Integrated Transport Strategy: Connecting Mandurah

a safe, accessible and connected transport network that enables sustainable travel choices

June 2024

CITY OF MANDURAH

Record of Adoption

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Draft for Internal Review	2	April 2023	
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Schedule of Modifications

No	Description	Version No	Document Date	Approval Date

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Key Terms

Key Term	Description
Active Transport	Active transport refers to the transport of people or goods through predominantly non-motorised means, thereby requiring an element of physical activity. Or put simply, human powered forms of travel. Walking and bike riding are the most common, but running, skateboarding, skating, mobility devices for seniors / people with a disability, paddling, electric bicycles, and eRideables such as e-scooters and other devices can all be considered types of active transport.
City Centre	The City Centre is a sub-precinct within the Mandurah Strategic Centre and is the historical town / city centre with a focus on Mandurah Terrace, extended north to Peel Street, east to Sutton Street, to the southern side of Pinjarra Road and extends westwards to including the Mandurah Ocean Marina, Civic Precinct and the Eastern and Western Foreshore (Hall Park).
Emerging Technologies	'Emerging technologies' refers to new technology that is currently in the process of being developed or is expected to be developed / refined over the next 5-10 years. Transport examples relevant to this Strategy include electric vehicles, autonomous / driverless vehicles and trackless trams.
End of Trip Facilities	End of trip facilities is a term used to describe infrastructure provisions in buildings or communal locations (e.g. workplaces, schools, community hubs) that support and facilitate the use of active transport modes, such as walking and cycling. Examples of 'end of trip facilities' include bicycle parking, showers, change rooms and lockers.
Mandurah Strategic Centre	Mandurah has been identified as a Strategic Metropolitan Centre and provides for a mix of retail, office, community, entertainment, residential and employments activities. The area comprises a number of sub-precincts including the Mandurah Forum, City Centre, Mandurah Station and includes the key streets and residential areas that connect these key precincts.
Mode	'Mode' refers to the various transport options that people use to travel from one place to another. Examples include walking, cycling, catching the bus or train, as well as driving a car. Some people may engage in a combination of travel methods as part of their journey, which is referred to as a 'multi–modal' trip.
Mode Shift	Mode shift is used to describe changes in travel patterns, in terms of the mode of transport used by people, over a period of time.

Executive Summary

The Integrated Transport Strategy ('Strategy') provides the vision and high-level direction for the management and development of the City's transport network for the next 10 to 20 years.

The Strategy has been developed with consideration of the objectives from the *Strategic Community Plan* and *Local Planning Strategy*, as well as various other City plans and strategies.

The Strategic Goal of the Strategy is:

'a safe, accessible and connected transport network that enables sustainable travel choices'.

As a result, the Strategy will be the guiding document for the City's various transport plans and projects.

With the progress of the Local Planning Strategy and many elements of the transport network at a regional level having been completed, the timing is right to readdress a holistic transport strategy as Mandurah's development progresses from rapid suburban growth to managing and renewing existing assets and an infill / redevelopment phase to cater for future residential growth.

Key themes of the Strategy include:

- *A safe movement network;*
- *An accessible movement network; and*
- *A connected movement network.*

Key outcomes and purpose of the Strategy is to:

- Provide a holistic approach to transport movement and integration including the ***consolidation of priorities and transport plans***;
- Provide a focus on the ***delivery of active transport*** modes;
- Advocate for and seek to ***improve Inter and Intra-City Public Transport***;
- Ensure transport infrastructure delivery meets the ***desired urban form*** that contributes to place outcomes.
- Investigate opportunities to provide ***higher quality, safer street spaces for all users*** by developing and applying a design guideline template.
- Ensure a ***master plan approach*** to significant road and street upgrades to drive design, funding, and infrastructure outcomes.

To enable people and businesses to reduce their reliance on private vehicles, they need access to alternative modes of transport and safe, connected infrastructure.

Strategically developing areas that are close to public transport, especially in and around the Mandurah City Centre and other activity

centres, will make it easier for more people to walk, cycle and take public transport.

A goal of this Strategy is to encourage a shift towards active modes of travel, thereby boosting daily physical activity levels, reducing transport-related greenhouse gas and particulate emissions, improving social wellbeing, enhancing built form outcomes, and strengthening important first- and last-mile connections between other modes.

Implementation

The Strategy, works in conjunction with a suite of strategic and operational documents.

The Strategic Community Plan (2020-2040) is the City's long-term direction that expresses the community's vision for the future together with the strategies to address planned community outcomes. This drives the Council's Corporate Business Plan 2022-2026, which is the detailed implementation plan for services, key projects and capital investments over the next four years.

The Integrated Transport Strategy is one of the actions of the Corporate Business Plan and is intended to identify and shape the City's transport priorities, projects, programs and service delivery to meet the outcomes of the Strategic Community Plan.

The following plans ensure the actions of the Strategy are delivered:

- Long Term Financial Plan (LTFP) - This demonstrates how Council will fund all strategies, services, and programs over the next 10 years.

- Infrastructure Asset Management Plans - These plans provide guidance on the cost service provision and whole of life cost information that will assist Council in planning for the future.

The Local Planning Strategy is the spatial response to the Strategic Community Plan, providing the mechanism for implementing the Council's vision and providing the strategic basis for Local Planning Scheme 12.

It is intended that the Integrated Transport Strategy be a live document that is actively implemented, with minor revisions every three to five years and progress reviewed annually. A complete refresh of the Strategy would only be expected every ten years.

Key Aspirations

Active Transport

Walking and bike riding are safe, connected, convenient and widely accepted forms of transport.

Public Transport

A high quality, sustainable public transport options that connect key activity centres; and connectivity consistent with the South Metropolitan Peel Sub-Regional Framework.

Road Network

A destination with a network of roads facilitating the efficient movement of people, goods and services. Roadway space will be designed and used more efficiently to be efficient, safe, and attractive environment for all road users.

Car Parking

Car parking appropriate to the land use and urban form in key activity areas by exploring intervention options, active management and encouraging different modes of transport

Marine Transport

Plan and advocate for additional facilities to support marine travel for recreation, tourism and as an alternative form of transport.

Key Recommendations and Actions	Theme &/or Purpose	City Role
Plan for the delivery of a network of safe bicycle facilities linking the City Centre, train stations, health services, education facilities and district level centres.	Safe; Consolidated Priorities	Plan; Deliver
Advocate for priority public transport routes linking the City Centre, railway station and major health, education, employment, tourism and retail destinations.	Accessible; Connected; Consolidated Priorities	Plan; Advocate
Plan for high frequency public transport services on major corridors that link Mandurah's suburban areas to the City Centre and major health, education, employment, and retail destinations.	Connected; Consolidated Priorities	Plan; Advocate
Refine Policies and Standards relating to Transport Infrastructure by developing Street Design Guidelines for future upgrades and renewals with a focus on safe and attractive environments for all transport users that align with urban form outcomes.	Safe; Accessible; Consolidated Plans	Plan; Design; Deliver
Develop a Master Plan for significant district and local road network upgrades and renewals that align the desired Urban Form of the location, Street Design Guidelines and Traffic Modelling outputs.	Safe; Consolidated Plans	Plan; Engage; Collaborate; Deliver:
Advocate for the delivery of 'Road B'.	Connected; Consolidated Priorities	Plan; Advocate
Advocate for connections points from Gordon Road and Meadow Springs Drive to Mandjoogoordap Drive.	Connected Consolidated Priorities	Plan; Advocate
Advocate for the extension of the Tonkin Highway to Forrest Highway.	Connected	Advocate

Key Recommendations and Actions	Theme &/or Purpose	City Role
Manage the demand for car travel on inner city streets consistent with the capacity of the street network.	Consolidated Priorities	Plan; Design; Delivery
Enhance the Mandurah Strategic Centre's grid-based street network to maximise opportunities to share transport modes across the network as many streets have moderate levels of traffic.	Consolidated Priorities	Plan; Design; Deliver.
Update the Local Planning Strategy and relevant actions relating to Transport and Infrastructure to align with this Strategy together with an alignment of plans with relevant geographic information systems and networks.	Consolidated Plans	Approve; Deliver
Use the Strategy as the core reference point for key road hierarchy descriptors with the support of detailed strategic traffic modelling as an input into plans and projects to progress to a Movement and Place method of classifying streets and roads.	Consolidated Plans	Reference;
Prepare District Level Active Transport Plans to guide the planning and prioritisation of path network plans as part of the implementation of the Long-Term Cycle Network.	Consolidated Plans	Plan; Deliver

1. Introduction

1.1 Purpose

Connecting Mandurah, the City of Mandurah's Integrated Transport Strategy ('Strategy') has been developed to articulate the Council's long-term aspirations for the way it plans for movement around Mandurah, to highlight transport opportunities and to outline how it will progress towards the future.

The Strategy has been developed in recognition of the evolution of Mandurah's growth and maturity in regard to a change in focus from a high-growth coastal corridor through an expanding suburban urban form, to a maturing city that requires focus due to a range of challenges.

Importantly, this Strategy is to be read in conjunction with key strategic and operational plans such as the Local Planning Strategy, Strategic Community Plan and Long Term Financial Plan.

As outlined in the key Strategic Direction and Key Actions, this Strategy, in order to remain relevant and consistent in planning decision making, will be updated as other related strategies, plans and proposals by the State Government and Council are considered. It will seek to consolidate various plans and strategies relating to transport in an integrated manner.

It is intended that the Strategy is a 30-year plan, however will be subject to review after 10 years. Critically, its outcomes will be included in the Local Planning Strategy which is subject to refinement as required by regulation to ensure alignment with state and regional planning requirements and Strategic Community Plans.

1.2 Function of the Strategy

The City's Integrated Transport Strategy seeks to provide for a safe, accessible and connected transport network that enables sustainable choices through the following key outcomes:

- Provide a holistic and integrated network as Mandurah's development progresses from rapid suburban growth to managing and renewing existing assets and an infill / redevelopment phase;
- Encourage and provide more opportunities for people to walk, cycle and use public transport for increased health, social, environmental, and economic benefits;
- Examine the regional movement network as it relates to Mandurah and develop a local movement framework that responds to the regional framework;
- Identify the role of the City and its stakeholders;
- Identify important issues the City will advocate for;
- Detail various actions relating to how Mandurah's transport system can be improved; and
- Shape Council's long-term financial planning and capital works program by guiding implementation planning and providing evidence in decision making.

1.3 Strategy Area

The Strategy covers the City of Mandurah's Local Government Area which has an area of 173.5 square kilometres and extends from Madora Bay and Lakelands in the north to Herron and Lake Clifton in the south.

Mandurah's Local Government Area is approximately 50km long, yet only 8km wide at its widest point which provides for significant challenges and opportunities in planning and managing transport.

The Strategy area is depicted within Plan 1 however as reflected in the Local Planning Strategy, will focus on the urban areas of Mandurah with a particular focus on the Mandurah's Strategic Centre, including City Centre and surrounds as reflected in various State Government plans and strategies.

1.4 Alignment to Existing Plans and Strategies

Strategic Community Plan Alignment

Council's Strategic Community Plan 2020 - 2040 provides a framework for ensuring that the activities and services that the City delivers are prioritised in line with the expectations and aspirations of the community.

The Strategic Community Plan advises how to respond to the major challenges Mandurah will face in the future including addressing climate change and environmental changes, education and economic outcomes, adequate provision of community infrastructure, and ensuring that we maintain the social fabric that makes Mandurah such a great place to live.

This Strategy provides a mechanism for implementing the Council's community vision within the City's Strategic Community Plan.

The purpose of this Strategy is:

To provide the movement network and framework necessary to achieve the Place Aspiration, Place Vision and deliver the objectives of the Key Focus Areas for Mandurah as stated in Council's Strategic Community Plan 2020 – 2040:

Place Aspiration:

"Woven by waterways, a city with a village heart"

Place Vision:

"We are built in nature - a meeting place surrounded by unique waterways, where the wellbeing of our people and our environment are nurtured; where business in the community can thrive and entrepreneurship is celebrated.

We will be the place where a thriving regional city and the heart of a village meet. This is our Mandjoogoordap."

Key Focus Areas:

Economic:	*Growing our economy;*
Social:	*Creating a better community;*
Health:	*Creating a healthy community; and*
Environment:	*Nature has a voice at the table in all decisions.*

Underpinned by Organisational Excellence:

City of Mandurah being a high performing organisation.

Plan 1 - Strategy Area

Urban Districts (Focus Area)

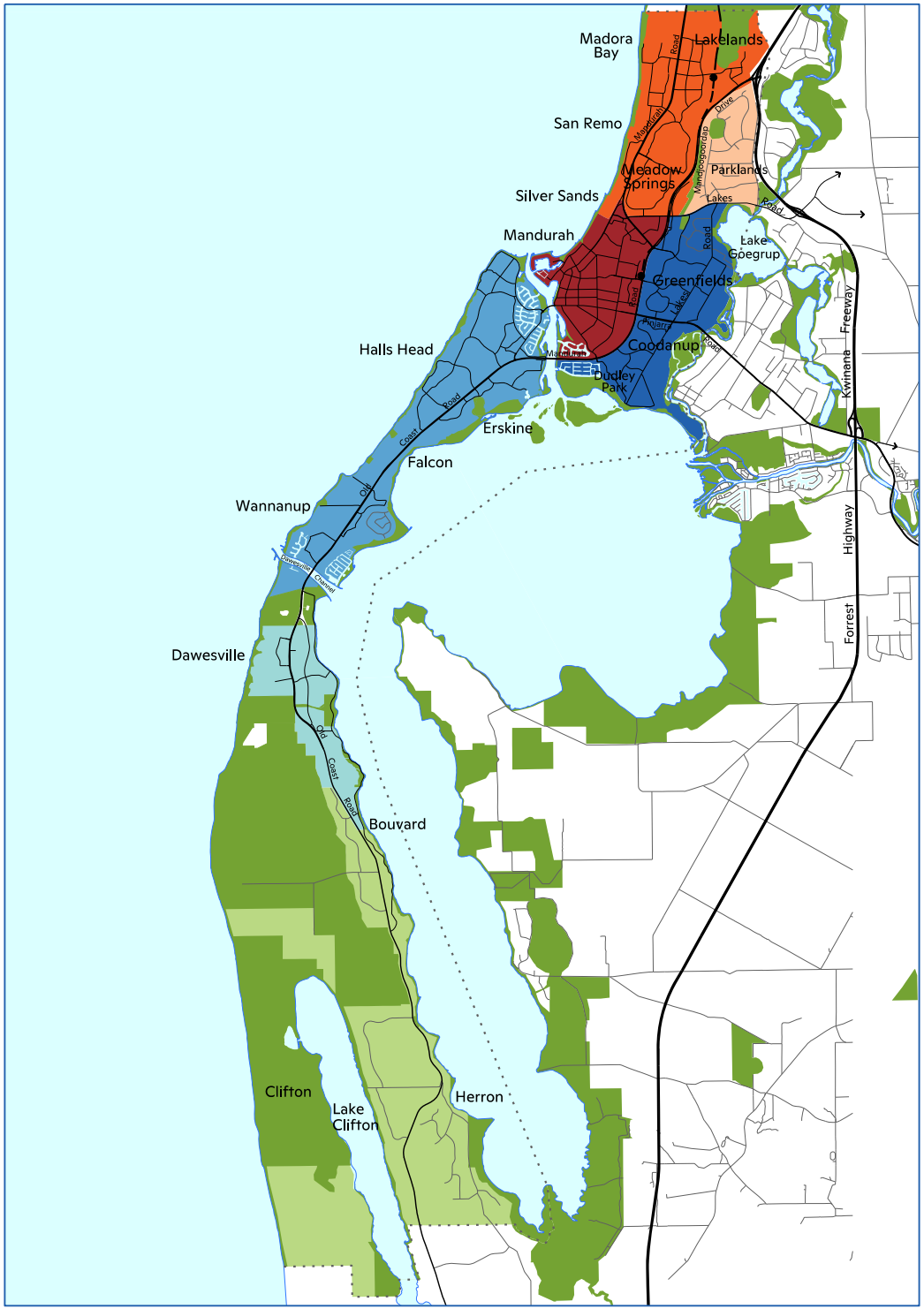
- Mandurah North
- Mandurah Central (Strategic Centre)
- Mandurah East
- Mandurah Island
- Dawesville

Rural Districts (Secondary Focus)

- Parklands
- Southern Rural

- Regional Open Space

- **City of Mandurah Boundary**



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Further, this Strategy is identified as a key supporting strategy within the Strategic Community Plan that includes the following objectives that are relevant to transport and movement:

Economic - Growing our economy:

1.1 Promote and foster investment aimed at stimulating sustainable economic growth.

1.2 Facilitate and advocate for sustainable local job creation, and industry growth and diversification.

1.4 Advocate for and facilitate opportunities for improved education, training and skill development opportunities in Mandurah.

Social - Creating a better community:

2.1 Promote safety within the community through urban design.

2.4. Promote and encourage community connection to create social interaction and a strong sense of belonging.

2.6. Provide diverse and sustainable places and spaces that enable people to lead an active lifestyle.

Health - Creating a healthy community.

3.3. Provide and facilitate quality community infrastructure that is accessible, and conducive to a healthy, active community.

Environment - Nature has a voice at the table in all decisions

4.1. Advocate for and partner with key stakeholders to ensure environmental impacts are considered in all planning, strategy development and decision making.

Organisational Excellence

5.1. Demonstrate regional leadership and advocate for the needs of our community.

5.2. Provide professional customer service and engage our community in the decision-making process.

5.4. Ensure the City has the capacity and capability to deliver quality services and facilities through accountable and transparent business practices.

5.5. Ensure that our actions maintain a sustainable balance between economic growth, the environment, and social values.

This Strategy has been prepared in response to the community's shared vision where the health and wellbeing of our people and our environment are nurtured; where business and the local economy can grow; and where a thriving regional city and the heart of a village meet.

Mandurah's urban form influences the way we move around – which in turn affects our physical and mental wellbeing, our household budget and the wider economic and natural environments. Council is striving for transformational change. A more suitable, balanced and diversified economy is sought from the health, education, tourism, and knowledge sectors to strengthen job creation, employment and education levels and improve the socio-economic status of Mandurah.

The growth in residential population, employment generating land uses and commercial activities provides an opportunity for Mandurah to function as a more sustainable city. More people living closer to employment and other services, and a greater concentration of employment in central Mandurah will deliver significant transport and health benefits, providing opportunities for walking and cycling. Where people live further from employment and other services, there is an opportunity to reduce private car use by promoting public transport and creating efficient transport networks.

Corporate Business Plan 2023 – 2027 Alignment

Critically, this Strategy is a key action of the Corporate Business Plan, that outlines the City will deliver:

Ec14 Integrated Transport Strategy
Develop and implement an Integrated Transport Strategy and underpinning Transport Plans.

In addition, the following key projects and strategies identified in the Corporate Business Plan support and compliment this Strategy and plans and projects relevant to transport and movement:

Focus Area: Economic

Major Roads and Transport Renewal Projects

Ec05 Peel Street Upgrade including the construction of the completion of the upgrade of Peel Street between Anstruther Road and Sutton Street.

Ec06 Falcon Coastal Shared Path including the planning, design and construction of the new coastal shared path between from Mercedes Avenue (Falcon) to Cesia Lane (Wannanup)

Ec08 Pinjarra Road Upgrade including the planning, design and construction of the continued upgrade of Pinjarra Road between Dower Street and the City Centre

Ec10 ***Trails Development***
Plan and develop a network of new eco-tourism and recreational trails around Mandurah and the Peel-Harvey Estuary.

Ec11 ***City Centre Parking Plan***
Review the City Centre Parking Strategy and develop a new City Centre Parking Plan focused on timed parking options, signage and wayfinding and lighting with implementation to follow.

Ec12 ***Waterfront Waterways Master Plan***
Develop a Master Plan for jetty and water infrastructure in the City Centre.

Ec15 ***City Centre Master Plan***
Implement key actions of the City Centre Master Plan.

Ec18 ***Economic Strategy***
Develop and commence implementation of the new Economic Strategy including the process to identify future projects to guide the growth and development of Mandurah's economy.

Focus Area: Health

H22 Peel Health Campus Structure Plan Review
Progress a review of the Mandurah East Structure Plan, including land uses and transport networks in and around the Peel Health Campus arising from the proposed redevelopment of the site.

Services (Business as Usual Functions)

Strategic Planning and Urban Planning

- **Urban design best practice**
  Implement Design WA and other urban design best practice in development approvals and City Infrastructure Projects.
- **Local Planning Strategy**
  Implement the Local Planning Strategy Actions and ensure the City's land use planning framework responds and adapts to evolving urban environments and regional initiatives.

Technical Services

- **Traffic and Transport Planning**
  Integrated transport planning to ensure a safe, efficient and effective integrated local road and transport network with connectivity to the State Government's regional transport network including public transport (including the planning of roads, car parks, paths and associated public area lighting infrastructure) and traffic engineering services including local area traffic management (LATM)
- **Traffic Management**
  Traffic Management Program & LATM investigation and implementation programmes to enable appropriate planning of road safety improvements including blackspot projects.
- **Tactical Asset Management**
  Planning for Road and Transport, Building and Community and Stormwater Drainage Infrastructure Assets. Tactical planning for the management of the City's road and transport, building and community and stormwater drainage infrastructure assets through asset condition monitoring the planning and programming of forward works for replacement, renewal, upgrade and new infrastructure assets including the development of ten-year capital works plans to meet agreed performance targets, aligned with strategic asset management planning and the Long Term Financial Plan.
- **Civil Infrastructure Design:**
  Survey and design of local road and transport and stormwater drainage infrastructure assets including roads, car parks, local area traffic management (LATM), paths, public area lighting and stormwater drainage infrastructure and management of private works within subdivision development and local road reserves aligned to agreed performance targets, tactical and operational asset management planning and the LTFP.

Environmental Services

- **Environmental Planning**
  Environmental planning and custodianship to ensure the protection and enhancement of the City's landscaped and natural environment.

Development and Compliance

- **Implement the Public Health Plan**
  Promote the health benefits linked to connecting people with and protecting the natural environment. Increase cross promotion of community programs and services to improve connections and partnerships across the community.

South Metropolitan Peel Sub-Regional Planning Framework

In March 2018, the Western Australian Planning Commission (WAPC) released the South Metropolitan Peel Sub-Regional Planning Framework as part of the 'Perth and Peel@3.5million' suite of land use planning and infrastructure frameworks. The frameworks seek to ensure that Perth and Peel grow into the communities of tomorrow and have a key focus on an integrated public transport network while staging and sequencing urban development to inform public and private investment. The frameworks provide strategic guidance to government agencies and local governments on land use, land supply, land development, environmental protection, infrastructure investment and the delivery of physical and community/social infrastructure for each sub-region.

This Strategy aligns with the overall framework. One transport related action within the framework is to investigate and confirm alignments for transit corridors, in conjunction with any central area transit services, for central Mandurah and approaches, including options for a bus layover facility in the Mandurah City Centre. This work will be undertaken by the Department of Transport, Public Transport Authority, WAPC and the City of Mandurah.

Local Planning Strategy

The Local Planning Strategy provides the framework for planning within a local government area and sets the strategic basis for a Local Planning Scheme.

It sets out a spatial plan for the urban areas of Mandurah as shown in Plan 2. This Strategy is to be read in conjunction with the Local Planning Strategy and will likely inform updates and modifications over time to the Local Planning Strategy.

This spatial plan provides an overview of the key outcomes arising from the structural elements that are addressed in the Local Planning Strategy which includes transport and movement together with the following key actions and outcomes:

Activity Centres

- Focus sub-regional functions of activity, employment, transport and amenities (including recreation) within the Mandurah Strategic Centre.

- Focus further retail and commercial activity within identified activity centres allowing for the development of diverse intense notes of activity that, along with targeted economic development interventions, will foster the development of mature local economies.

- Continue to liaise with relevant authorities to ensure future development of the Peel Health Campus and Mandurah Education Campus is well connected to the Mandurah Strategic Centre through road and transport networks.

Urban Form

- Recognise that Mandurah has a point of difference due to the natural assets, extensive coast line and waterways (natural and artificial), existing urban form and infrastructure, and ensure that there is a variety of development outcomes and scale to avoid being a continuation of suburban sprawl. Increase the density and diversity of housing in and around activity centres to improve land efficiency, housing variety and to support centre facilities.

- Ensure sufficient development intensity and land use mix is provided in centres and corridors to support high-frequency public transport.

Infrastructure

Plan and lobby for improvements to:

- the existing Mandurah passenger rail line and prioritisation of the east-west connection between Mandurah and Pinjarra;

- the provision of a high frequency street based transit system within the Mandurah Strategic Centre as a catalyst for infill development and regeneration; and

- the resetting of the existing bus system to provide a bus transit system along Mandurah Road between the northern suburbs of Mandurah and the Mandurah Transit Station; and along Old Coast Road between the southern suburbs of Mandurah and the Mandurah Station.

- Seek to ensure a priority on the delivery of 'safe active streets' in Mandurah's Strategic Centre for a mix of transport users, with enhanced attention given to pedestrians, bike riders and transit.

- Ensure modern and contemporary provisions are continued for onsite car parking and bicycle facilities to facilitate new commercial and mixed-use developments.

The Strategy's Spatial Plan (as shown on Plan 2) outlines the following elements of the transport network as follows:

- Freeway / Highways;
- Major Roads;
- District Integrator Roads;
- Neighbourhood Connector Roads;
- Perth to Mandurah Rail and Stations at Mandurah and Lakelands
- Priority Bus Networks

These elements will be further outlined in the Strategy.

Importantly, the spatial plan also outlines key activity centres and locations of community infrastructure that are attractors for transport and movement together with areas for future higher density and infill development, and as a result, it is important that these areas are well connected and accessible.

Plan 2 - Local Planning Strategy Spatial Plan (Urban)

Urban Form

- Urban Core
- Mixed Use Precinct
- Urban Neighbourhood
- Suburban (Infill)
- Suburban (Future)
- Suburban (Existing)
- Suburban (Large Lot)
- Rural Living
- Mixed Business

Open Space

- Regional Open Space
- Conservation
- Active
- District Parks / Golf Course

Transport Network

- Freeway
- Major Road
- District Integrator Road
- Neighbourhood Connector Roads
- Perth to Mandurah Rail & Stations
- Priority Bus Networks

Activity Centres

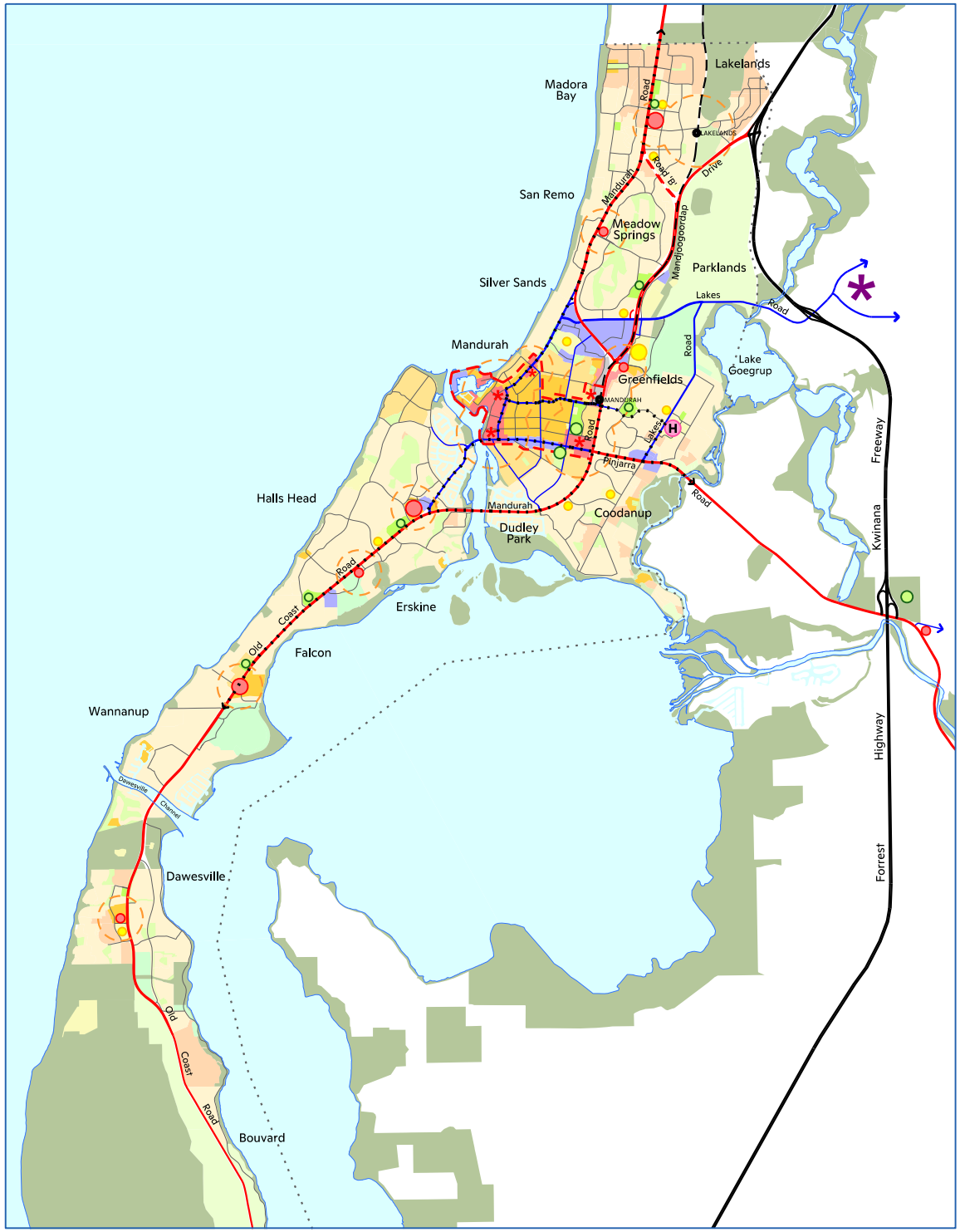
- Strategic Centre
- Strategic Centre Precinct
- District Centre
- Neighbourhood Centre
- Peel Business Park

Community Infrastructure

- Tertiary Education
- Regional Hospital
- Regional Recreation
- High Schools
- District Recreation

Walkable Catchments to Centres and Transit

City of Mandurah Boundary



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Integrated Transport Strategy

Local Planning Scheme 12

Local Planning Scheme No 12 ('Scheme 12') is the City of Mandurah's development control plan outlining zones and reserved land, together with requirements for approval. Scheme 12 also provides for the regional reserved land provided for in the Peel Region Scheme, a regional planning scheme administered by the Western Australian Planning Commission.

Major transport implications in Scheme 12 are provided as follows and as shown in Plan 3:

- Primary Regional Roads

  Key roads where the planning responsibility and management of the road generally is provided to Main Roads WA and any development proposals assessed by the City of Mandurah with direct access and / or frontages to these roads requires referral to Main Roads WA;

- Other Regional Roads

  Important regional roads where the planning control and land acquisition matters are the responsibility of the Western Australian Planning Commission. Any development proposal assessed by the City of Mandurah with direct access and / or frontages to these roads require referral to Department of Planning, Lands and Heritage;

- Railways

  Land identified and required for existing and future railways. Any development proposals on these lands require approval under the Peel Region Scheme and will be assessed by the Western Australian Planning Commission;

- Local Distributor Roads

  These lands are reserved in Scheme 12 (as required under the Model Provisions for Local Planning Schemes) and identified to set aside land required for a local distributor road classified as a Local Distributor in accordance with the Western Australian Road Hierarchy. There are no direct implications on development assessment or control in the Scheme and no privately owned land forms part of this reservation.

  Notably, District Distributor Roads are not identified in Scheme 12.

The use of these terms in the planning system often cause confusion with the traditional road network hierarchy terms, and further details are provided in Table 5.

Plan 3 - Local Planning Scheme No 12 Transport Networks

Peel Region Scheme Reserved Land

- **Primary Regional Roads**
- **Other Regional Roads**
- **Railways**

Local Reserved Land

- **Local Distributor Road**

Activity Centres & Attractors

- Strategic Centre Precinct
- District Town Centres
- Neighbourhood Centres
- Peel Business Park
- Tertiary Education
- Regional Hospital
- Regional & District Recreation
- High Schools

City of Mandurah Boundary

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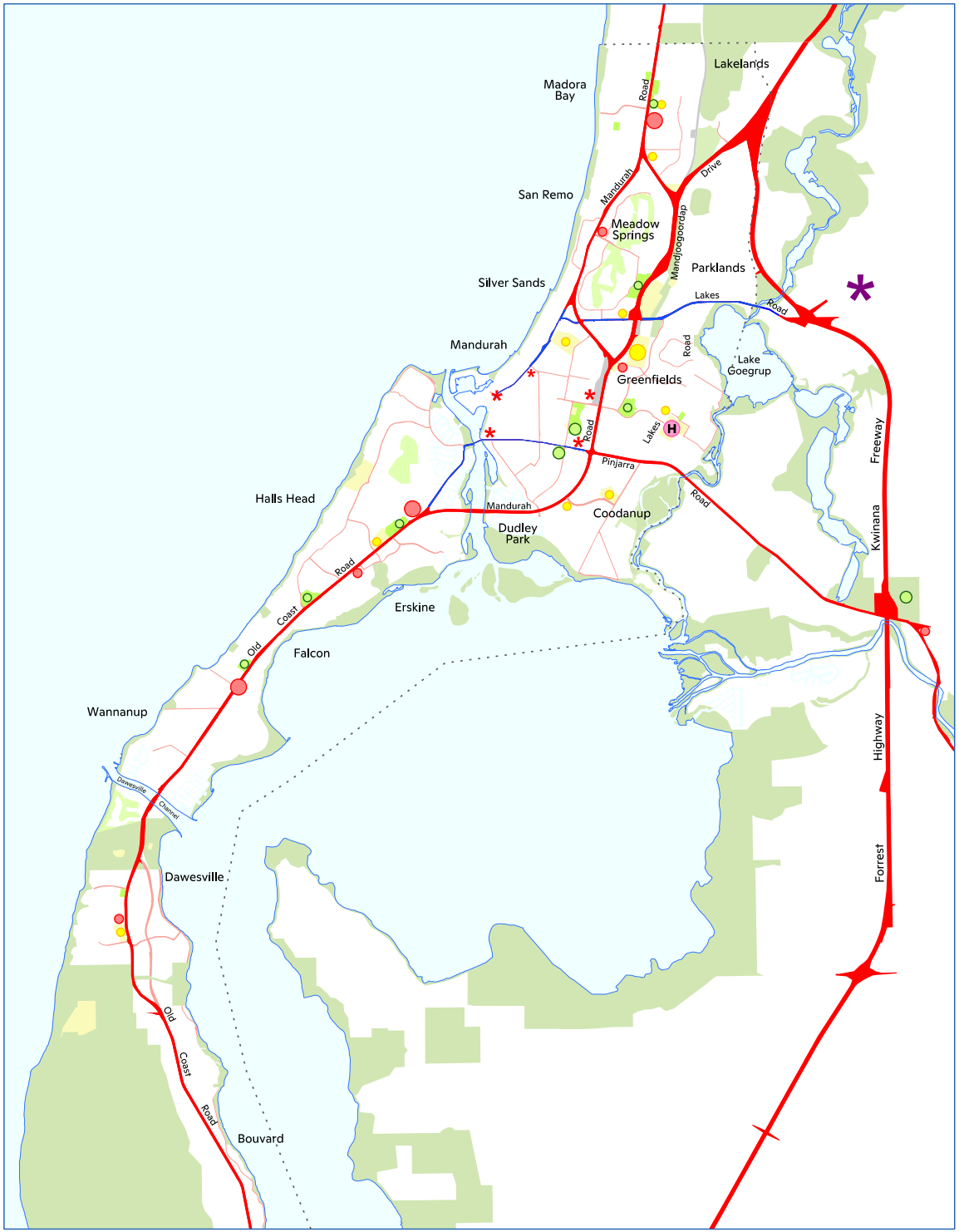


Long Term Financial Plan

The Council's Long Term Financial Plan (LTFP) is a 10-year rolling plan that informs the Corporate Business Plan and allocates the necessary resources to ensure that the Strategic Community Plan priorities are achieved. A number of the transport related projects are dependent on receiving external grant funding (shown in green text) as indicated below:

Road Projects: **Total $84.2 million**

- Road Renewal Resurface Program: $37.4 million
  $3.75m each year until 2032/33
- Road Renewal Rehabilitation Program: $18.2 million
  $1.46m in 2023/24 followed by
  $1.86m each year until 2032/33
- Road Upgrade Program: $28.6 million
  $1.65m in 2023/24 followed by
  $3m each year until 2032/33

Path Projects: **Total $16.35 million**

- Shared Paths New Program: $5.86 million
  $100,000 per year (years 1-3);
  $500,000 per year (years 5-7) and
  $1 million per year (years 8 to 10).
- Path Renewal: $1.2 million
  (average $120,000 per year)
- Cycle Path New Program: $6.5 million
  $1.1m in 2023/23 and $1.4M in 2024/25 followed by $500,000 each year until 2032/33.
- Boardwalk Renewal $2.79 million
  average $279,000 per year

Other Transport Related Projects: **Total $18.13 million**

- Street Lighting Renewal $8.8 million
  (average $880,000 per year)
- Street Lighting New $1.35 million
  (average $135,000 per year)
- Street Furniture: $580,000
  (average $58,000 per year)
- Trails Projects $350,000
- Mandurah Road Pedestrian Bridge (2026/27): $5 million
- Carparks Renewal $920,000
  (average 92,000 per year)
- Sutton Farm Car Parking (2024/25): $770,000
- Sutton Farm Public Jetties (2024/25) $364,000

Place Enrichment Strategy

The Place Enrichment Strategy aims to build an overarching framework that will guide decision making, corporate collaboration and resource allocation for the community development services activities and programs.

The Place Enrichment Strategy builds on the Council's 2020 endorsed place-based model approach deploying Community Development Officers in the North, South and Central neighbourhoods. This included a phased transition towards a strengths-based approach focused on enabling and empowering community to develop community-led solutions and moving away from traditional City-led service delivery.

Core to this idea, is a place approach which utilises the principles of Asset Based Community Development (ABCD) - which aims to reduce community dependency on external organisations. ABCD recognises that whilst social problems exist, all communities have social, cultural, and material assets to address them, including the skills, passions, and capacities of residents.

One action of the Place Enrichment Strategy is to advocate for improved transport to connect suburbs to the City Centre. This action will allow more people to access facilities, services, and events in the City Centre.

Environment Strategy

The Environment Strategy has the following objectives relating to transport:

- Champion sustainable and active transport opportunities to deliver an accessible, pedestrian-linked, eco-centric city that maximises nature's place in our urban environment; and

- Ensure our planning mechanisms are designed and used in a way that protects ecological values and maximises environmental outcomes.

The community aspires to have more sustainable and active transport options, such as walking, public transport, cycling or using electric vehicles, to reduce their environmental impact while also enjoying their travel through the City. However, these options need to be accessible and safe for people to enjoy their use. Connected walking and cycling paths, bus routes, mobility devices and electric vehicle charging stations allow the community to give their car a rest and take in the sights of the whole City.

A priority of the Environment Strategy is to develop greener transport and pathway networks, including the planting of additional vegetation within road reserves.

Public Health and Wellbeing Plan

The City is currently reviewing the 2020-2023 Public Health and Wellbeing Plan. It is anticipated the new plan will include a focus on active transport, recognising the healthier lifestyle benefits.

The City has recently joined the Department of Transport's '*Your Move*' program. The program supports individuals, schools and workplaces to start swapping a few car trips each week for walking, riding a bike or catching public transport. Incentives to earn points and to redeem for rewards are included as part of the program. Rewards include leadership team t-shirts, bike and scooter racks and bike education sessions.

Street Tree Masterplan

In 2019, the City undertook a city-wide public engagement survey to assist the development of a Street Tree Masterplan. The top five community values identified in the survey were:

1. Increasing habitat and biodiversity
2. Provide shade and cooling
3. Improved air quality
4. Absorbing carbon dioxide
5. Community health and wellbeing

Following the survey, tree species for 22 precincts across Mandurah and each street were chosen based on community consultation, technical knowledge, and specific benefits including shade, size, use for wildlife and more.

Planting additional street trees provides multiple transport related benefits, including:

- increasing shade;
- improved air quality and adsorbing carbon dioxide; and
- making neighbourhoods more beautiful and pleasant to walk and cycle.

All these factors will contribute to making active transport more desirable and in reducing private car use.

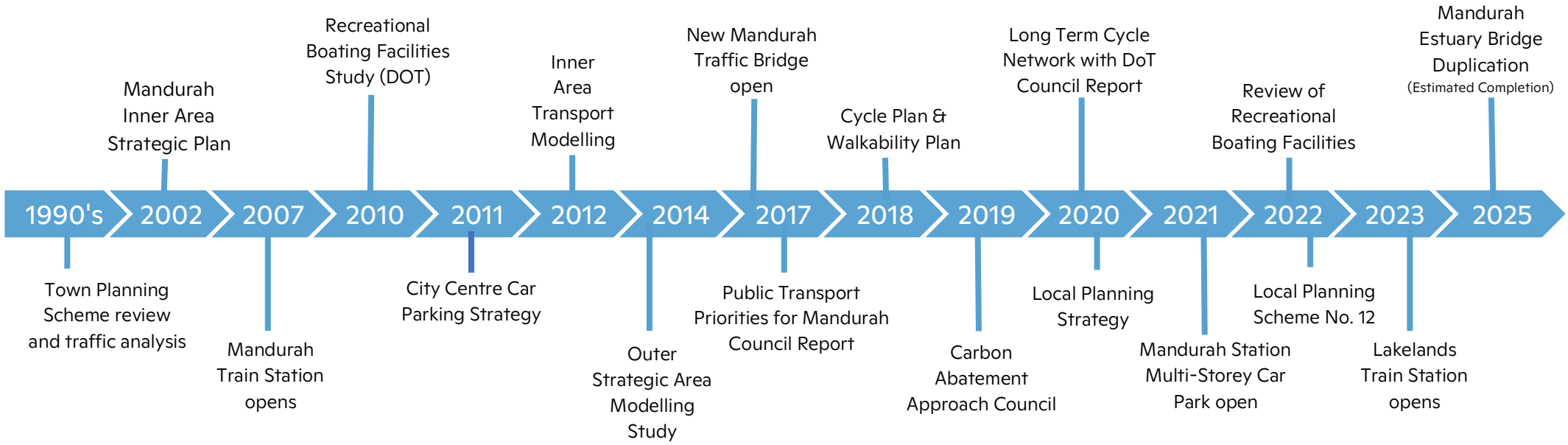
2. Existing Context

2.1 The Story So Far

The City has a long history of planning for land use and transport through integrated plans and strategies – some in partnership with the State Government, others to lobby for upgraded infrastructure, and responding to regulatory approvals undertaken for new development.

With the progress of the Local Planning Strategy and many elements of the transport network at a regional level having been completed, the timing is right to readdress a holistic transport strategy as Mandurah's development progresses from rapid suburban growth to managing and renewing existing assets and an infill / redevelopment phase.

Figure 1 Transport and Planning Projects Timeline



2.2 Existing Transport Network

Mandurah's existing public transport and road network are described as follows:

Public Transport

The Perth to Mandurah rail line, serviced by stations at Mandurah and Lakelands, is the key public transport highlight.

Mandurah Station is removed from the core of Mandurah's City Centre, however, is centrally located for the regional population base. Multiple forms of transport are required to access the rail network to travel north to Perth. Recent upgrades were made to the station parking provision with a multi-storey car park increasing the number of car parking bays from 782 to 1,886.

Bus routes 588 and 589 provide a circle route around the Strategic Centre in both directions with a bus departing every 10 to 15 minutes in peak periods. This route is within 400m of most of the retail and service areas within the Mandurah Strategic Centre.

Bus services in and out of the City Centre are limited with no high frequency services linking suburban communities to the north, south and east and all services commencing or finishing at the Mandurah Station.

The existing network exhibits relatively low patronage. This is due in part to the winding suburban routes and a lack of priority at key intersections and corridors leading to longer journey times than for private vehicles and cycling trips.

Road Network

Mandurah has an extensive regional and local road network that services transport needs with key roads including:

- Mandjoorgoordap Drive which links Mandurah to the Kwinana Freeway;
- Mandurah Road / Old Coast Road as the historic and retained north-south corridor 'Highway One';
- Pinjarra Road and Gordon/Lakes Road as key linkages through Mandurah to the north, south, east; and
- Key entry points into the City Centre include Mandurah Terrace from the north, Peel/Allnutt Street and Pinjarra Road from the East and Leslie Street and Old Coast Road/Pinjarra Road from the South.

Mandurah has over 800 km of roads with a breakdown as follows:

Primary Regional Roads	53 km
Other Regional Roads	11 km
Distributor A	23 km
Distributor B	19 km
Local Distributor	98 km
Local Access Roads	606 km

With the exception of 'Road B', which forms the final piece of the original Northern Mandurah Bypass, the regional and district network of roads is largely complete, noting previous plans and strategies focused on the planning and delivery.

Further, given the now largely developed nature of Mandurah, there are limited opportunities for expansion or major alteration to the road network without significant disruption to the built and natural environments.

Path / Trail Network

The City of Mandurah currently maintains a network of 580 kilometres of paths with a mix of on-street cycle lanes and concrete or red asphalt paths running beside existing roads.

Over 1,000 pedestrian crossing locations are included within this network.

Many new paths have been added in recent years, although there are some significant sections of the network still requiring construction or upgrading. Eliminating gaps in the network will provide safe, connected, and continuous routes to link the key destinations and the wider active transport network.

The most common trips people undertake by walking and cycling are to go shopping, to visit family and friends, to visit key activity attractors like parks, rivers or beaches, and for general fitness - particularly in close proximity to high activity waterfront locations.

The recent rise in popularity of eRideables has seen increased demand for high-quality paths and trails and has opened the door to a wider variety of people taking more and longer trips by active modes. Future network planning should consider these modes alongside traditional walking / cycling.

The City of Mandurah has an adopted standard concrete path width of 2.0 metres. This accommodates the minimum recommended width for two wheelchairs passing. This should be reviewed and increased as the current best practice is a minimum width of 2.5 metres for a shared path as prescribed in the Department of Transport's Shared and Separated Path Guidelines.

The City of Mandurah is also developing trails for people to experience the beauty of the City's natural coastal and estuarine landscape. The trails aim to create a tourism and recreational experience for visitors and residents.

What's an eRideable?

An eRideable is an electric rideable device, such as a scooter, skateboard or other vehicle, that: as at least one wheel; is designed to be used by only one person, is no more than 125cm long, 70cm wide and 135cm high and is 25kg or less; is not capable of travelling faster than 25km/h on level ground.

There is no restriction on power output for eRideables as long as it is compliant with the speed, size and weight limits outlined above. However, the 200w limit still applies to children (under the age of 16) riding low-powered motorised scooters.

What's not an eRideable?

An eBike or power assisted pedal cycle; an electric personal transporter (e.g. Segway) ; a motorised wheelchair or mobility scooter; motorised scooters 200w or less with a top speed of 10 km/h. These devices are already governed by their own regulations under the Road Traffic Code 2000 and are not included in the eRideable rules.

Source: Road Safety Commission

2.3 Challenges and Opportunities

In addition to being a growing population centre serving a broad catchment, Mandurah is also an important tourist destination for Western Australians, as well as interstate and international visitors. From a transport perspective, Mandurah has a number of specific challenges and potential opportunities.

Spatial Layout

Mandurah's long, narrow footprint makes accessibility and connectivity a challenge on a number of fronts:

- Bus routes are long, convoluted, suburban based routes resulting in slow trip times and a lack of direct connection to locations other than the Mandurah Station; and there are no bus priority lanes or high-frequency services to assist in improving connectivity and efficiency.
- Bicycle trips are attractive and travel times are competitive, however, dispersed employment and education locations make prioritising quality, attractive cycling infrastructure a challenge. The high level strategic planning of key cycle networks has been addressed through the endorsement of the Long Term Cycle Network with the Department of Transport.
- The centrepiece of public transport infrastructure is the Mandurah Station which is segregated and separated from the City Centre at a distance of 2.5 kilometres, but located centrally to the broad population catchment. The Station is the origin and destination for all bus routes in Mandurah.

These factors make getting around by modes of transport other than the private vehicle, challenging and potentially unattractive to users.

Existing Transport Behaviour

ABS Census data shows that a clear majority of people commute by private car (see table below).

Method of Travel to Work	2016	2021	Variance
Private Car	68.3%	65.4%	-2.9%
Public Transport	7.5%	6.0%	-1.5%
Bicycle or Walk	2.1%	1.6%	-0.5%
Other (e.g., eRideables)	2.9%	3.4%	+0.5%
Work at Home	3.9%	6.3%	+2.4%
Did not go to Work	12.7%	15.7%	+3.0%

COVID-19 pandemic restrictions impacted people travelling to work and many workplaces continue to offer flexibility in allowing employees to work from home.

Analysis of car ownership in 2016 and 2021 indicates 52% of households in Mandurah had access to two or more motor vehicles, compared to 57% in Greater Perth.

From the 2021 census data, approximately 70% of households within the Mandurah Strategic Centre only have 1 motor vehicle or less compared to 35% in Greater Perth. In addition, around 7% of people in this area walk to work, compared to 1.6% in Greater Perth.

Economic Growth

Mandurah's Economic Strategy seeks to focus on medium to long term projects and opportunities for economic opportunities in the region, aligned with the City's broader 20-year strategic objectives.

The key economic opportunities for Mandurah's future economic development lie at the intersection of its existing economic advantages and disadvantages and the global drivers of change that are both likely to occur and likely to have a significant impact. Opportunities were initially developed based on the synthesis of these two sets of findings, and subsequently refined and consolidated.

A total of eight opportunities were identified, each of which represents a potential area of focus to guide future policy decisions, objectives, and investment decisions for the Mandurah region.

The opportunities also consider existing programs and infrastructure currently in place, to ensure that they build from the current state.

The eight opportunities include:

1. Capitalise on Manudrah's lifestyle offering;
2. Develop Mandurah into a world-class Hospitality Education Precinct;
3. Build the capacity of the aged-care workforce;
4. Make Mandurah a hub for 'Blue Collar Tech' training and industries;
5. Innovation in healthcare delivery;
6. Innovative social interventions to support Mandurah's structurally unemployed;
7. A hub to lead industry decarbonisation, climate resilience and adaption;
8. Increase the base of professional workers in Mandurah.

Many of these opportunities will support and require an integrated transport network throughout Mandurah to be successful as the economic impact of the efficient movement of people, goods and services together with reduced operating costs through a road network that is well maintained.

Amenity

Poor streetscapes, traffic congestion, noise, and air pollution negatively impact amenity for residents, workers, and visitors and can detrimentally affect the perception of safety and the uptake of active transport modes.

High quality streetscapes are a core ingredient of a successful public realm. Improving a street's amenity through appropriate infrastructure that considers both the movement and place functions has a strong influence on uptake of active transport, increases the land value of adjacent properties and induces additional economic activity.

Mandurah's waterways and natural environment have a high amenity that attract residents and visitors. Extension and improvement to the path network is currently being undertaken within the Island area.

Many street trees in the older suburbs, such as the Mandurah Strategic Centre are required to be pruned and are unable to grow to their full height due to overhead power lines.

Progressing the undergrounding of power lines can contribute to improving streetscapes by removing barriers to tree canopies and the shade they provide road users.

Access and Inclusion

As recognised in the City's Access and Inclusion Plan 2021-2026, the City of Mandurah is committed to ensuring that spaces and places are accessible, inclusive and welcoming for people with disability, our aging population, their families and carers.

To ensure accessibility within Mandurah for a diverse range of residents with varying resources, needs, and abilities, Mandurah's transport and land use patterns must be well integrated, and provide the most opportunities for mode choice within parallel and overlapping transport networks.

Health and Safety

The transport network must focus on road safety issues for all users especially where different modes share spaces. Active transport can also deliver substantial public health benefits with more people walking and cycling.

Public transport usage also delivers a positive health benefit by encouraging walking and cycling to and from stops and stations. Together, these modes can reduce private car usage, reducing congestion as well as harmful emissions, thus having a significant long-term benefit on public health.

Road safety issues can be mitigated through the thoughtful integration of land use, transport, and urban design. Safe streets can also encourage the uptake of active transport.

Within Mandurah, the Department of Transport's '*Your Move*' program is gaining momentum in educating and providing incentives for people to cycle, walk or catch public transport to work or school 1 or 2 days per week instead of using a private car.

This has significant health benefits, however some of the routes and crossing points can be upgraded to improve the overall safety.

Population Growth and Further Development

Mandurah has a population of 90,000 (Census 2021), and is expected to grow steadily, to reach approximately 120,000 residents sometime in the next 20 years.

This means Mandurah will become home to almost 30,000 new residents, who will need around 12,000 additional dwellings to be built.

To accommodate the predicted population growth within Mandurah, approximately 8,000 dwellings will be accommodated in the Mandurah Strategic Centre, through identified infill development. Significant areas of land have already been zoned to allow for this to occur.

The balance of 4,000 dwellings will be predominately located in new suburban areas such as Lakelands and Madora Bay that have already undergone substantial structure planning.

Climate Change

Transport is Australia's second-largest source of greenhouse gas emissions (18%). Transport-related emissions have the highest rate of growth of any sector since 1990.

With no action, transport emissions are projected to continue growing. There are solutions available now to drive down greenhouse gas pollution from transport. These include:

- Providing viable alternatives to driving, such as expanding access to reliable, comfortable public transport, cycling and walking alternatives.
- Electrifying and powering cars, buses, trains and light rail with renewable energy.
- Adopting policies and incentives to encourage lower emitting vehicles, such as mandatory greenhouse gas emissions standards and electric vehicle targets.
- Technological advancements to make vehicles more fuel efficient.

Technological Change

Changes in lifestyle related to advancing technology will have implications for transport and land use patterns within the City. The uptake of autonomous vehicles and other more sustainable technologies such as electric bicycles and scooters are expected to have a substantial impact on private car ownership and use, congestion and parking requirements.

The use of eRideables are on the rise. Whilst the State Government has recently amended road laws to accommodate these forms of transport, there are concerns that some users frequently exceed the 25 km/h speed limit, do not adequately warn pedestrians on shared paths of their presence and travel on roads without sufficient safety equipment.

Additional challenges to accommodate eRideables include changes to infrastructure such as shared paths and charging stations, and the provision of fit for purpose parking may be required so that this form of mobility can be encouraged and integrated into the existing transport network in a safe way.

The advancement in alternative fuels such as hydrogen, the increase in use of electric vehicles (EVs) and the increasing availability of EV charging stations and improvements to public transport will result in changes to travel and transport behaviour.

Behavioural issues such as working from home and / or remote and satellite working rather than a large commute to the centre of Perth has been possible due to easier access to computers and higher internet speeds. Flexible working arrangements, including working from home increased in popularity due to the recent COVID-19 pandemic and has continued for many workers.

These implications must be monitored and considered as they relate to infrastructure and policy development over the next 10-30 years.

Integrated Land Use and Transport Planning

Integrated land use and transport planning ensures that land uses are compatible and that the roads, public and active transport networks are appropriate for the type and intensity of local and regional needs.

With the planned infill development within the Mandurah Strategic Centre to accommodate the majority of the population growth, the ability to increase the capacity of the existing road network is limited.

There is an increasing need to reduce reliance on private vehicles and focus on encouraging a shift in travel behaviours towards more sustainable modes of travel.

While it is acknowledged that private vehicles will continue to play a major role in Mandurah's movement network, there is a need for the City to create more walkable neighbourhoods, more connected and accessible active transport routes, and to advocate for more integrated public transport through a coordinated approach to transport and land use.

2.4 Roles and Responsibilities

Responsibility for transport planning is shared between Local Government and State Government agencies as outlined in Table 1.

Both levels of government must work together to provide a transport network that caters for the community.

High level land use planning policy, public transport and the arterial road network is the responsibility of State Government.

The City manages the local road network and the majority of the pedestrian and bicycle networks.

State and Federal Government funding for major projects and transport infrastructure has been provided for projects such as bridges and train stations, however this is often provided on an ad hoc basis and as an election commitment.

Table 1 Transport Roles and Responsibilities

Organisation/Agency	Role and influence in Mandurah	Relevant Strategies, Plans and Programs
City of Mandurah	Local Government authority responsible for the management and operation of the local street and path network, public realm and public assets such as community facilities, parks, foreshores etc.	• Connecting Mandurah: Integrated Transport Strategy; • Local Planning Strategy; • Cycle Plan 2018; Walkability Plan 2018; • City Centre Car Parking Strategy; • Precinct Structure Plans to guide land use and built form in activity centres and infill precincts.
Department of Transport (DoT)	State Government Agency responsible for wider transport planning and policy development, cycle path funding, boat and vehicle licencing, and recommendations on Road Traffic Act modifications.	• Perth and Peel @ 3.5 million: Transport Network • WA Long Term Cycle Network • Peel Region Recreational Boating Facilities Study Review 2020 • Your Move Program • WA Bicycle Network Grants (includes Safe Active Streets Program)
Main Roads WA (MRWA)	State Government Agency responsible for the management of the major road network, regional connections, high wide load routes, approval of changes to the road network and traffic signalling, speed limits and regulatory signage and line-marking.	• Perth and Peel @ 3.5 million: Transport Network • Planning Control and Management for Primary Regional Roads identified in Peel Region Scheme
Public Transport Authority (PTA)	State Government Agency responsible for the provision and operation of the public transport system, including rail and bus services.	• Perth and Peel @ 3.5 million: Transport Network • Station Access Strategies

Organisation/Agency	Role and influence in Mandurah	Relevant Strategies, Plans and Programs
Road Safety Commission	Business unit within WA Police that reports to the Minister for Road Safety. The unit strives to improve road safety and reduce road trauma.	• Driving Change – Road Safety Strategy 2020-2030
Western Australian Planning Commission (WAPC)	State Government Agency responsible for land use and spatial planning	• Perth and Peel @ 3.5 million • South Metropolitan Peel Sub-Regional Strategy • Planning Control for Other Regional Roads identified in Peel Region Scheme
Neighbouring Local Governments	Local Governments with an important interface relationship with Mandurah and in particular, inter-city connectivity of the road and path network.	Various planning schemes and strategies, transport and urban design plans and policies, parking management approaches and economic development initiatives to improve the region.

3. Strategic Direction

The Strategy's Goal is:

a safe, accessible and connected transport network that enables sustainable choices.

3.1 Key Theme 1 A Safe Movement Network

A Safe Movement Network is a vital component of the comprehensive transport strategy aimed at ensuring the safety of all road users, promoting sustainable transportation options, and enhancing overall urban mobility. The Strategy seeks to encompass a range of infrastructure, policies, and initiatives designed to prioritise safety, reduce accidents, and create an environment conducive to walking, cycling, and using public transport.

This can be achieved in various forms such as:

- Infrastructure Development, such as dedicated spaces for cyclists and pedestrians; traffic calming measures; design of intersections and enhancing public transport facilities such as bus stops and transit hubs.
- Safety Education and Awareness, such as campaigns to educate drivers, cyclists, and pedestrians about road safety and sharing the road responsibly together with school programs.
- Having appropriate design standards and guidelines that considers the needs of all road users and incorporates safety features into street design; and integrating universal design principles to ensure that infrastructure is accessible to people of all ages and abilities.

Key Outcomes and Actions

- ***The delivery of a network of safe bicycle facilities linking the City Centre, train stations, health services, education facilities and district level centres; (*)***
- ***Refine Policies and Standards relating to Transport Infrastructure by developing Street Design Guidelines for future upgrades and renewals with a focus on safe and attractive environments for all transport users that align with urban form outcomes; (*)***
- ***Develop a Master Plan for significant district and local road network upgrades and Renewals that align the desired Urban Form of the location, Street Design Guidelines and Traffic Modelling outputs. (*)***

*** where repeated across themes and priorities**

3.2 Key Theme 2 An Accessible Movement Network

An Accessible Movement Network provides equitable and convenient transportation options for all residents and workers in Mandurah, regardless of their physical abilities, age, or socio-economic background. This includes not only the physical infrastructure but also policies, technologies, and community engagement efforts that collectively create an inclusive environment.

Primarily, having an Accessible Movement Network seeks to break down the barriers to those in the community that have limited mobility and ensures a priority to universally designed infrastructure and making non-car based trips easily navigable for everyone.

Having an Accessible Movement Network promotes the importance of inclusivity and diversity in the Strategy and becomes a central theme that guides decision-making from the outset. This proactive approach acknowledges that accessibility is about fostering an environment where everyone benefits. An accessible network can provide benefits to parents with strollers, seniors, tourists, people with disabilities, thus promoting a more welcoming and vibrant community.

By doing so, the Transport Strategy aligns with key Council strategies such as Access and Inclusion, Youth and being an Age-Friendly City.

Key Outcomes and Actions

- ***Priority public transport routes linking the City Centre, railway station and major health, education, employment, tourism and retail destinations; (*)***

- ***Refine Policies and Standards relating to Transport Infrastructure by developing Street Design Guidelines for future upgrades and renewals with a focus on safe and attractive environments for all transport users that align with urban form outcomes; (*)***

*** where repeated across themes and priorities**

3.3 Key Theme 3 A Connected Movement Network

A Connected Movement Network will ensure there is efficiency, accessibility, and sustainability in the network. The Strategy seeks to integrate the various modes of transport, infrastructure, and plans together to create a seamless and user-friendly experience for people and goods moving within Mandurah and to surrounding areas which includes the following elements:

- Multi-Modal Integration, by planning for all modes of transport; and developing hubs that facilitate easy transfers between different modes of transport, reducing travel time and improving connectivity.
- Using Infrastructure and Technology to collect data to manage traffic flow, monitor vehicles, and provide real-time information as inputs into plans and projects.
- Prioritise the delivery of active transport by ensuring pedestrian-friendly streets, precincts and opens spaces, encourage walking as a viable mode of transport and promote cycling by building dedicated infrastructure.
- Ensuring that the movement network aligns with areas of density, amenity, activity and employment, so that the urban form of the City can be realised and is connected. Implement zoning policies that incentivise the creation of affordable housing near transportation hubs.

By integrating these elements, a connected movement network can enhance mobility, manage congestion, promote sustainable transportation, and provide positive benefits for the City.

Key Outcomes and Actions:

- ***Advocate for the delivery of 'Road B';***
- ***Advocate for connection points from Gordon Road and Meadow Springs Drive to Manjoogoordap Drive;***
- ***Advocate for the extension of the Tonkin Highway to Forrest Highway to ensure that Mandurah is connected to the eastern part of the Perth Metropolitan Region; (*)***
- ***Priority public transport and active transport networks linking the City Centre, railway station and major health, education, employment, tourist and retail destinations; (*)***
- ***Plan for high frequency public transport services on major corridors that link Mandurah's suburban areas to the City Centre and major health, education, employment, and retail destinations. (*)***

*** where repeated across themes and priorities**

3.4 Key Purpose 1 Consolidation of Priorities

The key outcome is that of consolidation as the extent of suburban development is largely complete and significant high-level network infrastructure has been delivered (or is being delivered). Over the last 15 years, this has included projects such as the Perth to Mandurah rail line, Mandurah Bridge replacement, Mandurah Estuary Bridge duplication, Mandjoorgoordap Drive and Kwinana Freeway and Forrest Highway extension.

The only remaining element of the regional network is a regional road link between Lakelands and Meadow Springs connecting Mandurah Road and Mandjoorgoordap Drive known as 'Road B'. Based on recent modelling undertaken Road B will be beneficial before 2041. If this link is not constructed, the longer distance trips are likely to cause more congestion, especially on Mandurah Road and saturate this corridor. Therefore, advocacy to the State Government to allocate the necessary funds for construction in a timely manner is required.

As a result, as a key outcome of this Strategy, the priorities for transport in Mandurah need to change to focus on those areas of future economic growth and redevelopment, primarily within the Mandurah Strategic Centre. The priority will also incorporate maximising access to the City Centre by public transport, walking and cycling.

Key Outcomes and Actions:

- ***Advocate for the delivery of 'Road B';***
- ***Advocate for connections from Gordon Road and Meadow Springs Drive to Manjoogoordap Drive;***
- ***Advocate for the extension of the Tonkin Highway to Forrest Highway to ensure that Mandurah is connected to the eastern part of the Perth Metropolitan Region; (*)***
- ***Priority public transport routes linking the City Centre, railway station and major health, education, employment, tourist and retail destinations; (*)***
- ***Plan for high frequency public transport services on major corridors that link Mandurah's suburban areas; (*)***
- ***Ensure the delivery of a network of safe bicycle facilities linking the City Centre, train stations, health services, education facilities and district centres; (*)***
- ***Manage the demand of car travel on inner city streets consistent with the capacity of the street network; and***
- ***Enhance that the Mandurah Strategic Centre's grid-based street network by maximising the opportunities to share transport modes across the network as many streets have moderate levels of traffic.***

*** where repeated across themes and priorities**

Key Purpose 2 Consolidation of Plans

This Strategy aims to consolidate the following plans:

- Local Planning Strategy and Local Planning Scheme;
- Walkability Plan;
- Cycle Plan;
- Long Term Cycle Network Plan; and
- Strategic Transport Model and Road Hierarchy Plans.

The consolidation has been broadly reflected in the Local Planning Strategy with more localised or district level plans required for each mode of transport. These shall be reflected in the Key Actions.

Local Planning Strategy and Local Planning Scheme

The City of Mandurah Local Planning Strategy was certified for advertising in August 2018, adopted for final approval in June 2020, and endorsed by the Western Australian Planning Commission in April 2022.

The Local Planning Strategy provides the framework for planning within a local government area and sets the strategic basis for a Local Planning Scheme.

The Local Planning Strategy is referenced in the City of Mandurah Local Planning Scheme No. 12, gazetted on 11 April 2022. To ensure that the Strategy remains relevant and consistent in planning decision making, it will be updated as strategies, plans and proposals by the State Government and the City of Mandurah are considered on identified issues.

Key Outcomes and Actions

- ***Update the Local Planning Strategy and relevant actions relating to Transport and Infrastructure to align with this Strategy together with an alignment of plans with relevant geographic information systems and networks;***

- ***Use the Strategy as the core reference point for key road hierarchy descriptors with the support of detailed strategic traffic modelling as an input into plans and projects to progress to a Movement and Place method of classifying streets and roads;***

- ***Prepare District Level Active Transport Plans to guide the planning and prioritisation of path network plans as part of the implementation of the Long Term Cycle Network;***

- ***Refine Policies and Standards relating to Transport Infrastructure by developing Street Design Guidelines for future upgrades and renewals with a focus on safe and attractive environments for all transport users that align with urban form outcomes; (*)***

- ***Develop Master Plans for significant district and local road network upgrades and renewals that align the desired urban form of the location, Street Design Guidelines and traffic modelling outputs. (*)***

Walkability Plan and Cycle Plan 2018

In 2018, the Council endorsed a Walkability Plan and Cycle Plan. These plans separately considered the City's approach to improving the walking environment and the commitments from the City in its cycling program delivery and infrastructure programs.

The Walkability Plan set the following key objectives:

- Target spending on capital works projects that improve walkability;
- Emphasise the importance of accessibility and increased mobility for people of all ages and abilities;
- Improve pedestrian safety in the road and traffic environment;
- Create well designed and managed spaces and places for people with improved integration of networks;
- Highlight improvements to walkability, such as reduced traffic signal cycle times and modified intersection design, and the potential benefits of implementing these improvements;
- Focus stakeholder liaison on how walkability can be improved and the benefits of this approach; and
- Create a culture of walking.

The walkability plan had a 4 year focus and review timeframe which aligns with the preparation of this Strategy.

The key objectives of the Cycle Plan included:

- Invest in providing dedicated cycling infrastructure along strategic routes identified using a multi criteria analysis method;
- Align development programs with Department of Transport cycle programs for funding;
- Develop strategic wayfinding signage throughout the City to help identify the cycle network;
- The promotion of Mandurah as a 'Cycling Tour' destination; and
- Reduction of emissions by reducing the number of cars for trips less than 5km.

The Cycle Plan had a 2 year focus, which aligns with the preparation of this Strategy and similarly to the Walkability Plan.

Long Term Cycle Network Plan

In 2016, as part of the State Governments long term transport strategy (Transport @3.5M), the Department of Transport released the Long Term Cycle Network Plan (LTCN). The aspirational long-term bicycle network was based on a robust methodology of connecting all key activity centres in Perth and Peel. The LTCN details a vision for a continuous bicycle network that links parks, schools, community facilities and transport services across the Perth and Peel regions. The State Government will use the routes identified in the LTCN to allocate funding for cycling infrastructure and shared paths (for both people-on-bikes and pedestrians) to local governments.

In June 2020, Council endorsed a Long-Term Cycle Network for Mandurah and this network is included in this Strategy as Plan 4. Routes have been categorised into a three-tier hierarchy of primary, secondary and local routes similar to a road network, that is based on function. The principle of having a hierarchical network of cycle routes was confirmed to align with the Department of Transport's Public Transport for Perth in 2031. A dedicated cycling infrastructure network that is well designed and connected to major activity centres and transport generators to encourage the community to accept cycling as a viable and safe mode of transport and an enjoyable recreation activity to cater for the level of demand.

The categorisation of routes has been based on the function of a given route within the network:

Primary Routes are high demand corridors that connect to major destinations. They provide high-quality, safe, convenient (and where possible uninterrupted) routes that form the spine of the cycle network. These routes are conducive to medium or long-distance commuting/utility, recreational, training and tourism trips.

Secondary routes have a lower demand than primary routes, but provide similar levels of quality, safety and convenience. These routes provide connections between primary routes and major activity centres such as shopping precincts, industrial areas or major health, education, sporting and civic facilities.

Local routes – Local routes are low demand and are predominantly located in local residential areas. They provide access to higher order routes and local amenities and recreational spaces. Changes to traffic management devices and cul-de-sacs may also be proposed, where these have not been designed with cycling in mind, particularly in the use of safe active streets.

Strategic Transport Model and Road Hierarchy Plans

The Mandurah Strategic Transport Modelling (Inner & Outer Area) Report was endorsed by Council as a guiding document in 2014. The report included traffic modelling and a road hierarchy plan providing forecast traffic volumes for the outer area of the City in 2031. The work complimented the modelling completed in 2012 on the Mandurah Inner Area Precinct.

The modelling proposed a road hierarchy and provides guidance for the development of the future road network based on forecast traffic predictions. Traffic can be monitored and planned intervention undertaken as and when necessary.

The traffic model and road hierarchy plan provided the City with the flexibility to plan and cater for the future transport needs of the municipality.

The City updated to the Mandurah Strategic Transport Model in July 2023. The purpose of the report was to describe and summarise the assumptions and outputs from the 2041 and 2051 future year scenarios in the Mandurah Strategic Transport Model to represent medium- and long-term planning horizons within Mandurah.

A main finding of the report included that the construction of 'Road B' connecting Mandurah Road and Mandjoogoordap Drive is required prior to 2041. Without 'Road B' being constructed, high levels of congestion will occur. As there is no effective route between the Lakelands / Madora Bay area to Mandjoogoordap Drive, longer distance trips to and from Mandurah are likely to saturate this corridor.

Emerging Technology

Non-electric vehicles contribute to air pollution and produce approximately 177g of CO2 emissions per kilometre. The City has a significant role in contributing to the national goal of achieving net zero CO2 emissions by 2050.

Matters such as supporting the following elements are opportunities to support emerging technology in relation to transport:

- Supporting EV Charing Stations which include having a supportive regulatory land use environment regarding proposals on private land and a consistent approach to proposals on public land to include matters such as:

    - Applications will be assessed on a case-by-case basis;
    - Selected locations must provide economic benefit to the community;
    - Infrastructure must service ccs / type 2 charging;
    - Signage is to be minimal;
    - Commercial lease terms are to be applied;
    - Lease terms will be for short periods given the changing nature of charging infrastructure.

- Having a Sustainable Fleet Selection; and

- Providing positive Community Education and Engagement

4. Key Actions by Transport Mode

Arising from the Strategic Direction, key analysis and outcomes by each transport mode are addressed in this Section.

4.1 Active Transport

Creating communities that encourage people to choose walking and cycling as modes of transport is a way to foster sustainable, healthy, connected and safe communities. It is considered a key outcome of this Strategy that everyone in the Mandurah community can access and enjoy their streets.

Mandurah has numerous key attractors, including the City Centre, District Centres and a range of Neighbourhood and Local Centres providing for retail needs of the community, and are the main transport generators.

In addition, there are other key attractors such as education facilities, recreation precincts, the Peel Heath Campus, the transport nodes of the existing Mandurah Train Station and Lakelands Train Station together with significant environmental and lifestyle assets of foreshores, beaches and natural areas.

It is important that we focus on these areas to ensure connectivity to these nodes from surrounding suburbs and that the City targets spending on capital works projects that improve the infrastructure for walking and cycling to, and around, these precincts.

The City's role in providing walking and cycling infrastructure is critical. By improving the safety and legibility of its streets, this increases the attractiveness of walking and cycling for a greater number of people. This in turn will encourage more people to walk and cycle, easing pressure on other modes of transport and delivering significant environmental and public health benefits, such as improved air quality, reduced emissions and less traffic.

There are a number of ways to improve the walking and cycling experience which include the provision of dedicated street space, shade, wayfinding, lighting, considering safety, providing time for walking at signalised intersections, frequent street crossing opportunities and addressing gaps in the network. There are a range relating to social, environmental and personal health.

The City's direction in recent years has been underpinned by its Strategic Community Plan 2020-2040, which was informed through an extensive public engagement process. Council included with 'Health' and 'Environment' emerging as consistent key priorities for residents which has led to a Public Health Plan in 2020 and the Environment Strategy in 2023.

In addition to recognising key destinations and trip purposes, it is important to understand some of the differing needs and abilities of people including children, older people and people with disabilities. Children riding to school, elderly bike riders on motorised bicycles or personal mobility devices may not practically share the same infrastructure as the commuter cyclist. Planning needs to accommodate the whole range of bike riders in such a way that is complementary to pedestrians and other transport modes.

Your Move Program

Encouraging people to walk or cycle to school rather than being dropped off and picked up by car is being promoted by the Department of Transport 'Your Move' program. This mode shift not only tackles parking and traffic issues, but also has health benefits and provides practical ways to teach and develop sustainable transport.

The City will continue to be involved in community awareness campaigns to encourage behaviour change and mode shift towards active forms of transport.

District Level Active Transport Plans

The preparation of District Level Active Transport Plans to guide the planning and prioritisation of path network plans should be undertaken to implement the Long-Term Cycle Network, Path Network and Trails Network.

The plans will consider and include:

- Existing path audits from asset data and condition monitoring;
- Assess opportunities to seek data on walking and cycling including surveys and pedestrian / bike rider counts;
- Community Engagement; and
- Path Prioritisation.

It is recommended that one District Level Active Transport Plan will be prepared and implementation commenced per financial year in the following priority district areas:

- Strategic Centre
- East
- North
- Island
- Dawesville

Recommendations of the Plans will be included within the Long Term Financial Plan, Capital Budgets and Asset Management Plans. Aligning the movement and place framework creates strong synergies to the strategic aims.

City Wide and City Centre Aspirations

The key theme of improving the environment for active transport modes and prioritising in the City Centre and surrounding suburbs requires some further consideration in design outcomes for the existing street network.

This can be achieved by several means including:

- Bicycle only, shared and/or separated paths;
- Protected bicycle lanes;
- Redesigned streets where bicycle routes are provided on local streets in a slower speed environment as a safer shared street space.
- Explore opportunities for crossings and connections to complete the Mandjar Bay Circuit as identified in the City Centre Master Plan.

With lower traffic speeds and lower traffic volumes, the streets are much safer for pedestrians and riders of all ages and abilities, as well as for people driving.

Plan 6 - Long Term Cycle Network

Primary Route

Secondary Route

Local Route

Activity Centres & Attractors

- Strategic Centre Precinct
- District Town Centres
- Neighbourhood Centres
- Peel Business Park
- Tertiary Education
- Regional Hospital
- Regional & District Recreation
- High Schools

City of Mandurah Boundary

0 1.5 3km

3 May 2023 | 22/ITS/PLN5 | 1:100 000 @ A3
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CITY OF MANDURAH

Integrated Transport Strategy

End of Trip Facilities

To improve the desirability of active modes of transport, it is essential to consider the whole of trip infrastructure. For commuter cyclists this might mean the provision of certain facilities, such as secure bike parking, showers, change rooms and lockers. The better the facilities, the more likely people are to choose cycling.

For recreational bike riders, the provision of cycle parking facilities is most likely to be the most important at accessible, high demand locations.

For all types of bike riders, the ability to undertake a multi-mode journey, via bus and train would be highly desirable and would significantly broaden accessibility to a much wider range of destinations and locations. Opportunity to seek advocacy and improvements to improve these outcomes are a key outcome of the Strategy.

For development assessment, ensuring provisions requiring end of trip facilities have been included in Precinct Structure Plans and the DesignWA suite of documents which includes updates to the Residential Deign Codes. It will be important to ensure the requirements are provided in new development to support the network of infrastructure and to support medium density infill development in the Strategic Centre.

Technology Changes

Innovation in technology is presenting new opportunities and challenges relevant to the planning and delivery of our infrastructure networks.

Electric bicycles and eRideable devices increase the viability of active transport for many people, as they can help reduce impediments such as long distances, hilly terrain and excessive heat.

Due to their speed and size, these devices have the potential to create conflict points across the existing network, particularly based on older style narrow paths and at intersection crossing points.

Future infrastructure and network design will need to respond to the different requirements of these technologies, so as to support their uptake, which will assist in achieving the public health, environmental and accessibility benefits of these forms of transport.

Figure 2 Benefits of Active Transport

Walking and bike riding are the most sustainable modes of transport. They not only contribute to great places, cleaner local environments and healthier lifestyles, they also provide economic benefits. Many of the benefits of walking and bike riding are interrelated.

Cleaner Environments

- The most sustainable modes of transport
- Contributes to the goal of net zero by 2050
- Reduces noise pollution
- Reduces air pollution
  - Substituting vehicle trips with walking and riding reduces CO2e emission by approximately 177g per kilometre
- Reduces polluted water run-off

Great Places

- People of all abilities can enjoy walking or riding
- Easier to get to school and work
- More local opportunities for fun and recreation
- Creates a sense of community
- Adds vitality and vibrancy to places
- Increases range and availability of public transport

Healthy Lifestyle

- Great form of physical activity
- More engagement with the local community
- Children who walk or ride to schools are more independent and more likely to continue to lead healthier lifestyles
- Healthier communities reduce the impacts on our health care system
- Helps manage weight and reduces the chance of heart disease
- Improves mental wellbeing with links to reduced anxiety and depression
- Enhances social connections.

Economic Benefits

- Boosts productivity
- Reduces congestion
- More foot traffic for local business
- Lowers cost of living
- Provides regeneration benefits
- Influences property uplift
- Benefits derived by per kilometre travelled by an individual:
  - **Walking**: $6.21 (rural) to $6.52 (urban)
  - **Cycling**: $1.94 (rural) to $2.25 (urban)
  - **E-bike**: $1.80 (rural) to $2.11 (urban)

Adapted from NSW Active Transport Strategy

Table 2 Active Transport Action Plan

ASPIRATION: Where walking and cycling is safe, connected, convenient and widely accepted form of transport

Action		Description / Comment	Lead Team	City Role & Funding Type	Timing
AT1	Consolidate the existing Walkability Plan and Cycle Plans by preparing District Level Active Transport Plans to guide the planning and prioritisation of path network plans.	These plans were initially prepared and endorsed by Council in 2017 and 2018 and have a review date of 4 years. City wide plans and networks are included in this Strategy and for each mode to be planned and prepared at a City-wide level are too high level. Being prepared at a district level allows for meaningful community engagement and is consistent with the place management framework; Integration of walking and cycling networks through active transport allows a holistic planning approach to personal mobility modes of transport; Given current projects and commitments which includes two coastal projects, the trails projects, with City Centre Master Plans and Precinct Structure Plan alignment, and opening of the Lakelands Train Station, priority listing is recommended.	Strategic Planning; Technical Services	Plan; Deliver; Within existing operating budget and to support Grant Funding submissions;	1 Plan Per Financial Year in following district areas by priority order: • Strategic Centre; • East; • North; • Island; • Dawesville.

Action		Description / Comment	Lead Team	City Role & Funding Type	Timing
AT2	District Level Active Transport Plans to consider and include the following key outcomes: • Existing Path Audits; • Assess opportunities to seek data on walking and cycling; • Community Engagement; • Path Prioritisation; • Inclusion of recommendations in Asset Management Plans; Long Term Financial Plan and Capital Budgets.	Active Transport Plans will align and be integrated with District Structure Plans or Place Plans that compliment other strategic plans such as Community Infrastructure Plans and Precinct Structure Plans. The key inputs will ensure that the elements of the previous walkability and cycle plans are reviewed and planned at a more detailed district level.	Strategic Planning; Technical Services	Plan; Deliver; Within existing operating budget	As plans are prepared as per Action AT1.
AT3	In preparation of Active Transport Plans ensure the following locations are given priority in the implementation: • Mandurah Road / Waterside Drive from Mandurah Station to Mandurah Estuary Bridge; • Northern Beaches Trail / Ormsby Terrace link to City Centre;	The June 2020 Council report on the cycle plan when adopting the Long Term Cycle Network identified a number of priority missing links and upgrades. Many of these have now been identified in the Halls Head Parade and Falcon Coastal Shared Paths; and Island Trails projects.	Strategic Planning; Technical Services	Plan; Deliver; Within existing operating budget	As plans are prepared as per Action AT1.

Action		Description / Comment	Lead Team	City Role & Funding Type	Timing
AT4	Prepare Design Guidelines for active transport infrastructure to achieve the following: • ensure paths on all streets in subdivisions; • have a consistent approach to location of the footpath in the street cross-section; • review turning movements at intersections to improve pedestrian desire lines across roads; • review the use of intersection control.	Many of these provisions and requirements are in place, however should be subject to review and upgrade to ensure they meet contemporary standards and to ensure the appropriate priority is placed on the form of transport that can have a positive impact on the safety, health and convenience of the most transport users. Significantly, these guidelines and are important as upgrade and renewals works are prepared as part rolling works that are identified in the Long Term Financial Plan and using these opportunities to make small but significant improvements to the delivery of the transport network.	Technical Services	Policy Development; Deliver; To guide Design within existing operating budget.	Annual Policy Review and Ongoing as part of Design and Development of Road and Street upgrades and renewals.
AT5	Ensure commitments to the delivery of active transport infrastructure is a key priority in the Long Term Financial Plan and Funding Opportunities.	Without commitments for the delivery of improved infrastructure in the budget and Long Term Financial Plan, seeking additional funding opportunities such as the Western Australian Bicycle Network (WABN) Grants Program, the priority to improve active transport may be lost.	Council; Technical Services;	Budget and advocacy within existing operating budget	Ongoing

Action		Description / Comment	Lead Team	City Role & Funding Type	Timing
AT6	Ensure cycle facilities and end of trip facilities are considered in key landscape master plan upgrades, community infrastructure projects and within development assessment of major proposals.	The delivery and requirement to provide end of trip facilities as part of key activities and attractors is an important piece of the commitment to improve active transport.	Strategic Planning; Landscape Services; Statutory Planning;	Design and Assess Proposals within existing operating budget	Ongoing
AT7	Ensure that the suitability of the cycling network is constantly reviewed considering technological advancements in bicycle design, such as e-rideables and feedback received from bike riders.	It is necessary to monitor the suitability of the cycle network and supporting infrastructure in relation to advancements in technology for active transport to ensure safety and encourage more frequent use.	Strategic Planning; Technical Services	Review within existing operating budget. Any minor path improvements would be from capital budget.	Ongoing
AT8	Undertake and continue to be involved in community awareness campaigns to encourage behaviour change and mode shift towards active forms of transport.	Continue supporting community awareness campaigns such as 'Your Move' Program promoted by the Department of Transport and other initiatives.	Health Services via Public Health Plan	Promote utilising existing operating budget.	Ongoing

4.2 Public Transport

Public transport has the potential to help Mandurah to sustainably continue with population growth. With Mandurah's long and narrow shape, a significant proportion of the population live within 800m or a 10-minute walk to Mandurah Road and Old Coast Road.

Due to Mandurah's future growth profile, it is likely that there will be more people living, working and visiting the City Centre, which will result in many more passenger movements to, from and within the City in the future. It is the public transport system that can shift the load from private vehicles and enable Mandurah to grow in a sustainable way.

The establishment of high capacity, high frequency public transport will be essential for the general functioning and liveability of the region. This strategy aims to identify and establish corridors linking the suburbs and the wider Peel region to the City Centre. Conceptually, this network of corridors is set out in Plan 5.

In addition, arising from sub-regional planning, connectivity between Rockingham and Mandurah and the suburbs in between; and Mandurah and Pinjarra require significant improvement beyond the commuter rail line between Mandurah and Perth and its associated stations.

Exploring the notion of a Mandurah – Pinjarra Regional City, the concept of connecting the two key components to the existing Passenger Rail Line warrants serious consideration. However, the extent of growth along this eastern corridor will determine this outcome.

Further to the potential connections to the east, further improvements to the train system to the north have been committed to, that will have a positive impact on Mandurah and the region. Current transport links that service Mandurah are primarily focused along the coastal southern corridor, linking the region to the Perth CBD.

With significant employment centres located within the eastern corridors of the metropolitan area, such as Canning Vale, Kewdale, together with the entertainment precinct at Burswood / Perth Stadium and the Perth Airport, provides the Mandurah region wider access to these services. Currently, the option of accessing these areas via public transport from Mandurah is difficult and provides an attraction to increased vehicle use.

The Thornlie-Cockburn Link will be Perth's first east-west cross line connection, to support growth and accessibility across the southern suburbs by providing direct access to employment, sporting and recreation opportunities and will be a significant improvement to the network that will benefit Mandurah's residents.

Plan 5 - Public Transport Network Priorities

Perth to Mandurah Rail & Stations

Inner City Street Based Transit

Rapid Bus Transit

Existing Bus Routes (to be reviewed)

Activity Centres & Attractors

- Strategic Centre Precinct
- District Town Centres
- Neighbourhood Centre
- Peel Business Park
- Tertiary Education
- Regional Hospital
- Regional & District Recreation
- High Schools

City of Mandurah Boundary

0 1.5 3km

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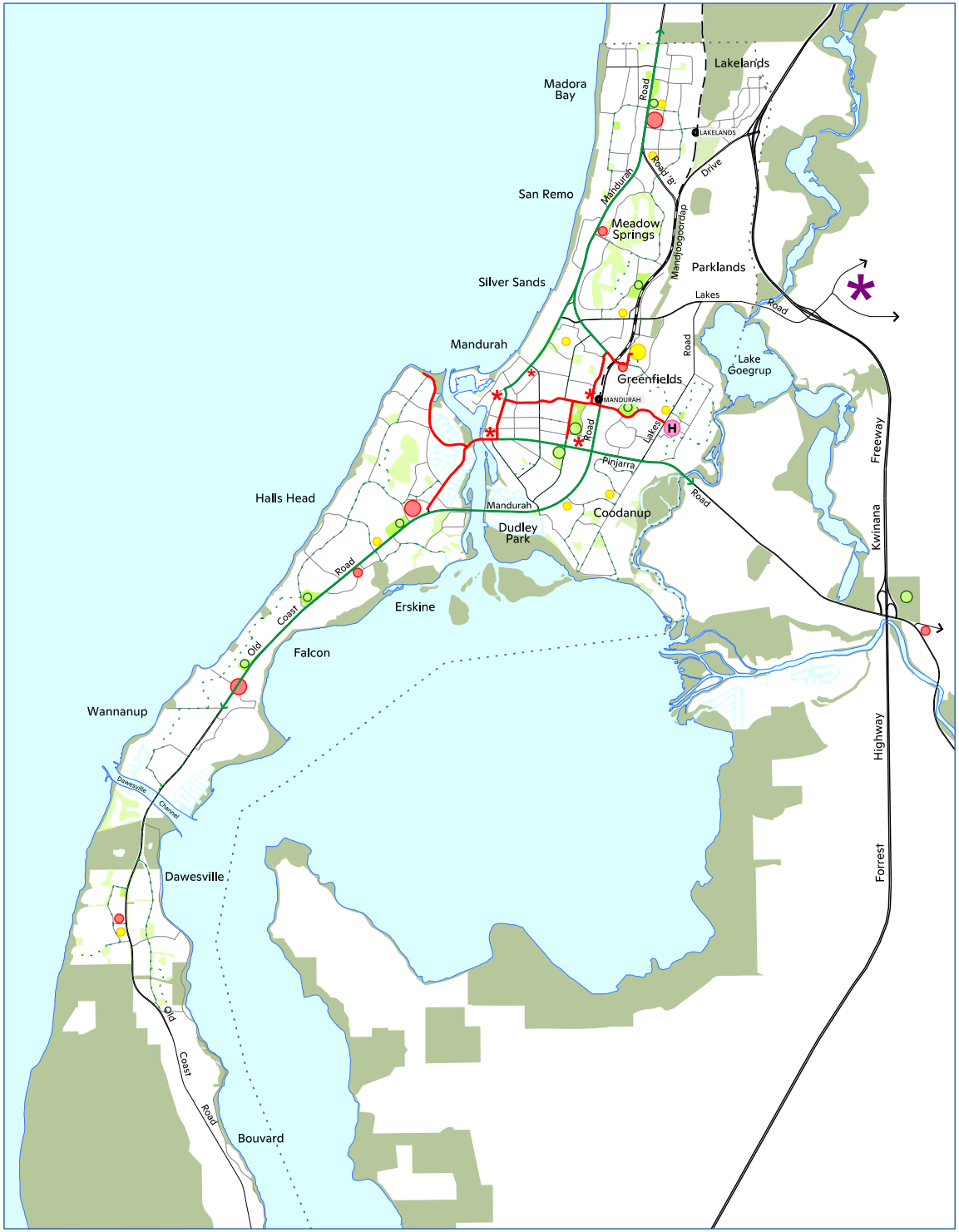

Additional Station(s) to the North

The original master plan for the Perth Urban Rail Development Project (South West Metropolitan Railway), that culminated in the delivery of the Perth to Mandurah Rail Line, had additional stations identified at South Perth, Mandogalup (Rowley Road), Stakehill, Karnup (Paganoni Road), Lakelands and Gordon Road. To date, two additional stations at Aubin Grove and Lakelands have been delivered.

The Lakelands Station has a site area of 1.89 hectares and is approximately 1km from Mandurah Road. This station primarily serves the immediate suburbs of Meadow Springs, Lakelands and Madora Bay and relies on accessibility via bus services as t car parking provision within the site is limited.

In the planning for Lakelands, the State Government indicated that a station at Lakelands does not negate the need for an additional station at Karnup. The site at Paganoni Road is located adjacent to Mandurah Road and is within an area of approximately 48 hectares of State Government owned land. This location has the potential to be a conduit for a bus-rapid transit line operating along Mandurah Road providing an integrated transit system for the coastal suburbs located between Mandurah and Rockingham, albeit for relatively low density suburbs.

Street Based / Mid-Tier Transit System

Street based or mid-tier transit systems represent a transport service that is a step change from the suburban bus network. They have many varied forms and functions from semi-segregated, to one that mixes with the general traffic, to a vehicle type that does not rely on

tracks, but provides a significant high degree of certainty, regularly and capacity.

One of the key elements of an integrated movement network is the delivery of a high frequency, street-based / mid-tier transit system. As Western Australia currently does not have any light rail transit (LRT) in place, there is an opportunity for trackless and autonomous trams to be implemented due to improving technologies. However, to ensure certainty and regularity, some form of the system is required to be 'fixed'.

Central Mandurah has been identified for infill development with increased residential densities. The traditional grid road layout in this area provides many opportunities for a street-based transit system to be installed.

As future growth within Mandurah will transition from predominantly suburban development to predominantly infill development. Central

Mandurah is based on a traditional grid system which provides a high level of regularity and accessibility.

There is no doubt that a full-scale LRT system is an expensive exercise with recent systems in Australia such as the Gold Coast LRT costing approximately $37M/km, Sydney CBD costing approximately $88M/km and a system in Canberra costing approximately $29M/km. A full analysis and business case of such a project would be required, but this Strategy sets out the rationale, based on the City Centre being the focus for high density residential, entertainment and employment.

The City of Striling received Australian Government funding of $2 million through the Urban Congestion Fund for a business case to trial a trackless tram system in November 2023. The trial includes a 7km connection from Glendalough Train Station to Scarborough Beach. The project is being delivered with partners Curtin University, CRRC, Shanghai Electric and Infrastructure Technology Solutions.

In January 2023, the Minister for Transport and Planning agreed to work with the Local Government Consortium (through METRONET) to prepare a Mid-Tier Transit Plan for Perth and Peel. The City of Mandurah is a member of the consortium, and the project scope includes advocating for short, medium, and long term initiatives for consideration. In addition, the City of Mandurah has an advocacy position to lobby the State Government for a high frequency street-based transit system in central Mandurah.

Rapid Bus Transit System

The development patterns within Perth and Peel are anticipated to extend eastwards from Mandurah to Pinjarra. Current planning contained within the Public Transport Plan (Transport @ 3.5 million – July 2016) describes this corridor as requiring infrastructure for a network of 3.5 million people for Perth and Peel under 'high priority public transit corridors'.

High priority public transit corridors are defined as follows:

"consisting of queue jump lanes, signal priority, or transit lanes, [corridors] may be created to improve the operating conditions of street transit and semi-rapid transit. These corridors are generally developed to serve a number of different bus routes with higher levels of patronage or where congestion is creating long and unreliable journey times."

Queue jump lanes give priority to transit vehicles at intersections, allowing them to bypass queued traffic and move through the intersection once permitted by the traffic signals. In this capacity, they are an effective and cost efficient (relative to full bus lanes) method of giving priority to transit vehicles on roads where delay at traffic signals can disrupt transit operations.

However, their effectiveness is hampered when mid-block traffic creates congestion issues outside of intersection areas, or where traffic queues exceed the length of the queue jump lane. In these circumstances, dedicated bus lanes are preferable, which can be operational all day or only in the peak periods.

Whilst not identified within the completed Perth and Peel Transport Network Plan, the delivery of a high frequency bus based system along Mandurah Road between the northern suburbs of Mandurah to the Mandurah Transit Station; and along Old Coast Road to the southern suburbs of Mandurah and the Mandurah Transit Station, would connect the balance of Mandurah's suburban population to the above-mentioned network connections.

Recent initiatives such as bus stop upgrades along Mandurah Road and Old Coast Road are a positive first step in establishing this network upgrade.

In addition to a focus on the major roads, there is scope to review the provision and frequency of service between the Halls Head District Centre and the Peel Health Campus via the City Centre and Mandurah Transit Station with scope to upgrade to future street-based transit.

This model would be based on the provision of signal priority at key intersections and building on the existing bus network, but refocused on the key corridors.

A high percentage of existing retail and secondary schools are located adjacent to this corridor and space is provided within existing road reserves to upgrade stops at key locations that increase the amenity of the service beyond the suburban network that currently exists.

A key outcome of the Strategy is to advocate for improvements to the bus network, as they have not been strategically reviewed or modified since the opening of the Mandurah Train Station in 2007. The improvements should include rapid transit routes north and south along Mandurah Road and Old Coast Road corridors to reduce travel times, whilst also improving the overall service and experience to users.

The Lakelands Train Station has resulted in modified bus routes in the northern suburbs to feed into the train station. This includes adding three bus routes and modifying seven existing routes in Meadow Springs, Lakelands and Madora Bay to connect to the Lakelands Train Station.

One disadvantage within the proposed bus route additions and modifications is that some students will have to use two or three modes of transport (bus – train – bus) to access schools as some direct bus routes are being removed. In addition, passengers in Madora Bay and Meadow Springs traveling to Rockingham will need to transfer to the train at the Lakelands Station.

Table 3 Public Transport Action Plan

ASPIRATION: High quality, sustainable transport options that connects key activity centres; and connectivity consistent with South Metropolitan Peel Sub-Regional Framework

Action		Description / Comment	Lead Team	City Role & Funding Type	Timing
PT1	Plan and advocate for the provision of a high-frequency, street- based transit system for the Strategic Centre, extending to Peel Health Campus and Education Campus;	The provision of a high-frequency based transit system will improve the use of public transport and reduce travel times between key destinations.	Transform Mandurah; Strategic Planning	Plan and Advocate within existing operational budget	Include provisions in master plans and structure plans.
PT2	Advocate for rapid bus transit routes north and south along the Mandurah Road and Old Coast Road corridors; and undertake a review of the remaining bus network;	The delivery of a high frequency bus based system along Mandurah Road between the northern suburbs of Mandurah to the Mandurah Transit Station; and along Old Coast Road to the southern suburbs of Mandurah and the Mandurah Transit Station, would connect the balance of Mandurah's suburban population to the Mandurah to Perth train line.	Director, Built and Natural Environment; Strategic Planning	Plan and Advocate within existing operational budget	Align with the advocacy framework and use when required to input into state plans and strategies.
PT3	Ensure the Council continues to advocate and commit to State Government transport plans, projects and strategies; with a focus to connect inter-regional destinations such as Rockingham, Mandurah,	The City of Mandurah is a member of the Local Government consortium advocating for the State Government to prepare a Mid-Tier Transit Plan for Perth and Peel. The project scope includes advocating for short, medium, and long-term initiatives for consideration.	Director, Built and Natural Environment; Strategic Planning;	Plan and Advocate within existing operational budget	Ongoing

Action		Description / Comment	Lead Team	City Role & Funding Type	Timing
	Pinjarra; and ensuring linkages and connections to the Perth to Bunbury Fast Train project;				
PT4	Implementation of Station Access Strategies	To assist in improving access to the Mandurah and Lakelands Station, improvements to access to these stations is important to aid in mode shift from small vehicle trips.	PTA, Technical Services	Advocate for Funding and Implementation	Ongoing
PT5	Upgrading of Bus Stop Infrastructure	The PTA upgrade a number of bus stops annually as a part of their Bus Stop Accessibility Works Program (BSAWP). The City also has a Bus Stop Infrastructure Partnership Agreement with PTA where Bus Stops can be upgraded under the Bus Shelter Subsidy Program (BSSP).	PTA, Technical Services	$50,000 per year from Capital budget for PTA Bus Shelter Subsidy Program	Annual
PT6	Advocate for improved multi-mode travel opportunities such as greater provision for bikes to be transported on trains and buses;	Currently bikes are restricted on trains during peak times and there is no ability for bikes to be transported via bus. Consideration should be given to changing the restrictions for bikes on trains between Mandurah and Rockingham during peak times; and consider a trail of buses being equipped to carry bikes for high frequency routes along key major roads.	Director, Built and Natural Environment; Strategic Planning;	Advocate	Ongoing

4.3 Road Network

Cars will continue to play an important role in Mandurah, given the spatial layout and ageing population. However, car dependency, where people have no other choice but to drive, adversely impacts public health as well as the environment.

As such, the Strategy primarily targets maximising and prioritising of modes of transport such as walking, cycling or public transport, to reduce reliance on private vehicles and provide more sustainable choices. Behaviour change programs form an integral part of this prioritisation and should continue to be promoted to help people understand their personal transport alternatives.

The Strategy adopts the outcomes and recommendations of Mandurah Strategic Transport Model (Cardno Now Stantec, dated July 2023) with regard to strategic recommendations and a revised road network hierarchy.

Modelling was undertaken with a 'do-nothing' and 'do-minimum' networks to 2041. Based on the model results, the following conclusions are reached with regards to each of the scenarios and networks modelled:

Do-Nothing Networks

- The model results show high 'volume to capacity' ('V/C') values for both Lilydale Drive, Lakelands and Sticks Boulevard, Erskine, however the volumes on these roads aren't considered sufficiently high to warrant upgrades to the roads themselves, they connect to higher-order roads with priority-controlled intersections. Over time, these intersections may warrant upgrade to ensure future satisfactory performance.

- The V/C values for Old Coast Road, Halls Head suggest that this road is approaching practical capacity. While there appears to be sufficient road reserve to widen Old Coast Road, duplication of the existing bridge would also be required. The current configuration is a critical component constraining through traffic in and out of the City centre in the future.

- Mandurah Road (north of Mandurah Terrace) showed high levels of congestion throughout the Madora Bay area. As there is no effective route between the Lakelands area to Mandjoogoordap Drive, longer distance trips to and from Mandurah are likely to saturate this corridor.

- For the 2041 Do-Nothing network, congestion has increased significantly throughout the network, resulting in significant rat-running on a large number of local roads.

- It is not considered feasible or realistic to resolve this level of congestion from an infrastructure capacity-supply perspective. The modelling outcomes are such that the integrated transport strategy emphasises the use of non-vehicle mode shares.

Do-Minimum Networks

- While there are still a large number of links in the 2041 Do-Minimum network with V/C ratio greater than 85%, the links included as part of the Do-Minimum network are shown to result

in substantially less links with V/C ratios higher than 85% when compared to the Do-Nothing network.

- A summary of the roads included in the Do-Minimum network, including their suggested priority, is included in Table 4

Table 4 Summary of Key Road Upgrades from Modelling

Road	Comment
Road B	Road B is the most impactful of the 'Do-Minimum' schemes. This model results in a re-distribution of traffic from the Mandurah Road corridor to the Mandjoogoordap Drive corridor. This outcome provides improved access to the Kwinana Freeway, allowing trips from the northern part of the model to head north on Mandjoogoordap Drive, where it connects the Freeway. Road B is considered to be a strategic critical link, with the model results suggesting that Road B will result in a substantial reduction in V/C values on adjacent roads, particularly on Mandurah Road. **Priority: High**
Galgoyl Road Extension	The Galgoyl Road extension was found to result in a redistribution of local traffic, with trips to or from the residential and commercial areas west of Galgoyl Road using this road instead of Mandurah Road. **Priority: Medium**
Ruthland Drive Extension	The Ruthland Drive extension is considered to be a relatively minor upgrade, with the model results suggesting that this extension will result in a relatively minor redistribution of trips from Peelwood Parade. **Priority: Low**

Road Network Hierarchy

Main Roads WA (MRWA) applies a hierarchy classification system to all roads within the State, whether the responsibility of local government or State government and are based on the efficient movement of vehicles and are published via Main Roads Road Information Map.

As a result of the modelling outcomes, the Strategy recommends some variations to the current published road hierarchy and provides an indication of potential localised improvements to current roads based on indicative volumes which are outlined on Plan 7 and in Table 6 and Table 7 with descriptors provided in Table 4.

There is also an alternative classification system of road functions in Liveable Neighbourhoods that applies to new developments. The Local Planning Strategy identifies a Road Hierarchy to current and future road networks based on traditional Western Australian Road Hierarchy approach but with updates to reflect contemporary terminology. This is outlined in Table 5.

Within the Peel Region Scheme, key roads, the descriptors of Primary Regional Roads and Other Regional Roads is used and identified in reserving land. Under this classification, Primary Regional Roads are the responsibility of Main Roads WA. Other Regional Roads have a shared responsibility between the Western Australian Planning Commission (WAPC) and local government.

The inconsistencies in the different road hierarchy terminology between Main Roads WA and the WAPC can create confusion. Whilst it is important to consider contemporary language for the movement of vehicles, consistency when individual traffic models are produced is also important.

Plan 6 - Road Network Outcomes

Road Network

- **Primary Distributor**
- **Regional Distributor**
- **Distributor A**
- **Distributor B**
- **Local Distibutor**
- **Local Connector (Local Only)**

(all other roads are Access Roads / future roads shown dotted)

Future Connections and Master Plan Upgrades

① Pinjarra Road / Sutton Street (City Centre);
② Lakes Road (Murdoch Drive to Pinjarra Road);
③ Road B;
④ Gordon Road Connection to Mandjoorgoordap Drive;
⑤ Meadow Springs Drive Connection to Mandjoorgoordap Drive;
⑥ Estuary Bridge Duplication

Activity Centres & Attractors

- Strategic Centre Precinct
- District Town Centres
- Neighbourhood Centres
- Peel Business Park
- Tertiary Education
- Regional Hospital
- Regional & Distrct Recreation
- High Schools

City of Mandurah Boundary

0 1.5 3km

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Integrated Transport Strategy

Table 5 Road Network Hierarchy Descriptors

Liveable Neighbourhoods Street Types (WAPC)	Metropolitan Functional Road Hierarchy (Main Road WAs) (see link for further information)	Identification in Local Planning Scheme 12
Primary Distributor Those arterial routes that are highly connective, with service roads wherever possible, and limited intersections. They are often signal-controlled. Indicative maximum traffic capacity is 35,000 vpd for four lanes and 50,000 vpd for six lanes.	**Primary Distributor** These provide for major regional and inter-regional traffic movement and carry large volumes of generally fast moving traffic. Some are strategic freight routes and all are National or State roads. Indicative traffic volumes are 'in accordance with Classification Assessment Guidelines' which appear consistent with the Livebale Neighbourhoods descriptors.	**Primary Regional Roads** As reflected in the Peel Region Scheme; otherwise known as 'Red Roads'. Planning and management with Main Roads WA.
District Distributor Integrator 'A' An arterial route that has frequent connections to local streets and development frontage along its length, it typically has service roads with on-street parking for mixed use, with direct vehicle access limited where there are no service roads. Indicative maximum traffic capacity is 35,000 vpd.	**District Distributor A** These carry traffic between industrial, commercial and residential areas and generally connect to Primary Distributors. These are likely to be truck routes and provide only limited access to adjoining property. Indicative traffic volumes are above 8,000 vpd	**Other Regional Roads** As reflected in the Peel Region Scheme; otherwise known as 'Blue Roads'. Planning control to the Western Australian Planning Commission; management to the local government
District Distributor Integrator 'B' An arterial route that has frequent connections to local streets and development frontage along its length, it typically has one clear lane for each direction with on-street parking. Indicative maximum traffic capacity is 20,000 vpd.	**District Distributor B** These perform a similar function to type A District Distributors but with reduced capacity due to flow restrictions from access to and roadside parking alongside adjoining property. These are often older roads with a traffic demand in excess of that originally intended. District Distributor A and B roads run between land use cells and generally not through them, forming a	**Not Applicable** *(Notably District Distributor Roads not shown in Scheme 12)*

Liveable Neighbourhoods Street Types (WAPC)	Metropolitan Functional Road Hierarchy (Main Road WAs) (see link for further information)	Identification in Local Planning Scheme 12
	grid which would ideally space them around 1.5 kilometres apart. Indicative traffic volumes are above 6,000 vpd	
Neighbourhood Connector These are local streets that provide the lower order sub-arterial network that services and links neighbourhoods and towns. They spread local traffic loads, act as a bus route, have a predominantly residential frontage, have frequent connection points to local streets, and are typically traffic calmed to limit noise and facilitate pedestrian use.	**Local Distributor** Carry traffic within a cell and link District Distributors at the boundary to access roads. The route of the Local Distributor discourages through traffic so that the cell formed by the grid of District Distributors only carries traffic belonging to or serving the area. These roads should accommodate buses but discourage trucks. Indicative traffic volumes for built up areas are a maximum desirable volume of 6,000 vpd	**Local Distributor Road** Planning control and management with the local government; however, no specific planning controls are included in the planning framework.
Access Street Streets providing predominantly residential access where the local environment is dominant, traffic speeds and volumes are low, and pedestrian and cycle movements are facilitated.	**Access Road** Provide access to abutting properties with amenity, safety and aesthetic aspects having priority over the vehicle movement function. These roads are bicycle and pedestrian friendly. Indicative traffic volumes for built up areas are a maximum desirable volume of 3,000 vpd	**Not Applicable**

Table 6 Road Network Indicative Volumes and Outcomes

Road Name		2041 Volumes	V/ C Ratio	Infrastructure Change Required
Primary Distributor				
Kwinana Freeway	(Northern Boundary to Mandjoogoordap Drive)	76,738	1.01	
Kwinana Freeway	(Mandjoogoordap Drive to Eastern Boundary)	28,868	0.0	
Mandurah Road	(Northern Boundary to Mandurah Terrace)	49,210	1.45	Intersection Capacity Reviews
Mandurah Road	(Mandurah Terrace to Mandjoogoordap Drive)	34,037	0.87	
Mandurah Road	(Mandjoogoordap Drive to Pinjarra Road)	37,093	0.93	
Mandurah Road	(Pinjarra Road to Old Coast Road)	35,940	1.46	Estuary Bridge Duplication
Mandjoogoordap Drive	(Kwinana Freeway to Mandurah Road)	48,224	0.96	Additional Connections
Pinjarra Road	(Mandurah Road to Lakes Road)	37,034	1.03	Monitor Need and Functionality
Pinjarra Road	(Lakes Road to Eastern Boundary)	28,176	0.73	
'Road B'	(Mandjoogoordap Drive to Mandurah Road)	42,145	1.15	New Build
District Distributor A				
Mandurah Terrace	(Mandurah Road to Peel Street / Sutton Street)	37,136	1.07	Streetscape Upgrade
Gordon Road	(Mandurah Road to Lakes Road)	37,623	0.99	Monitor Need and Functionality
Pinjarra Road	(Mary St/Old Coast Road to Sutton Street)	33,170	1	Upgrade with City Centre Master Plan
Pinjarra Road	(Sutton Street to Mandurah Road)	21,844	1.03	Review need to widening
District Distributor B				
Lakes Road	(Gordon Road to Pinjarra Road)	15,296	0.79	Master Plan Required
Sutton Street	(Mandurah Terrace to Pinjarra Road)	10,751	0.82	Monitor Need and Functionality
Old Coast Road	(Mary Street to Mandurah Road)	17,165	2.08	
Local Distributor				
Lakes Road	(Gordon Road to Kwinana Freeway)	11,259	0.63	

Road Name		2041 Volumes	V/ C Ratio	Infrastructure Change Required
Mandurah Terrace	(Peel Street to Gibson Street)	13,239	0.84	Upgrade with City Centre Master Plan
Gibson Street	(Mandurah Terrace to Sutton Street)	1,316	0.23	
Peel Street	(Ormsby Terrace to Sutton Street)	16,789	1.72	Upgrade with City Centre Master Plan
Peel Street	(Sutton Street to Anstruther Road)	8,033	0.86	Upgrade Underway
Scott Street	(Anstruther Road to Allnut Street)	5,767	0.66	
Allnut Street	(Scott Street to Mandurah Road)	17,103	1.12	Monitor Right Turns to Park Road
Anstruther Road	(Mandurah Terrace to Scott Street)	11,006	1.14	Monitor Need and Functionality
Anstruther Road	(Scott Street to Pinjarra Road)	9,255	0.96	Monitor Need and Functionality
Anstruther Road	(Pinjarra Road to Boundary Road)	5,420	0.97	
Park Road	(Mandurah Road to Allnut Street)	11,549	1.20	Road Renewal Program
Dower Street	(Allnut Street to Pinjarra Road)	10,008	1.08	Review Turning Movements
Coolibah Avenue	(Pinjarra Road to Leslie Street)	7,039	1.05	Road Renewal Program
Leslie Street	(Pinjarra Road to Coolibah Avenue)	7,347	0.76	
Leslie Street	(Coolibah Avenue to Mandurah Road)	11,873	1.24	
Wanjeep Road	(Pinjarra Road to Coodanup Drive)	13,399	0.64	
Coodanup Drive	(Wanjeep Road to Mandurah Road)	13,338	0.40	
Murdoch Drive	(Mandurah Road to Bortolo Drive)	14,496	0.85	
Murdoch Drive	(Bortolo Drive to Lakes Road)	9,397	1.09	Monitor with Peel Health Campus
Minilya Parkway	(Teranca Road to Lakes Road)	2,603	0.14	
Lake Valley Drive	(Mandurah Road to Badgerup Avenue)	11,245	1.55	
Kirklands Way	(Pebble Beach Boulevard to Road B)	9,923	1.55	
Mary Street	(McLarty Road to Old Coast Road)	16,030	1.91	

Table 7 Road Network Changes from Existing Main Roads Hierarchy

Road Name		Existing	Recommended
Mandurah North District			
Meadow Springs Drive	(Oakmont to Pebble Beach Blvd)	Access Road	Local Distributor
Pebble Beach Blvd	(Meadow Springs Dr to Kirkland Way)	Access Road	Local Distributor
Road B	(Mandurah Rd Mandjoogoordap Drive)	Local Distributor	Distributor A
Lake Valley Drive	(Mandurah Rd to Lilydale Drive)	Access Road	Local Distributor
Badgerup Avenue	(Banksiadale Gte toYindana Blvd)	Access Road	Local Distributor
Malata Rdge	(Badgerup Ave to Warburton Trail)	Local Distributor	Access Road
Mawson Grange	(Badgerup Ave to Loretta Pwy)	Local Distributor	Access Road
Ada Lane	(Loretta Pwy to Yindana Blvd)	Local Distributor	Access Road
Lea Wynd	(Loretta Pwy to Yindana Blvd)	Local Distributor	Access Road
Challenger Road	(Madora Beach Rd to Lord Hobart Drive)	Access Road	Local Distributor
Mandurah Central (Strategic Centre) District			
Mandurah Terrace	(Mandurah Road to Peel Street / Sutton Street)	Distributor A	Local Distributor
Gibson Street	(Mandurah Terrace to Sutton Street)	Distributor B	Local Distributor
Sutton Street	(Gibson Street to Peel Street)	Access Road	Distributor B
Peel Street	(Mandurah Terrace to Ansturther Road	Access Road	Local Distributor
Scott Street	(Anstruther Road to Allnut Street)	Access Road	Local Distributor
Mandurah East District			
Mississippi Drive	(Murdoch Drive to Paraguay Avenue)	Access Road	Local Distributor
Paraguay Avenue	(Mississippi Drive to Mississippi Drive)	Access Road	Local Distributor
Rio Grande Avenue	(Mississippi Drive to Pinjarra Road)	Access Road	Local Distributor
Old Pinjarra Road	(Pinjarra Road to Teranca Road)	Access Road	Local Distributor

Road Name		Existing	Recommended
Teranca Road	(Old Pinjarra Road to Tuart Road)	Access Road	Local Distributor
Hudson Drive	(Wanjeep Street to Mariners Cove Drive)	Access Road	Local Distributor
Mariners Cove Drive	(Hudson Drive to Mandurah Road)	Access Road	Local Distributor
Comet Street	(Leslie Street to Gillark Street)	Local Distributor	Access Road
Leigh Street	(Leslie Street to Gillark Street)	Access Road	Local Distributor
Mandurah Island District			
Hungerford Avenue	(McLarty Road to Glencoe Parade)	Access Road	Local Distributor
Glenoe Parade	(Hungerford Avenue to Peelwood Parade)	Access Road	Local Distributor

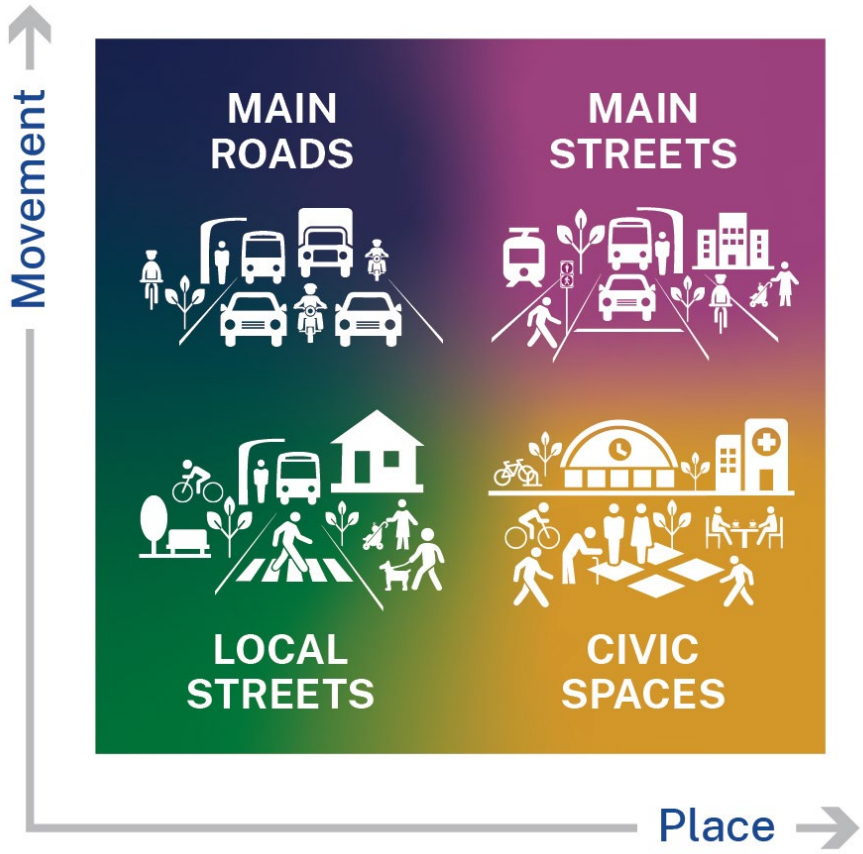
Movement and Place

Movement and Place is a concept that recognises streets have two different and sometimes competing roles - to transport people and goods (movement) and as destinations in their own right (place). It is important to plan whether streets will primarily be used for movement or place, or a combination of both, as prioritising one role impacts the other.

Creating great places to live, work and play is an important priority. As Mandurah's population continues to grow, and particularly in existing areas rather than new suburban areas, the growing population will place greater demand to make better use of resources and infrastructure, including streets, as more frequent use will highlight the competing demands for road space.

The movement and place roles of streets have traditionally been dealt with separately; therefore, complementary outcomes are not always achieved. This has resulted in movement and place being treated as two separate functions, leading to segregation rather than integration. Finding a balance between the competing roles and taking an integrated approach to managing streets and roads will help resolve conflicting movement and place-based priorities when planning and designing streets and urban corridors.

It is a core recommendation that the existing road network hierarchy adopted by Main Roads WA is updated to reflect outputs of strategic traffic modelling; and further, seek to advocate for consistency across State Government agencies with regard to road and street descriptors to reflect a movement and place approach – potentially undertaken at district level and to assist in informing key design and planning for street upgrades and plans such as the Arterial Roads Landscape Master Plan.



(Source: NSW Movement and Place Framework)

Regional Road Connections

Designs are being prepared for the upgrade and improvement of Peel / Allnutt Street and Pinjarra Road. There are challenges between widening roads to increase vehicle capacity and reduce congestion, whilst at the same time creating an attractive place for pedestrians and bike riding.

Many of the gaps in the intra and inter regional movement that have long been planned and advocated for are coming to an end, including projects such as the new Mandurah Bridge (completed in 2017), the Mandurah Road / Pinjarra Road intersection (completed in 2018) and the pending duplication of the Mandurah Estuary Bridge (estimated to be completed by late 2025).

The remaining piece of the network outstanding from decades of sub-regional and district planning is the addition of a new road connecting Mandurah Road and Mandjoorgoordap Drive known as 'Road B' located between Lakelands and Meadow Springs.

This connection will aid in completing the regional traffic network for the northern area of Mandurah, will assist in maintaining Mandurah Road south of this location for local related vehicle trips and will reduce congestion at key intersections along Mandurah Road. A number of connection points from Gordon Road and/or Meadow Springs Drive to Mandjoorgoordap Drive also remain outstanding.

Broadly, plans to extend Tonkin Highway as a southern extension will assist in providing access between Perth's eastern corridor and the broader Peel region are proposed with current plans proposing to extend the highway from Thomas Road in Oakford to South Western Highway, south of Mundijong which is supported to assist in the broader regional network.

Strategic Centre

The traditional grid pattern within the Strategic Centre allows for the distribution of traffic throughout the centre. Mandurah Terrace, Sutton Street, Anstruther Road, and Dower provide for key north-south links through the Strategic Centre, with Pinjarra Road and Peel/Allnutt Street providing east-west links.

Since June 2002, strategic planning and project delivery has been based on the Mandurah Inner Area Strategic Plan (MIASP) which was prepared to facilitate changes to the Peel Region Scheme and to identify State and Local Government funding priorities. The road network upgrades and recommendations made within the MIASP were formulated using traffic modelling (EMME) and analysis undertaken at that time. The EMME model was initially developed in 2010 for the inner area of Mandurah and then later updated in 2013 to include the Mandurah outer area. The MAISP has formed recommendations relative to road widening projects in this central area as well as key network improvements.

In 2014, the model was refined to better reflect the land uses based on the State planning *Directions 2031 and Beyond* (WAPC, 2010). The Mandurah Strategic Transport Modelling (Inner and Outer Area) report was adopted by Council in 2014 as a guiding document and it endorsed the road hierarchy for the City.

Given progression of time, changing demographics and completed infrastructure projects, both the Strategic (city-wide) and City Centre traffic models have been reviewed and updated as outlined above.

A key aspect of the development of this Strategy and the City Centre Master Plan is an understanding of the future patterns of traffic and congestion on the existing and future network and these new models will assist the City in this regard.

The outcomes of the Strategy and its actions supersede the MIASP approach; and with completed updates to modelling, the recommendations arising from the 2014 road hierarchy approach adopted by Council are also superceded.

Table 8 Road Network Action Plan

ASPIRATION: A destination with a network of roads facilitating the efficient movement of people, goods and services. Roadway space will be designed to be efficient, safe, and attractive environment all road users.

Action		Description / Comment	Lead Team	City Role & Funding Type	Timing
RN1	Recognise and accept transport models as an informing tool to advocate, plan and design road network infrastructure.	Needed to justify, validate and test network changes and check impacts of any road network changes to help inform the City Centre Master Plan and other strategic planning projects and major road upgrades.	Technical Services	Transport modelling to be undertaken by external consultants from operating budget.	Required for Master Plans and prior to road network changes.
RN2	Use traffic models and the traditional Main Roads WA hierarchy to establish a Movement and Place method of classifying streets and roads within revised Precinct Structure Plan(s) using the methodology in from Precinct Design requirements of Design WA (State Planning Policy 7.2).	Manage streets within existing road network to cater for all modes of transport. In some instances, it may be better to separate modes of transport and priority given to pedestrians / bike riders rather than cars.	Strategic Planning; Technical Services	City led within operating budget	As required and when Precinct Structure Plans undertaken.
RN3	Advocate for the: • construction of 'Road B' connecting Mandurah	The construction of 'Road B' will finalise the regional road network; connections from existing district road network to Manjoogoordap Drive will support the local road	Director, Built and Natural Environment;	Advocacy for funding and construction.	Ongoing with an emphasis leading up to Federal and State Elections.

Action		Description / Comment	Lead Team	City Role & Funding Type	Timing
	Road and Manjoogoordap Drive; • connections required from Gordon Road and Meadow Springs Drive to Manjoogoordap Drive; and • the extension of the Tonkin Highway to Forrest Highway.	network; and the extension of Tonkin Highway will connect Mandurah to wider region.	Strategic Planning;		
RN4	Develop Street Design Guidelines for future upgrades and renewals with a focus on safe and attractive environments for all transport users in conjunction with Action AT4 to achieve a balance between movement and urban form outcomes.	Applying road cross sections commensurate with the 'road hierarchy' with design outcomes in Liveable Neighbourhoods (which are designed for new subdivisions) require a City of Mandurah response to ensure appropriate design outcomes to urban form contexts, particularly in pre 1990's development areas. The outcomes will seek to address pavement widths, reduced size intersections, tree and path alignments.	Strategic Planning; Technical Services	City lead within operating budget	2023/24
RN5	Develop a Master Plan for significant district and local road network upgrades and renewals that align the	The program shall have regard to Local Planning Strategy and Local Planning Framework outcomes together with District Level Active	Technical Services;	Planning within operating budget	Annually

Action		Description / Comment	Lead Team	City Role & Funding Type	Timing
	desired urban form of the location and street Design Guidelines and traffic modelling outputs.	Transport Plans and will be a holistic approach to design outcomes prior to project delivery commitments.	Strategic Planning	and renewal within capital budget.	
RN6	Progress with a review, update, and implementation of landscape master plans for key major roads reflecting the place and character of the roads.	Landscaping improvements will improve the amenity and character of an area and added environmental benefits.	Technical Services; Natural Environment	Funding from capital budget	Ongoing
RN7	Advocate for the various State Agencies to align road network descriptions for consistency and reflect contemporary terminology and to ensure the Main Roads Hierarchy is updated to reflect outcomes of Table 7.	The inconsistencies in the different road hierarchy terminology between Main Roads WA, WAPC creates confusion. The Main Road WA terminology reflects a vehicle movement outcome and should be reviewed to provide conformity across all sectors of government and reflect contemporary terminology.	Strategic Planning;	Advocacy within operating budget	Ongoing
RN8	Seek to provide training and development opportunities for City staff in contemporary programs aimed at improved street design and public spaces	As the linkages between Movement and Place are improved, reliance on road standards for street design require a holistic approach to include public health and well-being, tree canopy.	Technical Services; Strategic Planning	City lead within operating budget	Ongoing

4.4 Parking

With potential growth in business activity, residents and visitors, Mandurah's parking stock will need careful management. Urban car parking plans need to strike the right balance between enabling access, and mitigating the effects of excessive car use in sensitive, pedestrian priority areas.

Strategic planning for the provision of car parking can be used to encourage a shift in commuter expectations and travel behaviours in line with the sustainable growth and development of the City Centre. A key challenge for the Strategic Centre is to manage parking to address mobility, access and economic needs to ensure a sustainable, vibrant and thriving pedestrian orientated City Centre is provided.

In 2011, Council endorsed the City Centre Parking Strategy with the key objectives being:

- to address demand management, not demand satisfaction;
- to foster an environment of change in attitudes and past practices towards parking supply;
- to accommodate the reasonable needs for car access;
- to expand the role for alternative modes of transport to access the City Centre; and
- to facilitate the development of a City Centre which focuses on 'people access' rather than 'vehicle access'.

The key parking strategies were identified to be:

- Implement maximum levels of parking by use in City Centre;
- Maximise shared/public parking; and
- Consider alternative paid and time-based parking.

While recognising that there are situations where it is appropriate to drive and park private vehicles, a major component of this strategy is to boost public transport accessibility in Mandurah and the region. This improvement will lead to greater transport choice and reduce people's reliance on cars for accessing Mandurah. The knock-on effect to parking management is obvious; net access to Mandurah will be improved without the centre needing to accommodate a major increase in car parking.

The City Centre provides a varied amount of public on- and off-street parking much of which is underutilised. As a result, a City Centre Parking Plan is being developed to review the 2011 Strategy.

In order to generate more effective use of the overall parking supply and thereby encourage the number of visitors to City Centre businesses and other attractions, the City recognises that actions are required to increase public awareness of parking options, provide good pedestrian connections and alternate transport modes.

Long Term Parking

Due to the current supply of off-street parking in central Mandurah, there is no urgent need for the provision of additional parking. It is planned for growth to be catered for predominantly by public and active transport modes, however the distribution and overall level of supply of off-street parking will still require ongoing management.

The creation of long-term parking on the periphery of the City Centre will enable the pedestrian economy and local business to be more

broadly activated throughout the City Centre. It is likely the City Centre Car Parking Plan will include recommendations pertaining to the use of improved wayfinding signage and will be utilised to assist in changing parking behaviour and breaking the 'park at the door' expectation of users.

Short Term Parking

The City's management of on-street parking has a major influence on traffic flows, economic activity, and the amenity of streets. It needs to be managed as public space, and allocated to car parking in an area where parking vehicles is deemed to be an appropriate use of public space. More broadly across Mandurah, and especially in areas of mixed-use activity, on-street parking will be managed for short term use to encourage higher turnover, with off street spaces on the periphery providing for longer term car parking.

As the demands for space in streets increases, there is likely to be a net reduction in the supply of on-street car parking. This transition will require innovative management to ensure streets are improved and our existing parking assets are used more effectively.

Short term parking is proposed to be prioritised in on-street locations and within the core of the City Centre to accommodate short term visitors.

Managing Parking Outside the City Centre

Outside of the City Centre, there are occasional parking supply issues associated with sporting events (e.g. Rushton Park), around schools at pick up time, district centres, large community events. These activities do not warrant formal additional car parking areas due to their limited nature, however temporary overflow car parking areas and alternative transport options, like a shuttle buses, should be provided.

Many coastal and estuary foreshore reserves have seasonal high parking demands. Potentially, many car parks could be reduced in size if residents and tourists used active transport and the City provided suitable facilities such as bike racks.

Parking at Train Stations

A multi-storey car park was constructed at the Mandurah Train Station in November 2021 to increase the station's parking capacity by 782 bays, to around 1900 bays. The additional bays are now more than sufficient to cater for the current demand.

The Lakelands Train Station opened in mid 2023 with around 400 car parking bays due to site constraints. This has been considered an under-supply of car parking bays based on patronage estimates, there are feeder buses and people will be encouraged to use active transport to access the station. The City of Mandurah will monitor the need for parking restrictions and residential parking permits surrounding the Lakelands Train Station to manage train commuters parking in surrounding residential streets.

Car Parking Rates

State Planning Policy 4.2 Activity Centres for Perth and Peel (SPP4.2) recognises that increasing demands for access, particularly for strategic metropolitan centres, requires a reduced reliance on private cars and a mode shift towards public transport, walking and cycling. Within the key centres, it is desirable to require reduced parking rates based on:

- A proportion of parking being provided as public parking and therefore available for reciprocal use. Reciprocal parking allows for the most efficient use of available bays whereby uses that have different periods of peak demand can utilise the same parking facilities; and

- Reduced rates of car parking together with improvements to the pedestrian and cycle networks and public transport will encourage alternative forms of transport.

Minimum parking may be required, however there should be some flexibility for proponents to provide less or no parking on site and contribute cash-in-lieu towards facilities and services for common-use parking, public transport and alternative modes.

Cash-in-lieu (payment in lieu of parking) is a mechanism that can be applied when a developer opts out of providing on-site parking. It is essentially a financial contribution paid to the City to offset the parking not provided, for the City to then invest in accessibility improvements in the local area.

The Mandurah Strategic Centre Precinct Structure Plan establishes minimum car parking provisions and not upper limit provisions, as encouraged under SPP4.2, primarily due to the current development status of the City Centre, which does not reflect an appropriate development and density level to warrant the introduction of upper limits. It will require a significant maturity of the City Centre to consider:

- establishment of maximum parking rates in place of existing minimum parking requirements; and

- to encourage low or zero parking and/or the inclusion of car sharing schemes for developments in the City Centre and other areas served by high quality public transport.

Elsewhere throughout Mandurah, the Local Planning Scheme determines the parking requirements for new development and will continue to be City's main private parking management tool.

The Western Australian Planning Commission is currently reviewing non-residential car parking rates and developing interim guidelines with the Department of Transport to support local governments that are reviewing applicable car parking rates.

Initial workshops conducted in developing the guidelines has revealed that there does not seem to be a one-size-fits-all approach to implementing contemporary parking regimes that seems appropriate for the entirety of Perth and Peel.

Adopting precinct-based options was considered more appropriate for a variety of centres and land uses, particularly for higher order activity centres with better accessibility. This position is in line with recently developed State Planning Policy on activity centres and precinct design.

Outside of the City Centre, there is a desire to allow the 'market' to manage parking supply and to include maximum parking rates rather than the current minimum parking rate. It would be prudent to have areas designated for overflow car parking for peak times or for occasional events. Ideally, any required overflow car parking would be a grass area on the subject property or reciprocal car parking on non-residential properties.

Ancillary Infrastructure – Electric Vehicle (EV) Charging Stations

By 2040, it is expected that 61% of all passenger vehicle sales in Australia will be electric.

Reference: Electric Vehicle Outlook 2019, BloombergNEF

Within Mandurah there are currently three public charging stations for electric vehicles (EVs). Some are provided free of charge for patrons, including the Mandurah Forum Shopping Centre (up to 7kW) and Silk Thai Restaurant (up to 22kW).

The third charging station is located along Mandurah Terrace outside the City Administration Centre (up to 50kW). This was installed and is maintained by the RAC as part of its Electric Highway.

All of the current EV chargers within Mandurah take a long time to charge. Generally, a 22kW charger will deliver 22km of range for every 10 minutes of charging, therefore 1 hour of charging will deliver approximately 130km of range.

Ultra-rapid DC charges (350kW) are capable of delivering 400km of range (80% charge) to an EV in around 15 minutes at a current cost of $0.60/kWh or $30 for 50kW) however none of these chargers are currently available in Mandurah.

Most electric vehicle (EV) charging is done at private homes which is in contrast to cars fuelled by petrol, diesel and LPG. Hydrogen fuel is also emerging as an alternative fuel for vehicles.

Implementation of rapid charging stations are required to meet the rapidly growing demand for EV recharging. It is likely that these will be located in either public car parking areas or private businesses such as service stations, shopping centres and restaurants.

A position and policy statement on the use of public spaces for electric vehicle charging stations should be prepared to ensure a consistent approach to the provision of charging for electric vehicles and other emerging technologies to include the following principles:"

- Applications will be assessed on a case-by-case basis;
- Selected locations must provide economic benefit to the community;
- Infrastructure must service ccs / type 2 charging;
- Signage is to be minimal;
- Commercial lease terms are to be applied;
- Lease terms will be for short periods given the changing nature of charging infrastructure.

Table 9 Parking Action Plan

ASPIRATION: Car parking are appropriate to the land use and urban form in key activity areas by exploring intervention options , active management and encouraging different modes of transport.

Action		Description / Comment	Lead Team	City Role and Funding Type	Timing
PK1	Prepare and Implement a City Centre Parking Plan.	Major review required of the City Centre Car Parking Strategy undertaken in 2011.	Strategic Planning; Development & Compliance	Operating budget to prepare and Business Case / capital budget to implement.	To be completed in 2023/24; Implement ongoing
PK2	Review actions of the City Centre Car Parking Plan to ensure continued relevance and implement payment in lieu of parking in accordance with planning regulations.	Dependent on the outcomes and actions contained within the City Centre Car Parking Plan.	Strategic Planning	Operating budget	2024/25
PK3	Maintain a position regarding time controls (rather that pricing) associated with public parking, to encourage people seeking long stay parking to predominately utilise off street parking spaces on the periphery and other strategic locations, and enable on street parking to	Various intervention methods are available, including timed free parking to enable higher turnover of on street car parking bays closer to retail outlets and restaurants.	Strategic Planning; Development & Compliance	Operating budget	2023/24

Action		Description / Comment	Lead Team	City Role and Funding Type	Timing
	serve a short-term function within the City Centre.				
PK4	Monitor the need to introduce maximum parking rates within the local planning scheme, in place of existing minimum parking requirements to ensure the appropriate urban form objectives are achieved for key activity areas.	The WAPC is currently reviewing non-residential car parking rates and developing interim guidelines with the DoT to support local governments that are reviewing applicable car parking rates.	Strategic Planning Statutory Planning	Operating budget	2025/26
PK5	Prepare a position statement on the use of public spaces for electric vehicle charging stations.	A position and policy statement will ensure a consistent approach to the provision of charging for electric vehicles and emerging technologies.	TBC	Operating budget	2024/25
PK6	Car Park Renewal Program	Ongoing program identified within the Long Term Financial Plan to review existing car parks. Consider car park function and internal stakeholder liaison as required to determine timing and where upgrades are required.	Technical Services;	Long Term Financial Plan and capital budget	Ongoing

4.4 Marine Transport

Mandurah is highly appealing due its proximity to the coast and many interconnecting waterways. The City is already one of the most popular recreational boating environments in the State with boat ownership predicted to increase with population growth.

Table 10 Mandurah Recreational Boating Registrations

Boat Length	0 – 7.5m	> 7.5m	Total	Vessels / 1000 people
2019	6,832	646	7,478	86
2036 (forecast)	9,686	1,097	10,783	84
Growth	2,854	451	3,305	-2

(Source: DoT Peel Recreational Boating Facilities Study in 2020)

Mandurah is within the Peel Region and includes waterways of the Peel Inlet, Harvey Estuary, Murray and Serpentine Rivers, Dawesville Channel, extensive canal estates and adjacent coastal waters. There are 15 existing boat ramps (including 3 with beach access only), the Mandurah Ocean Marina and multiple private and public jetties throughout the City.

There is an opportunity for residents and visitors to use marine transport such as boats and kayaks to not only enjoy the waterways for recreational purposes, but to also visit the City Centre to patronise shops, restaurants and attend events. Many residents living within canal estates have private jetties making it very convenient to use boats for an entire journey. Visitors use two modes of transport; requiring boat launching facilities and supporting vehicle parking areas.

A survey conducted in 2022 for the City Centre Masterplan indicated 6% of people regularly travel to the City Centre by boat. It was also identified that ferry services or other mechanisms should be investigated to allow pedestrians and people with bikes and scooters to cross sections of the estuary and waterways. These possible connections should connect major points of interest / activity and also be integrated with the wider public transport network.

The Department of Transport Maritime (DoT) published the Peel Recreational Boating Facilities Study in 2010 and this was reviewed and updated in 2020.

As a result of the review, the following table provides a summary of options for recreational boating facility development to meet the demand to 2036.

Managing Authority	Development Options Extract from: Recreational Boating Facilities Study Review 2020
City of Mandurah	Support the City of Mandurah's Foreshore Focus 2020 Vision marina development proposals, subject to appropriate environmental and engineering studies being completed.
	Support the development of short stay boating facilities in Mandjar Bay subject to community support and resolution of design constraints including adequate water depth.
	Investigate opportunities for the development of an additional boat launching facility adjacent to the Harvey Estuary on the south east side of the Dawesville Channel.
	Support the City of Mandurah to undertake a review of the Peel Harvey Estuary Foreshore to understand where future opportunities may arise to locate new boat ramp channels.
	Establish and promote additional short stay moorings and berths at key destination points.
Department of Transport	Encourage the upgrade of existing boat launching facilities via the installation of related ancillary amenities and services such as universal access pontoons, improved parking and other facilities generally supported by the DoT's Recreational Boating Facilities Scheme.
Department of Transport & City of Mandurah	Encourage existing facilities in the Peel region to be developed to their full potential before new facility proposals are pursued at nearby locations.
	Include beach landing and launching areas when appropriate, adjacent to existing formal boat launching facilities for use by non-powered craft.
	Create a publication/s identifying short stay facilities and destination points within the Peel region to promote tourism and recreational opportunities. Such facilities would provide further boating alternatives to activities such as fishing and crabbing.

Table 11 Marine Transport Action Plan

ASPIRATION: Plan and advocate for additional facilities to support marine travel for recreation, tourism and as an alternative form of transport.

Action		Description / Comment	Lead Team	City Role and Funding Type	Timing
MT1	Advocate for and support the implementation of the Peel Region Recreational Boating Facilities Study Review 2020.	The Study includes multiple actions to improve boating facilities across the City over the next 10 years.	Marina & Waterways; DOT	Operating and Capital Budget	Ongoing
MT2	Review, investigate and implement the Mandjar Bay Jetty Master Plan to review short stay boating initiatives, subject to community consultation, appropriate environmental and engineering studies being completed and resolution of design constraints including adequate water depth.	This is an action of the will be City Centre Master Plan.	Marina & Waterways	Operating and Capital Budget, with Business Case and funding options required for infrastructure projects.	2023/24 and Ongoing
MT3	Review, investigate and maintain opportunities for further marina development proposals at Roberts Point that were identified in the Foreshore Focus 2020 Vision Master Plan in association with permanent sand bypassing operations.	As many elements of the Foreshore Focus 2020 Master Plan have been further developed or updated through further projects, the concept of long term marina(s) at Roberts Point should be retained in long-term strategic plans	Director, Built and Natural Environment; Strategic Planning;	Future Master Planning; Advocacy and Partnership with State Government for delivery	Long Term

Action		Description / Comment	Lead Team	City Role and Funding Type	Timing
MT4	Investigate the feasibility of introducing ferry services or other mechanisms to allow pedestrians and people with bikes and scooters to cross sections of the estuary and waterways to connect major points of interest / activity and be integrated with the wider public transport network.	This need was identified during public consultation in preparing the City Centre Master Plan.	Strategic Planning; Transform Mandurah	Investigations to include Business Case for private business to introduce a ferry service or funding options required a public service and infrastructure projects.	Long Term (5+ Years)