUTE NO	ROUTE DESCRIPTION	SERVICE FREQUENCY
802	Leaves Alexandra St After Olivia Tce and has a total of 11 stops.	5 services per day (2 to Carnarvon and 3 to Mungullah Village)
803	Leaves Alexandra St After Olivia Tce and has a total of 7 stops.	2 services per day
804	Leaves Alexandra St After Olivia Tce and has a total of 20 stops.	2 services per day

*bus services operate on Monday, Wednesday, and Friday only.

The three bus routes are shown in Figure 40. Route 803 and 804 are circular loop services which cover the main town centre area and its surrounds. Most bus stops along these routes are located at key landmarks and destinations throughout the town centre. Route 802 is an east-west service primarily traveling to/from East Carnarvon which provides a public transport link to the town centre for residents.

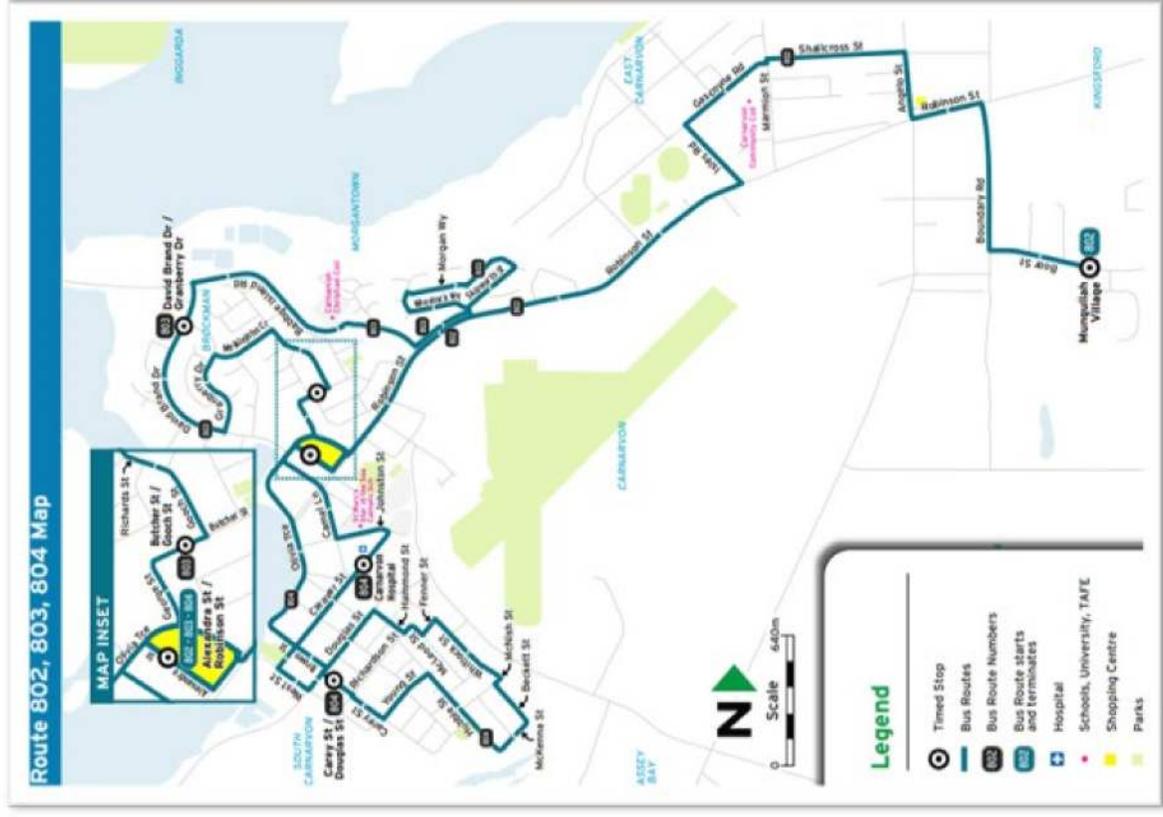


Figure 40: Carnarvon Public Transport Routes

Source: PTA

School Bus Service

School Bus Services also operate within the Carnarvon town site in the mornings and afternoons shuttling students to and from schools within the local area. **Figure 41** shows the school bus route for the morning and afternoon services.

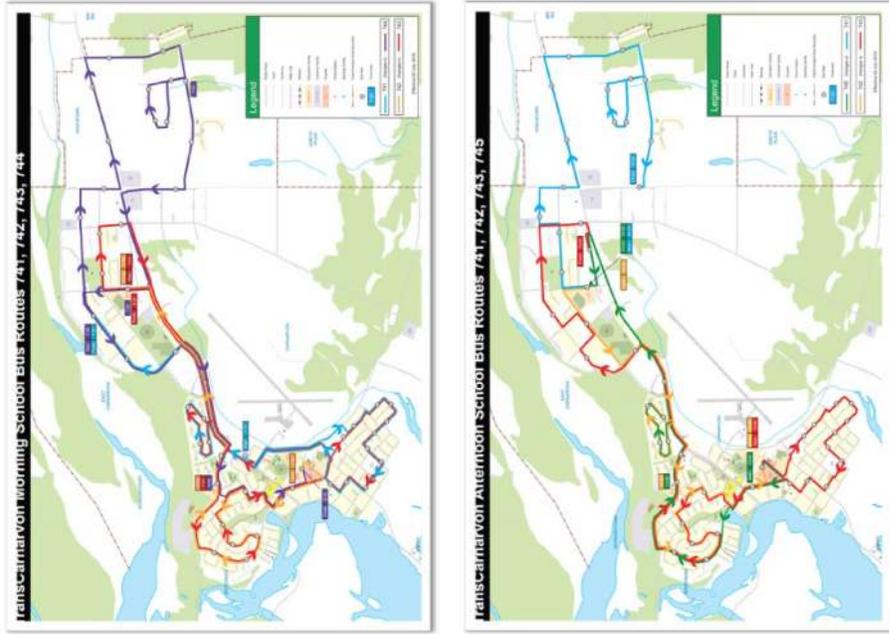


Figure 41: Carnarvon School Bus Routes

Source: PTA

Private Bus Network

While there are no regional public bus services, integrity Coach Lines provides a bus service between Perth, Carnarvon, and Coral Bay, connecting coastal tourist nodes within Western Australia. The bus operates three days a week (Sunday, Tuesday and Thursday).

Road Network

The existing local and regional road network is anticipated to have sufficient capacity to service additional demand and traffic volumes for the foreseeable future. The major road servicing the town is North-West Coastal Highway (NWCH). The NWCH links Geraldton to Port Hedland and provides the primary route for interregional freight movements and tourist travel. There are several upgrades planned for the Highway including widening carriageways, providing additional overtaking lanes, and improving the standards of road shoulders.

The road network under the control of the Shire can be separated into those roads servicing the town and those servicing the extensive pastoral, coastal and remote areas of the Shire.

The key roads that service the Carnarvon town site comprise:

- + HMAS Sydney II Memorial Avenue – provides a southern connection from the town to the NWCH. This road provides alternative access to the Carnarvon town centre; however, it lacks a defined purpose and does not receive the same level of traffic as Robinson Street.
 - + Robinson Street - the main distributor road for the town centre from the NWCH. The road falls within the jurisdiction of Main Roads WA (MRWA), although the Shire accepts responsibility for maintaining the road verge. There has previously been interest in extending the dual portion of Robinson Street, however the existing arrangement has sufficient capacity to maintain an acceptable level of service in the medium to long term.
 - + Babbage Island Road – provides the only vehicle access to the Babbage and Whitlock islands is along Babbage Island Road located at the northern end of the Babbage Island.
 - + Cornish Street – provides the key link between Carnarvon Road, Robinson Street and the primary industrial area. The increase in industrial activity and in particular freight will compel the widening of this road to allow for heavy vehicles.
 - + Douglas Street – links Carnarvon Road to Harbour Road and is surrounded chiefly by residential development. Future reconstruction is likely to be required to improve safety for local residents.
 - + Harbour Road – provides alternative access to Cornish Street from the NWCH. Further, this road is the primary means of access the Road Train Assembly Area located on Hudson Street. As future freight and industrial activity grows Harbour Road will be requiring sealing to Cornish Street to provide improved access to the industrial area for heavy vehicles.
- Other key roads that service the wider Shire area include:
- + Carnarvon – Mullewa Road – provides the primary link from the NWCH to Gascoyne Junction and the Murchison and Mullewa areas to the south. This road also provides access from the Carnarvon townsite to the Kennedy Range and Mount Augustus. Further, this road also serves as a key interregional and interstate route for the transport of horticultural produce.
 - + Blowholes Road – key route to the Blowholes settlement and tourist attraction.
 - + Quobba - Gnaraloo Road – Links the Blowholes with Quobba and Gnaraloo Stations.
 - + Lyndon Road – provide the primary means of access to pastoral stations in the North-eastern area of the Shire.

Local Road Upgrades

The aim of the Regional Strategies for Significant Local Government Roads is to identify and develop a significant road network to support and facilitate the development of the Gascoyne Region.

Tourism, centred on the Shark Bay World Heritage Area, Monkey Mia and the Ningaloo Marine Park continues to play a major role in driving the Region’s road infrastructure requirements.

Development of onshore support facilities for the Oil and Gas industry at Exmouth will also have a significant impact on the road infrastructure of North West Cape. Other important developments in the Region include the Carnarvon Flood Mitigation project and the associated road works on North West Coastal Highway

The following upgrades to local roads are identified in the Regional Strategies for Significant Local Government Roads (**Table 53**). The Strategic Community Plan identifies the need to upgrade the roads to Bush Bay and New Beach, and in the longer term upgrade the road to Miaboolya Beach and extend the road further north.

Engagement also identified the following road network suggestions:

- + Network and facility for larger vehicles – Carnarvon as an RV friendly town
- + Caravan drop-off area in Carnarvon for people to leave their caravan and then go and explore the town and surrounding area.
- + Large vehicle parking near the entrance to Coral Bay to allow people with caravans or boats to park and wait for accommodation and/or explore Coral Bay.

Table 53: Local Road Upgrades

ROAD TYPE	ROAD NAME	ROAD DEVELOPMENT NEED
Carnarvon – Mullewa Road	Carnarvon – Mullewa Road	A demand exists for an improved standard of road and a more direct east west link between the Gascoyne and Mid West and Goldfields – Esperance Regions to access new markets in these regions and in the Eastern States.
Carnarvon Townsite Roads	Robinson Street	The development need is to continually improve the standard of this road to better facilitate the growing users of this road.
	Cornish Street	With the increased demand for freight and local traffic, the Carnarvon community has identified a need to improve access and road safety to the industrial, boat harbour and CBD areas.
	Harbour Road	Road pavement areas requires renewal works to rectify poor quality subgrades and pavements and failing seals. Drainage capacity needs to be improved at the northern end. The Shire of Carnarvon has received DOT funding to undertake a feasibility study of Robinson Street to provide options for improved cyclist access.
Mine and Coastal Access	Blowholes Road	With the greater demand on Blowholes Road from the increasing numbers of tourist and mine site activities, the road is lacking the standards to cater for this demand.
	Quobba-Gnaraloo Road	Quobba – Gnaraloo Road is severely lacking in both safety and serviceability standards to meet the increasing number of tourists visiting the area.

ROAD TYPE	ROAD NAME	ROAD DEVELOPMENT NEED
North West Coastal Hwy To Kennedy Range And Mount Augustus Route	Lyndon – Minnie Creek Road Lyndon – Towera Road Mintilya – Lyndon Road	There is a need to provide more direct links and better standard roads between tourist destinations in the Gascoyne Region. For people living in the northern parts of the region, this proposal links Exmouth more directly than travelling via Carnarvon and the North West Coastal Highway.
Plantation Roads	Bibbawarra Road	With the ever-increasing demand of tourism and heavy vehicles utilising these roads, the standards have been found to be inadequate for safety and access.
	North River Road	
Robinson Street – Banksia Drive Route	Robinson Street Banksia Drive	Robinson Street traffic has increased in recent years due to increased visitor numbers. Traffic demand will continue to increase as Coral Bay accommodation is booked to capacity for months at a time during peak periods with further expansions of visitor capacity planned. Robinson Street traffic is often caravans, RVs and boats and as the current road is a dead end, this creates bottlenecks and congestion. High levels of pedestrian and other non-vehicular traffic are also present. The development need is for localised widening, additional on street parking, traffic calming and shared use areas to support tourism development and to improve road safety and reduced traffic congestion. Upgrade from Type 4 to Type 6 required. The extension of Banksia Drive is identified in the Coral Bay Settlement Structure Plan (WAPC Ref SPN-0557). Extension of Banksia Drive will provide alternative access existing tourism facilities and will support future tourism development of adjacent land parcels. Development of the road is needed to assist traffic flow and reduce congestion in the Coral Bay Settlement area. Problematic at present due to the Robinson Street dead end. Traffic numbers in the settlement continue to increase with all accommodation in Coral Bay booked to capacity for months at a time during peak visitor periods.
Wahroonga – Pimbee Road	Wahroonga – Pimbee Road	The Wahroonga-Pimbee Road has experienced increased tourist traffic travelling between the highway and the Shire of Upper Gascoyne accessing camping destinations such as Kennedy Range and Mt Augustus. Road also used for stock transport from Shire of Upper Gascoyne as a shorter direct route bypassing the Carnarvon townsite. Road is prone to washouts and has sections of reduced pavement depths and widths

Source: Regional Strategies for Significant Local Government Roads – Gascoyne Region (2021)

Pedestrian Network

The Walk Score walkability assessment tool considers the town of Carnarvon to be generally “somewhat walkable” where some errands can be accomplished on foot, with an overall walk score of 65 out of 100. This is due to most key essential services and the majority of housing being within a walkable catchment of the Carnarvon Town Centre.

While the quality of the pedestrian network is high in some places (along the fascine and within the town centre) the majority of the pedestrian network in residential areas is relatively poor, with many streets having inadequate footpaths and very limited amenity. Community engagement raised the following issues:

- + Lack of shade
- + Poor connectivity
- + Poor accessibility for wheelchairs and prams
- + Poor quality footpaths

Cycling Network

Cycling infrastructure within the region is scarce and mostly limited, consisting of local paths within town centres such as Carnarvon and Coral Bay. While most key arterial roads will contain at least one path abutting the road, many of these paths are narrow.

The Shire has also received funding over the last couple of years from the WA Bicycle Network Grant for several bicycle related projects as summarised below:

- + Shared path connecting Carnarvon Community College on Gascoyne Road to Lewer Road leading up to Robinson Street
- + Bicycle Path in Coral Bay from the town centre to the boat harbour
- + Carnarvon CBD Shared Space Study

The Department of Transport is currently working on the regional cycling strategy for the Gascoyne region in collaboration with the shires of Carnarvon, Exmouth, Shark Bay, and Upper Gascoyne. The Gascoyne 2050 Cycling Strategy aims to improve cycling within and across the region while also focusing on establishing local cycling networks within key townsite locations.

E-Mobility

There are limited electric vehicle charging facilities within the Shire of Carnarvon with most of them being located on private land and reserved only for guests or customers of the establishment. These include the following locations:

- + Carnarvon Motel
- + Outback Oasis Caravan Park
- + Big4 Plantation Caravan Park
- + Minitiya Bridge Roadhouse

A public electric vehicle charging station is available at the Carnarvon Visitors Centre which was installed in 2022 as part of the initiative proposed by the State Government to create Australia’s longest electric vehicle charging network (WA EV Network). The programme also includes plans of an electric vehicle charging station located in Minitiya. A small fee is incurred for the usage of these electric charging facilities.

EV charging point installed at the North West Coastal Highway turn off to Coral Bay. An electric vehicle charging station was available at the Ningaloo Reef Resort but is no longer accessible as it is currently closed for

redevelopment. While it is likely that the electric vehicle charging bay will be reinstated once the resort reopens it will still be for guest use only.

Freight

The freight network within the region is extensive covering hundreds of kilometres and accommodating some of the largest road trains authorised to use the road network. The Northwest Coastal Highway is a crucial link within the freight network which spans along the Western Australian coastline forming key strategic links to regional towns such as Exmouth, Onslow, Karratha, and Port Hedland. **Table 54** provides a summary of the roads within the Carnarvon region that are a part of the Restricted Access Vehicles (RAV) network. The RAV network map is also available on Main Roads WA website.

Table 54: Restricted Access Vehicles Network

ROAD NAME	RAV NETWORK CLASSIFICATION
Minitiya Exmouth Rd	10
Coral Bay	7
Sanctuary Rd	7
North West Coastal Hwy	9, 10
Blowholes Rd	7
North River Rd	8
Lawson St	4
Carnarvon - Mullewa Rd	10
Speedway Rd	10
Robinson St	4, 8
Illes Rd	8
Cornish St	8
Boundary Rd	8
Cleveland St	4
Harbour Rd	8, 9, 10
Hudson St	9
Collins St	9
Babbage Island Rd	8
Pelican Point Rd	8
Binning Rd	4
James St	6
Carnarvon Rd/HMAS Sydney II Memorial Ave	4
Douglas St	4
Boat Harbour Rd	4
Wairroonga - Pimbee Rd	6

4.5.2. AIRPORTS AND PORTS

AIRPORTS

Carnarvon Airport

Carnarvon Airport is serviced by Regional Express Airlines (REX) operating 8 services per week equating to approximately 23,000 passengers per year.

Carnarvon airport provides essential connections for freight as well as corporate business connections. Carnarvon provides an air transport link to other destinations for light aircraft including both general aviation and charters.

Air travel facilities within the Shire of Carnarvon comprise the Carnarvon Airport and the Coral Bay Airstrip. The Carnarvon Airport is owned and operated by the Shire of Carnarvon and serves as a major regional airport providing for daily passenger services throughout the Gascoyne Region and to Perth. The Airport has three sealed runways which provide for different aircraft. The runways are classified in **Table 55**.

Table 55: Carnarvon Airport Runway Details

RUNWAY CASA	CLASSIFICATION	CONSTRUCTION	LENGTH
Primary Runway	Code 3	Bitumen	1,679m
Secondary	Code 2	Bitumen	1,140m
Small Plane	Code 1	Natural Surface (silt/sand)	478m

Currently the Carnarvon Airport is unsuitable for use by commercial jet aircraft and is limited to smaller propeller driven aircraft. Further, the Shire of Carnarvon has determined the existing airport site is suitable for the foreseeable future although various upgrades have been foreshadowed. In order to upgrade the airport to accommodate larger aircraft, the future relocation of the airport has been key initiative of the Shire of Carnarvon, with a location identified north of the Carnarvon River. This site will need to be identified in the Strategy, and a Scheme Amendment undertaken should the airport relocation proceed. The relocation and upgrade of the airport is identified in the Shire of Carnarvon Strategic Community Plan and summarised in **Table 56**. While the relocation of the airport has been a priority for the Shire for several years, the ability to access and secure funding has been the major barrier. The Carnarvon Airport Structure Plan has been adopted by the Shire which will guide the future development of the Airport precinct.

In the meantime, State have provided some funding to cover upgrades to expand existing operations in the short-medium term.

Table 56: Strategic Community Plan Big Ideas – Airports

BIG IDEA	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Airport Relocation and Upgrade	Upgrade the airport to accommodate larger 737/A320 type aircraft. This will include the airport in the Australian aviation network and open up the Gascoyne to travel, FIFO from Carnarvon and export to overseas and domestic markets. The current site can be developed to satisfy residential housing and commercial demand right near the centre of town due to its locations services and developed ground. The project will require significant community support through the provision of accurate information and effective communication of reasons for the project. It will also require the development of relationships with federal and state governments and private enterprise.	A site has been identified to the north of the Gascoyne River on the North West Coastal Hwy (Lot 720), which is owned by the State government and currently reserved Environmental Conservation Reserve. It is recommended this site is identified to the Strategy Map to assist future rezoning. As the Carnarvon Airport Precinct Structure Plan is also due to expire in 2024, it is recommended that the structure plan is reviewed to enable the staged approach to developing this precinct can proceed.

Coral Bay Airstrip

The Coral Bay Airstrip comprises a natural surface runway suitable for light aircraft only and is typically utilised for charter flights. The Department of Transport (DoT) manages the airstrip which is located on Cardabia Station and owned by the Baiyungu Aboriginal Corporation. The airstrip currently meets the Civil Aviation Safety Authority and Royal Flying Doctor Service standards for both day and night operations.

Ports, Harbours And Boatramps Harbours

Carnarvon Boat Harbour plays a crucial role as a hub for both the commercial fishing industry and the recreational boating community. With amenities like Bickley Wharf, a boat ramp, and two service jetties, it provides essential facilities for various maritime activities. However, access to the Fascine, a waterway linking the Carnarvon townsite to the coast, has been restricted due to wave action, erosion, and siltation.

The Fascine Entryway Project has been completed in March 2024 to address the above issue following by the program initiated by the Department of Transport (DoT) in August 2020, as part of the WA Recovery Plan to find a solution for Fascine Access. The project is one of the largest dredging and sand stabilisation campaigns the waterway has seen; the work is to stabilise the sand spit at the entrance to the Fascine. The accompanying pen project and ramp upgrades were also delivered at Carnarvon Boat Harbour to include 16 modern, floating pens accommodating vessels up to 15 metres long, increasing by 50 per cent the number of pens and berths available.

Ports

The Shire have also identified the construction of a new port at Bejaling in the Shire of Carnarvon Strategic Community Plan, summarised in **Table 57**. Scheme Amendment 10 currently underway to create appropriate zoning for future port and associated facilities. This is largely driven by Province Resources as part of their HyEnergy Project.

Table 57: Strategic Community Plan Big Ideas – Ports and Harbours

BIG IDEA	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Bejalung Multiuser Port	Construction of a port that can accommodate cape-size vessels at Bejalung as an alternative for Cape Cuvier. Would build on studies and projections showing such a port would be useful to assist expansion of Rio Tinto's Lake McLeod salt mining production, FMG, Total Eren/Province, Rio Tinto, Sand mining, Jack Hills projects as well as proposed renewable and hydrogen proposals. Would require Environmental & Cultural Impact assessment & secure funding/investment.	This project is being driven by Province Resources as part of their HyEnergy Project mentioned above. Scheme Amendment 10 is currently underway to create appropriate zoning for future port and associated facilities. As the land is already going through a Scheme Amendment process, there are no implications for the Strategy, other than identifying the area on the Strategy Map.

Boat ramps

Three key dedicated boat ramps are provided for public access in the Shire of Carnarvon, with one located on the northern side of the Carnarvon Boat harbour, a second located at Pelican Point on Babbage Island, and a third at the Coral Bay Settlement. These provide important public boat launching access. Many informal opportunities for small boat launching are available from the beach, particularly within stations.

4.5.3. SERVICING

Water

Birdrong Sandstone is the main aquifer in the Carnarvon Artesian Basin and covers an area of some 25,000 km2. Artesian bores are found from south of Shark Bay to Exmouth and up to 70 km inland. The depth to the aquifer ranges from 120 m in the south to over 1500 m in the North. The basin is recharged through areas of outcrop along the eastern extent of the basin. The aquifer is estimated to recharge at a rate of 17,000 ML a year. There is an estimated 30GL a year available for commercial use.

Carnarvon's water is sourced from groundwater bores located along the Lower Gascoyne River. The Water Corporation and Gascoyne Water Cooperatives borefield extend along the Gascoyne River between Brickhouse Station and Rocky Pool and extract water from Subareas B-L. These supply 18 GL/year for Town Water Supply and 6-7GL/year for the irrigation industry via a reticulated supply system. Owners of horticultural properties along the North and south banks of the Gascoyne River extract about 5-6 GL of water from Sub-Area A via private bores.

Existing infrastructure for the town's water supply includes a disinfection treatment plant, pump stations, distribution mains and reticulation mains. The major storage tanks are located at Brown Range and both the low level (LL) and high level (HL) tanks have a capacity of 4,500KL. There is a further 186GL held in reserve for future town water supply.

Upgrades to water infrastructure, including irrigation pipelines, have also been undertaken to support the local horticulture precinct and its proposed expansion. In addition to expected future permanent populations, planning for future requirements for service infrastructure should take into consideration demand created by itinerant population (total peak populations), given that this could potentially have a significant impact on service demand.

In Coral Bay, the availability of potable water is one of the key limiting factors for development. The Water Corporation again draws water deep from the Birdrong aquifer (~ 800 m), which is then desalinated and disinfected prior to consumption. The depth and confined nature of the aquifer provide a high level of water quality protection. Within Coral Bay, the Water Corporation are currently using approximately 30% of the water that is allocated to them through their groundwater licence, issued by DWER.

Wastewater

Most of the existing Carnarvon townsite area is serviced by reticulated sewer. However, a large part of the South Carnarvon area is not connected to a wastewater system. This is chiefly due to engineering difficulties and high costs associated with high water tables, black swamp (acid sulphate) soils and dewatering problems. Further, the East Carnarvon and Kingsford area currently have no access to sewer. When a property cannot be connected to a reticulated sewerage system, the wastewater should be treated and disposed of.

Draft SPP2.9 Planning for Water Guidelines provides a minimum lot sizes for where reticulated sewerage is required, resulting in a number of future residential areas in Carnarvon being unable to be subdivided or rezoned to allow for greater residential densities.

Table 58: Draft SPP2.9 Minimum Lot Size Requirements

LOCATION/ LAND USE	MINIMUM LOT SIZE
PDWSA in rural, rural residential/rural living zones	One to four Hectares
In sensitive water resource area	One hectare
Outside PDWSA and sensitive water resource areas	2,000m ²

LOCATION/ LAND USE	MINIMUM LOT SIZE
<p>Outside PDWSA and sensitive water resource areas and:</p> <ul style="list-style-type: none"> + infill residential or commercial subdivision in existing urban areas; + residential and commercial subdivision in towns outside the Metropolitan and Peel Region Scheme areas without an established reticulated sewerage scheme; or + residential and commercial subdivision in towns outside the Metropolitan and Peel Region Scheme areas with existing sewerage schemes where unsewered subdivision at the density proposed is specifically provided for through the provisions of the local planning scheme or a local structure plan endorsed by the WAPC 	1000m ²

Development and subdivision should take into consideration the future impact of sewer connection and the resulting densification. The lack of provision of services constrains some land for development in Carnarvon. In particular, there is an absence of a reticulated sewerage system in large areas of the settlement, including South Carnarvon, East Carnarvon and Kingsford. Provision of appropriate service infrastructure may provide opportunities for urban infill and densification to be considered in affected areas.

The Carnarvon Wastewater Treatment Plant (WWTP) is currently located on Babbage Island Rd. to the north of the existing residential suburb of Brockman. Guidance for separation distances between industrial and sensitive land uses have been set out by the EPA, identifying that wastewater treatment plants have the potential for gaseous, noise, odour and risk impacts, requiring buffer studies to determine appropriate separation distances. A generic buffer is of applied involving drawing a line with a consistent radius (usually 500 metres) around the operational area of a treatment plant. Distances are based on many years of experience managing odour from treatment plants. This approach is used for most plants in Western Australia, especially those plants servicing smaller urban settlements. A number of existing residential houses (a sensitive land use) are located within this buffer at present. Being adjacent to the Gascoyne River, the current location of the Carnarvon WWTP impacts on a unique natural environment and many residential properties, and is constrained for future expansion at that site.

Water Corporation planning suggests the WWTP will be relocated around 2030, when the existing plant reaches its treatment capacity. The Water Corporation advises that:

- + Ground and hydrogeological studies have been carried out on the new WWTP site.
- + The new WWTP will be constructed to minimise odours and buffers will be defined by odour modelling.
- + The southern WWTP site was selected following consultation with stakeholder's and members of the community.

The Water Corporation have identified an alternative site well away from existing development. Potential implications regarding future buffer requirements should be integrated into local planning processes. Importantly, planning for a new wastewater treatment plant provides an opportunity for Carnarvon's future servicing requirements to be considered.

Long-term Water Corporation planning for the East Carnarvon and Kingsford area suggests the area will be connected to a reticulation sewer system in the future. This system will gravity drain to a new pump station and eventually into the new WWTP. It is recommended that the property location be identified and protected by a 500m buffer, both on the strategy map and in the new scheme.

Gas

The Dampier to Bunbury Natural Gas Pipeline (DBNGP) corridor is an area of land that houses the high-pressure gas pipelines which supplies gas to heavy and light industry consumers, electricity generation and homes within

Western Australia.

The DBNGP corridor is approximately 1,600km in length, starting from the Burrup Peninsula near the town of Dampier in the North West to Brunswick near Bunbury in the South West of Western Australia. The DBNGP corridor also includes land for various high-pressure gas pipeline laterals to service areas such as Carnarvon.

To minimise the impact of the DBNGP corridor on land use and vice versa, the DBNGP corridor was established on pastoral/rural/semi-rural land and where feasible, adjacent to rail and road reserves and property boundaries. Also, where possible, the properties through which the DBNGP corridor passes have alternative access provisions to allow for pipeline operators to conduct operations and maintenance with minimal disruption to land owners should additional pipelines be constructed in the DBNGP corridor in the future. The route was chosen to avoid built up areas where possible, but population growth and rezoning of land has increased population density close to the DBNGP corridor. This has raised the potential for unauthorised activity being undertaken in the DBNGP corridor, which could affect the integrity of the high-pressure gas pipelines.

Electricity

The existing Mungullah power station in Carnarvon has a total capacity of 18MW and has the ability to be expanded to provide for the Region's forecast growth. The power station is connected to the connection to Dampier to Bunbury gas pipeline and consists of five diesel-fuelled generators and five gas-fuelled generators. The power station has also been designed to allow for adding renewable energy expansion in the future to increase generation capacity. The Carnarvon townsite is also supplied with power from a small-scale photovoltaic facility. Outside of the townsite electricity is provided through private photovoltaic systems, wind farms and generators. The Dampier to Bunbury Natural Gas Pipeline (DBNGP) traverses the Shire and according to DMP there is reasonable chance that in future there will be new pipelines built connecting to the DBNGP either to supply gas to power generation facilities/developments or receiving natural gas from undeveloped gas fields.

There is no formal plan to replace overhead power lines with an underground reticulated network in the Carnarvon Region, but Horizon Power are retrofitting services where it is possible with available funds. According to Horizon policy, all new subdivisions should be underground developments to ensure security and reliability of power supplies.

Coral Bay's wind diesel power station is considered one of the most environmentally friendly power supplies in Western Australia. The facility consists of a combination of wind turbines, battery energy storage system and modified 'Low Load' diesel generators. The power station was officially launched in August 2007. Key elements of the design and operation of the facility include:

- + The facility consists of three 275kW wind turbines, seven 320kW containerised low-load diesel generators, a 585kVA energy storage system, two 81,000L bulk diesel storage tanks and a 2,000L diesel day service tank.
- + The system saves more than 500,000L of diesel (compared to Diesel only) which equates to a greenhouse gas emission reduction of 1,300 tonnes a year.
- + The wind turbines can be laid on the ground for maintenance or during bad weather such as prior to cyclonic storm events.
- + At times the wind turbines can deliver 100% of the settlement's electricity; however, on average more than 60% of Coral Bay's electricity supply per year is generated by the wind turbines.
- + Average current draw on the system is approximately 600kW per day. The system has ample capacity to enable expansion to the Coral Bay townsite population.
- + The power station is owned and operated by Verve Energy. Horizon Power owns and operates the underground distribution network and retail electricity to customers.

There are existing renewable energy projects in Carnarvon and there is further potential to expand these

opportunities, including solar, wind and tidal energy.

Communications

Telstra’s Optic Fibre network runs up the NWCH less than 3km out of Carnarvon. The fibre cable branches off and runs into the town’s main exchanges.

Coverage maps for the NBN Co suggest that Carnarvon is to be included in the rollout. The areas of roll out are limited to Brockman, Brown Range, Carnarvon, East Carnarvon, Kingsford, Morgantown, and South Carnarvon. Now these areas are serviced with NBN.

Developers of new residential estates have the option to pay an extra fee to Telstra or an alternative service provider for provision of a high-speed broadband network. In either case the developer will be responsible for installing all pit and pipe infrastructure which will be required to accommodate a future high speed broadband network. Several Internet Service Providers (ISPs) operate in Carnarvon and ADSL is available to many residents. However, there are still major issues with some areas of the community only having access to dial up or satellite broadband. The network continues to be upgraded.

3G coverage is available with Optus and Telstra, with Optus limited to Carnarvon Townsite and Coral Bay only. Telstra towers are intermittent along the NWCH. Optus recently relocated their tower to Robinson Street and indicated a future development of 4G coverage. Television and radio service needs are well met with the full range of digital channels available to the community. The Square Kilometre Array (SKA) 150km – 260km RQZ and SKA 70km–150km RQZ – Outer Zone) is shown on the Shire of Carnarvon – Whole of Shire Strategy Map and indicates the constraint on the use of radio signals in this area.

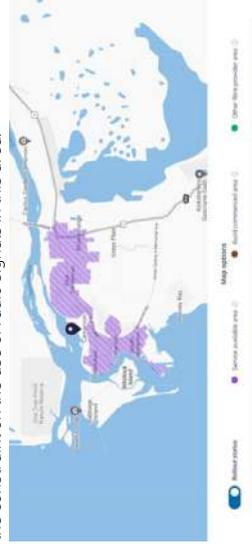
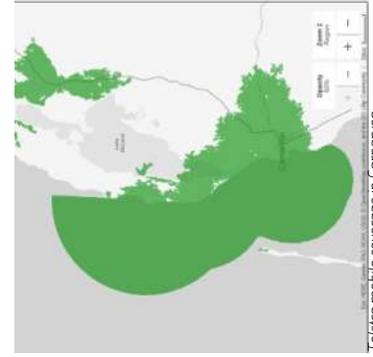


Figure 42: NBN Coverage in Carnarvon



Figure 43: Mobile Coverage in Carnarvon



Telstra mobile coverage in Carnarvon

Waste

Within Coral Bay, the need for an alternative land fill site or waste transfer station has been identified for some time with the Shire of Carnarvon indicating the preferred option being in a location adjacent to the existing wastewater treatment facility approximately 6km east of Coral Bay. The CBSSP recommends that relocation of the waste disposal site occurs within 5 years (from 2024). The Shire have also identified the need for a recycling and processing centre in the Shire of Carnarvon Strategic Community Plan, summarised in **Table 59**.

Table 59: Strategic Community Plan Big Ideas – Waste

BIG IDEA	DESCRIPTION	STATUS AND STRATEGY IMPLICATIONS
Recycling and Processing Centre	Develop a business structure for a recycling plant to process and repurpose materials based on models of sustainable recycling facilities already existing (e.g. composting, metals, rubber, paper etc.) Empty trucks moving to and from mining sites can reduce transport costs of moving recycled material to utilization points. Operational facilities to be run through sustainable, renewable energy.	No action has been taken on this yet. Two locations for the Recycling and Processing Centre have been identified: + in the area of the Multiuser port, as part of Scheme Amendment 10; + or in general industry zone.

4.5.4. INFRASTRUCTURE SUMMARY

The key issues and opportunities identified in the infrastructure theme are provided in **Table 60**.

Table 60: Infrastructure - Issues and Opportunities

ISSUES AND OPPORTUNITIES	
Transport Network	<ul style="list-style-type: none"> + Linkages to key tourist attractions and other settlements will be a key consideration in expanding and developing the tourism industry. + Banksia Drive and Robinson Street to be shown on strategy maps as important components of the movement network for Coral Bay. + Establish a freight transport laydown area in Carnarvon for trucks going from Broome, Exmouth, and Geraldton to Perth. Continued dialogue with both local and regional industry stakeholders and the implementation of an Economic Development Action Plan. Acknowledgment of potential challenges associated with long-haul transport movements at present (e.g. multiple drivers negotiating need for stopovers); with a view that there will be potential opportunities in the future if Carnarvon can position itself as a hub and 'open for business'. + Collaborate with the Department of Transport on the Gascoyne 2050 Cycling Strategy to develop a cycling network for the surrounding region and key townships. + Given the strategic importance of Northwest Coastal Highway for the surrounding region, a pre-emptive study should be considered to explore the impacts of future demand due to freight and tourism including the appropriate actions to undertake to ensure that the road continues to operate without issues. The main issue regarding Northwest Coastal Highway is that it is owned and managed by Main Roads WA and while the Shire will be consulted on any proposed studies and/or road upgrades Main Roads will ultimately make the final decision in this regard. + The frequency of bus services within the Carnarvon town site is low and only operates on select weekdays. The low frequency of services can be perceived by some as unreliable which also discourages them from using this service, preferring travel by private vehicle. Furthermore, the low population means that the overall demand for bus services may not be sufficient to justify the increase in frequency. While this suggests that an increase in bus frequency is unviable, the influx of tourist during holiday periods may create enough demand for a temporary increase in service frequency during these specific periods. + Coral Bay currently does not have any electric vehicle charging stations that are available to the general public and would benefit from having one installed that can be easily accessible by the community and visitors. + The Shire of Carnarvon Economic Development Strategy 2023 – 2028 envisions that Carnarvon will play an important role in the renewable energy sector. Consider investigating and investing in infrastructure to improve logistic and transport routes from Carnarvon to other key regions. + Investigate opportunities to encourage walking and cycling including potential infrastructure improvements within Carnarvon and Coral Bay. + The Strategic Community Plan identifies the need to upgrade the roads to Bush Bay and New Beach, and in the longer term upgrade the road to Miaboolya Beach and extend the road further north.

ISSUES AND OPPORTUNITIES

Airports and Ports

- + The Carnarvon Airport Structure Plan will guide future land uses and development within the Airport and the immediate surrounds.
- + The Shire has reserved land to the north of Carnarvon for a future airport development, to be identified on the Strategy Map.
- + Identify the preferred location for the proposed Multiuser Port on the Strategy Map.

Servicing

- + Connection to sewer largely dictates ability to release land for development. The Shire may be able to seek State Government support for the funding of inflit sewerage programs and similar. As part of structure planning, arrangements may need to be established that address both interim and ultimate infrastructure delivery – to facilitate subdivision and development in a timely and cost-effective manner.
- + Potential issues with access to services and infrastructure during natural disasters.
- + Planning for water (agriculture, industrial, domestic) is a key consideration and is being considered as part of wider discussions with the Shire and Government agencies.
- + Identify on the Strategy Map a preferred location for a new Wastewater Treatment Plant and corresponding 500m buffer protection zone.

4.6 CONCLUSION

Part Two of this Strategy has provided an overview of the relevant planning context, data, analysis and issues arising that are pertinent to land use planning outcomes in the Shire. The information and interpretation of the implications for the Shire, form the rationale underpinning the Strategy actions contained in Part One. The Strategy provides in some cases recommendations for revised provisions or land use classifications, or other instances suggests additional studies be undertaken to address and support resolution of the issues through planning and organisational partnerships, during the years ahead.

ACRONYMS

ABS	Australian Bureau of Statistics
BMP	Bushfire Management Plan
CHRMAP	Coastal Hazard Risk Management and Adaptation Plan
COVID-19	Coronavirus
DoT	Department of Transport
DPLH	Department of Planning Lands and Heritage
LPP	Local Planning Policy
LPS	Shire of Carnarvon Local Planning Strategy
LPS13	Shire of Carnarvon Local Planning Scheme No.13
POS	Public Open Space
LDIP	Local Development Plan
LPP	Local Planning Policy
RAP	Reconciliation Action Plan
SCA	Special Control Area
SEIFA	Socio-Economic Indexes for Areas
SPP	State Planning Policy

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05 APPENDIX 1

Carnarvon Local Planning Strategy Engagement Outcomes Report

**CARNARVON LOCAL
PLANNING STRATEGY
ENGAGEMENT OUTCOMES
REPORT
JULY 2024**



SHAPE URBAN



ACKNOWLEDGEMENT

Shape Urban acknowledge the Yinggarda and Baiyungu people as traditional custodians of the land on which we have worked for this project. We recognise their cultural heritage, beliefs and relationship to the land, which continue to be important to the Yinggarda and Baiyungu people today.

We pay our respects to Elders past and present, and to the land which they have cared for.

This document has been prepared with the support of many people from the Shire community. We wish to acknowledge the Shire community for your contribution.

PROJECT PARTNERS

SHAPE URBAN

Hames
Sharley

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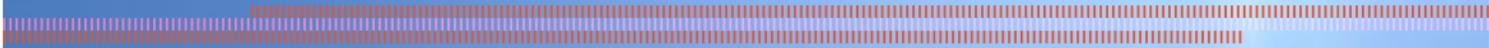
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DOCUMENT CONTROL

Carnarvon Local Planning Strategy Engagement Outcomes Report - July 2024

No.	Author	Reviewed By	Date	Purpose
1	R Doohan	A Kelderman	24 June 2024	Draft for HS Review
2	R Dohan	G Young	1 July 2024	Draft for client review
3				
4				



EXECUTIVE SUMMARY

The Shire of Carnarvon has commenced a review of its Local Planning Strategy. Preliminary engagement is a key component of preparing the draft Local Planning Strategy to understand the vision and aspirations for the future.

Input from community and stakeholders was facilitated through in-person and online engagement, including:

- + Community drop in session at the Carnarvon Library (14 May 2024)
- + Community workshop in Carnarvon (18 May 2024)
- + Online community and stakeholder workshop (22 May 2024)
- + Online survey (26 April - 2 June 2024)
- + Stakeholder meetings in Carnarvon, Coral Bay and online (May 2024)
- + Staff workshop in Carnarvon (15 May 2024)
- + Council workshop (14 May 2024)

The key outcomes of the engagement include:

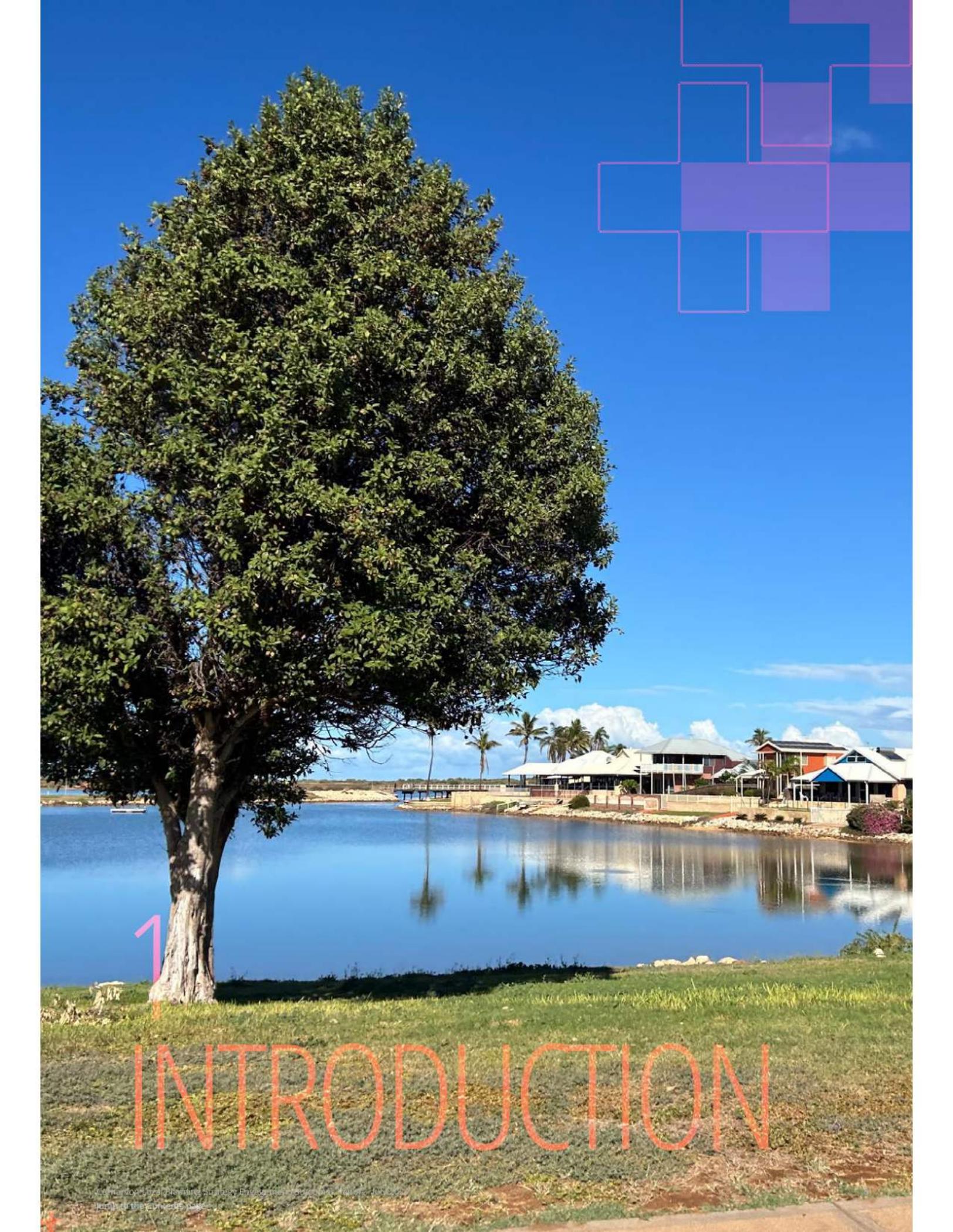
- + Need to provide diverse housing option of different sizes to accommodate singles, families, aged and workers.
- + Consider reusing vacant or old building stock rather than building new housing.
- + Need for aged care, child care and maternity facilities.
- + Protection of environmental and cultural assets is important, including One Mile Precinct, Blow Holes, Ningaloo Reef, Gascoyne River, Bibawarra Bore, tramway and cemetery.
- + Encourage growth and create opportunities and incentives to invest in the town.
- + Consideration and improvements to active transport networks such as cycling and pedestrian paths in town.
- + Manage development to avoid flooding and other coastal risks.
- + Waste management in Coral Bay.



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1

INTRODUCTION

1 INTRODUCTION

1.1 Background

The Shire of Carnarvon (SoC) has commenced a review of its Local Planning Strategy (the Strategy). An updated Local Planning Strategy is to be prepared in accordance with the *Planning and Development (Local Planning Schemes) Regulations 2015*.

The project study area includes the entire SoC, spanning an area of approximately 46,500 km². Carnarvon is recognised as a regional centre and Coral Bay as a tourism centre in the State Planning Framework.

1.2 Purpose of this Report

Preliminary stakeholder consultation with members of the community, relevant government agencies and other stakeholders, is strongly encouraged under the *Local Planning Strategy Guidelines* (Western Australian Planning Commission, March 2023).

In addition, once the draft Strategy has been prepared, it must be formally advertised in accordance with Regulation 13 of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

The purpose of this report is to summarise the consultation undertaken as part of the preparation of the Strategy.

A separate project to review components of the Coral Bay Settlement Structure Plan is also being undertaken. Engagement for this project was undertaken in conjunction with the preliminary engagement for the LPS and is summarised in a separate report.

1.3 Engagement Methods

As noted in section 1.2, engagement for the project occurs at two key points in the project.

1.3.1 Preliminary Engagement

The purpose of the first phase of engagement was to seek input into the Local Planning Strategy from the community and stakeholders.

Feedback was sought both online and in person, via:

- + Community drop in session at the Carnarvon Library (14 May 2024)
- + Community workshop in Carnarvon (18 May 2024)
- + Online community and stakeholder workshop (22 May 2024)
- + Online survey (26 April - 2 June 2024)
- + Stakeholder meetings in Carnarvon, Coral Bay and online (May 2024)
- + Staff workshop in Carnarvon (15 May 2024)
- + Council workshop (14 May 2024)

1.3.2 Formal Advertising

Formal advertising of the Local Planning Strategy is required under Regulation 13 of the *Planning and Development (Local Planning Schemes) Regulations 2015*.

Feedback will be provided via written submission and is anticipated to occur in late 2024/early 2025.

This section of the report will be updated following the draft LPS consultation stage.





2 COMMUNICATION METHODS



2 COMMUNICATION METHODS

The project and the opportunity to get involved, was shared through a variety channels.

2.1 Shire Website

The Shire’s website was used to provide a central location for all project information. This included frequently asked questions, details for getting involved and useful links.

An article was shared on the Shire’s Online News on 7 May 2024, to promote the commencement of the project and opportunity to get involved.

2.2 Social Media

The Shire’s Facebook was used to raise awareness of engagement opportunities. The posts shared are listed in Table 1.

2.3 Direct Mail and Emails

Letters and emails were sent to key stakeholder with an invitation to meet with the project team and/or raise awareness of the project and opportunities to get involved.

2.4 Displays and Flyers

Notices and flyers were made displayed at various locations, including:

- + Carnarvon Papershop – on noticeboards and A5 flyers at the counters.
- + Carnarvon Menswear – in their window and A5 flyers at the counters.
- + Norwest Surf Store – displayed on side wall
- + Gascoyne Bakery – window display
- + Pharmacy 777 – noticeboard
- + Boulevard Shopping Complex – displayed at the entry of Woolworths
- + Coral Bay – flyers distributed throughout the town.

2.5 Markets

The Shire had a pop-up stall at the Saturday Markets where they promoted various things that were going on in the Shire. Information about this project was shared at the event.

Table 1 Facebook posts

Publication date	Summary of Facebook post content	Reactions	Comments	Shares
5 May 2024	Promoting engagement opportunity - both online and in person.	9	0	3
9 May 2024	Promoting opportunity to get involved.	5	2	7
14 May 2024	Promoting community workshop	11	1	8
18 May 2024	Promoting community workshop happening that day.	3	0	1
20 May 2024	Thanking community for attending workshop and promotion of online workshop.	1	0	0
TOTAL		29	3	19



3 PRELIMINARY ENGAGEMENT OUTCOMES

- Housing: Culture, Heritage, Community
- Public Space: Shared, Social, Recreational, Institutional
- Development: Create, Control, Retain, Renew
- Employment: Tourism, Industrial, Shops



- LEGEND**
- 1 Management of foreshore reserves
 - 2 Prohibition of a drive-in and permanent structures
 - 3 Re-location of waste disposal site to land
 - 4 Potential relocation of Coral Bay Airline
 - 5 Tourism development opportunity
 - 6 Overflow caravan & camping during peak season
 - 7 Relocation of the existing fuel station
 - 8 Worker accommodations
 - 9 Ningaloo Reef Resort Staff Accommodation
 - 10 Ningaloo Reef Resort
 - 11 Existing commercial opportunity & relocation of WA Country Health Service
 - 12 Opportunity for expanded tourism signage & an Indigenous Interpretive Centre
 - 13 Opportunity to create workers accommodation with workshop and storage for a site, locate, investigate expansion of site size or site
 - 14 Waste water treatment facility

Coral Bay
Refracture it
to
bring
water
back
in

Water Park
on main
beach area

Get lucky
Pool a little up
- from road in

3 PRELIMINARY ENGAGEMENT OUTCOMES

Preliminary engagement was undertaken to inform the development of the Strategy. Feedback was gathered both in person (in Carnarvon and Coral Bay) and online. The following summarises the outcomes from all engagement activities.

3.1 Community Drop-in Session

The project team were available to speak with the community at the Carnarvon Library on 14 May 2024, between 2:00-4:00pm.

The session was attended by 4 community members. The key matters raised regarding the Carnarvon townsite included:

Environmental

- + Identification of areas of flooding north of the Gascoyne River.
- + Questions regarding the artificial reef and what is happening.

Housing

- + The lots in Northwater are not selling; too many conditions/caveats/lot price and other locational factors.

Needs

- + Need identified for more shops particularly shoes and children's clothes.
- + Suggestion to provide shade for playgrounds.

Movement

- + Suggestion for bike lanes through the town centre.
- + Suggestion for Perth to Karratha railway.

History

- + Suggestions to clean up the Bibbawarra Bore.
- + Suggestion for more information on the history of the coast.
- + Suggestion to replace One-Mile Jetty.

Population

- + The population decline is impacting sporting clubs and community.
- + Identification of labourer shortage and that they tend to leave.

Coral Bay

- + Suggestion for a water park on the main fascine park.
- + Suggestion for improvements at Rocky Pool, including the road in.
- + Comment saying that Coral Bay and the Blow Holes are perfect as they are.

3.2 Community Workshop

A community workshop was held in Carnarvon on Saturday, 18 May 2024, between 1:00-4:00pm.

The workshop was attended by one community member. The key matters raised are summarised below.

Housing

- + Two and three bedroom housing is needed.
- + Aged care accommodation is needed.
- + Tiny homes may help but kerb appeal needs to be carefully considered.
- + Not public housing.
- + Workers accommodation should be located in town, not in a camp.

Coral Bay

- + Strongly agree with the importance of protecting the natural environment.
- + Suggestion for parking at entry for buses and visitors.
- + Suggestion for a turnaround area.





Community infrastructure

- + There is adequate provision but not serviced or staffed.
- + Health improvements - maternity.
- + Childcare - provision is inadequate. The buildings are fine but there is a worker shortage.
- + Education - there is a shortage of teachers.
- + Paths are inadequate.
- + Suggestion to plant trees.

Economy

In order to support rural services, there is a need for:

- + Managers in service centres.
- + Maternity facilities
- + State Government
- + Mechanical and electrical expertise - all the young staff are moving to the mining sector.

Transport and Infrastructure

- + No need to relocate the airport - its current locations means it is accessible for locals to walk to.
- + A recycling Hub is needed to support manufacturing projects and support freight and logistics.
- + More wheelchair access and bike paths are needed. Suggestion for paths strategy.

General

- + Discussion around population decline in the last few years resulting from mining industry letting people go and centralisation of Government services pulling people away from Carnarvon.
- + Importance of the night sky.
- + Opportunity to share history and stories.
- + One Mile Jetty "Precinct" rather than "One Mile Jetty".

3.3 Online Workshop

An online workshop was held on Wednesday, 22 May 2024 between 4:30-6:00pm.

The content presented was the same as that shared at the in-person community workshop. The session was attended by five people.

The key matters raised by the attendees included:

- + Concerns that the Department of Planning, Lands and Heritage guidelines do not provide enough rural context.
- + Challenges of housing and creating long-term prospects to stay in Coral Bay.
- + The housing stock in Carnarvon does not necessarily meet the needs of the local community.
- + Queries around how climate change is being considered in relation to coastal erosion and inundation.
- + Power, water and sewer supply/capacity is a challenge.
- + Current provision of open space/parkland/sports facilities is poor.
- + A preference for workforce accommodation to be near town.
- + There is a challenge for the Strategy to deal with emerging issues and an opportunity to develop principles that guide the Council.
- + Queries about areas outside of Carnarvon and Coral Bay and whether they are looked at through this process.
- + Challenges around Coral Bay tip management.





3.4 Survey

A survey was shared online between 26 April and 2 June 2024. 51 survey responses were received. A summary is provided below. The full quantitative results are shown in APPENDIX B.

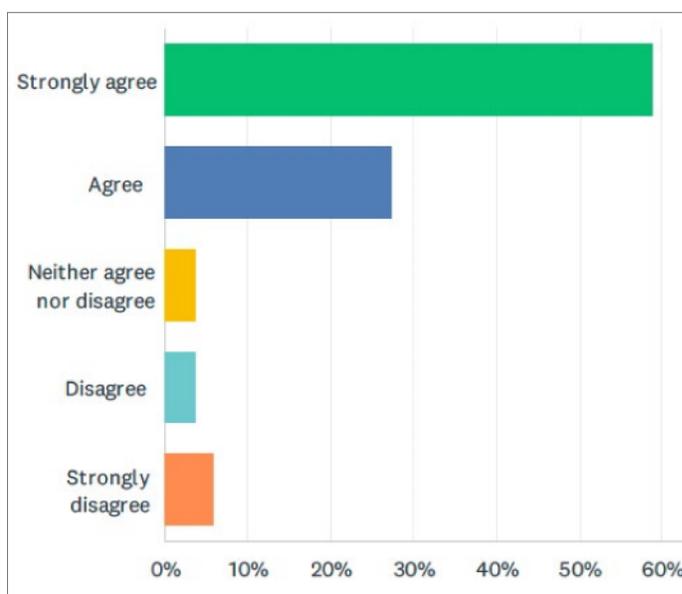
Housing

The Shire has a recognised housing supply shortage, particularly in the Carnarvon townsite, where the housing stock is aging and lacks diversity. People were asked their views on the need to provide more housing in Carnarvon. The majority (59%) strongly agreed (Figure 1).

18 comments were provided, with the key matter raised being:

- + Suggestions to renovate old, derelict or vacant housing stock.
- + Need for aged care.

The lack of workers' accommodation was identified as a major barrier to attracting and retaining workers. 59% of respondents strongly agreed that there is a need to provide more workers' accommodation in the Shire.



Some of the key comments raised (12 in total) included:

- + Renovate existing housing stock.
- + The importance of attracting permanent residents and families not just workers.

The community were asked if they had any comments or ideas about improving the type of housing or housing affordability. 31 responses were provided. Some of the key matters raised include:

- + Building costs are high - consider grants to offset costs associated with building cyclone rated buildings. Also consider options to purchase land at lower price to enable building.
- + Different types of housing/buildings e.g. transportables, prefabricated housing, granny flats.
- + Consideration of apartments for Government workers.
- + Refurbish and/or renovate existing housing stock.
- + Need to provide safe housing.
- + Concerns associated with social housing.
- + Improve amenity of Carnarvon to make it more attractive to live in the town.
- + Consider relocating airport.

Figure 1 Consultation survey - housing supply needs



Community infrastructure

The provision and availability of community infrastructure such as education, health, aged care, childcare and sports and recreation has been identified as an issue in the Shire of Carnarvon. The community were asked if they have any comments or ideas about how this could be improved. 36 comments were provided. Some of the key matters raised include:

- + Health - Need for maternity facilities and aged care.
- + Recreation - Need for indoor sports facilities, outdoor play spaces, creation of a sport and recreation hub, and need for recreation facilities in Coral Bay.
- + Education - Broadening education opportunities e.g. more TAFE courses, Ag College, special needs unit.
- + Events - re-establishing events and festivals.
- + Consideration of safety and security in town.
- + Several comments noted the importance of maintaining existing infrastructure and facilities.

Cultural Heritage

The community were asked for any comments and ideas about managing the protection of cultural heritage and if there are particular features that are important.

30 comments were provided. Some of the key matters raised include:

- + One Mile Jetty
- + Bibbawarra Bore
- + Tramway
- + Cemetery
- + Opportunities for engaging with Aboriginal community to identify areas of cultural heritage and opportunities for dual naming.
- + Information signage to tell stories and history of places.

Economy

The community were asked their level of agreement for the protection of agricultural land including managing encroachment from other uses that may impact viability. 60% strongly agreed with this protection.

11 comments were received. Some comments neither agreed nor disagreed with the protection, noting that if another use is appropriate and has benefits then it should be considered.

Others that strongly agreed noted the important role that agriculture and horticulture plays in the economy.





Coral Bay

The Coral Bay townsite is an important tourism location in a significant natural environment and adding more accommodation is currently limited. The community were asked whether they have any comments or ideas about the future of Coral Bay.

30 comments were provided. The comments were mixed with some people wanting more accommodation and others preferring to keep the atmosphere small and quiet. Other comments included:

- + Need for worker's accommodation.
- + Waste facility needs improving.
- + Opportunities are too tightly held by a small number of people.
- + Lots of the Shire's resources are used to manage Coral Bay.
- + Tourist fees should apply for the services and entry fees (e.g. Monkey Mia).

Tourism

The community were asked to identify which tourism features are important to them and should be protected. 43 comments were provided. The top three responses were:

1. One Mile Jetty
2. Blowholes
3. Ningaloo

Retail

The community were asked if they had any ideas or comments about improving shopping, commercial and food/restaurant activity in the Shire. 37 comments were provided.

- + More security needed.
- + There is antisocial behaviour at the shopping centre that needs to be addressed.
- + Food and beverage venues that are near the water/take advantage of the sunsets and are open later in the day.
- + Greater variety of shops including food, beverage and retail.
- + Enable/encourage pop-ups and mobile trading.
- + Parking - provide more in main street, upgrade shopping centre parking.



Environment

The Shire's coastal and inland environment is recognised internationally. When asked what their view is on the importance of supporting the protection of the natural environment balanced against economic development, 54% of respondents strongly agreed (Figure 2). 12 comments were provided.

The sentiment in the comments were mixed. Some saying that there needs to be a balance and others noting the importance of protecting the environment and coast.

Respondents were asked to determine their level of interest with environmental protection and economic development, on a scale of 1 to 5 (1 being none and 5 being high). The average rating for economic development was 4.1 and environmental protection was 4.

When asked which natural environmental features are important and should be protected, the top three responses were:

1. Gascoyne River
2. Ningaloo Reef
3. Protect it all

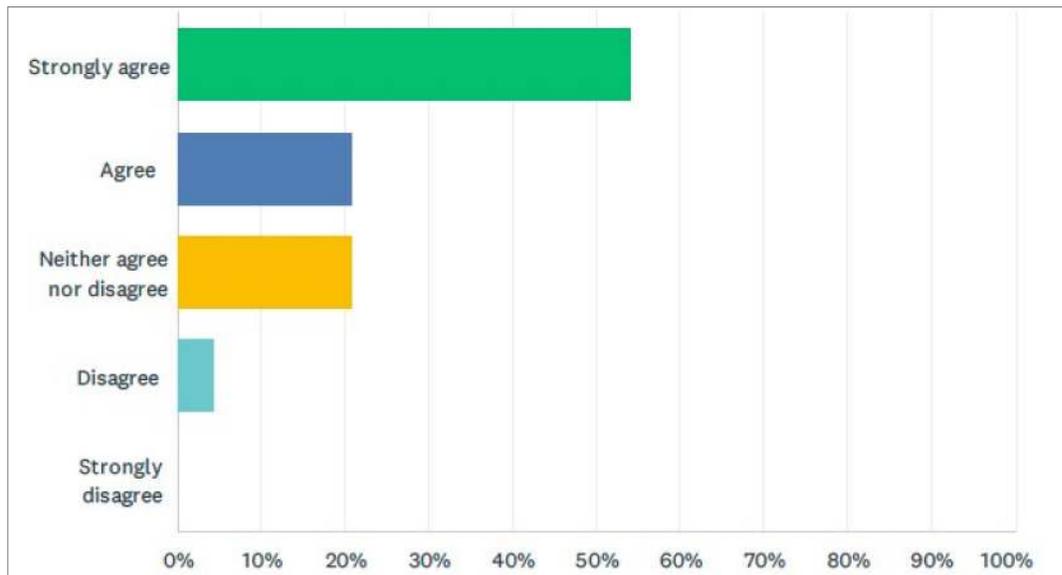


Figure 2 Consultation survey - Protection of natural environment against economic development

Flooding and Inundation

The Shire is impacted by flooding and inundation from the Gascoyne River and the ocean. 63% stated that they strongly agreed with the importance of managing development to avoid flooding and other coastal risks to houses and businesses. The community were asked if there any specific assets that are critical for protection. 19 comments were provided. The commonly raised matters included:

- + People know that there is flood risk when you build a business on the floodplain/ waterway.
- + Some suggestions to open areas to allow water movement or divert water flows.



Transport, servicing infrastructure and industrial development

The community were asked if they have any comments or ideas about how to improve transport or servicing infrastructure or industrial development in the Shire. 21 comments were provided. Some of the key matters raised included:

- + Removing barriers to development e.g. making land cheaper, removing red tape, opening up more land.
- + Options for the airport e.g improvements to enable jets, relocation with a modern facility.

Additional comments

29 general comments were shared in relation to the future planning of the Shire. The commonly raised matters included:

- + Encourage growth and create opportunities and incentives to invest in the town.
- + Amenity - maintain public spaces and entry points such as mowing grass and tidying areas.
- + Public realm - improve footpaths.
- + Safety and security needs to be addressed.
- + Coral Bay - waste management, coordinated approach to foreshore development and using Coral Bay rates in Coral Bay town.
- + Governance - continue to seek grants, retain strong staff and focus on core business.





3.5 Stakeholder Meetings

Meetings were held with relevant government agencies and key stakeholders in Coral Bay. Two stakeholder meetings were held with Gascoyne Development Commission and DevelopmentWA.

The key matters raised included:

- + Importance of infrastructure (roads, marine, aviation) to support mining and resource industry and opportunities.
- + Worker's accommodation is a barrier in Carnarvon and Coral Bay.
- + There are barriers with the existing legislation for managing emerging issues around the pastoral industry.
- + Flood risks are still present.
- + Create linkages between One Mile Precinct and town.
- + Two key development areas - Northwater (residential) and Cornish Street (light industrial).
- + Need to consider the relationship and impacts of worker's accommodation on locals and tourist accommodation.

3.6 Community Meetings

Individual and group meetings were held with nine community members in Coral Bay. Some of the key matters raised include:

Environment

- + The condition of the reef needs to be considered as this is the primary driver for tourism.
- + Larger boats are having an impact on the environment.

Population and Housing

- + A sense of community is difficult to foster because you cannot reside long term.
- + There is a lack of staff accommodation.

- + Need accommodation options for business owners. There is only leasehold land.
- + Long-term residents are needed to run volunteer services such as emergency, bushfire, sea search and rescue etc.

Services and Infrastructure

- + Nursing post runs well.
- + Education options - school of the air or take the bus to Exmouth.
- + The pressure on facilities such as waste is increasing as the season is longer.
- + The rubbish tip on the way into a World Heritage site is unsightly.

Other

- + Need a more coordinated approach to future planning - getting everyone involved.
- + Opportunity for parking and vehicle movement improvements on the foreshore.

3.7 Staff Involvement

Staff at the Shire are both residents and facilitators of the outcomes of the LPS. A staff workshop was held on 15 May 2024 to seek staff input. Some of the key matters raised include:

Major Projects and Economy

- + Suggestion to rename 'Old Justice Precinct Revitalisation' to 'Pier Development'.
- + Recognition of more Green Hydro projects.
- + New major project to include - Leichardt has acquired the industrial salt and gypsum operation at Lake MacLeod.
- + Opportunity for horticulture diversification (e.g. brewery, farm stays).
- + Opportunities for brewery or distillery.



Population and Housing

- + Housing barriers - some housing stock is too old, asbestos houses cannot be insured, housing availability is low.
- + Much of the available land is constrained.
- + Opportunities to consider old school site for future residential.
- + Smaller housing is good for retirees, young people, singles.
- + Flood modelling should be considered.
- + There is a shortage of labourers - electricians, plumbers and builders.
- + There is a need for diverse housing options.
- + There is a preference to have workers accommodation dispersed throughout town.

Coral Bay

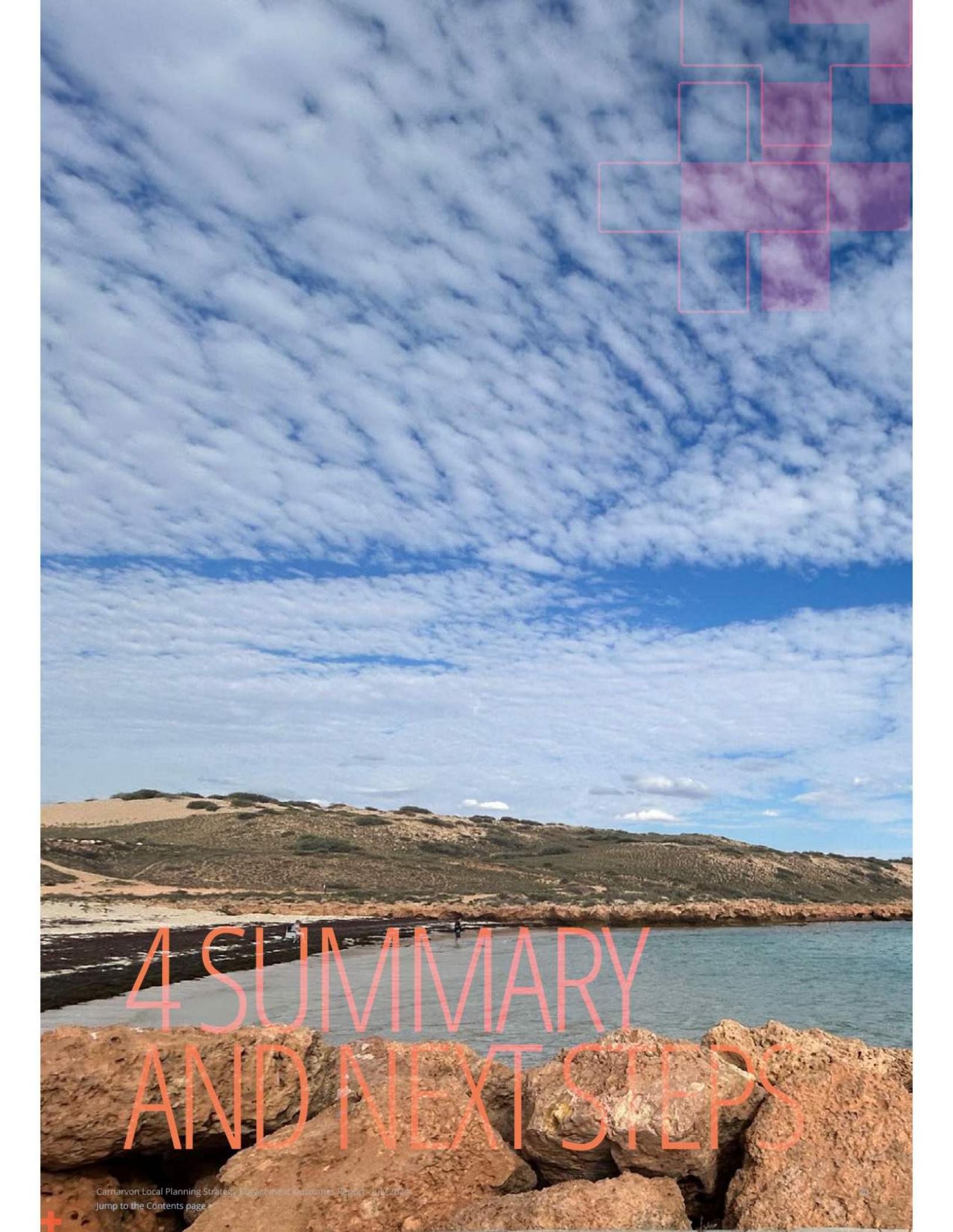
- + There is a challenge to providing services in the town when there isn't a permanent population.
- + There is no sense of community as the population is transient.

Community Infrastructure

- + Need for childcare
- + Sporting infrastructure is old and of poor quality.
- + Opportunity to co-locate activities and for spaces to be multi-purpose.
- + Need for space for children at risk.
- + Lack of tertiary education and Agricultural College.
- + The bushfire and SES facility is currently shared and not fit for purpose.

Infrastructure and Transport

- + Need for network and facilities for larger vehicles.
- + Need for active transport including suggestions of a cycle plan, trails development and improved pedestrian amenity (shade, points of interest).
- + Suggestion to test the interest with the community to bitumise the road Quobba - Blow Holes - Red Bluff - Gnaraloo - Coral Bay.



4 SUMMARY AND NEXT STEPS

4 SUMMARY AND NEXT STEPS

Throughout the engagement there have been several opportunities for community and stakeholders to provide their input into the future planning of the Shire of Carnarvon.

Table 2 outlines the feedback that was regularly raised that should be considered in the LPS. The comments have been grouped based on the four profile areas that are discussed in the LPS.

The next steps for the project are to prepare the draft LPS taking into consideration the feedback from community and stakeholders and the information gathered through background analysis.

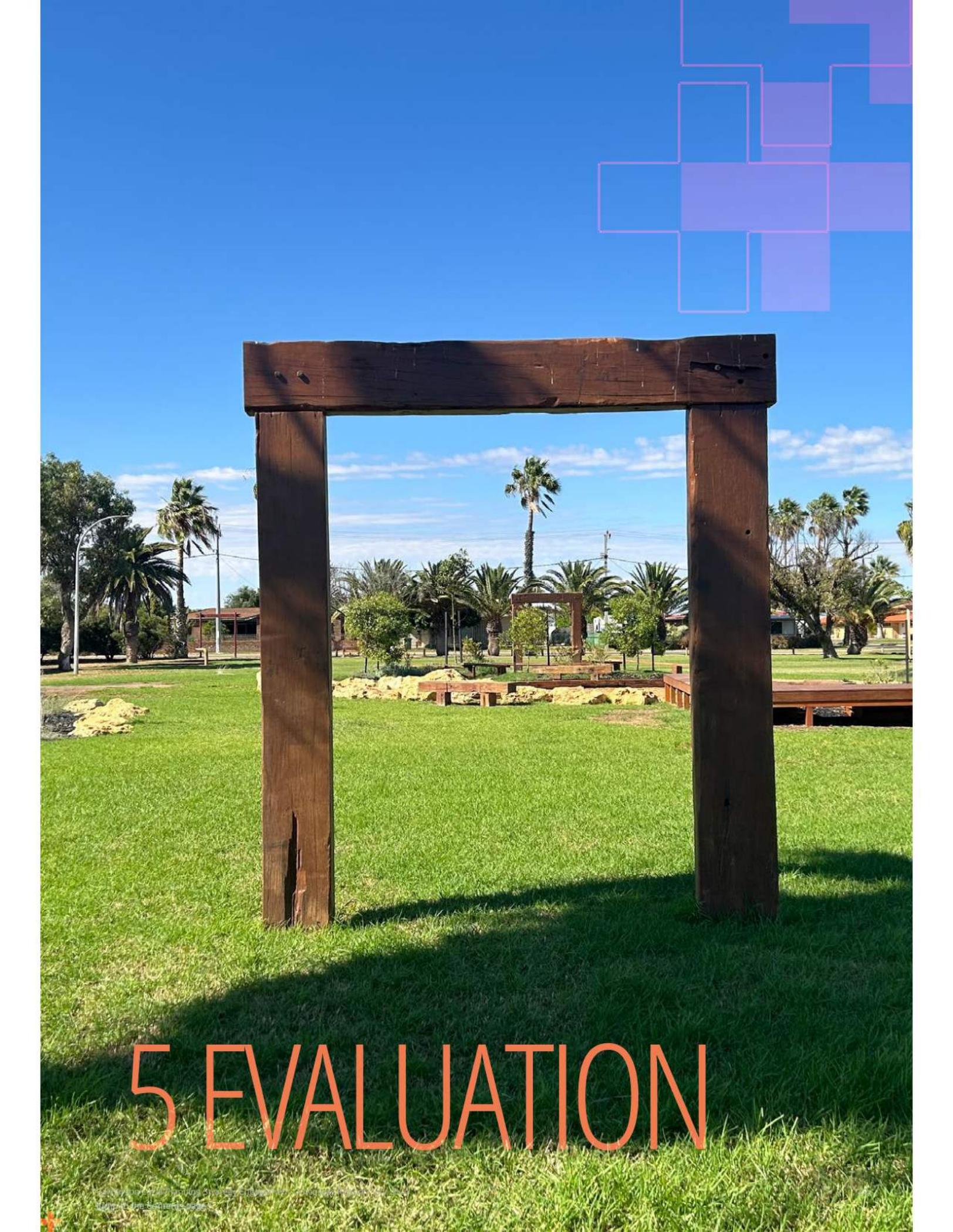
Once the draft LPS is endorsed by the Council and Western Australian Planning Commission for advertising, the draft LPS will be publicly advertised for comment.

For Coral Bay, the next step is to further assess the suitability of the bed number cap.

Table 2 Suggested considerations for LPS based on consultation outcomes

Profile areas	Opportunities for the Local Planning Strategy
Urban growth and settlement	<ul style="list-style-type: none"> + Remove barriers for small apartments or units for Government worker accommodation, different types of housing (e.g. transportables, prefabricated, granny flats). + Support for re-use of existing building stock (e.g. houses and schools) and revitalise buildings rather than build new. + Consideration of how the LPS can influence safety and security. + Support for more aged care, child care and maternity facilities. + Ensure protection of cultural heritage and tourism assets including One Mile Precinct, Blow Holes, Ningaloo, Bibawarra Bore, tramway and cemetery. + Carefully consider additional opportunities for accommodation in Coral Bay. Limiting impacts whilst enabling key worker housing.
Economy and employment	<ul style="list-style-type: none"> + Support diversity of commercial activity in town and make it easier/more attractive for businesses by removing red tape. + Support for more education and training (e.g. tertiary education or Agriculture College). + Create opportunities that support population and economic growth. + Support for incentives to invest in Carnarvon. + Ensure the planning framework responds to green and blue energy projects.
Environment	<ul style="list-style-type: none"> + Importance of protecting environmental assets such as Ningaloo Reef and the Gascoyne River. + Manage development to avoid flooding and other coastal risks. + Waste management in Coral Bay.
Transport and infrastructure	<ul style="list-style-type: none"> + Consideration of bike lanes in the town centre. + Improvement to path network. + Strategic transport and infrastructure to support large economic projects.





5 EVALUATION



5 EVALUATION

Evaluating community engagement involves assessing the quality of the engagement process.

It seeks to measure how well the engagement process was planned, implemented and managed and informs continuous improvement of the engagement approach.

Table 3 outlines the level of engagement to date in comparison to the original targets set at the start of the project.

Table 3 Engagement Evaluation

Measurement	Target	Actual*
Engagement Activities		
+ Number attending in-person engagement events - Community workshop, staff workshop and stakeholder meetings	60	35
+ Number participating in survey	150	51
Website		
+ Total views	350	TBD
+ Total users	350	TBD
+ Views per user	1	TBD
+ Engagement rate	95%	TBD
+ Engaged sessions	300	TBD
Social Media		
+ Total impressions (reactions, comments and shares)	500	51

*As at 18 June 2024.







APPENDICES

Appendix A: Community Drop-in session comments

Appendix B: Survey results

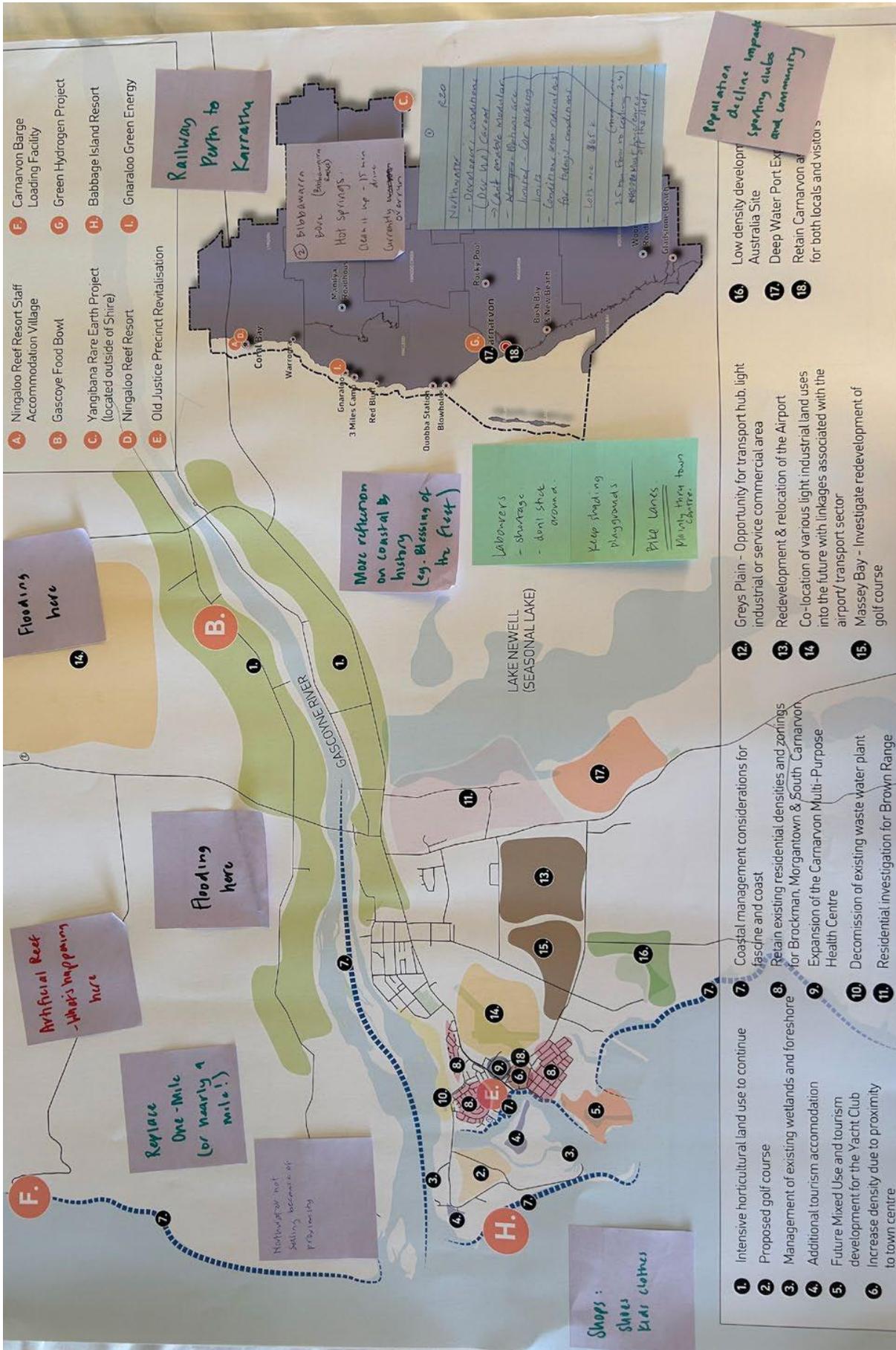




APPENDIX A

Appendix A: Community Drop-in session comments







LEGEND

- 1. Management of foreshore reserve
- 2. Prohibition of subdivision and permanent residential
- 3. Re-location of waste disposal site to land south
- 4. Potential re-location of Coral Bay Airstrip
- 5. Tourism development opportunity
- 6. Overflow caravan & camping during peak season
- 7. Relocation of the existing fuel station
- 8. Worker accommodations
- 9. Existing commercial opportunity & relocation of WA Country Health Service Clinic
- 10. Opportunity for improved tourism signage & an Indigenous Interpretive Centre
- 11. Opportunity to combine workers accommodation with workshop and storage for trades people
- 12. Investigate expansion of storage area site
- 13. Waste water treatment facility

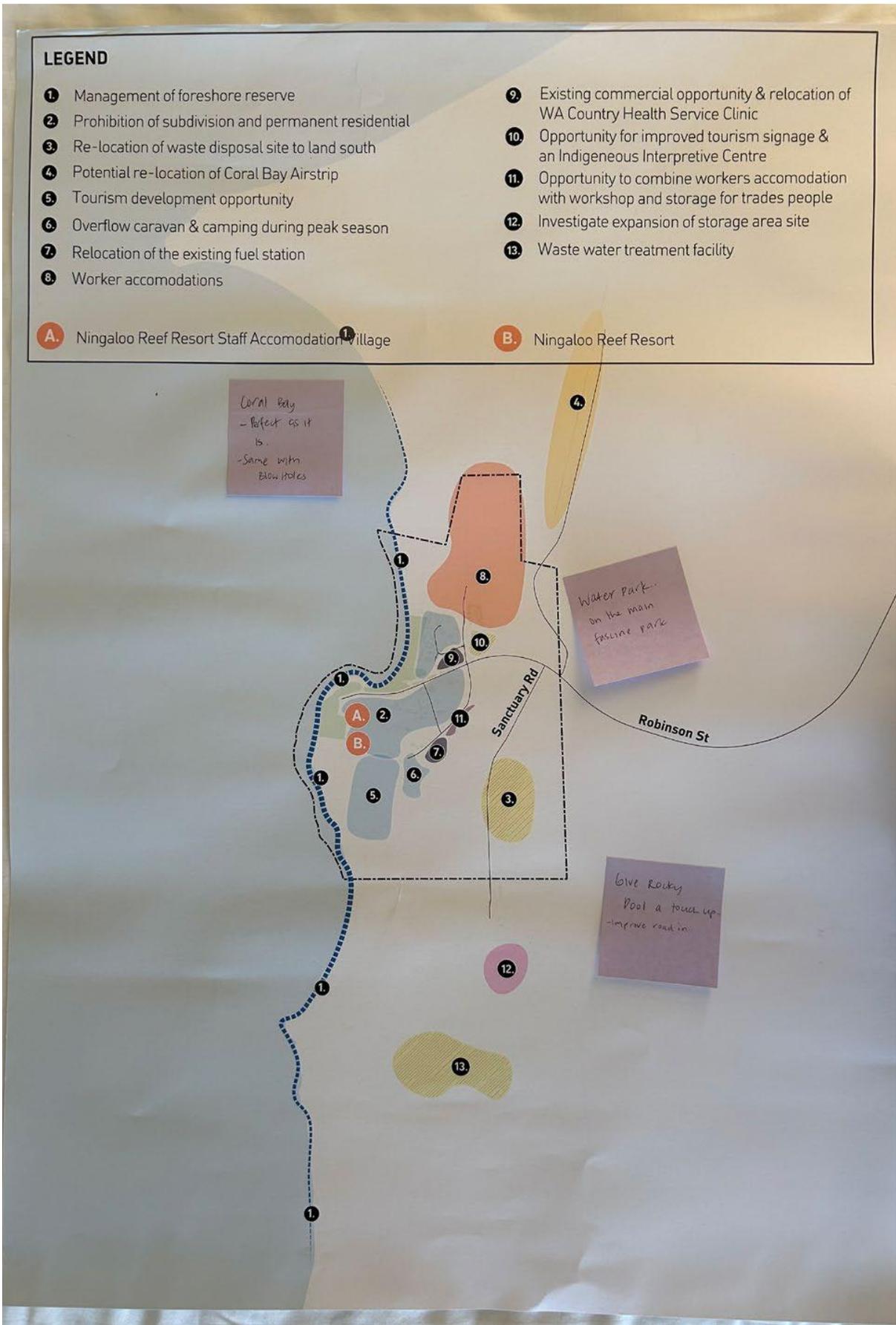
A. Ningaloo Reef Resort Staff Accommodation Village

B. Ningaloo Reef Resort

Coral Bay
- Perfect as it is.
- Same with Blowholes

Water Park
- on the main fascine park

Love Rocky
Pool a touch up
- improve road in





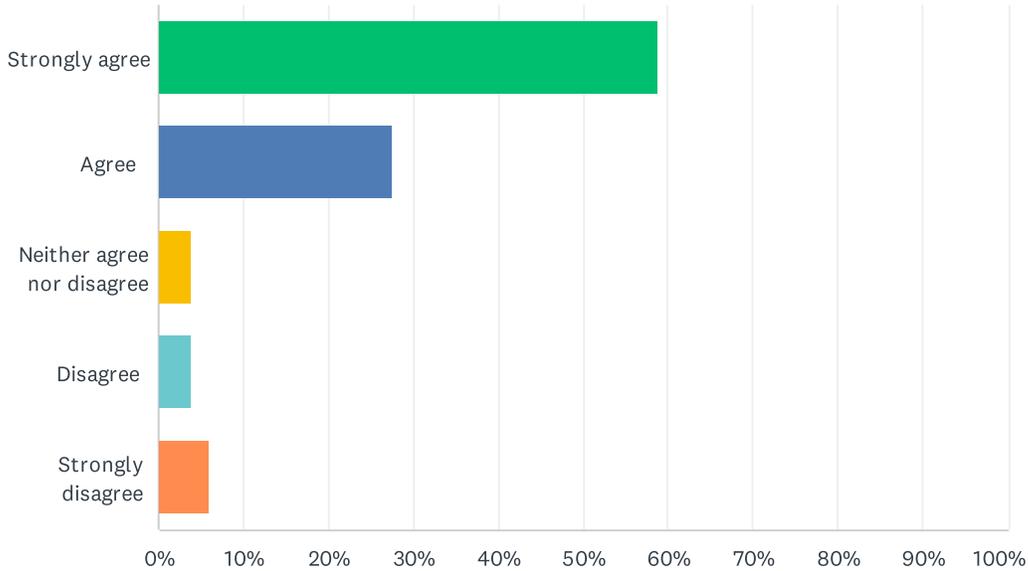
APPENDIX B

Appendix B: Survey results



Q1 The Shire has a recognised housing supply shortage, particularly in the Carnarvon townsite. The housing stock is ageing, and there is a lack of housing diversity (in terms of units, apartments, and number of bedrooms). What is your view on the need to provide more housing in Carnarvon?

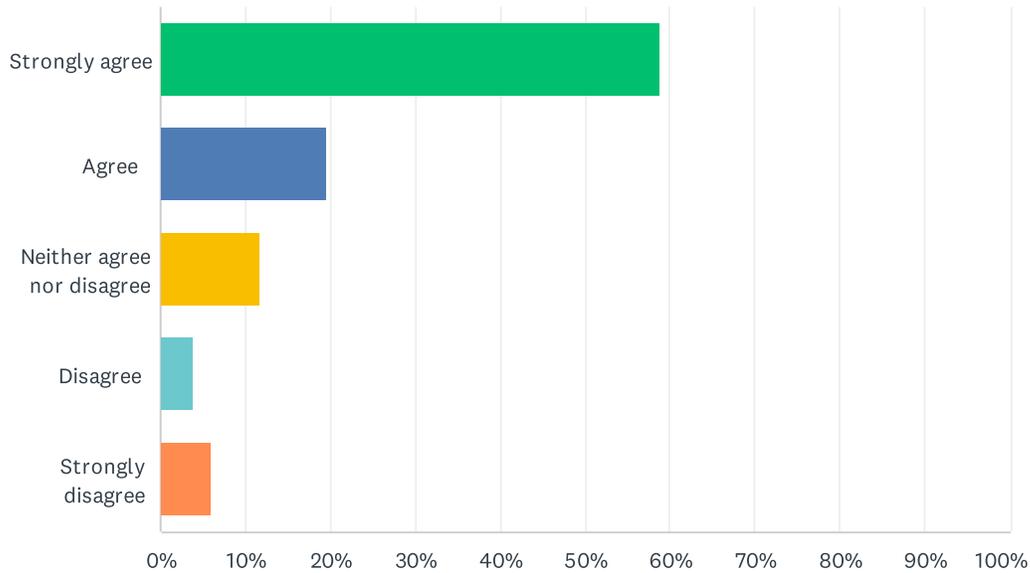
Answered: 51 Skipped: 0



ANSWER CHOICES	RESPONSES	
Strongly agree	58.82%	30
Agree	27.45%	14
Neither agree nor disagree	3.92%	2
Disagree	3.92%	2
Strongly disagree	5.88%	3
TOTAL		51

Q2 The lack of workers' accommodation (both private and government-supplied) has been identified as a major barrier to attracting and retaining workers. What is your view on the need to provide more workers' accommodation in the Shire?

Answered: 51 Skipped: 0



ANSWER CHOICES	RESPONSES	
Strongly agree	58.82%	30
Agree	19.61%	10
Neither agree nor disagree	11.76%	6
Disagree	3.92%	2
Strongly disagree	5.88%	3
TOTAL		51

Q3 Do you have any specific comments or ideas about how to improve the type of housing, or housing affordability in the Shire?

Answered: 31 Skipped: 20

Q4 The provision and availability of community infrastructure such as education, health, aged care, childcare and sports and recreation has been identified as an issue in the Shire of Carnarvon. Do you have any comments or ideas about how to improve community facilities, recreation and open space in the Shire?

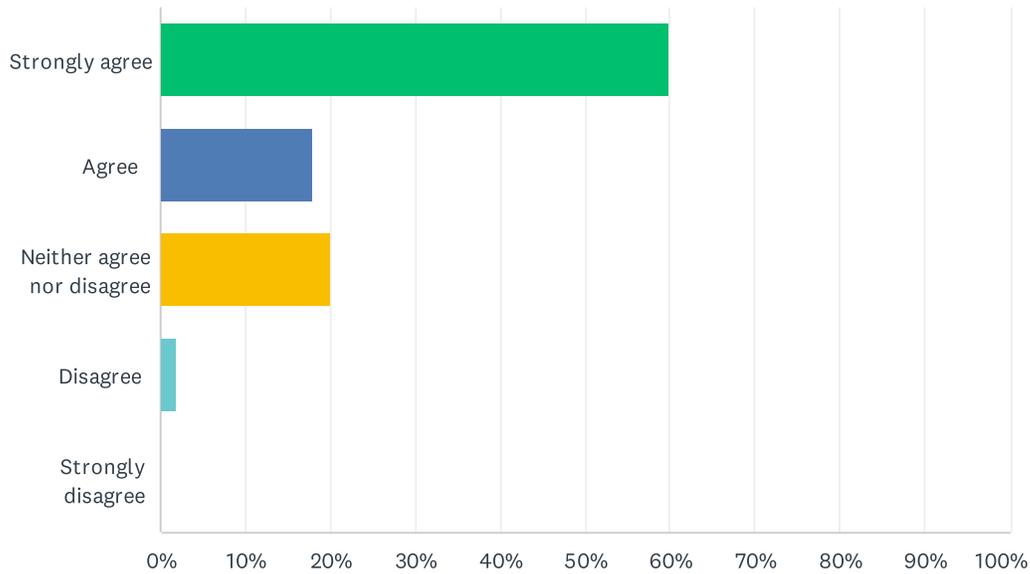
Answered: 36 Skipped: 15

Q5 Do you have any comments or ideas about how to manage protection of cultural heritage (both Aboriginal and European) in the Shire? Is there a cultural heritage feature (natural or built) that is very important to you within the Shire, that you would like to ensure is protected for the future?

Answered: 31 Skipped: 20

Q6 The Shire comprises an important food production zone. How strongly do you agree with supporting the protection of agricultural land, including managing encroachment from other uses that may impact viability?

Answered: 50 Skipped: 1



ANSWER CHOICES	RESPONSES	
Strongly agree	60.00%	30
Agree	18.00%	9
Neither agree nor disagree	20.00%	10
Disagree	2.00%	1
Strongly disagree	0.00%	0
TOTAL		50

Q7 The Coral Bay townsite is an important tourism location in a significant natural environment. Adding more accommodation is currently limited. Do you have any comments or ideas for the future of the Coral Bay townsite?

Answered: 30 Skipped: 21

Q8 Tell us which tourism features are very important to you within the Shire (e.g., Ningaloo Reef, One Mile Jetty Heritage Precinct, etc.) and that you would like to ensure are protected for the future.

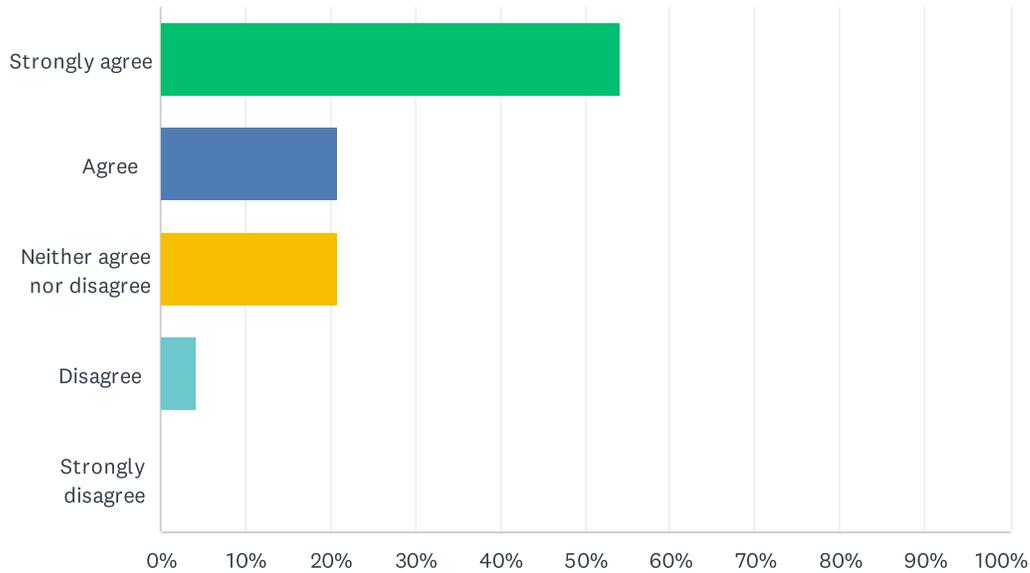
Answered: 43 Skipped: 8

Q9 Do you have any comments or ideas about how to improve shopping, commercial and food/restaurant activity in the Shire, noting specific precincts if relevant?

Answered: 37 Skipped: 14

Q10 The Shire's coastal and inland environment is recognised internationally. What is your view on the importance of supporting the protection of the natural environment balanced against economic development?

Answered: 48 Skipped: 3



ANSWER CHOICES	RESPONSES	
Strongly agree	54.17%	26
Agree	20.83%	10
Neither agree nor disagree	20.83%	10
Disagree	4.17%	2
Strongly disagree	0.00%	0
TOTAL		48

Q11 What is your interest with Environmental Protection (1 being none and 5 being high)

Answered: 49 Skipped: 2

4.0 

average
rating



	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	4.08%	12.24%	14.29%	22.45%	46.94%		
	2	6	7	11	23	49	3.96

Q12 What is your interest with Economic Development (1 being none and 5 being high)

Answered: 48 Skipped: 3



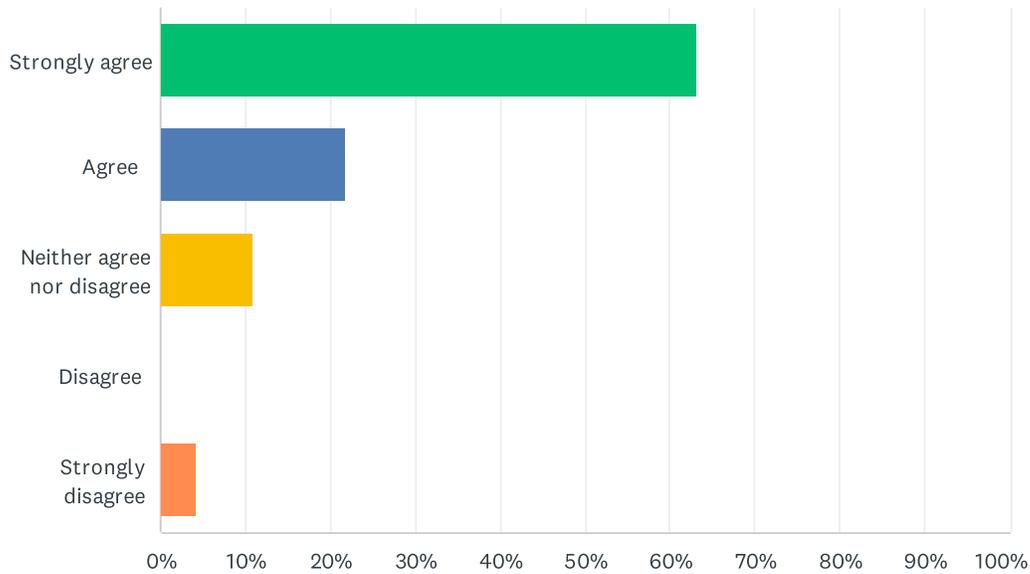
	1	2	3	4	5	TOTAL	WEIGHTED AVERAGE
☆	0.00% 0	8.33% 4	22.92% 11	20.83% 10	47.92% 23	48	4.08

Q13 Tell us which natural environmental features are very important to you within the Shire (e.g. the Gascoyne River, Ningaloo Reef, Disappointment Reach Sanctuary Zone, etc.) that you would like to ensure are protected for the future.

Answered: 39 Skipped: 12

Q14 The Shire is impacted by flooding and inundation from the Gascoyne River and the ocean. What is your view on the importance of managing development to avoid flooding and other coastal risks to houses and businesses, and are there any specific assets that are critical for protection?

Answered: 46 Skipped: 5



ANSWER CHOICES	RESPONSES	
Strongly agree	63.04%	29
Agree	21.74%	10
Neither agree nor disagree	10.87%	5
Disagree	0.00%	0
Strongly disagree	4.35%	2
TOTAL		46

Q15 Do you have any comments or ideas about how to improve transport or servicing infrastructure or industrial development in the Shire?

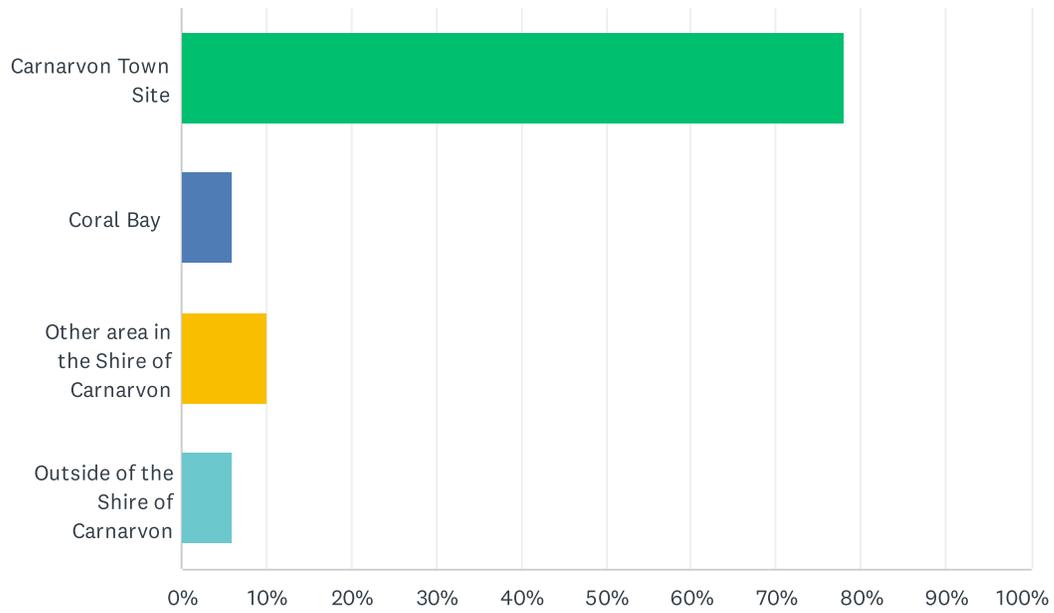
Answered: 21 Skipped: 30

Q16 Do you have any other comments or ideas about guidance for the future of the Shire that are not related to the themes/questions already presented?

Answered: 29 Skipped: 22

Q17 Where do you live?

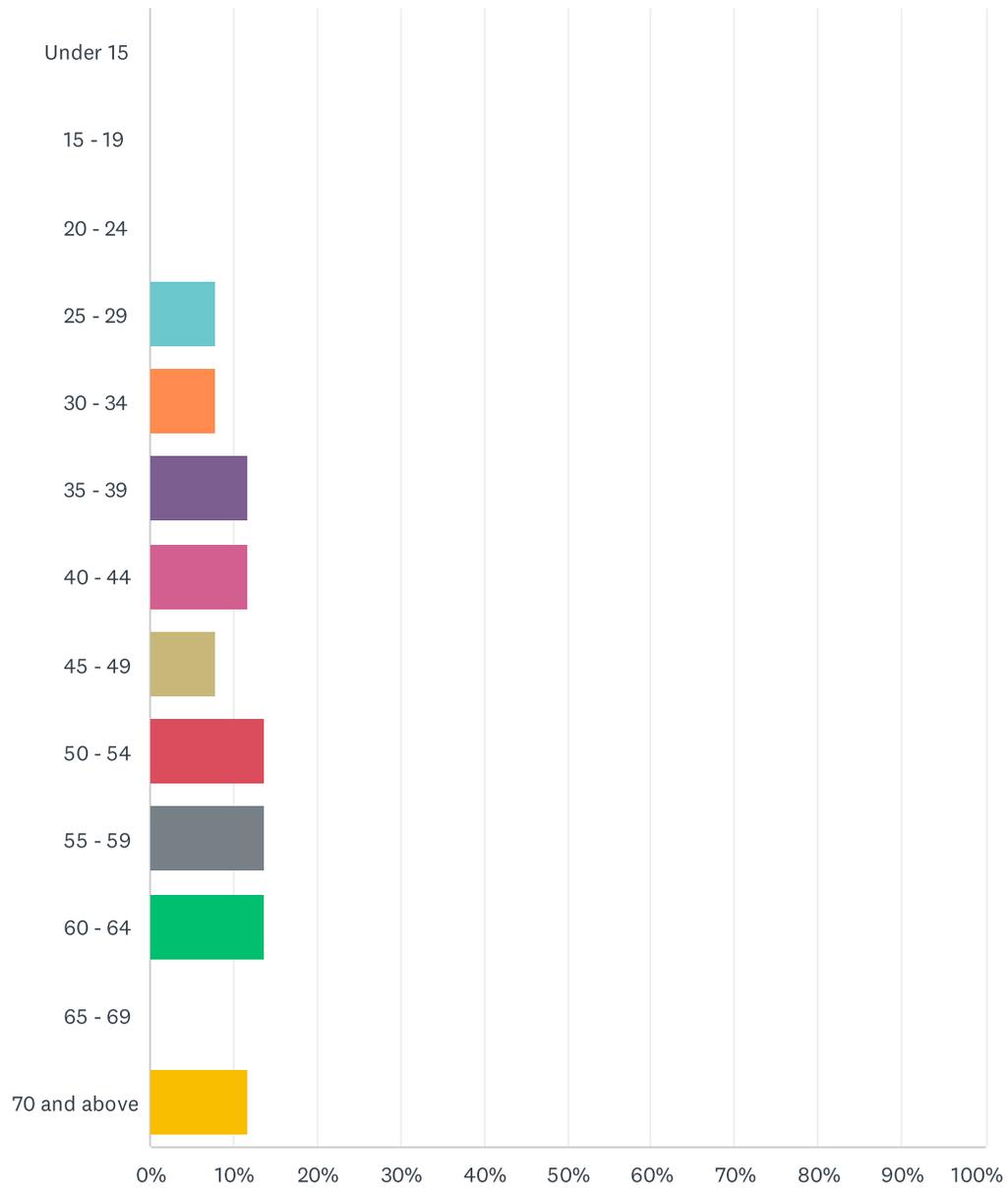
Answered: 50 Skipped: 1



ANSWER CHOICES	RESPONSES	
Carnarvon Town Site	78.00%	39
Coral Bay	6.00%	3
Other area in the Shire of Carnarvon	10.00%	5
Outside of the Shire of Carnarvon	6.00%	3
TOTAL		50

Q18 What is your age?

Answered: 51 Skipped: 0



Carnarvon & Coral Bay Local Planning Strategy - Preliminary Engagement Survey

ANSWER CHOICES	RESPONSES	
Under 15	0.00%	0
15 - 19	0.00%	0
20 - 24	0.00%	0
25 - 29	7.84%	4
30 - 34	7.84%	4
35 - 39	11.76%	6
40 - 44	11.76%	6
45 - 49	7.84%	4
50 - 54	13.73%	7
55 - 59	13.73%	7
60 - 64	13.73%	7
65 - 69	0.00%	0
70 and above	11.76%	6
TOTAL		51





APPENDIX 2

Shire of Carnarvon

Economy and Employment

Overview

Shire of Carnarvon



Document Control				
Document Version	Description	Prepared By	Approved By	Date Approved
v 1.0	Economy and Employment Overview	Jason Cook	Dawson Demassiet-Huning	13/03/2024
v 2.0	Economy and Employment Overview	Jason Cook	Dawson Demassiet-Huning	02/09/2024
V 3.0	Updates in response to DPLH mods prior to advertising	Jason Cook	Rebecca Spencer	15/01/2025

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1 EXECUTIVE SUMMARY

The Shire of Carnarvon is in the process of reviewing its Local Planning Strategy (LPS). The objectives of the strategy review include ensuring that the townsite of Carnarvon, settlement of Coral Bay and surrounding rural areas develop to meet the needs of the community. The Shire identified the need for an economic and employment analysis to incorporate economic policy considerations and market demand into the planning framework. This report will support the Shire to deliver an LPS that facilitates employment and liveability for its residents.

State population forecasts indicate the Shire's population may decline to 2031. Demographic analysis identified the potential to support resident attraction and retention by targeting Culturally and Linguistically Diverse persons to settle in the Shire and to support training initiatives to align local skills with higher skilled employment available through resource and energy projects. Employment gaps were identified in a number of population services including child care, aged care and sport and recreation services.

A SWOT analysis was used to summarise engagement feedback and analysis findings. The Shire's has clear strengths in natural environment and resource related industries such as mining, agriculture and tourism. The lack of variety and affordability in housing were noted as weaknesses of Shire and are exacerbated through negative reinforcing relationships with gaps in important essential services and worker shortages. Engagement indicated that projects such as the Lake Macleod Salt Mine, HyEnergy's Green Hydrogen, Babbage Island Resort, and Ningaloo Reef resort will create local employment opportunities in the Shire. The increasing cost of construction was identified in stakeholder feedback as a threat to economic opportunities as high costs reduce the viability of investment, particularly in residential construction required to support higher levels of resident workers.

Employment projection scenarios have been developed to inform the LPS. A base case was determined using WA Tomorrow population growth rates and conservative assumptions. Three scenarios have been developed in addition to the base case based on stakeholder engagement, benchmarking and documentation from the Shire:

- Scenario 1, Base Case plus employment gaps are addressed in key service industries (childcare, aged care and general medical services) benchmarked against the regional WA average
- Scenario 2, Scenario 1 plus local employment generated by key tourism projects according to the Shire's On Our Horizon report
- Scenario 3, Scenario 2 plus local employment generated by key strategic projects according to the Shire's On Our Horizon report



Population and employment projections in Scenarios 2 and 3 are dependent on meeting the baseline level of demand for essential services for the current local population outlined in Scenario 1. Scenario 3 projects an additional 416 workers and 769 people relative to the Base Case (Figure 1).

Figure 1. Employment and Population Projections

Scenario	Component	2024	2029	2034	2039
Base Case	Employment	2,274	2,257	2,245	2,245
	Population	5,254	5,213	5,186	5,186
Scenario 1	Employment	2,274	2,286	2,289	2,289
	Population	5,254	5,268	5,267	5,267
Scenario 2	Employment	2,274	2,389	2,431	2,431
	Population	5,254	5,458	5,531	5,531
Scenario 3	Employment	2,274	2,389	2,661	2,661
	Population	5,254	5,458	5,955	5,955

Source: Pracsys 2024

Benchmarking and stakeholder engagement has been utilised to undertake a high-level estimate of the quantum and location of floorspace and land required to support the additional employment identified in Scenario 1. Scenarios 2 and 3 have been excluded from the analysis as the details of the planned tourism and strategic projects are highly specific, not publicly available and generally do not form part of commercial centres. Approximately 1,952m² of floorspace and 13,615m² of land will be needed to accommodate the identified level of essential services for Shire's residents and to support growth in other industries such as tourism and energy (Figure 2).

Figure 2. Floorspace and Land Requirement

Industry	Additional Employment	Floorspace (m ²)	Land (m ²)
Childcare	7	294	2,053
Aged Care	21	915	6,384
Medical Services	17	742	5,178
Total	44	1,952	13,615

Source: Pracsys 2024

The additional land required to support childcare, aged care and medical services can be attributed to the Carnarvon townsite in its entirety. Planning restrictions currently prevent the development of essential services in Coral Bay despite stakeholder and community feedback identifying a need for it. If



the tourism projects identified in Scenario 2 proceed, it is likely that demand for essential services like childcare and medical care in Coral Bay will grow along with visitation.



2 INTRODUCTION

The Shire of Carnarvon (the Shire) spans an area of approximately 46,500 square kilometres of Western Australia's northern coast. The Shire is located within the Gascoyne Region, bordered by the Shire of Exmouth, Shire of Upper Gascoyne and the Shire of Shark Bay.

In accordance with the Regulations, the Shire proposes to review its Local Planning Strategy (LPS). The objectives of the strategy review include ensuring that the townsites of Carnarvon and Coral Bay and surrounding rural areas develop to meet the needs of the community. As part of the strategy review, this economic and employment analysis seeks to enable local government policies and market demands to be incorporated into the planning framework for the Shire to facilitate employment and lifestyle opportunities.

The economy and employment component of an LPS is aimed at facilitating trade, investment, innovation, employment, and community betterment for the local government. To gain an understanding of the factors influencing Shire's economic position, this report undertakes a demographic analysis involving population change, age, household structure, cultural diversity and income. This economic and employment analysis reviews existing planning frameworks to establish the Shire's current activity centre hierarchy and issues and opportunities. Historical data for the Shire's labour force, employment by industry, business entries and exits and employment quality have been analysed to provide an overview of recent trends and changes in the community. Industry analysis employed a Shift-Share model to calculate the size, growth and local concentration of industries in Shire to determine emerging opportunities and gaps. Engagement findings and benchmarks were used to undertake employment projection scenarios and determine the impact of local job creation on population.

3 DEMOGRAPHIC ANALYSIS

A demographic analysis was undertaken for the Shire to gain an understanding of factors influencing the Shire's economic position. The Shire's population profile, household profile, cultural profile and income profile were compared over time. The demographic analysis has made use of the Gascoyne Region and Greater Perth as benchmarks where appropriate (Figure 3). Where the analysis refers to the Gascoyne Region, the data for the Local Government Areas (LGAs) of the Shire of Carnarvon, Shire of Shark Bay, Shire of Exmouth and Shire of Upper Gascoyne has been aggregated.

Figure 3. Demographic Components and Benchmarks

Benchmark(s)	Demographic Component
Gascoyne Region	Population Change and Forecast
	Dwelling Change
Gascoyne Region and Greater Perth	Age
	Household Structure
	Tenure Type
	Cultural Diversity
	Aboriginal Population
	Household Income

Source: Pracsys 2024

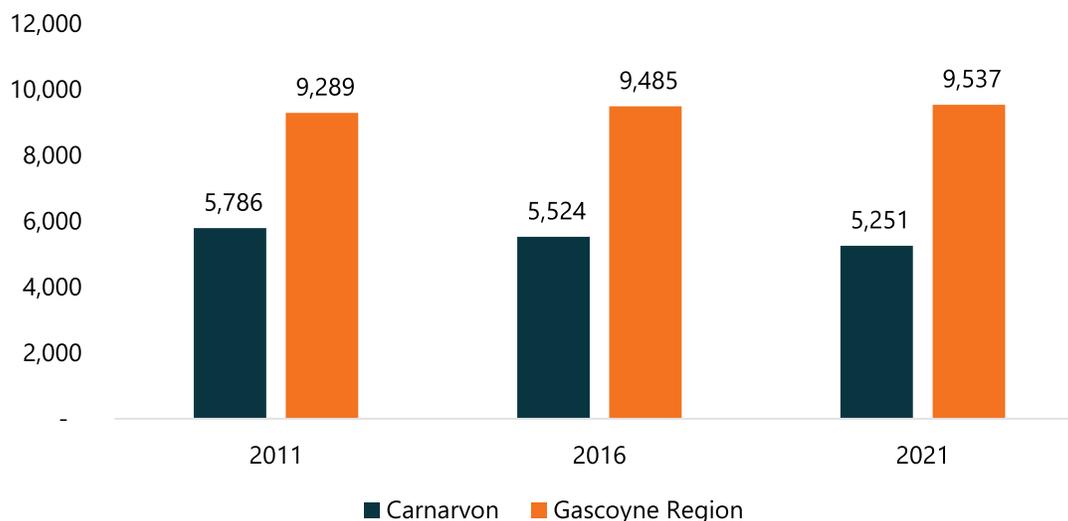
3.1 Population Profile

Population Change and Forecast

The Shire accounts for 62% of the Gascoyne Region's population in 2011 but declines to 55% by 2021 (Figure 4). In the same period, the Shire's population declines by 535 people. The rate of population decline in the Shire was constant between 2011-2016 and 2016-2021 at -5% per five-year period. The Gascoyne Region's population increase is due to growth in the Shire of Exmouth.



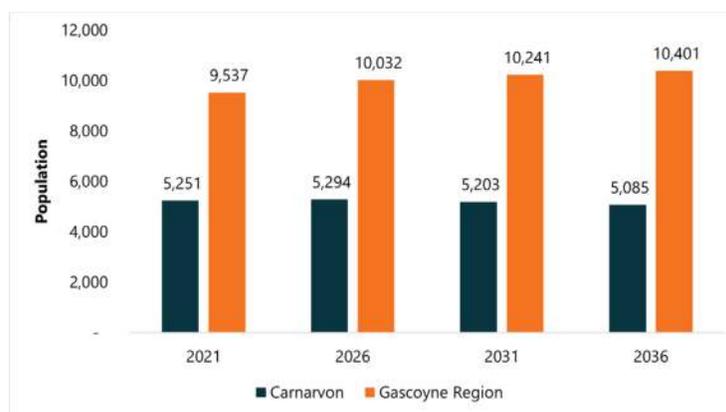
Figure 4. Population Change in Carnarvon and the Gascoyne Region



Source: ABS Census 2011, ABS Census 2016, ABS Census 2021

Western Australia Tomorrow 12 (WAT12) population projection growth rates (Central) were applied to 2021 ABS Census population data to forecast the Shire’s population by 2036 (**Figure 1**). The projections the Shire’s population to experience a -3% change between 2021 and 2036, reaching a population of 5,085. The Shire is the only LGA in the Gascoyne Region expected to experience negative population growth. Population decline in regional areas is often related to an underprovision of key amenities and infrastructure and, education and job opportunities. Identifying key economic opportunities and services that the Shire may be able to influence will be critical in retaining and potentially growing population. Note that there are a number of forecast scenarios, based on strategic opportunities, which are discussed in more detail in **Section 4.1.4 Population Forecast**.

Figure 5. Population Forecast in Carnarvon and the Gascoyne Region

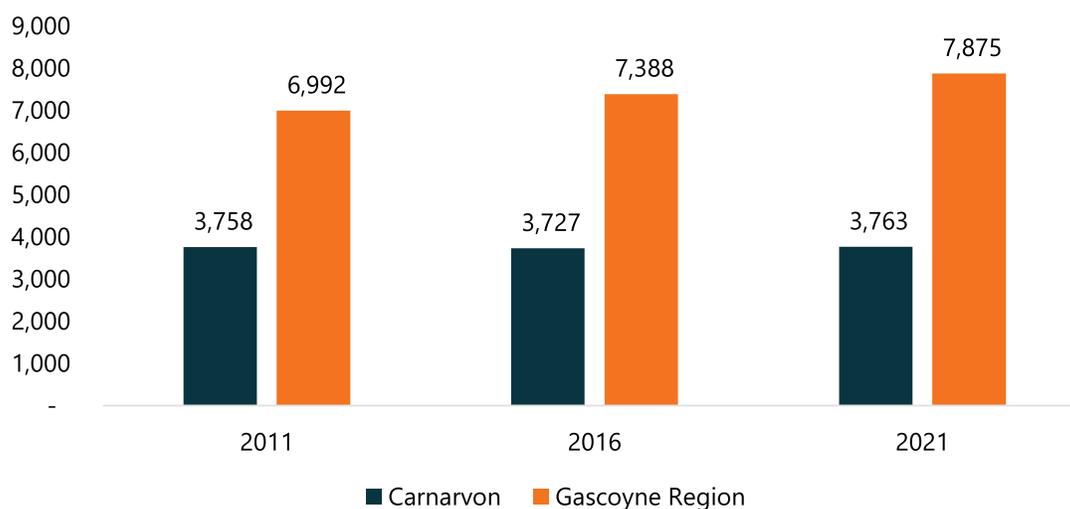


Source: WA Tomorrow 2025, ABS Census 2021

Dwelling Change

The dwellings in the Shire increase, unlike population, from 3,758 in 2011 to 3,763 in 2021 (0.13% change) (Figure 6). The Shire accounted for 54% of dwellings across the Gascoyne Region in 2011 which remained approximately the same in 2016 and 2021. The declining quantum of dwellings from 2011 to 2016 (-1% change) may be attributable to slowing economic conditions which were revitalised by an increase in domestic tourism following border closures in 2021.

Figure 6. Dwelling Change in Carnarvon and the Gascoyne Region



Source: ABS Census 2011, ABS Census 2016, ABS Census 2021

3.2 Age Profile

The age profile of the Shire of Carnarvon, Greater Perth and the Gascoyne Region has been compared in Figure 7. The Shire has:

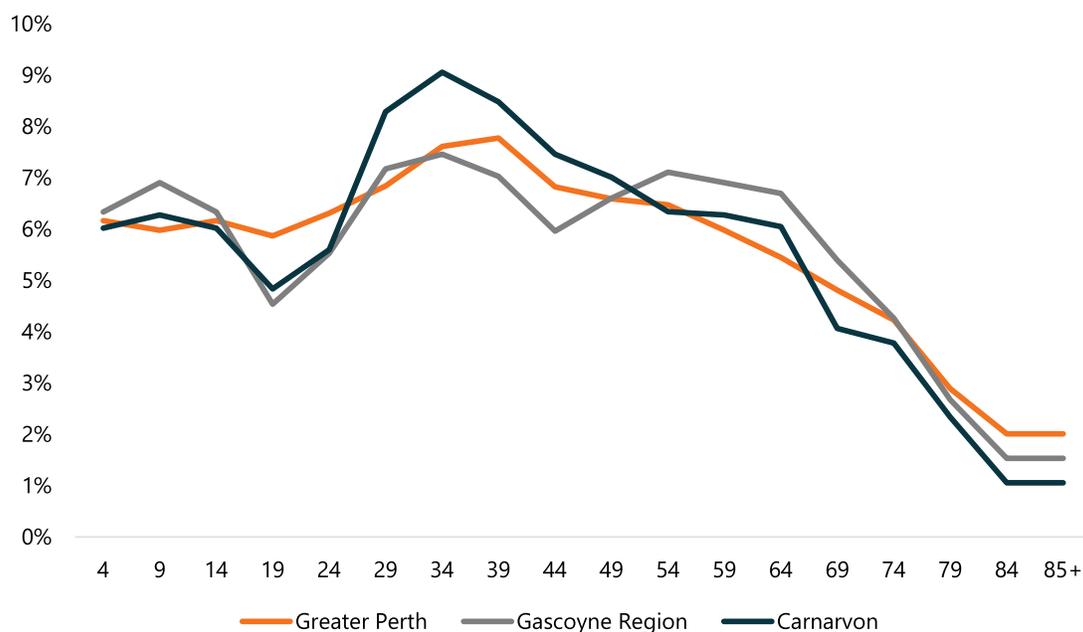
- A higher concentration of working-age population (18 years old to 64 years old) than both Greater Perth and the Gascoyne Region (69% versus 66% and 65%)
- A lower proportion of older persons (60+ years old) relative to Greater Perth and the Gascoyne Region (18% versus 21% and 22%)
- A lower proportion of secondary and university-aged persons (14 to 24 years of age).

The high proportion of working age persons reflects a somewhat transient community that comes to the Shire for work. The Shire's relatively small older population and large working-age population compared to the benchmarks are likely related to poor health outcomes in long term residents and limited health services, particularly for aged persons. Education and diversity of employment opportunities are likely contributing to youth leaving the Shire for opportunities to study and work.



These gaps present opportunities for the Shire to focus economic and community development efforts that can retain population and allow residents to age in their community.

Figure 7. Population by Age in Carnarvon against Greater Perth and the Gascoyne Region



Source: ABS Census 2021

3.3 Household Profile

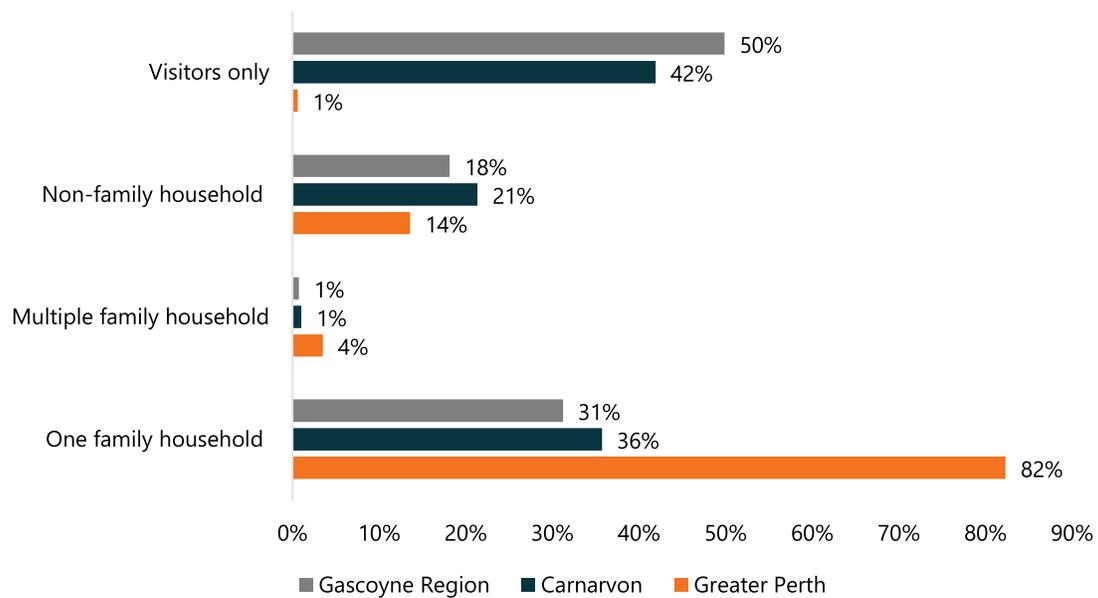
Structure

The Shire of Carnarvon’s household structure was examined by household composition against Greater Perth and the Gascoyne Region (Figure 8). Visitor-only households account for a greater proportion of households in the Shire of Carnarvon and the Gascoyne Region relative to Greater Perth (39% and 47% versus 1%). The Shire’s high proportion of visitor-only households is likely accounted for by vacation or summer homes¹ and has grown since 2016. Lone-person households (a sub-division of non-family households along with group households) account for 21% of total households in the Shire. Lone-person households and visitor-only households are the only household compositions to have positively changed between 2016 and 2021.

¹ ABS provides no clear definition of a Visitor Only household. Typically, households are counted by private dwellings and the number of families present. Visitor Only households are part of the Non-Classifiable category of Household Composition data.



Figure 8. Household Composition in Carnarvon against Benchmarks

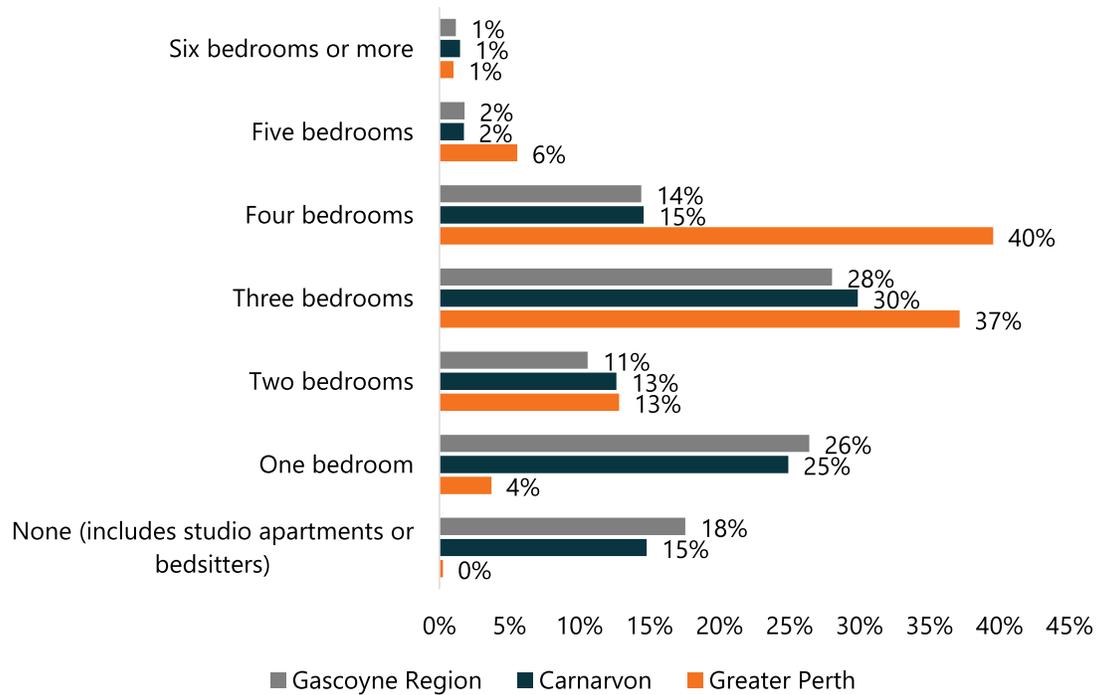


Source: ABS Census 2021

The Shire’s household structure was also examined by the number of bedrooms per dwelling (Figure 9). A larger proportion of dwellings in the Shire can be attributed to no-bedroom dwellings relative to Greater Perth (15% versus 0.2%). However, the Gascoyne Region has a greater proportion of no-bedroom dwellings (18%) and one-bedroom dwellings (26% versus 25%). No-bedroom and one-bedroom dwellings can likely be attributed to mining workforce accommodation. This aligns with the Shire’s smaller share of 14- to 24-year-old age group and non-family-oriented demographic as dwellings with two or more bedrooms represent a smaller proportion of total dwellings relative to Greater Perth and Gascoyne Region. Both household structure and the number of bedrooms indicate that the number and composition of dwellings in the Shire are determined by the extent of the mining industry and a small family-oriented population.



Figure 9. Number of Bedrooms in Carnarvon against Benchmarks



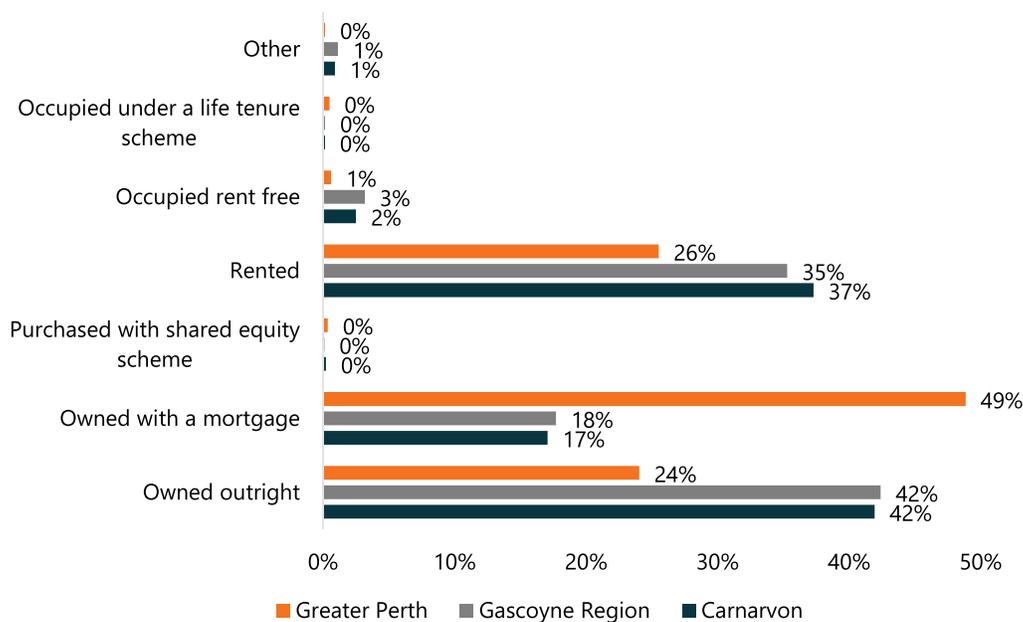
Source: ABS Census 2021

Tenure

Tenure data indicates that the Shire is home to both a mobile working-age population and an older, permanent population (Figure 10). The Shire has a greater proportion of dwellings that are rented compared to Greater Perth (35% versus 26%), these are more likely to be taken up by working age persons who may be living in the town for a defined period. Approximately 42% of homes are owned outright, significantly higher than Greater Perth (24%), and likely correspond to longer term residents. The lower proportion of homes owned with a mortgage are an indication that people moving to the Shire are not intending to stay long term.



Figure 10. Tenure Type in Carnarvon by Benchmarks



Source: ABS Census 2021

3.4 Cultural Profile

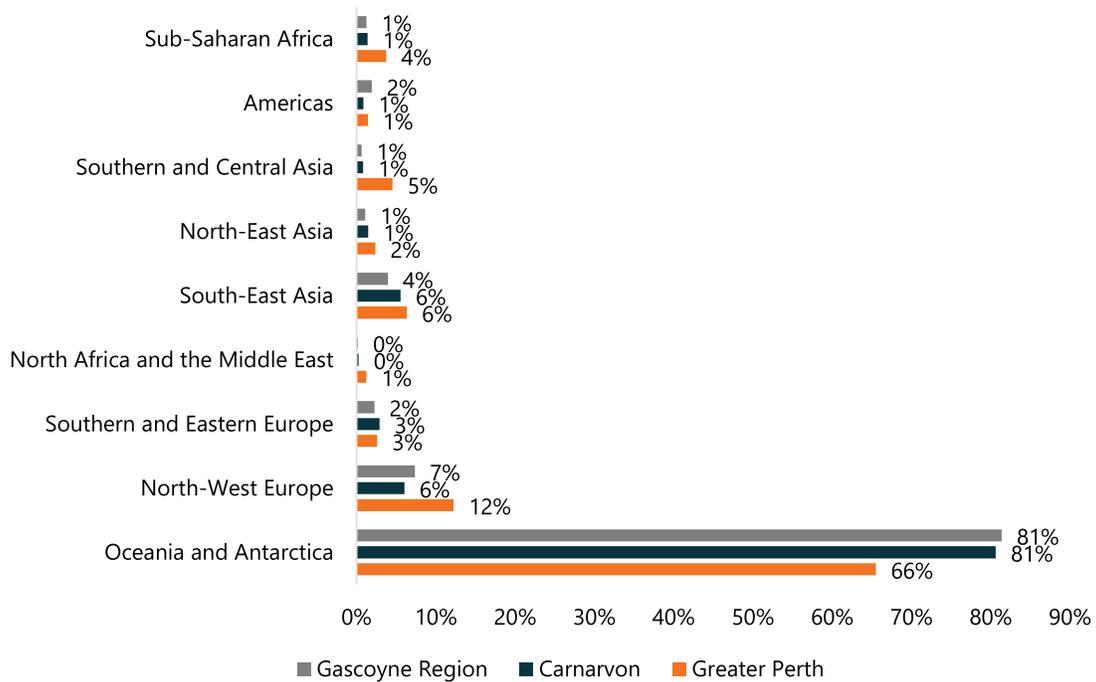
Cultural Diversity

The Shire of Carnarvon’s cultural diversity was analysed using country of birth data against Greater Perth and the Gascoyne Region (Figure 11). Australia is a larger country of birth for the Shire (78%) compared to the Gascoyne Region (69%) and Greater Perth (62%). The United Kingdom is the next largest country of birth for the Shire (4%), the Gascoyne Region (11%) and Greater Perth (10%). There are lower levels of Culturally and Linguistically Diverse (CaLD) population in the Shire compared to Greater Perth. The Shire has a similar cultural diversity composition to the Gascoyne Region whereas Greater Perth has a higher proportion of people born in African and Asian regions. Attracting CaLD communities is an opportunity to address sparse population and skill shortages while generating benefits for both the local community and those newly settled in the area².

² Federation of Ethnic Communities’ Councils of Australia, 2015, Migration: An Opportunity for Rural and regional Australia, <https://fecca.org.au/wp-content/uploads/2015/08/Migration-and-Regional-Australia.pdf>



Figure 11. Country of Birth in Carnarvon against Greater Perth



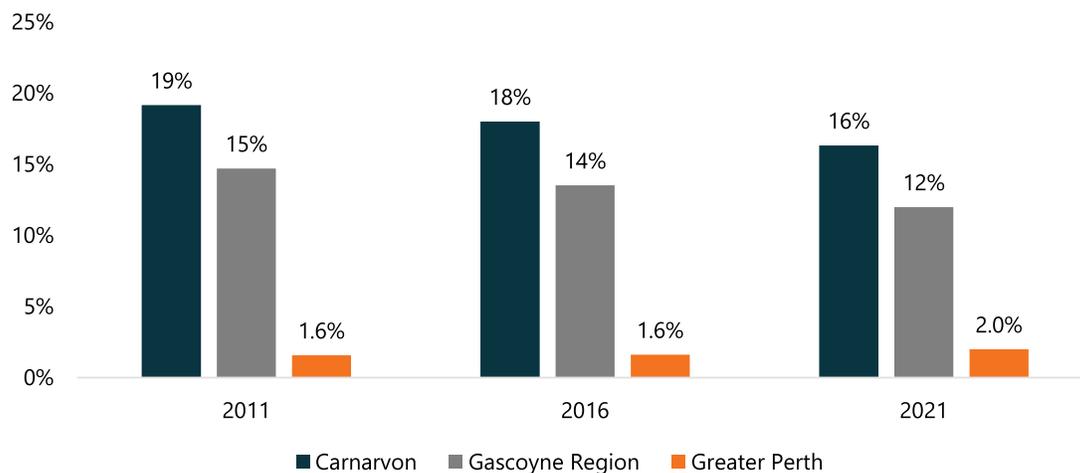
Source: ABS Census 2021

Aboriginal Population

The Shire accounted for 857 of the Gascoyne Region’s 1,143 Aboriginal people in 2021, falling from 81% of the Region’s Aboriginal population in 2011 to 75% in 2021 (Figure 12). The Shire’s Aboriginal population has fallen from 19% of the total population to 16%. There may be the need for additional culturally relevant services to be provided to support the Shire’s Aboriginal population.



Figure 12. Aboriginal Persons as a Proportion of Total Population for Carnarvon and Benchmarks



Source: ABS Census 2011, ABS Census 2016, ABS Census 2021

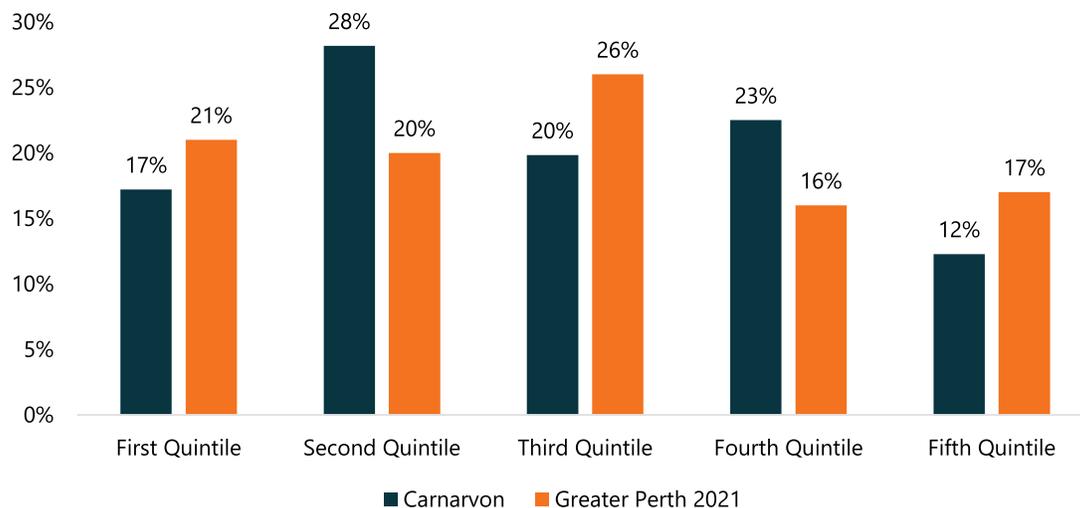
3.5 Income Profile

Household Income

Households in the trade area have been equally distributed into five levels of weekly income. Generally, lower-income quintiles spend a higher proportion of their income on basic goods and services; upper-income quintiles have more disposable income available to spend on luxury items. Incomes in the Shire have a lower representation than Greater Perth across the first (17% versus 21%), third quintiles (20% versus 26%) and fifth quintiles (12% versus 17%) with a higher proportion of households in the second (28% versus 20%) and fourth quintiles (23% versus 16%) (Figure 13). This would indicate that households in the Shire generally have a lower level of discretionary spending relative to Greater Perth. A similar conclusion can be found in comparison with the Gascoyne Region.



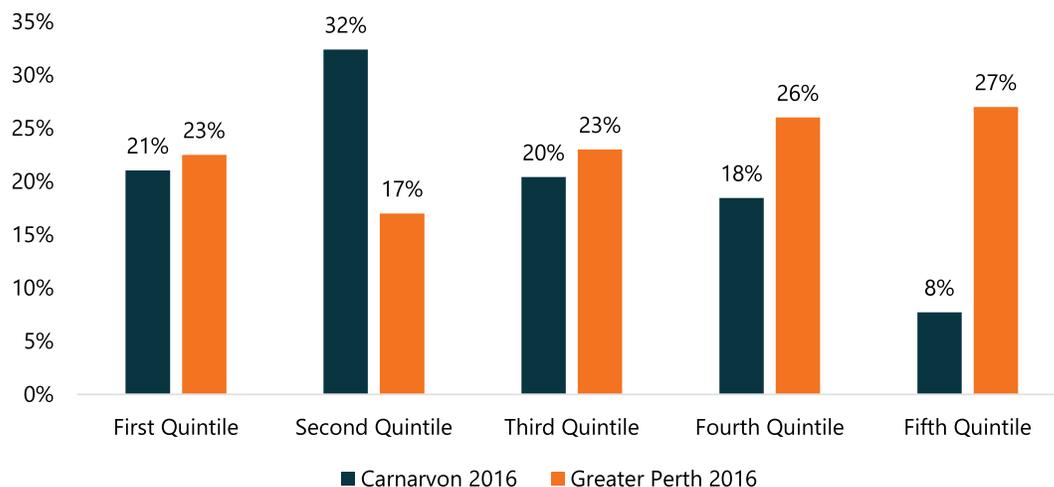
Figure 13. Weekly Household Income Quintiles in Carnarvon against Greater Perth 2021



Source: ABS Census 2021

The analysis has also been completed with 2016 data to examine income without the effects of COVID-19 and over time (Figure 14). Incomes within the Shire do not appear to have been significantly impacted by COVID-19 as the fourth- and fifth-income quintiles increased from 2016 to 2021 with the third quintile remaining at 20% and the first two income quintiles decreasing. This may be associated with higher levels of domestic tourism. If this is the case, there may be the opportunity to maintain higher levels of visitation through appropriate initiatives such as improved accommodation, marketing and new tourist activities / attractions.

Figure 14. Weekly Household Income Quintiles in Carnarvon against Greater Perth 2016



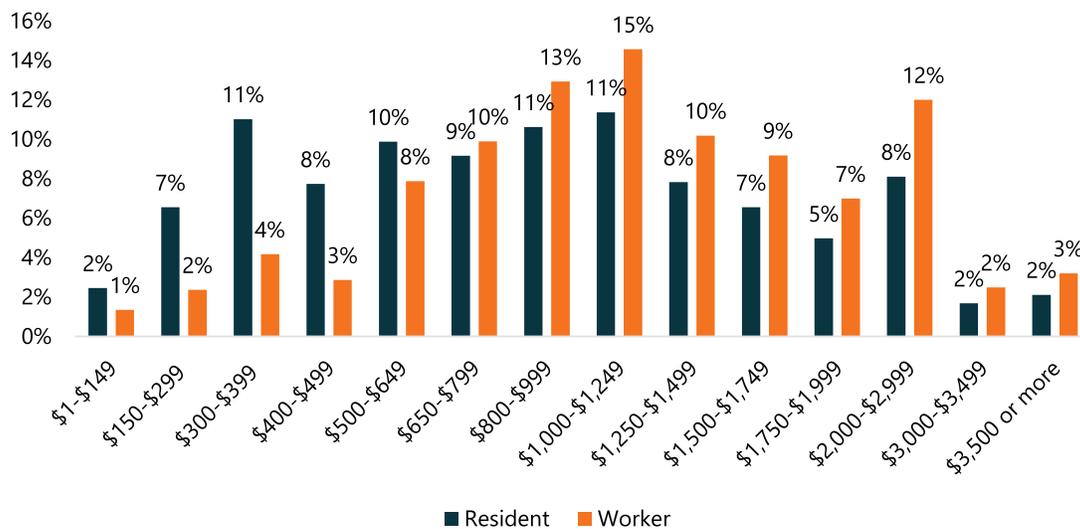
Source: ABS Census 2016



Worker and Resident Income

ABS Census 'Place of Work' data has been compared against 'Place of Usual Residence' to compare the income distribution of residents against workers for the Shire of Carnarvon (Figure 15). The Shire has a greater proportion of residents in the low-income brackets (up to \$500-\$649) compared to workers. Those who work in the Shire make up a greater proportion of the medium to high income brackets. This reflects FIFO and potentially a misalignment of local skills. Vocational training and reskilling opportunities may assist locals in entering higher paying jobs and may help retain the youth population by providing better pathways to paid employment.

Figure 15. Resident and Worker Weekly Income in Carnarvon



Source: ABS Census 2021

4 EXISTING PLANNING FRAMEWORKS

Existing planning frameworks have been reviewed to establish the Shire's current economic issues and opportunities and activity centre hierarchy.

4.1 Economic Opportunities and Issues

Current issue and opportunity areas have been examined with reference to existing planning documents for the Shire of Carnarvon (Figure 16).

Figure 16. Existing Economic Issues and Opportunities

Strategic Documentation	Opportunities / Issues
Shire of Carnarvon – Economic Development Strategy 2023-2028	Opportunities
	<p>Established Industries</p> <p>The Shire's concentration of mining and agriculture resulting from its rich location represents an opportunity for new businesses in the renewable and extractive industries.</p> <p>Food production and agriculture play a significant role in the Shire's economy and Western Australian consumers. The goods produced in the industry represent a constant need and the Shire has the capacity to grow production.</p> <p>Existing Infrastructure</p> <p>The extent of existing infrastructure catered towards FIFO industries means the Shire is well-established for commercial business. The Shire also hosts essential services such as health, social services and satellite government offices. As the Shire's industries are export-oriented, supply chain networks are well-established.</p> <p>Tourism</p> <p>The Shire is uniquely situated between the Ningaloo Coast, the Shark Bay World Heritage Areas and the Kennedy Range National Park making it the primary location for visitors to the region.</p> <p>Promoting and investing in the LGA's culture and natural attractions to increase the visitor length of stay and spend represents an economic opportunity for the Shire.</p>
	Issues
	<p>Seasonality</p> <p>Fluctuations in the population are driven by tourism in the warmer months against colder months. This presents a challenge for economic planning. Growth in tourism will put pressure on local and regional infrastructure with off-season lows reducing the feasibility of investments.</p>



Strategic Documentation	Opportunities / Issues
	<p>Infrastructure and Skilled Workforce</p> <p>Accommodation shortages represent a heightened issue in regional WA including in the Shire due to the escalated costs associated with remoteness. Without critical infrastructure such as housing, the Shire cannot attract and retain a qualified workforce relative to the demand for skilled workers.</p> <p>The lack of necessary infrastructure and amenities limits the extent of population and economic growth. The Shire’s ageing infrastructure and lack of childcare, sports and school facilities means the region does to have the capacity to retain or attract population.</p> <p>Lack of Investment</p> <p>Visitation plays an important role in the diversity and success of the Shire’s economy. The lack of investment in new and existing tourism products limits the growth of visitation.</p> <p>The Shire’s concentration in primary industries faces fluctuations as they compete in the global market. This makes attracting investment and increasing the confidence of stakeholders and the government to support industries and the community in the Shire challenging.</p>
Shire of Carnarvon – Corporate Business Plan 2023-2027	<p>Opportunities</p> <p>Tourism Investment and Development</p> <p>Trails development as a way of connecting cultural and natural assets in the Shire. Register Coral Bay as an Astro Tourism Town to diversify the Shire’s tourism offerings.</p> <p>CBD Activation</p> <p>Implementation of a place-based approach to foster economic growth at a local level in the Carnarvon CBD by creating vibrant and active spaces.</p> <p>Investment Attraction</p> <p>Implement an economic development strategy that encourages private investment in tourist accommodation and infrastructure. Seek out funding opportunities from 3rd parties such as partnerships, sponsorships and grants.</p> <p>Issues</p> <p>A Gap in Key Service Delivery</p> <p>A number of programs, providers and organisations operate to assist different parts of the community with no way of understanding where services are appropriately delivered or where there are gaps.</p>
Gascoyne Development Commission –	<p>Opportunities</p> <p>Industrial Sector</p> <p>The development of a deep-water port facility would be advantageous for the region and provide sustainable economic and employment stimulus.</p>



Strategic Documentation	Opportunities / Issues
<p>Economic Development Opportunities for the Gascoyne region associated with Resource Sector Investment and Expansion</p>	<p>Redevelopment damaged petrol stations, expand heavy-duty maintenance repair industry, allocate sufficient zoned land for heavy industry and develop supporting infrastructure for a road transport hub.</p> <p>FOFI / DODI Residential Base</p> <p>Establish the Shire as a FOFI / DODI residential base for off-shore oil and gas and on-shore mining and exploration nodes.</p> <p>Tourism Development</p> <p>Encourage the development of additional high-end accommodation, resort development and attraction offerings. Such as the restoration of the jetty, development of trails, restoration of the OTC site and encouragement of private sector investment in Coral Bay.</p> <p>Creation of a policy to encourage workers to stay a night or two in the Shire prior to or after their stay on site to increase local expenditure.</p> <p>Education and Training Precinct</p> <p>Establish a link between the mining and resource sector and Indigenous training and employment outcomes in the sector.</p> <p>Develop a school campus and a Trade Training Centre. Include the delivery of mining and resource sector-specific training. The size of the population would support trade enrolment to a greater extent than other regional towns.</p>
	<p>Issues</p>
	<p>Industrial Sector</p> <p>Insufficient demand to develop a port on this scale. Consultation indicates that servicing at the point of use (e.g. in the Pilbara) is preferred. Labour shortages in Carnarvon may prohibit the development of a resilient heavy-duty maintenance cluster.</p> <p>FOFI / DODI Residential Base</p> <p>Current airport infrastructure capacity is insufficient to meet the demands of offshore oil and gas. A limiting factor is the cost and feasibility of establishing a workforce based in the Shire.</p> <p>Tourism Development</p> <p>The lack of existing signage and entrance statements decreases the rate of stop-over visitation from passing traffic on the highway.</p> <p>Different understanding of responsibility between stakeholders with locals believing the FIFO workforce represents an opportunity to increase tourism and resource sectors suggesting they play no role.</p>

Source: Pracsys 2024

4.2 Activity Centre Hierarchy

The Gascoyne Coast Sub-Regional Strategy 2018 outlines the settlement and activity centre tiers for the region according to the Gascoyne Regional Planning and Infrastructure Framework 2015. The hierarchy of settlements and centres in the Shire of Carnarvon has been summarised (Figure 17). The functions of regional settlements and activity centres have been broadly aligned with the functions of State Planning Policy 4.2 – Activity Centre’s (SPP4.2) classifications (see Section 10.3 for centre characteristics). The Gascoyne Coast Sub-Regional Strategy indicates that the key opportunities and issues facing activity centres are accommodating future population growth and developing the sub-region’s settlements to be sustainable and liveable communities. Engagement findings will be collated with the results of this analysis to determine if any changes to the hierarchy should be considered.

Figure 17. Shire of Carnarvon Activity / Settlement Hierarchy

Tier		SPP4.2 Alignment	Description	Settlement / Centre
1	Regional City	Secondary Centre	Dominant centres for population, economic activity and employment with a range of diverse high-order services and functions. Regional cities service the majority of the regional population and include industrial, commerce, government, health and education infrastructure and services.	N/A
2	Regional Centre		Regional centres service a smaller population in comparison to a Regional City. Regional Centres are significant	<ul style="list-style-type: none"> Carnarvon



Tier		SPP4.2 Alignment	Description	Settlement / Centre
			centres of economic activity, employment and population. Regional Centres are hubs for regional industry, commerce and administration. They also provide education, recreation and health services.	
3	Sub-regional Centre	District Centre	Sub-regional centres support the population and economic activities within their surrounding rural areas through the provision of goods and services. Retail services offered in Sub-regional centres largely focus on the day-to-day needs of their service population, however, some comparative retail may also occur, particularly in larger centres. Other commercial and light industrial activities, which generally exist to service the local economies, are	N/A



Tier		SPP4.2 Alignment	Description	Settlement / Centre
			important functions of sub-regional centres. Sub-regional centres often provide local government administrative functions and a range of social infrastructure.	
	Tourism Centre	Neighbourhood Centre	Tourism centres have a small population base and their local economies are focused on tourism. These centres experience significant fluctuations in population due to the seasonal influxes of tourists, and as such are generally service and experience-oriented with some associated retail functions.	<ul style="list-style-type: none"> Coral Bay
4	Local Centre	Local Centre	Local centres offer a level of service that generally deals with the daily needs of their service population with a lower level of choice than Regional or Sub-regional centres.	N/A



Tier		SPP4.2 Alignment	Description	Settlement / Centre
	Tourism Node		<p>Tourism nodes contain a negligible population base and as such the functions they provide cater exclusively to the needs of tourists.</p> <p>Tourism nodes primarily accommodate overnight visitors and generally contain the necessary infrastructure to facilitate this function. They can also offer some basic retail facilities that are secondary to the core function of accommodation.</p>	<ul style="list-style-type: none"> Gnaraloo Station Quobba
5	Service Centre		<p>Service centres are generally located on major State arterial roads and offer basic 'roadhouse' facilities, including minor vehicle repair and servicing.</p> <p>Service centres may play an important role in inter and intra-regional travel.</p>	<ul style="list-style-type: none"> Minilya Billabong



Tier		SPP4.2 Alignment	Description	Settlement / Centre
	Minor Tourism Node		Minor Tourism nodes accommodate overnight visitors but have a lesser capacity in comparison to Tourism nodes. They generally have limited infrastructure related to this function, meaning that they are generally more constrained than tourism nodes.	<ul style="list-style-type: none"> Warroora
Other Activity Centres	Specialised Centre	N/A	Specialised Centres are essentially centres of employment that concentrate on a specific type of activity. They can be but are not necessarily, located within relatively close proximity to other activity centres that contain a permanent population and typical urban functions.	<ul style="list-style-type: none"> Port mining facilities associated with Cape Cuvier Any operating mine sites Future centres: <ul style="list-style-type: none"> Former Overseas Telecommunications Centre site, Brown Ranges Proposed mine sites Bejaling Port
	Conservation Areas		Conservation areas encompass World Heritage areas and State managed conservation parks and	<ul style="list-style-type: none"> Earl of Carnarvon Conservation area



Tier		SPP4.2 Alignment	Description	Settlement / Centre
			reserves (including the conservation and recreation reserves and marine reserve system); and privately managed conservation lands.	
	Local Day-use Sites		Local day-use sites offer various visitor amenities and facilities, but generally contain extremely limited or no formal provision for overnight accommodation. They are numerous in the Gascoyne Coast sub-region and occur within and outside of other activity centres.	N/A

Source: Gascoyne Coast Sub-Regional Strategy 2018

5 ECONOMIC CONTEXT

The Shire of Carnarvon's current economic position was analysed using labour force information, business entries and exits, employment quality and residents' industry of employment to provide an overview of recent trends and changes in the community.

5.1 Labour Force Status

The proportion of the Shire's employed population to its total population has remained stable since 2011 (decreasing from 44% to 43% over 10 years) (Figure 18). Both the unemployment rate and the labour force participation rate in the Shire have not changed since 2011 (5% and 68%, respectively).

Figure 18. Carnarvon Labour Force

Status	2011	2016	2021
Employed	44% (2,538)	42% (2,344)	43% (2,273)
Unemployment Rate	5% (132)	7% (167)	5% (122)
Labour Force Participation Rate	68% (2,670)	67% (2,511)	68% (2,395)
Not in the Labour Force	32% (1,248)	33% (1,215)	32% (1,141)

Source: ABS Census 2011, ABS Census 2016, ABS Census 2021, Pracsys 2024

The labour force status for Greater Perth and the Gascoyne Region have been calculated as benchmarks to compare against the Shire (Figure 19). While accounting for a significant proportion of the Gascoyne Region's labour force, the Shire has higher rates of unemployment with a lower proportion of the population employed or participating in the labour force. The same can be said for the Shire with reference to the Greater Perth labour force. The labour force outcomes are likely a result of high competition for local jobs because of skilled and experienced persons temporarily moving to the Shire, forcing young persons to look elsewhere for both education and work.

**Figure 19. Greater Perth and Gascoyne Region Labour Force**

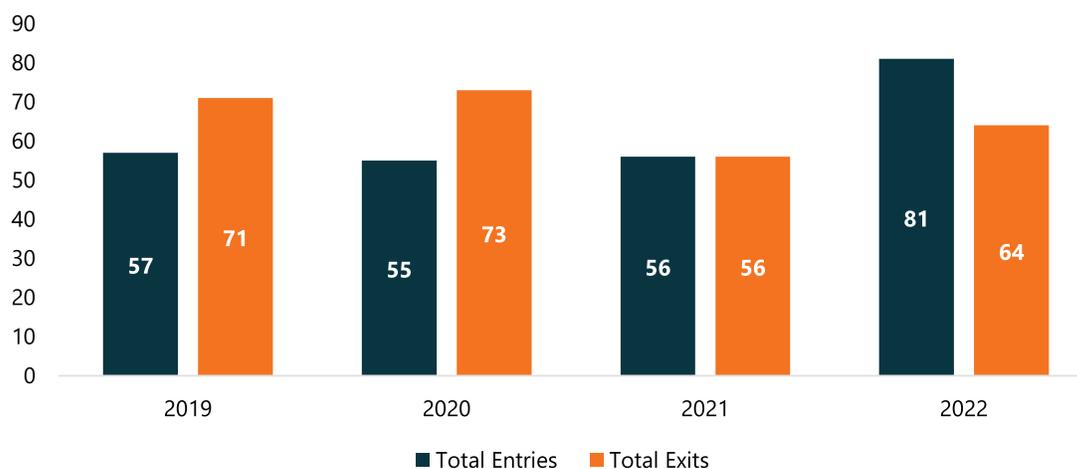
Status	Gascoyne Region			Greater Perth		
	2011	2016	2021	2011	2016	2021
Employed	47% (4,344)	45% (4,238)	48% (4,539)	50%	47%	48%
Unemployment Rate	4% (192)	6% (257)	4% (174)	5%	8%	5%
Labour Force Participation Rate	70% (4,536)	69% (4,495)	71% (4,713)	69%	68%	69%
Not in the Labour Force	30% (1,979)	31% (2,033)	29% (1,934)	31%	32%	31%

Source: ABS Census 2011, ABS Census 2016, ABS Census 2021, Pracsys 2024

5.2 Business Entries and Exits

Total business entries have increased from 57 to 81 between 2019 to 2022 (12% average growth per year) (Figure 20). Total business exits were greater than entries in 2019 and 2020, stabilising during COVID-19 in 2021 and improving in 2022. As major industries such as mining were contracting during this period, the growth in business entries likely reflects an expansion in domestic tourism resulting from the prohibition on international travel in 2021. On a more detailed level, non-employed businesses account for 71% of business entries in 2022 followed by businesses employing 1-4 employees (25%)³. Non-employed businesses account for 70% of business exits in 2022 followed by businesses employing 1-4 employees (22%).

Figure 20. Carnarvon Business Entries and Exits 2019-2022



Source: ABS Data Explorer 2023

5.3 Employment Quality

Employment quality can be described by considering industry uses and the required level of knowledge.

The Employment quality covers four types:

- Consumer services (CS) include retail, real estate agents, travel agents, shoe repair, dry cleaning services and beauty salons.
- Producer services (PS) include manufacturing, construction, and distribution.
- Knowledge-intensive consumer services (KICS) include general practitioners, accountants, veterinarians and legal services.

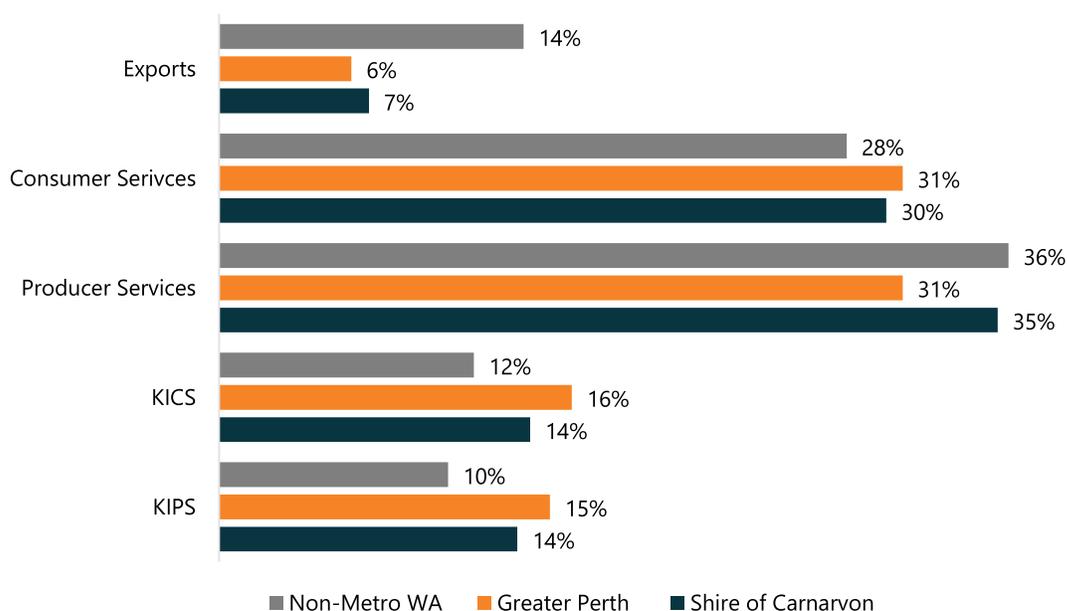
³ Data for businesses employing 20+ people were not available for the Shire of Carnarvon.



- Knowledge-intensive producer services (KIPS) include engineers, architects, medical scientists and computer software developers.
- Export-oriented activity (Exports) include strategic industries such as mining, oil and gas and defence.

The Shire of Carnarvon has an employment quality breakdown broadly in line with that of Greater Perth (Figure 21). It does however have higher levels of producer services. Strategic employment combines exports and supporting knowledge-intensive producer services (KIPS). The levels of producer services and knowledge-intensive producer services (KIPS) are greater than that of Greater Perth, this identifies that the region has higher than average business to business related employment. The Shire has greater KICS, KIPS and consumer services relative to regional WA which can likely be attributed to high levels of tourism that support amenities and infrastructure beyond what would be generally be achieved by regional populations. Export related employment is less in the Shire than regional WA which is predominantly related to the scale of mining operations locally.

Figure 21. Carnarvon and Greater Perth Employment Quality



Source: ABS Census 2021

5.4 Industry of Employment

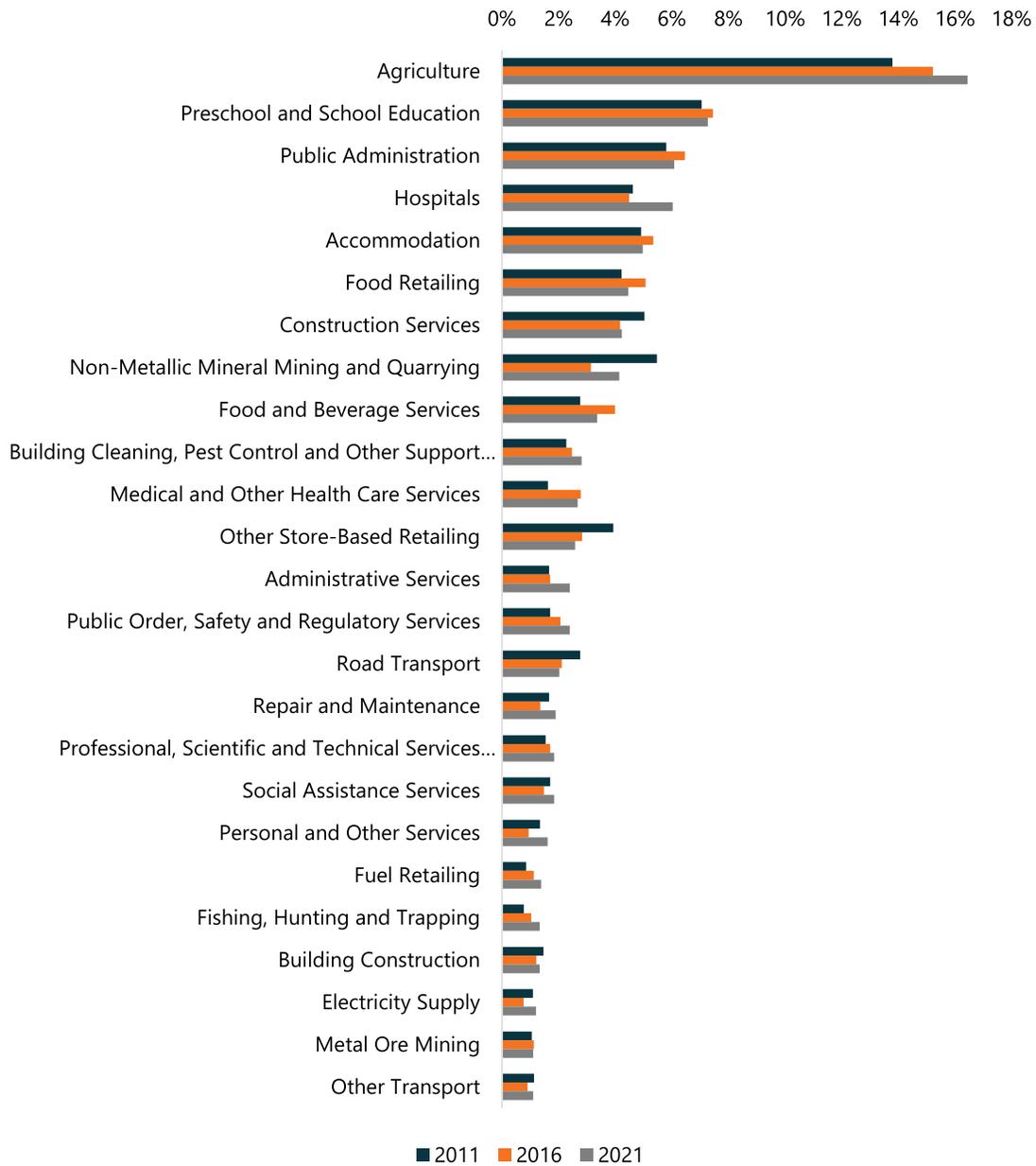


Dominant industries in the Shire of Carnarvon were examined by the proportion of workers the industry employs (Figure 22)⁴. Agriculture, Forestry and Fishing have employed the greatest, and a growing, proportion of residents since 2011 (15%, 18%, 19%). On a more detailed level, Agriculture (16%), Preschool and School Education (7%), Public Administration (6%), Hospitals (6%) and Accommodation (5%) account for the greatest proportion of workers. These five key industries have all experienced increases in the proportion of workers employed.

⁴ Only industries that employed at least 1% of the Shire's workforce were included in Figure 22



Figure 22. Proportion of Workers by Industry 2011-2021



Source: ABS Census 2011, ABS Census 2016, ABS Census 2021



6 INDUSTRY ANALYSIS

Industry employment data from the ABS was analysed to identify key growth industries and/or industries that are underrepresented locally. The analysis considered industry size, growth and local concentration; the final set of opportunity and emerging industries will be used to inform engagement with key stakeholders.

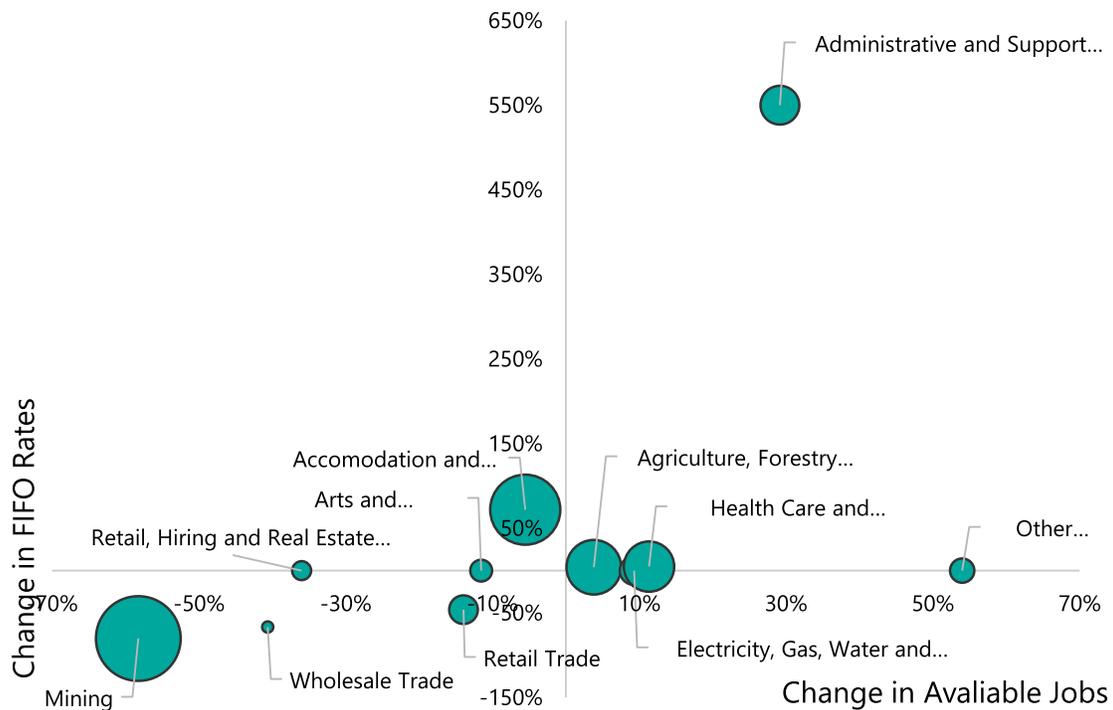
6.1 FIFO Employment Change

Industry of employment was compared against those who work in the Shire and those who reside there. The difference between these two populations provides an indication to the extent of fly-in, fly-out work undertaken in the Shire (Figure 23). FIFO accounted for a significant proportion of mining jobs in 2016 however, mining jobs appeared to decrease in 2021, largely accounted for by a decrease in FIFO employment. The positive change in FIFO rates for Accommodation and Food Services and Administrative and Support Services appears contradictory as both these industries typically have a complementary relationship to other FIFO-based industries such as mining.

Negative changes in population-driven service industries such as Retail Trade, Real Estate Services and Arts and Recreation align with population decline in the Shire. At the same time, other population-driven services such as Other Services, Health Care and Social Assistance and Electricity, Gas and Water Services experience positive change which may be associated with increased domestic tourism.

The engagement should look to understand opportunities to reduce trends towards FIFO workforce, particularly in industries such as Accommodation and Food Services that are also local strengths for tourism.

Figure 23. Carnarvon Change in FIFO Employment



Source: Source: ABS Census 2016, ABS Census 2021, Pracsys 2024

6.2 Employment Concentration Factors

Employment concentration factors (ECFs) measure the concentration of an industry’s employment within a study area relative to a benchmark, indicating the local specialisation of an industry and its exportability.

WA state employment and Regional WA⁵ employment were selected as benchmarks for this analysis to identify the strength of the Shire of Carnarvon’s industries relative to the benchmark averages (Figure 24). An ECF of 1.0 means that an industry in the Shire has the same concentration as it does in a benchmark. An ECF greater than 1.0 indicates that an industry employs a higher proportion of workers in the Shire than it does in a benchmark. A high ECF indicates that the industry is producing more goods and services than the local population can consume, making it possible to service or export to markets beyond the local area. Industry strengths and gaps can provide an understanding of economic development opportunities.

⁵ Non-metropolitan WA employment counts all employment in WA excluding employment in Greater Perth. Under ABS’s geographical categories, this is called ‘Rest of Western Australia’.

**Figure 24. Employment Concentration by Top-Ten Industry Sub-Division WA**

ANZSIC 2 Industry Sub-Division ⁶	ECF (WA)
Fishing, Hunting and Trapping	20.30
Other Transport	13.85
Non-Metallic Mineral Mining and Quarrying	13.16
Agriculture, Forestry and Fishing	8.08
Agriculture	7.94
Aquaculture	7.25
Accommodation	6.53
Fuel Retailing	4.39
Agriculture, Forestry and Fishing Support Services	4.12
Heritage Activities	3.67

Source: ABS Census 2016, ABS Census 2021, Pracsys 2024

Agriculture (and Support Services), Aquaculture, Non-Metallic Mineral Mining and Quarrying, Other Transport⁷, Fishing, Hunting and Trapping⁸ are the top industries by ECF compared to the State benchmark and may present opportunities for economic development through expansion and supply chain development. Accommodation, Heritage Activities, and Other Transport have the opportunity to expand based on tourism demand.

Employment in many strength industries is more closely aligned with Regional WA resulting in lower ECFs (Figure 25). Agriculture, Forestry and Fishing Support Services, Aquaculture and Agriculture no longer appear in the top ten; Electricity Supply, Gambling Activities and Defence emerge in the top-ten ECFs. The Shire's high concentration of Fishing, Hunting and Trapping and Other Transport remains when compared to Regional WA.

⁶ Definitions and subcategories for each ANZSIC 2 Industry Sub-Division can be found on the ABS website: <https://www.abs.gov.au/statistics/classifications>

⁷ Other Transport consists of Scenic and Sightseeing Transport and Pipeline and Other Transport

⁸ Subdivisions of Fishing, Hunting and Trapping are Fishing and Hunting and Trapping. Hunting and Trapping largely reflect small-scale commercial activity while Fishing includes larger-scale activities such as trawling.

Figure 25. Employment Concentration by Top-Ten Industry Sub-Division Non-metro WA

ANZSIC 2 Industry Sub-Division ⁹	ECF (Non-metropolitan WA)
Fishing, Hunting and Trapping	8.96
Other Transport	8.46
Gambling Activities	4.37
Defence	4.33
Non-Metallic Mineral Mining and Quarrying	4.05
Fuel Retailing	3.07
Accommodation	2.84
Agriculture, Forestry and Fishing, nfd	2.65
Heritage Activities	2.54
Electricity Supply	2.45

Source: ABS Census 2016, ABS Census 2021, Pracsys 2024

The results highlight the Shire's strengths in relevant agriculture and tourism activities.

6.3 Emerging / Strength Industries

Shift-share analysis is a technique that uses historical employment growth to identify the industries that have recently been most competitive within the region. Employment growth is broken down into different components to determine the share of growth that is attributable to the broader national economy and particular industry, with the remainder then assumed to result from particular competitive strengths developed in the region. Under this approach, local industry performance can be defined under the following four categories: high growth locally in a high growth industry, low growth locally in a high growth industry, high growth locally in a low growth industry, low growth locally in a low growth industry (Figure 26).

Figure 26. Shift-Share Model

High Growth	Local growth outperforms in a high growth industry at the benchmark level	Shift Share Score	1
	Local growth underperforms in a high growth industry at the benchmark level		2

⁹ Definitions and subcategories for each ANZSIC 2 Industry Sub-Division can be found on the ABS website: <https://www.abs.gov.au/statistics/classifications>.



Low Growth	Local growth underperforms in a low growth industry at the benchmark level		3
	Local growth outperforms in a low growth industry at the benchmark level		4

Source: ABS 2021, Pracsys 2024

Industries that score well in the shift share are likely to be key investment attraction opportunities as they are concentrated locally and experiencing high growth. The shift share analysis has been conducted using Western Australian employment and Regional WA employment as the comparisons.

The shift share analysis and other industry factors were used to identify the opportunity and emerging industries that should be considered in this study. The table below outlines the key ANZSIC 2¹⁰ industries within the Shire. These industries have been chosen based on achieving two or more of the following criteria:

- **Their size:** They employ more than 25 people
- **An appropriate shift share score:** they grew between 2016 and 2021 and either grew faster than the industry at the comparison population level or experienced growth in a high growth industry
- **Concentration levels:** they are concentrated more within the Shire than the comparison population (ECF > 1)

These criteria resulted in a set of 12 industries that are considered strength industries relative to the State (Figure 27).

Figure 27. Existing Strength Industry in the Shire against WA

ANZSIC 2 Industry Sub-Division	Jobs	Score	ECF	Growth
Fishing, Hunting and Trapping	43	4	20.3	20
Other Transport	26	4	13.8	7
Agriculture	363	3	7.9	5
Fuel Retailing	38	1	4.4	15
Electricity Supply	29	4	3.2	7
Administrative Services	58	4	1.7	17
Building Cleaning, Pest Control and Other Support Services	63	4	1.5	12
Hospitals	144	2	1.4	27
Food Retailing	101	3	1.35	1.45

¹⁰ ANZSIC is the ABS industry classification. ANZSIC 2 are detailed industry categories.



ANZSIC 2 Industry Sub-Division	Jobs	Score	ECF	Growth
Accommodation	140	3	6.5	0
Non-Metallic Mineral Mining and Quarrying	87	2	13.2	-136
Metal Ore Mining	75	2	0.6	-112

Source: ABS Census 2016, ABS Census 2021, Pracsys 2024

The industries identified present strategic employment opportunities and are likely to play an important part in the ongoing success of the Shire's economy. Agriculture related strengths may have the opportunity to increase production by addressing constraints and promoting the adoption of new practices and technology. There may also be the possibility of supply chain development, for example increased food product manufacturing.

Tourism and population related strengths could benefit from both increased tourism promotion and initiatives that support population retention. There is also the opportunity to use activity centre planning and principles of economic activation to improve business viability (see Section 10.2). Mining activities are likely fixed based on resources available at the Carnarvon oil and gas basin; the main opportunity for the Shire is to increase the number of mining workers who live in the Shire.

The same criteria were applied in comparison with Regional WA and the results were the same.

6.4 Gap Industries

Gap industries are opportunities to attract investment in industries where there may be a local gap in provision. Gap industries have been assessed at an ANZSIC 2 industry Sub-Division level. These industries have been assessed on having two or more of the following criteria:

- **Concentration levels:** A low level ECF (ECF < 1)
- **Size:** More than 25 employees
- **Shift share score:** A shift share score of 1

A set of 10 industry gaps have been identified through these criteria (Figure 28).

Figure 28. Gap Industry in the Shire against Western Australia

ANZSIC 2 Industry Sub-Division	Jobs	Score	ECF	Growth
Personal and Other Services	36	1	0.70	16
Road Transport	35	3	0.79	-12
Medical and Other Health Care Services	66	2	0.71	-2
Food Product Manufacturing	16	2	0.69	-11
Sports and Recreation Activities	13	2	0.66	-2
Food and Beverage Services	85	2	0.63	-12
Preschool and School Education	148	2	0.99	0.97
Social Assistance Services	43	2	0.57	8
Other Store-Based Retailing	58	3	0.55	-4
Professional, Scientific and Technical Services ¹¹	35	2	0.25	2

Source: Source: ABS Census 2016, ABS Census 2021, Pracsys 2024

Identified opportunities include:

- Social assistance and personal services are particularly relevant in the Shire due to the identified level of disadvantage in Section 3 Demographic Analysis. Providers of social assistance in the Shire include Regional Alliance West, HelpingMinds, Carnarvon Family Support Service and more. There may be an opportunity to expand the provision in the Shire to achieve an appropriate provision compared to the State.

¹¹ In full: Professional, Scientific and Technical Services (except Computer System Design and Related Services).



- Sports and Recreation Activities and Food and Beverage Services have low ECFs (0.66 and 0.63) and represent industries that commonly support liveability and tourism opportunities. Compared to Non-metro WA, the Shire has a sufficient concentration of Sports and Recreation Activities (ECF of 1.29) but a low ECF for Food and Beverage Services (0.75). The under provision of sport and recreation in regional towns is not uncommon and is an opportunity to provide necessary infrastructure for the Shire's under 14 years old population. Food-related services will likely expand based on direct intervention and because of growth in population or tourism.
- Medical and Other Health Care Services has a low ECF compared to both benchmarks (0.71 against WA and 0.98 against Non-metro WA) but employs a relatively large amount of employment (66 jobs). The services offered by this industry can be considered underprovided with an employment concentration below 1. This likely represents a gap given the Health Campus acts as a regional hub for health services. Opportunities to support increased health services may involve additional local training and employment pathways.

6.5 Essential Service Outliers

A couple essential services were noted to have completely ceased between 2016 and 2021. Library and Other Information Services and Waste Collection, Treatment and Disposal Services decline to 0 jobs in 2021 (Figure 29). It is assumed that these are errors in the ABS Census, however, these will be confirmed through engagement. This is an important issue as these industries can be considered essential services. Engagement with Shire indicates that there are currently 4 FTEs related to the library and therefore the decline in the essential service industries can likely be attributed to an error. The Shire has a high concentration of Library and Other Information Services when applying the 2016 job data while Waste Collection, Treatment and Disposal Services is unconcentrated in the Shire.

Figure 29. Essential Service Industries against both Benchmarks

ANZSIC 2 Industry Sub-Division	2016 Jobs	2021 Jobs	Score	2016 WA ECF	2016 Non-Metro WA	2021 ECF
Library and Other Information Services	4	0	3	4.9	5.7	0
Waste Collection Services ¹²	4	0	2	0.5	0.4	0

¹² In full: Waste Collection, Treatment and Disposal Services

Source: ABS Census 2016, ABS Census 2021, Pracsys 2024

6.6 Tourism Industries

The tourism sector was considered in the aggregate as many industries under different ANZSIC levels make up tourism. ABS Tourism Satellite Account was used to identify which industries are tourist industries (Figure 30). Tourism jobs in the Shire declined between 2016 and 2021. The significant decreases in Education and training and Ownership of dwellings are unlikely and can be attributed to low quality census data. The adverse effects of COVID-19 and population decline are likely the reason for the decline in jobs in Other Retail Trade and Cafes, restaurants and takeaway food services.

Figure 30. Tourism Industries and Employment

Characteristic and connected tourism industries	ANZSIC Industry	2016 Jobs	2021 Jobs
Accommodation	Accommodation	140	140
Ownership of dwellings	Residential property operators	10	0
Cafes, restaurants and takeaway food services	Cafes, restaurants and takeaway food services	70	52
Clubs, pubs, taverns and bars	Pubs, taverns and bars	23	25
	Clubs (hospitality)	0	3
Taxi transport	Taxi and other road transport	0	0
Other road transport	Interurban and rural bus transport	0	0
	Urban bus transport (including tramway)	8	0
Air, water and other transport	Rail passenger transport	0	0
	Water passenger transport	0	0
	Air and space transport	8	8
	Scenic and sightseeing transport	19	22
Transport equipment rental	Passenger car rental and hiring	0	0
Travel agency and information centre services	Travel agency and tour arrangement services	21	30
	Other Administrative Services, nfd	0	0
Cultural services	Heritage activities	10	14
	Creative and performing arts activities	0	0
Casinos and other gambling services	Gambling activities	5	3



Characteristic and connected tourism industries	ANZSIC Industry	2016 Jobs	2021 Jobs
Sports and recreation services	Sports and recreation activities	15	13
Automotive fuel retailing	Fuel retailing	23	38
Other retail trade	Motor vehicle and motor vehicle parts retailing	33	19
	Food retailing	120	101
	Other store-based retailing	62	58
	Non-Store Retailing and Retail Commission-Based Buying and/or Selling	0	0
Education and training	Preschool and school education	170	148
	Tertiary education	14	11
	Adult, community and other education	13	11
Total		764	696

Source: ABS Tourism Satellite Account 2023

Employment in these industries was summed to examine the Shire's tourism sector in comparison to the benchmark populations (Figure 31). Tourism industries in the Shire employ 29% of the working population and experienced negative growth between 2016 and 2021. The Shire has an above-average concentration of tourism industries relative to both WA (ECF of 1.09) and Regional WA (ECF of 1.24). Within the tourism sector, Accommodation, Food Retailing and Preschool and School Education are the largest employers. Tourism industries that experienced growth include Fuel Retailing, Travel Agency and Tour Arrangement Services and Heritage Activities. Industries that experienced negative growth include Preschool and School Education, Food Retailing and Cafes, Restaurants and Takeaway Food Services. The analysis of the tourism sector was also undertaken without education and training industries as regional areas often have an untreatable gap in education due to labour shortages and isolation. The concentration of the tourism sector in the Shire increases without education and training component of tourism, reinforcing extent of the Shire's strength in the tourism sector. The strong tourism economy should be leveraged to support opportunities in retail, and food and beverage opportunities; this may be achieved by applying economic principles of activation to maximise exposure of businesses to both visitors and residents (see Section 10.2, Appendix 2).

**Figure 31. Tourism Sector in Carnarvon**

Benchmark	Jobs	Score	ECF	ECF (without education)	Growth
Western Australia	696	3	1.09	1.22	-68
Non-metro WA	696	3	1.24	1.38	-68

Source: ABS Census 2016, ABS Census 2021, Pracsys 2024



7 SWOT ANALYSIS

The strengths, opportunities, weaknesses and threats associated with the economic-related stakeholder feedback acquired by Hames Sharley and from the analysis undertaken are summarised below.

Figure 32. SWOT Key

S	Strengths	Feedback that relates to a particular local advantage
W	Weaknesses	Feedback that notes an area of interest that is affected by a particular local constraint
O	Opportunities	Feedback that outlines new or developing opportunities
T	Threats	Feedback that identifies a threat to a local opportunity or a strength that may not be realised locally if certain threat is not addressed

Source: Pracsys 2024

Figure 33. SWOT

Type	Description	Industry
S	<p>The Shire of Carnarvon is rich in natural resources which gives it a strategic advantage in primary and resource industries. The Shire’s key drivers of economic activity include horticulture, fishing, pastoral and mining activities. Engagement noted that the community strongly agree that agriculture and horticulture play an important role in the economy. This is reinforced by the analysis, which indicates that the Shire has significant concentration, and growing amount of employment in fishing and agriculture.</p> <p>Analysis found that the Shire has an above benchmark level of employment in tourism for its population. The Shire’s strong tourism sector is a result of its desirable coastal location and climatic conditions.</p>	Mining, Agriculture, Forestry and Fishing, Tourism
S	<p>The extent of the Shire’s existing heavy industrial infrastructure such as road networks, industrial areas, marine infrastructure and complementary mining services supports future economic development opportunities. This is evident through high ECFs in industries such as:</p> <ul style="list-style-type: none"> Fuel Retailing Other Transport Electricity Supply <p>The efficiencies gained from existing shared services and multi-use infrastructure increases the viability of proposed projects and may be used to encourage investment.</p>	Mining, Transport, Electricity Supply

Type	Description	Industry
W	Housing affordability, viability and variety are noted by both community and industry stakeholders as a constraint to economic development. Restricted housing opportunities are reinforced by, and generate, other concerns listed in this SWOT such as workforce shortages and a reduction in services.	Construction Services
W	Both in the feedback and in the analysis, the Shire is identified to have gaps in important essential services such as retirement / aged care, childcare, other health care (e.g. maternity facilities), education opportunities and recreation infrastructure. This is noted as a particular concern for Coral Bay because of its transient population. Without these essential services, the Shire cannot support a permanent population or local workforce leading to reduced viability of investment and economic development.	Health Care Services, Education, Arts and Recreation Services, Construction Services
W	Engagement feedback noted that the provision of infrastructure in industries such as childcare and education are restricted by worker shortages. Analysis reinforces that some of these industries have experienced declines in employment since 2016. Community engagement indicated there was also a shortage in labourers such as electricians, plumbers and builders.	Health Care Services, Education, Construction Services
W	The Shire's agricultural sector faces constraints such as sufficient water, land restrictions under Aboriginal and Torres Strait Islander Heritage Act, flooding risks from poor maintenance and encroachment of other land uses. In this sense, the Shire's limited productive agricultural land is a constraint to further expansions to food production. 60% of the community strongly agreed for the protection of agricultural land including addressing the encroachment of other land uses.	Agriculture
O	<p>New and expanding strategic and tourism projects are currently underway and will support new jobs and economic stimulation in the Shire:</p> <ul style="list-style-type: none"> Acquisition of Lake Macleod Salt Mine is expected to support 70 new staff Emergence of green energy industry with HyEnergy's Green Hydrogen and Ammonia Project GDC investigating viability of a deep-water port, barge loading facility Development of tourism facilities on Babbage Island <p>There may be the opportunity to leverage these projects to increase the viability of local retail and service related industries and potentially grow employment in these industries.</p>	Mining, Electricity, Gas, Water and Waste Services, Tourism
O	Engagement indicated that there is an opportunity to support commercial and retail variety in the Shire. Strategically zoning desirable areas as potential locations for cafés and restaurants	Retail Trade

Type	Description	Industry
	will support the activation of these uses. Desirable areas include locations that support both visitor and local activity.	
O	There is the opportunity to support increases in key services such as child care and aged care to support population retention and a sufficient local workforce. This will function as a foundation for further investment and economic development. Housing policy, commercial rent incentives (i.e. LGA owned property), land contributions, are examples of potential interventions that could be used to influence development of these industries.	Health Care Services, Education, Arts and Recreation Services
O	<p>Engagement revealed that there are many opportunities to support tourism including:</p> <ul style="list-style-type: none"> • Protection of environmental and cultural assets such as One Mile Precinct, Blow Holes, Ningaloo Reef, Gascoyne River, Bibawarra Bore and tramway • Clean up or redevelopment of Bibawarra Bore and One Mile Jetty • Carefully provide more services in Coral Bay such as accommodation, waste, health • Review camping cost and capacity <p>The Shire should look to support and facilitate communication between key stakeholders to progress these potential opportunities.</p>	Tourism
O	There is an opportunity to provide new and higher quality sports and recreation infrastructure and job opportunities. This long-term opportunity would support the Shire's underrepresented under 14 years old population.	Arts and Recreation Services
O	Engagement noted that expanding the Shire's aviation provision will allow for bigger planes to land and increase the size of the FIFO workforce. This opportunity would support the employment in the extractive industries as well as allow for air freight services. Notably, the State and Federal government have not indicated interest in supporting expansions to the airport at this point in time. Further advocacy for this project may be necessary as this opportunity can make the Shire more competitive.	Transport, Mining
T	Project development across housing, community infrastructure and private enterprise in regional areas face escalated costs. High construction costs associated with vast distances can often be compounded by limited local workforce, significant challenges in attracting workers, extreme weather conditions and greater maintenance costs. These factors contribute to a low level of viability and overall, less investment in the Shire. Engagement revealed that new lots sell for almost half as much as they cost to develop.	Construction Services

Type	Description	Industry
	<p>Stakeholder feedback outlines that this process is cyclical with low investment in housing creating a limited local workforce and a limited local workforce contributing to higher construction costs and thus lower investment.</p> <p>The Shire should look to work / negotiate with major project stakeholders to ensure that a strategic approach is taken including government and private sector contributions to provide housing and infrastructure to support the employment and services required to maintain liveability as the workforce grows.</p>	
<p>T</p>	<p>Contrary to analysis findings, engagement indicated that government services in the Shire have experienced centralisation and contraction with State Government services listed as one of major rural services that is missing. Discussion indicated that a reduction in government services is a factor in population decline.</p> <p>The Shire should lobby for provision of state government services that relate to major projects; the potential synergies may increase the likelihood of a positive outcome.</p>	Public Administration
<p>T</p>	<p>Analysis indicated that there had been a decrease in mining activity in the Shire from 2016 to 2021 which can largely be attributed to a decrease in FIFO rates in mining. This decrease in one of the Shire's major industries threatens the stability of the population and essential services. In the same period, FIFO rates and employment for Arts and Recreation, Wholesale Trade, Retail Estate Services, Retail Trade and Accommodation and Food Services decreased.</p> <p>It is unclear what factors have contributed to this trend and it may relate to COVID-19 pandemic lock downs and census data collection. The Shire should monitor workforce numbers and engage with relevant stakeholders to understand what is contributing to the identified trends.</p>	Mining, Arts and Recreation, Real Estate Services, Retail Trade, Accommodation Services
<p>T</p>	<p>Feedback from the Shire has indicated that tourism visitation has decreased. The analysis supports this finding with employment across tourism-related industries decreasing from 2016 to 2021. Business entries since 2021 indicate a potential increase in tourism activity, however, it is unclear if this is an ongoing trend as borders have now opened to international travel.</p> <p>The Shire should monitor workforce numbers and engage with relevant stakeholders to understand what is contributing to the identified trends.</p>	Tourism

Source: Pracsys 2024, Hames Sharley 2024

8 EMPLOYMENT PROJECTIONS

Employment projections have been developed to inform the Strategy (refer **Appendix 2**). The projections have been developed based on a combination of:

- + WA Tomorrow population growth rates
- + On Our Horizon population growth rates
- + Analysis and engagement findings in this report

2021 ABS Census population and WA Tomorrow 12 population growth rates were used to determine a Base Case scenario for the Shire of Carnarvon (**Figure 34**).

Figure 34. Population Growth Rates

Period	2021 – 2026	2026 - 2031	2031 - 2036	2036+
Compound Annual Growth Rate	1.002	0.997	0.995	1.000

Source: WA Tomorrow 2025, Pracsys 2026

The population was assumed to remain constant post-2036 which is conservatively greater than the extrapolation of WA Tomorrow Middle projections. This assumption has been made because it is unrealistic to apply a continuing downward trend when the short-term projection is positive. The following scenarios detail the mitigative impact of future employment opportunities on population decline in the Shire.

Population has been projected to 2041 and applied to the breakdown of labour force status; approximately 43% of people in the Shire are considered employed. The Shire is estimated to support 2,201 workers and 5,085 people by 2041 (**Figure 35**).

Figure 35. Base Case Projections

Component	2026	2031	2036	2041
Employment	2,292	2,252	2,201	2,201
Population	5,294	5,203	5,085	5,085

Source: WA Tomorrow 2025, Pracsys 2026, ABS Census 2021

Three scenarios have been developed in addition to the base case based on benchmarks and key findings from stakeholder engagement:

- Scenario 1, Base Case with the addition of employment gaps in key service industries (childcare, aged care and general medical services) benchmarked against the regional WA average
- Scenario 2, Scenario 1 with the addition of local employment generated by key tourism projects according to the Shire's On Our Horizon report



- Scenario 3, Scenario 2 with the addition of local employment generated by key strategic projections according to the Shire's On Our Horizon report

An increase in employment creates a virtuous cycle; more residents, leads to additional demand for services, creating an increase in demand for employment and so on. It is assumed that the initial increase in service orientated employment in Scenario 1 is sufficient to support the current and future populations that would result in each scenario. This is due to the fact that regional areas tend to be underserved and the additional increases in population in each scenario are of a scale that could increase the viability for businesses where there is slightly greater demand than supply.

A breakdown of age for new local workers and their associated population multipliers were aligned with the On Our Horizons 2022 report and utilised to determine the impact of additional employment on total population (Figure 36).

Figure 36. New Worker Age Group and Population Multipliers

Age Group	Proportion	Population Multiplier
18 – 24	15%	1.26
25 – 44	60%	1.95
45 – 65	25%	1.97
65+	0%	1.71

Source: On Our Horizons 2022

8.1 Scenario 1

Scenario 1 builds on the base case by adjusting employment in key essential service industries based on benchmarks. Essential services were identified during stakeholder engagement and in analysis, these services are critical to attracting and retaining a permanent population base in the Shire. It is unlikely that the local population generated by the major projects outlined in Scenarios 2 and 3 will occur without at least meeting the level of demand for essential services in the current local population.

While the benchmark analysis examined both Greater Perth and regional WA, regional WA yielded conservative results that are likely more applicable to the Shire (Figure 37). Regional WA service ratios have therefore been used to estimate adjusted employment estimates for Essential Services in the Shire; the benchmark adjusted employment in childcare was found to be 17, in aged care it was 34 and in general medical services it was 65.

Figure 37. Benchmark Service Ratios

Benchmarks	Essential Services	Employment	Service Ratio	Adjusted Employment in the Shire
Greater Perth	Childcare	9,261	0.0044	23
	Aged care	21,056	0.0099	52
	Medical services	38,513	0.0182	96
Regional WA	Childcare	1,699	0.0032	17
	Aged care	3,491	0.0065	34
	Medical services	6,605	0.0124	65
Shire of Carnarvon	Childcare	10	0.0019	
	Aged care	14 ¹³	0.0026	
	Medical services	48	0.0091	

Source: ABS Census 2021, Pracsys 2024

The Shire has a gap of 7 childcare workers, 21 aged care workers and 17 general health care workers based on the size of its population relative to the regional WA benchmark. This gap of 44 workers is assumed to be addressed gradually over six years from 2026, accounting for the implementation of the strategy and other community and economic development initiatives. Scenario 1 estimates 2,244 workers and 5,164 people in 2036 (**Figure 38**). The additional employment generated in Scenario 1 is representative of a foundation of essential services that will be necessary to support growth in other industries such as in the tourism and strategic sectors.

Figure 38. Scenario 1 Projections

Component	2026	2031	2036	2041
Employment	2,299	2,296	2,244	2,244
Population	5,307	5,285	5,164	5,164

Source: Pracsys 2026, ABS Census 2021

8.2 Scenario 2

Scenario 2 is based on the Shire being able to grow tourism employment through key projects. The Shire's On Our Horizon report outlined four major tourism-related projects and the local employment likely generated by each project.

¹³ Updated based on the additional 38 beds provided by Gnullingoo Mia Residential Care



- + Ningaloo Reef Resort Staff Accommodation Village
- + Ningaloo Reef Resort
- + Old Justice Precinct Revitalisation
- + Babbage Island Resort

The development status of each project has been updated by Hames Sharley and an approximate first year of

operation has been assumed where required. With the additional jobs in Scenario 1, the 147 tourism-related jobs will contribute to 2,375 workers and 5,421 people in 2036 (**Figure 40**).

Figure 39. Major Tourism Projects

Projects	Local Jobs Created	Year Operational
Ningaloo Reef Resort Staff Accommodation Village	12	2026
Ningaloo Reef Resort	55	2026
Old Justice Precinct Revitalisation	40	2028
Babbage Island Resort	40	2031
Total	147	

Source: On Our Horizons 2022, Hames Sharley 2024, Pracsys 2024

Figure 40. Scenario 2 Projections

Component	2026	2031	2036	2041
Employment	2,361	2,431	2,375	2,371
Population	5,423	5,548	5,421	5,421

Source: Pracsys 2026, ABS Census 2021

8.3 Scenario 3

Scenario 3 incorporates strategic industry employment that may eventuate through major resource and energy projects.

- + Green Hydrogen Project
- + Carnarvon Barge Loading Facility
- + Other

Hydrogen-related projects are expected to generate approximately 225 local jobs with tourism-related employment accounting for 147 jobs. Engagement undertaken by Hames Sharley was utilised to provide an updated list of strategic projects as well as an expected year of operation based on information



initially outlined in the Shire's On Our Horizon report. Scenario 3 is estimated to contribute to 2,596 workers and 5,834 people in 2036 (**Figure 42**).

Figure 41. Major Strategic Projects

Projects	Local Jobs Created	Year Operational
Green Hydrogen Project	225	2031
Carnarvon Barge Loading Facility		
Other	28	2031
Total	253	

Source: On Our Horizons 2022, Pracsys 2024

Figure 42. Scenario 3 Projections

Component	2026	2031	2036	2041
Employment	2,361	2,657	2,596	2,596
Population	5,423	5,972	5,836	5,836

Source: Pracsys 2026, ABS Census 2021

8.4 Scenario Summary

The following table summarises the employment and population scenarios (**Figure 43**). Scenario 1 population projections are a result of addressing key gaps in essential services. Population projections in Scenarios 2 and 3 are reliant on the completion of essential services which will be necessary support the local workforce and population generated by tourism and resource projects.

Figure 43. Employment and Population Scenarios

Scenario	Component	2026	2031	2036	2041
Base Case	Employment	2,292	2,252	2,201	2,201
	Population	5,294	5,203	5,085	5,085
Scenario 1	Employment	2,299	2,296	2,244	2,244
	Population	5,307	5,285	5,164	5,164
Scenario 2	Employment	2,361	2,431	2,375	2,375
	Population	5,423	5,548	5,421	5,421
Scenario 3	Employment	2,361	2,657	2,596	2,596
	Population	5,423	5,972	5,836	5,836

Source: Pracsys 2026

8.5 Land Analysis

Benchmarking and stakeholder engagement has been utilised to undertake a high-level estimate of the quantum and location of floorspace and land required to support the additional employment identified in Scenario 1. Scenarios 2 and 3 are not assessed as the details of the planned tourism and strategic projects are highly specific and not publicly available. Their land and floorspace requirements will be developed based on the market opportunity and not based on population provision ratios.

Regional benchmarks were identified for floorspace estimates. DPLH Land Use and Employment (LUES) data for employment and floorspace in the City of Karratha and Shire of Broome has been used to generate employment-to-floorspace ratios (Figure 44). The Health/Welfare/Community Services (HEL) category aligns with the essential services identified in Scenario 1¹⁴.

Figure 44. Benchmark Employment-to-Floorspace Ratio

Benchmarks	Component	HEL
City of Karratha	Employment	440
	Floorspace (m ²)	21,935
Shire of Broom	Employment	277
	Floorspace (m ²)	9,644
Total	Employment	717
	Floorspace (m ²)	31,579
Employment-to-Floorspace Ratio (m² / Employment)		44.04

Source: Pracsys 2024, DPLH LUES 2019

Land area was not available for regional commercial centres so outer metropolitan local governments were identified to understand the land requirements for essential services. DPLH LUES data and Development Area data have been cross-referenced for the Shire of Serpentine-Jarrahdale and the Shire of Murray to determine appropriate benchmarks for the identified essential services. Byford and Mundijong activity centres were selected as benchmarks because their floorspace-to-land ratios are reflective of a density that is likely similar to the provision of childcare, aged care and health services in the Carnarvon townsite (Figure 45).

Figure 45. Floorspace-to-Land Ratio

LUES Centre	Component	Total
Byford	Floorspace (m ²)	9,567
	Land (m ²)	59,183
Mundijong	Floorspace (m ²)	3,370

¹⁴ DPLH, 2017, Land Use and Employment Survey Information Sheet, https://www.wa.gov.au/system/files/2021-07/LUES_Glossary.pdf



LUES Centre	Component	Total
	Land (m ²)	31,074
Total	Floorspace (m ²)	12,937
	Land (m ²)	90,256
Floorspace-to-Land Ratio (m² land / m² floorspace)		6.98

Source: DPLH LUES 2015/16

The employment-to-floorspace ratios were applied to the additional employment generated in Scenario 1 followed by the application of the floorspace-to-land ratio. Approximately 1,952m² of floorspace and 13,615m² of land will be needed to provide the appropriate level of essential services for the population of the Shire and to support growth in other industries such as tourism and energy (Figure 46).

Figure 46. Floorspace and Land Requirement

Industry	Additional Employment	Floorspace (m ²)	Land (m ²)
Childcare	7	294	2,053
Aged Care	21	915	6,384
Medical Services	17	742	5,178
Total	44	1,952	13,615

Source: Pracsys 2024

The additional land required to support childcare, aged care and medical services can be attributed to the Carnarvon townsite in its entirety. Planning restrictions currently prevent the development of essential services in Coral Bay despite stakeholder and community feedback identifying a need for it. If the tourism projects identified in Scenario 2 proceed, it is likely that demand for essential services like childcare and medical care in Coral Bay will grow along with visitation.

9 KEY FINDINGS

In accordance with the Regulations, the Shire of Carnarvon proposes to review its LPS. The objectives of the strategy review include ensuring that the townsite of Carnarvon, settlement of Coral Bay and surrounding rural areas develop to meet the needs of the community. As part of the strategy review, this economic and employment analysis will enable local government policies and market demands to be incorporated into the planning framework for the Shire to facilitate employment and lifestyle opportunities.

Important findings from the demographic analysis include:

- The Shire's population is forecast to decline in the long term according to the State government WA Tomorrow Band C projections. Population decline in regional areas is often related to an under-provision of amenities, education opportunities and job opportunities. Identifying key economic opportunities and services that the Shire may be able to influence will be critical in retaining and potentially growing population.
- There are lower levels of Culturally and Linguistically Diverse (CaLD) population in the Shire. Attracting CaLD communities is an opportunity to address sparse population and skill shortages while generating benefits for both the local community and those newly settled in the area.
- Those who work in the Shire make up a greater proportion of the medium to high income brackets while residents make up a greater proportion of the lower income brackets. Vocational training and reskilling opportunities may assist locals in entering higher paying jobs and may help retain the youth population by providing better pathways to employment.

Key opportunities and issues identified in existing planning frameworks include:

- Further developing the Shire's aviation industry to support extractive industries and FIFO-related infrastructure is an established economic opportunity for the Shire. Tourism development is also outlined an important opportunity that captures the Shire's comparative advantage.
- Issues in realising these opportunities are seasonal visitation and the lack of investment in new tourism products, the lack of necessary industrial infrastructure and workforce and skills shortages.
- Opportunities and issues facing activity centres involve accommodating future population growth and developing the sub-region's townsite and settlements to be sustainable and liveable communities.

An analysis of the Shire's economic and employment context revealed:



- The levels of producer services and KIPS are greater than that of Greater Perth, this identifies that the region has higher than average business to business related employment.
- The Shire has greater KICS, KIPS and consumer services relative to regional WA which can be attributed to the Shire's high level of tourism.
- Agriculture, Preschool and School Education, Public Administration, Hospitals and Accommodation industries have high employment concentration factors and are growing.
- Changes in FIFO employment appeared contradictory. Mining (the primary FIFO dominant industry) experienced negative change while employment in complementary FIFO industries such as accommodation and administration increased.

A high-level analysis of the Shire's industries through a shift-share model revealed:

- The Shire has strengths in relevant agriculture and tourism activities compared to all of WA and regional WA.
- Agriculture related strengths may have the opportunity to increase production by addressing constraints and promoting the adoption of new practices and technology. There may also be the possibility of supply chain development, for example increased food product manufacturing.
- Tourism and population related strengths could benefit from both increased tourism promotion and initiatives that support population retention. There is also the opportunity to use activity centre planning and principles of economic activation to improve business viability (see Section 10.2).
- Mining and resource extraction activities are likely fixed based on resources available at the Carnarvon oil and gas basin; the main opportunity for the Shire is to increase the number of mining workers who live in the Shire.
- Social assistance and personal services are particularly relevant in the Shire due to the identified level of disadvantage in Section 3 Demographic Analysis. There may be an opportunity to expand the provision in the Shire to achieve an appropriate provision compared to the State.
- The under provision of sport and recreation in regional towns is not uncommon and is an opportunity to provide supporting infrastructure for the Shire's underrepresented under 14 years old population.
- The services offered by the Medical and Other Health Care Services industry can be considered underprovided with an employment concentration below 1. This likely represents a gap given the Health Campus acts as a regional hub for health services. Opportunities to support increased health services may involve additional local training and employment pathways.



Economic strengths, weaknesses, opportunities and threats from engagement findings have been integrated with the analysis to inform the LPS:

- The Shire's a comparative advantage in resource and energy industries. This is compounded by the efficiencies gained by the extent of existing heavy industrial infrastructure such as road networks, industrial areas, marine infrastructure.
- The lack of variety and affordability in housing were noted as weaknesses of Shire. These factors contribute to, and are caused by other mutually reinforcing weaknesses such as gaps in important essential services and worker shortages.
- Engagement indicated that projects such as the Lake Macleod Salt Mine, HyEnergy's Green Hydrogen, Babbage Island Resort, and Ningaloo Reef resort will create local employment opportunities in the Shire.
- The cost of construction was identified in stakeholder feedback as a threat to economic opportunities as high costs reduce the viability of investment.

Three employment and population scenarios were developed in addition to the base case based on benchmarks and key findings from stakeholder engagement:

- The Base Case uses WA Tomorrow Band C growth rates and results in an estimated workforce of approximately 2,245 people and a population 5,186 people by 2039
- Scenario 1 projections are based on addressing the gap in essential services such as childcare, aged care and general medical services and results in an additional 44 local workers and 81 people relative to the Base Case.
- Scenario 2 projections build on Scenario 1 with the development of key tourism projects, resulting in an additional 187 workers and 345 people.
- Scenario 3 projections build on Scenario 2 with the development of key resource projects, resulting in an additional 416 workers and 769 people.
- Providing jobs in key service industries is critical to attracting and retaining a permanent population base in the Shire. It is unlikely that the local population generated by the major projects outlined in Scenarios 2 and 3 will occur without at meeting the baseline level of amenity in the current local population.
- The additional jobs to provide the appropriate level of essential services provision will likely be accounted for on the Carnarvon townsite. Approximately 1,952m² of floorspace and 13,615m² of land will be required for the additional 44 jobs.

10 APPENDIX

10.1 Appendix 1: Employment Quality Categories

Consumer services

Consumer services have a high transaction frequency and must locate in close proximity to their customer base in order to deal directly with them. Like retail tenancies, consumer services often locate in centres to minimise trip generation and benefit from convenience good attractors. Consumer services can include real estate agents, travel agents, shoe repair, dry cleaning services and beauty salons.

Producer services

Producer services deal directly with other businesses, rather than consumers. Like retail; wholesale producer services must locate close to the businesses they serve, due to the frequency of transactions required. For example, the Coles distribution warehouses must occupy a central location to carry out daily delivery of goods to supermarkets. Producer service industries include manufacturing, construction, and distribution.

Knowledge-intensive consumer services

Knowledge-intensive consumer services are those specialist services that deal directly with consumers, yet typically have a higher productivity and lower transaction frequency. KICS provide a skilled service to consumers that usually requires a higher level of education or training. Depending on the scale of their catchment, KICS may choose to locate within major or regional centres, or larger business districts with greater soft infrastructure and amenity levels. Examples of KICS include general practitioners, accountants, veterinarians and legal services.

Knowledge-intensive producer services

Knowledge-intensive producer services involve businesses dealing directly with other businesses, rather than consumers. Transactions are less frequent, however generally have a higher monetary value, due to the intellectual property or knowledge involved. KIPS businesses often locate near their client businesses, although with low transaction frequency and good communications infrastructure, they are to an extent 'footloose'. This means they can choose to locate in places with relevant physical infrastructure, high retail amenity, or soft infrastructure such as access to a solid education base. Examples of KIPS are engineers, architects, medical scientists and computer software developers.

Export-oriented activity

Export refers to jobs in industries in the subject area of study that have a comparative advantage - deemed strategic due to growth and development through exports and the inflow of funds. Export jobs

are producer services, however they occur in strategic industries such as mining, oil and gas and defence. Export jobs are likely to be hands on, involving the physical construction of a marine vessel or operation of machinery on a mine site - as opposed to the mathematical or scientific analysis carried out by KIPS. Strategic industries tend to require physical infrastructure, such as ports, airports or universities.

10.2 Appendix 2: Economic Principles of Activation

Principles of economic activation can be applied to support the development of vibrant and viable activity centres and settlements (Figure 47). Pracsys uses Six Principles of Economic Activation to assess the relative performance of centres from an economic perspective. This includes how key anchors such as supermarkets and major tourist attractions drive pedestrian traffic (activation), how smaller tourist attractions and local population-oriented businesses can benefit from this pedestrian traffic, and suitable locations for less high traffic uses such as other retail. The principles can also be applied to other commercial uses based on their drivers and access considerations.

Figure 47. Summary of Six Principles of Activation

Principle	Summary
1. Purpose of Place 	The role of the Centre based on its size and classification: <ul style="list-style-type: none"> Addresses the question – what does this place represent to its target user population (residents, workers, visitors)? This should link to the SPP4.2 identified roles of centre classifications.
2. Access – Arrival Points 	This refers to the means by which centres are accessed and the arrival points: <ul style="list-style-type: none"> Decisions about access begin 5km from the place Transport networks should be planned to travel through centres (not bypass them) – ensure the design funnels people and traffic into the core Congestion and a mix of transport nodes is beneficial It is better to arrive at the “front door” of the place, not around the back
3. Origins – Car Parking and Transport Nodes 	Origins are areas from which pedestrian movements begins: <ul style="list-style-type: none"> Parking and transport nodes are the drivers of pedestrian movement Strategic distribution of car parks and transport nodes will maximise pedestrian movement Location is more important than numbers Space the car parks around the periphery of the centre Street parking is important (for commercial areas)



Principle	Summary
	<ul style="list-style-type: none"> ○ Use fees to ensure turnover of parking but not so much that consumers do not park ○ Relax time limits in appropriate areas to ensure customers have time to undertake shopping trips relevant to proximate uses
<p>4. Exposure – Pedestrian Movement</p> 	<p>Exposure indicates Active Frontages that are exposed to high levels of pedestrian traffic:</p> <ul style="list-style-type: none"> • Economic activation is driven by the frequency and concentration of transactions • Channel movements <ul style="list-style-type: none"> ○ Concentrate transactions by pushing people past as many shop windows as possible ○ Rents and sales are directly related to pedestrian traffic (e.g. a butcher will pay higher rent to be at supermarket entry) • Minimise possible routes from origin to destination points (e.g. car park to main attraction) as architectural “permeability” is not always a good thing
<p>5. Destinations – Major attractions</p> 	<p>Destinations are areas that attract high concentrations of customers/people:</p> <ul style="list-style-type: none"> • Identify main destination – what will bring users into the core? • Assess user behaviour <ul style="list-style-type: none"> ○ Number of visits ○ Timing of visits (time of day, seasonality) • Give major destinations special treatment <ul style="list-style-type: none"> ○ Understand what they need ○ Build a centre around them • Amplify the impact of attractions by creating support amenities and infrastructure to maximise frequency, length of stay and expenditure
<p>6. Control – Strategic Sites</p> 	<p>Key Sites are locations that could be considered future destinations and/or suitable sites for anchor tenants (i.e., supermarkets). Tenure control is a significant advantage for overall development success</p> <ul style="list-style-type: none"> • Tenure control is vital for overall development success – determine which sites (supporting what uses) must stay in public ownership • Identify active frontages and take control of key sites or implement appropriate planning measures (i.e., a set of preferred uses for a site) • Corner sites drive uses on either side (more appropriate for high turnover uses such as a café where there is high pedestrian traffic) • Not all areas in a place need to be active – be selective

Source: Pracsys 2024

10.3 Appendix 3: Activity Centre Characteristic Summary



The following discussion outlines the role and characteristics of local centres as defined by SPP4.2, as well as boundary considerations guided by SPP7.2. These policy documents provide key guidelines for the function and integration of local centres in community planning.

When establishing the boundaries of an activity centre in accordance with SPP7.2, the following key principles should be considered:

- Topographical features
- Major infrastructure elements
- Public transport stops
- Interface or transition points

Other key considerations by centre type are outlined below.

Local Centre

Local centres primarily provide for the convenience and incidental needs of local communities. These centres are important for offering walkable access to services and facilities, reducing the need for vehicular travel and enhancing community well-being. Local centres should incorporate the following characteristics:

- **Desired Land Use** – Convenience store, shop – small, liquor store, small food outlet/lunch bar, restaurant/café, small bar.
- **Typical Urban Form** - The streetscapes in a local centre should be landscaped and defined by the overall scale rather than individual building styles or heights. New developments should align with the area's existing or planned scale and include on-site landscaping to benefit both residents and the broader community.
- **Average Residential Density** – 25+ Dwellings Per ha / 200m walkable catchment
- **Preferred residential dwelling type** – Low-rise apartments/ multiple dwellings, Townhouses/grouped dwellings, Single houses/Terraces

Neighbourhood Centre

Neighbourhood centres serve as essential local focal points, addressing daily to weekly household shopping needs, hosting community facilities, and offering a small range of other convenience services. Additionally, they are key for promoting medium density housing within their vicinity. Their role is crucial in ensuring walkable access to these services and facilities, thereby supporting the local community's needs. Neighbourhood centres should incorporate the following characteristics:

- Future indicative service population area – 2,000 – 15,000 persons
- Typical transport connectivity and accessibility - Stopping/transfer points of bus networks



- **Desired Land Use** – Shop – large, liquor store – large, market, restricted premises, amusement parlour, educational establishment, recreation – private, small bar, tavern, office – small, medical centre, art gallery
- **Typical Urban Form** - A compact and cohesive urban form that complements the surrounding built form character in scale and style. New development should enhance the public realm, activate the streetscape, and help forge a distinct, appealing character for the centre.
- **Average Residential Density** – 25+ Dwellings Per ha / 200m walkable catchment, 30+ Dwellings Per ha/800m walkable catchment where there is an existing proposed train station within 400 metres.
- **Preferred residential dwelling type** – Low to medium-rise apartments/ multiple dwellings, Townhouses/grouped dwellings

District Centre

District centres mainly service the daily and weekly needs of residents, with their smaller scale and catchment area allowing for a strong local community focus. They offer services, facilities, and employment opportunities that mirror the needs of their catchments. Often, district centres may specialise in areas such as tourism or entertainment, catering to a wider catchment. Centres with a rail station should particularly be a focal point for medium and high-density housing and job opportunities.

District centres should incorporate the following characteristics:

- **Future indicative service population area** – 20,000 – 50,000 persons
- **Typical transport connectivity and accessibility** – Focal point for rail and/or bus network, ideally with high frequency bus links
- **Desired Land Use** – Bulky goods showroom, nightclub, cinema/theatre, hotel, motel. District centres with access to a rail station may be suitable for office – large.
- **Typical Urban Form** - District Centres feature mid-rise buildings with continuous, pedestrian-friendly frontages and activated public spaces. New developments should ensure attractive, coherent street frontages at a pedestrian scale, offering passive street surveillance.
- **Average Residential Density** – 25+ Dwellings Per ha / 400 walkable catchment, 35+ Dwellings Per ha/800m – 1200m walkable catchment where there is an existing proposed train station within 400 metres
- **Preferred residential dwelling type** – Medium-rise apartments/ multiple dwellings, Townhouses/grouped dwellings – 2+ storeys



Secondary Centre

Secondary centres, while similar to strategic centres, serve smaller catchments and offer a more limited range of services, facilities, and employment opportunities. They are integral to the regional economy and crucial in providing essential services to their catchments. Secondary centres with rail stations should be targeted for medium and high-density housing, employment growth, and a diversity of land uses. Secondary centres should incorporate the following characteristics:

- **Future indicative service population area** – Up to 150,000 persons
- **Typical transport connectivity and accessibility** – Focal point for passenger rail and/or high frequency bus network with routes to multiple destinations
- **Desired Land Use** – All local, neighbourhood and district centre land uses. Secondary centres with access to a rail station may be suitable for office – large
- **Typical Urban Form** - The centre core of a medium and high-density urban area is marked by mid to high-rise buildings with activated, pedestrian-friendly frontages and public spaces, while areas outside the core feature low to mid-rise buildings maintaining a pedestrian scale with attractive landscaping. New developments should contribute to a coherent and attractive street frontage in line with existing or planned setbacks.
- **Average Residential Density** – 25+ Dwellings Per ha / 400 walkable catchment, 40+ Dwellings Per ha/800m – 1200m walkable catchment where there is an existing proposed train station within 400 metres
- **Preferred residential dwelling type** – Medium to high-rise apartments/ multiple dwellings, Townhouses/grouped dwellings – 2+ storey