His Worship the Mayor
Councillors
City of Marion

Notice of Asset and Sustainability Committee

Council Chamber, Council Administration Centre
245 Sturt Road, Sturt

Tuesday, 2 August 2022 at 6.30 pm

The CEO hereby gives Notice pursuant to the provisions under Section 83 of the *Local Government Act 1999* that an Asset and Sustainability Committee will be held.

A copy of the Agenda for this meeting is attached in accordance with Section 83 of the Act.

Meetings of the Council are open to the public and interested members of this community are welcome to attend. Access to the Council Chamber is via the main entrance to the Administration Centre on Sturt Road, Sturt.

Tony Harrison

Chief Executive Officer

1 Open Meeting

2 Kaurna Acknowledgement

We acknowledge the Kaurna people, the traditional custodians of this land and pay our respects to their elders past and present.

3 Elected Member Declaration of Interest (if any)

4 Confirmation of Minutes

4.1 Confirmation of Minutes of the Asset and Sustainability Committee Meeting held on 5 July 2022	
Report Reference	ASC220802R4.1
Originating Officer	Business Support Officer – Governance and Council Support – Cassidy Ryles
Corporate Manager	Manager Office of the Chief Executive – Kate McKenzie
General Manager	Chief Executive Officer – Tony Harrison

RECOMMENDATION

That the minutes of the Asset and Sustainability Committee Meeting held on 5 July 2022 be taken as read and confirmed.

ATTACHMENTS

1. AS C 220705 - Final Minutes [**4.1.1** - 8 pages]

Minutes of the Asset and Sustainability Committee held on Tuesday, 5 July 2022 at 6.30 pm Council Chamber, Council Administration Centre 245 Sturt Road, Sturt

PRESENT

His Worship the Mayor Kris Hanna (7:34pm)	
Councillor Ian Crossland (Chair)	Councillor Tim Gard
Councillor Bruce Hull	Councillor Nathan Prior

In Attendance

General Manager City Services - Ben Keen
Executive Officer to the General Manager City Services - Colleen Madsen
Manager Engineering, Assets & Environment - Mathew Allen
Unit Manager Engineering – Carl Lundborg
Coordinator Transport – Nathan Saxty
Water Resources Coordinator – Glynn Ricketts
Coordinator Survey and Design - Alex Dorn
Unit Manager Open Space and Recreation Planning - Renee Pitcher

1 Open Meeting

The Chair opened the meeting at 6.31pm.

2 Kaurna Acknowledgement

We acknowledge the Kaurna people, the traditional custodians of this land and pay our respects to their elders past and present.

3 Elected Member Declaration of Interest (if any)

The Chair asked if any member wished to disclose an interest in relation to any item being considered at the meeting.

The following interests were disclosed:

- Nil

4 Confirmation of Minutes

4.1 Confirmation of Minutes of the Asset and Sustainability Committee Meeting held on 5 April 2022

Report Reference ASC220705R4.1

Moved Councillor Prior **Seconded Councillor Hull**

That the minutes of the Asset and Sustainability Committee Meeting held on 5 April 2022 be taken as read and confirmed.

carried unanimously

5 Business Arising

5.1 Business Arising Statement - Action Items

Report Reference ASC220705R5.1

Moved Councillor Prior **Seconded Gard**

That the Asset and Sustainability Committee:

1. Notes the business arising statement, meeting schedule and upcoming items.

carried unanimously

6 Confidential Items - Nil

7 Reports for Discussion

7.1 Stormwater Management

Report Reference ASC220705R7.1

Unit Manager Engineering, Carl Lundborg presented to the Committee with an overview of Stormwater Practices across the City of Marion and was seeking support to trial additional innovative water sensitive urban design (WSUD) solutions.

Key discussion points noted:

Stormwater Infrastructure

- How WSUD works – value and funding.
- Percentage of non-developed allotments, developed v under developed. There is an 80-90% impervious hard surface within infill development and the road corridor.
- Total replacement cost of stormwater infrastructure is $214M.
- We currently have two endorsed Stormwater Management Plans – Hallett Cove Creeks and Coastal Catchments; still in draft are the Sturt River and Field River.
- We have high confidence in the stormwater data (where they are located, what physical properties and the date of construction). We are still in the early stages of asset management of the stormwater infrastructure when collecting condition data and how the budgets are formed through the Asset Management Plans.
- The responsibility for the drains that run through the city are:
  - City of Marion – trunk drains on arterial roads & Stormwater network on council land
  - DIT – side drains on arterial roads
  - Sturt River channel SA Water
- To ascertain the viability of the infrastructure CoM is placing CCTV down the pipes.
- Renewals have not yet been accounted for. Currently, renewal is based on age however the data we are collecting via CCTV will assist us to determine renewal requirements.
- Infrastructure standards have changed; when we look at renewal we will see if there is a viability of replacing with a larger asset due to capacity.

- Responsibility of developers and builders is considered very strong at state government level, holding developers responsible within the development sites. However issues can arise immediately adjacent to those areas.
- The introduction of a state levy for developers would require a resolution by the LGA.
- The Stormwater Management Authority only has approx. $4.4M p.a. and is aware through Stormwater Management Plans that Council has asset and flood liabilities. They are working with Councils on how to obtain further funding to assist in addressing problems created by urban planning, parking etc., possibly through federal grants.

Permeable paving

- The benefits of permeable paving for use in footpaths was discussed. They are good for low lying areas, although due to run off they are not preferable for use on hills.
- The noise factor of cars for permeable roads is well within the acceptable readings.
- The cost difference for bitumen v permeable pavers in car parks is approximately 30%.
- Car parks life span 70 years.
- Permeable paving would not be used in high trafficked and/or large vehicle loads due to the load of the turning movements. Further consideration can be given to the design of carparks to use a combination of both bitumen and permeable pavers where appropriate.

Tree Inlets

- Less water needed to water the tree etc.
- Tree roots don't need to go searching for water as much, lifting roads and footpaths.
- Approximately 200 across the city.
- Each Tree Inlet can hold approx. 200-300L of stormwater

Rain Gardens

Rain Gardens require ongoing maintenance, however can be used to build up amenity of the area.

No one solution is the best, a combination of all can be used depending upon the requirements for the particular area.

Manager of Engineering, Assets and Environment, Mathew Allen presented on the five major principles of Stormwater Management.

- Detention
- Retention
- Plumbed Rainwater Tanks
- First Flush Retention – EPA Targets
- Flood Protection

Planning and design code.

Retention rainwater tanks need to be plumbed.

Infill development:

Oaklands Green – Brownfield Development

- Progressing quickly and putting in place the five principles.
- Infrastructure agreement and conditions consent.
- Can use recycled water into residential properties.

- Don't have much drainage infrastructure – have pits and pipes for 5-year events.
- WSUD will complement.

Cove Point – Greenfield Development

- Site has sandy soil.
- Water from the outlet goes over cliff face and is causing a lot of erosion.
- Council is conscious not to disturb coastal reserve and does not want the developer to touch those areas.
- Currently working with the developer to create a stormwater management plan.
- Discussing discharge and will need to look at retention and detention.
- Any concern at government level with the developer? Staff are quite firm with the developer of what is required.

Water Resources Coordinator, Glynn Ricketts provided an update of the Holdfast Bay and City of Marion Rainwater Tank Pilot Project.

- Project is behind schedule due to the difficulty in employing a student during Covid, however this has now been done.
- Rebate scheme in place for next winter.
- Rainwater tanks trying to demonstrate they have a place.
- Project has commenced and will have rainwater tanks in by next winter.
- Of the $260,000 allocated to the project, most goes to the rebate scheme, buying tanks etc.
- Currently determining the status of the rainwater tanks for the residents.

Unit Manager Open Space Planning, Renee Pitcher gave a presentation on water within Open Space planning.

- The current Plan and Policy supports the use of WSUD and will be considered in open space design to meet sustainability targets, to preserve and enhance the natural environment and to manage stormwater events.
- Open space is designed to maximise porous surfaces.
- With new developments, internal departments peer review plans and documentation; and it's a balance with the developers, with staff raising questions such as how much is useable space. 12.5% is the minimum useable space that must be accounted for. Walkways used to be included as part of the percentage of useable space.
- We can reduce our reliance on piped irrigation, and design to passively irrigate out natural landscaping and grassed areas.
- Open space planning preference is for WSUD to limit impact on useable open space by ensuring designs contain flooding under the 1 in 5 year event.

Project Learnings

- Harbrow Grove Reserve, Seacombe Gardens was upgraded in 2011 and is a collaborative design response to local flooding on adjacent streets.
- Aspects of the site could have been improved, including flattening grass areas to create more useable spaces for recreation; establishment and correct species selection for bioretention pond; topping up water in extreme drought conditions. There is no value in retro-fitting.
- The underground rainwater tank, designed to top up the ornamental pond quickly depleted during the months it was needed, it had maintenance issues and WHS issues. It is a very complex system and limited in this scale or reserve.

Lightsview case study on integrated WSUD Management in Open Space

- Major infill development 8 kms from Adelaide CBD, and illustrates best practice in the integration of water and landscape planning to achieve a response to stormwater management without sacrificing recreational and environmental ambitions.
- Three wetlands terraced across the development, capturing upstream and development runoff and cleans it. Once the water is purified its pumped up to the off line ornamental pond, which is at the highest point of the development. No untreated stormwater with enter this system.
- Volume of detention basins were increased to the 1 in 5 events could be contained to vegetated swales that were located on the outside edge of the reserve.

We will continue to utilise open space as green sponges to reduce pressure on peak flows and clean water prior to discharge downstream and identify site appropriate WSUD systems.

Moved Councillor Hull **Seconded Councillor Gard**

That the Asset and Sustainability Committee:

1. Notes the presentation and provides feedback for stormwater management across the City of Marion.
2. Supports the trial of permeable pavements within the footpath programs and identified car park projects.
3. Recommends to Council that:
   - City of Marion approaches the LGA to lobby for developer contributions towards Council infrastructure prior to caretaker.

Carried unanimously

7.2 Parking Management

Report Reference ASC220705R7.2

Mat Allen introduced Unit Manager Engineering, Carl Lundborg and Coordinator of Transport, Nathan Saxty to present to the Committee an overview of the current Parking Management Practices across the City of Marion and seek comments on developing Parking Management Guidelines for the City of Marion.

The committee was introduced to the Menti metre engagement tool. This tool was used via the members phone to determine what they consider their most important aspects of the road boundaries.

ACTION
Take the Parking Data provided on the slide and plot using a heat map – red more restrictions – green less restrictions

Key discussion points noted:

- A variety of parking restrictions exist without a clear reason why, and are often contradictory. Many of our parking arrangements are historical, and records don't always go back that far to determine why they were originally installed.
- Parking concerns often focused on customer experience, however we would like to have more consistency across the city.
- There is a push for adequate road widths with new developments.
- There is an identified minimum width of road. Historically cannot comment if that has been upheld.
- 45kms of road do not meet the standard.

ACTION
Provide the Committee Members with the ABS data on general trends of motor vehicle ownership. i.e. every member of the family over the age of 18 yrs. to have a car?

- Discussion on the current Parking Management Action Plan (operational document).
- Collector or Distributor Roads are determined via a planning perspective.
- The high number of customer requests dictates staff are working more reactive than they would like and are trying to get to that space so that they can become proactive.
- Parking Management Plan will provide residents with guidelines on what Council can look at and why and provide integrity across the council.
- Suggestions for the guidelines:
    - Criteria for restricted parking yellow lines etc.
    - Hierarchy of roads etc.
    - Strategically we don't want to restrict train station parking.
    - Design code

<u>Current Parking Interventions</u>

- Yellow Lines
- Paved/Indented Parking Bays
- Time restrictions
- Zones i.e. loading, Disability, Park n Ride

Are we able to introduce Legislation to prevent people parking in Electric Vehicle areas (currently 3 stations)? No issues have arisen as yet. It was suggested if the Committee Members would like to lobby for legislation it could come to Council as a Motion with Notice.

<u>Current Education/Enforcement</u>
Parking safely and correctly pamphlets
Keep kids safe pamphlets provided to school each term
CSIs (refer to slide)

- Community consultation on the draft Guidelines would be on the principles and guidelines within the document.
- Committee Members agreed to consider including retrospective provision in the guidelines. Exceptional circumstances would need to be considered.
- Administration will aim for October to bring a draft of guidelines to the Committee.

Moved Councillor Nathan Prior **Seconded Councillor Tim Gard**

That the Asset and Sustainability Committee:

1. Notes the presentation and provides feedback for parking management across the City of Marion.
2. Supports the development of Parking Management Guidelines for the City of Marion.

Carried unanimously

8 Reports for Noting - Nil

9 Workshop / Presentation Items - Nil

10 Other Business

11 Meeting Closure

The meeting shall conclude on or before 9.30pm unless there is a specific motion adopted at the meeting to continue beyond that time.

The meeting was declared closed at 9.56pm.

CONFIRMED THIS 2ND DAY OF AUGUST 2022

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CHAIRPERSON

5 Business Arising

5.1 Business Arising Statement - Action Items	
Report Reference	ASCYYMMDDR5.1
Originating Officer	Executive Officer to the General Manager City Services – Colleen Madsen
Corporate Manager	N/A
General Manager	General Manager City Services – Ben Keen

REPORT OBJECTIVE

The purpose of this report is to review the business arising from previous meetings of the Asset and Sustainability Committee meetings, the meeting schedule and upcoming items.

RECOMMENDATION

That the Asset and Sustainability Committee:

1. **Notes the business arising statement, meeting schedule and upcoming items.**

ATTACHMENTS

1. ASC 220802 - Business Arising as at 2 August 2022 [**5.1.1** - 2 pages]
2. ASC 220802 - Schedule of Upcoming Items 2022 draft [**5.1.2** - 2 pages]

CITY OF MARION
BUSINESS ARISING FROM THE ASSET & SUSTAINABILITY COMMITTEE MEETINGS **AS AT 2 AUGUST 2022**

Meeting Date	Document	Item No.	Item	Action Required	Assignee/s	Action Taken	Status
5/10/2021	SASC211005 – Special Asset and Sustainability Committee – 5 October 2021	9.1	Aged Care Services – Fee Payment Update	Item to come back to ASC	Jaimie Thwaites	Report scheduled for 11 October ASC meeting.	Item to come back to ASC
2/11/2021	ASC211102 – Asset and Sustainability Committee 2 November 2021	7.1	Environmental Sustainability	Further research will be conducted into electric vehicles and reported back to Members.	Ann Gibbons	Report scheduled for 2 August 2022 ASC meeting	Complete
5/07/2022	ASC220705 – Asset and Sustainability Committee 5 July 2022	7.1	Stormwater Management	Recommends to Council that: City of Marion approaches the LGA to lobby for developer contributions towards Council infrastructure prior to caretaker.	Mathew Allen	Report to be presented to the 23 August General Council meeting.	In progress
5/07/2022	ASC220705 – Asset and Sustainability Committee 5 July 2022	7.1	Stormwater Management	Supports the trial of permeable pavements within the footpath programs and identified car park projects.	Carl Lundborg	Will be considered as part of the scope of future capital works and programs.	Complete
5/07/2022	ASC220705 – Asset and Sustainability Committee 5 July 2022	7.2	Parking Management	Take the Parking Data provided on the slide and plot using a heat map – red more restrictions – green less restrictions.	Nathan Saxty	Will be provided to the Committee in August.	In progress
5/07/2022	ASC220705 – Asset and Sustainability Committee 5 July 2022	7.2	Parking Management	Provide the Committee Members with the ABS data on general trends of motor vehicle ownership. i.e. every member of the family over the age of 18 yrs. to have a car?	Nathan Saxty	Data being collated, awaiting recent ABS data.	In progress

CITY OF MARION
BUSINESS ARISING FROM THE ASSET & SUSTAINABILITY COMMITTEE MEETINGS **AS AT 2 AUGUST 2022**

Meeting Date	Document	Item No.	Item	Action Required	Assignee/s	Action Taken	Status
5/07/2022	ASC220705 – Asset and Sustainability Committee 5 July 2022	7.2	Parking Management	Supports the development of Parking Management Guidelines for the City of Marion.	Nathan Saxty	Due to resource constraints, draft guidelines will be developed and provided to Council post caretaker.	In progress

* Completed items to be removed are shaded

Asset & Sustainability Committee – 2022 Schedule of upcoming items

Asset and Sustainability Committee		Date: Tuesday, 1 February Time: 6.30pm – 9.30pm	Venue: Chamber	
Topic	**Type of Report**	**Description**	**External Attendees**	**Staff Responsible**
Business Arising		Business arising from previous meetings, the meeting schedule and upcoming items – Plan for April meeting		C Madsen
Marion Cultural Centre Plaza – Community Consultation		GC211026R10.7 - That this item be considered at the Asset and Sustainability Committee to be held on 1st February 2022		B Grimm
Capital Works Plan 2022/23				M Allen
Civil Service Review Part 1		Introduction and Overview		R Troup

Asset and Sustainability Committee		Date: Tuesday, 5 April Time: 6.30pm – 9.30pm	Venue: Chamber	
Topic	**Type of Report**	**Description**	**External Attendees**	**Staff Responsible**
Business Arising		Business arising from previous meetings, the meeting schedule, and upcoming items – Plan for May meeting		C Madsen
Civil Service Review Update	30 mins	Continuation of discussion from February ASC meeting		R Troup
Green City Update	60 mins	City greening, canopy, TMF update, Tree AMP, tree nets	Brenton Grear	R Neumann
Marion Golf Club (Confidential)	45 mins			M Hubbard
CoM Water Business (Confidential)	45 mins	Update on water business activities across the CoM		G Ricketts
Plan for June Meeting				

Asset and Sustainability Committee		Date: Tuesday, 7 June (deferred to 4 July) Time: 6.30pm – 9.30pm	Venue: Chamber	
Topic	**Type of Report**	**Description**	**External Attendees**	**Staff Responsible**
Business Arising		Business arising from previous meetings, the meeting schedule and upcoming items – Plan for August meeting		C Madsen
Transport		Parking/traffic		C Lundborg
Water Management		WSUD, RWT Study		G Ricketts

Asset & Sustainability Committee – 2022 Schedule of upcoming items

Asset and Sustainability Committee	Date: Tuesday, 2 August	Time: 6.30pm – 9.30pm	Venue: Chamber	
Topic	**Type of Report**	**Description**	**External Attendees**	**Staff Responsible**
Business Arising		Business arising from previous meetings, the meeting schedule and upcoming items – plan for October meeting		C Madsen
Asset Management Update		Update, review progress and direction - Check re inclusion of RAMP		B Lyons
Fleet Transition Plan		Update, review progress and direction including discussion on the budget impacts on the fleet transition program	Consultant	A Gibbons
Walking & Cycling Guidelines 2023-28		Review of the guidelines		C Lundborg
Environmental Sustainability Update				A Gibbons

Caretaker Period: 6 September – 12 November 2022

Asset and Sustainability Committee	Date: Tuesday, 11 October	Time: 6.30pm – 9.30pm	Venue: Chamber	
Topic	**Type of Report**	**Description**	**External Attendees**	**Staff Responsible**
Business Arising		Business arising from previous meetings, the meeting schedule and upcoming items		C Madsen
Aged Care Services – Fee Payment Update	R	SASC211005R9.1 - Action: Report back to the Asset and Sustainability Committee in 12 months' time with an update		J Thwaites
Draft Parking Management Guidelines		Draft guidelines for consideration following feedback at ASC 5 July 2022		C Lundborg
Plan for 2023 Schedule				
Waste		SRWARA, hydrogen generation and use, circular economy	Speaker?	

Future item

- Resilient South Sector Agreement with SA Government – Renewal
- Road Reseals
- Remnant Native Vegetation Plan

6 Confidential Items

7 Reports for Discussion

7.1 Fleet Transition Plan	
Report Reference	ASCYYMMDDR7.1
Originating Officer	Unit Manager Environment and Sustainability – Ann Gibbons
Corporate Manager	Manager Engineering, Assets and Environment - Mathew Allen
General Manager	General Manager City Services - Ben Keen

REPORT HISTORY

Report Reference	Report Title
GC210209R04	Final Carbon Neutral Plan

REPORT OBJECTIVE

The purpose of this report is to provide the Asset and Sustainability Committee with:

- An update on the development of a Fleet Transition Plan to support the City of Marion's carbon neutral commitments.
- An opportunity to provide input on key elements of the Fleet Transition Plan including:
  - Infrastructure upgrades to support electric vehicle charging.
  - Proposed fleet transition pathways and timing.
  - Current and future budget impacts.

EXECUTIVE SUMMARY

In February 2021 the City of Marion (CoM) adopted a Carbon Neutral Plan 2020 – 2030 (GC210209R04) that sets out how Council will achieve its target of becoming carbon neutral by 2030 for its own operations. A key action in the Plan is for a transition to a Zero Emissions Fleet.

Mr Jake Bugden of Gething Pty Ltd., technical consultant engaged to assist with the development of Marion's Fleet Transition Plan, will attend the meeting to present an overview of research to date and gather input from the Committee that will be used to inform the Fleet Transition Plan.

RECOMMENDATION

That the Asset and Sustainability Committee:

1. **Notes the information provided in the meeting on the City of Marion's current fleet and options for transitioning to electric vehicles.**
2. **Provides input in the meeting to shape the City of Marion Fleet Transition Plan.**

DISCUSSION

In February 2021 CoM adopted a Carbon Neutral Plan 2020 – 2030 (GC210209R04) that sets out how Council will achieve its target of becoming carbon neutral by 2030 for its own operations. A key action in the Plan is for a transition to a Zero Emissions Fleet.

CoM has also agreed to participate in the South Australian Government's Fleet Pledge Program established in South Australia's Electric Vehicle Action Plan, with a commitment to transform its light fleets to zero emission electric vehicles by 2030.

CoM uses a range of fleet, plant and equipment assets (fleet assets) to deliver services to improve our residents' quality of life. These include passenger vehicles, trucks, mowers, trailers, utilities, community buses, earthmoving equipment, mobile/fixed plant, and small plant. Council seeks to maximise value to ratepayers and ensure sustainable services by optimising the use of our fleet assets. An overview of Marion's current fleet will be provided in the meeting and is summarised in Attachment 1.

Outcomes sought in the development and implementation of the Fleet Transition Plan include:

- Understanding of the full costs of transition of the CoM fleet (including infrastructure needs) with a view to minimising the whole of life cost increase to Council's fleet (operations and maintenance).
- Reduce Council's fleet related carbon emissions to support Council's carbon neutral by 2030 commitments.
- Trial and utilisation of smarts and updated technology such as telematics.
- Connection of fleet to localised excess renewable energy sources (e.g., council sites and bi-directional charging) where available.
- Updated Council Policies to support fleet transition.

Research and investigations to better understand current and future requirements has commenced including:

- Engagement of technical consultants, Gething Pty Ltd. to assist in the development of the fleet transition pathways and business cases.
- Infrastructure needs analysis at City Services, Administration Building, and Southern Depot by WGA. This analysis includes a review of SA Power Networks transmission infrastructure and onsite switchboards, distribution boards and cabling. An overview of the infrastructure needs analysis and anticipated budget impacts will also be provided in the meeting.
- Discussion with key leaders to ensure that vehicle selections will continue to suit business needs.

CoM aims to transition to Electric Vehicles (EV) in all areas where it is practical for operations. It is recognised that availability of suitable vehicles to meet business need (e.g., utilities) may mean longer than initially anticipated transition times. Transition to electric heavy plant (trucks, streetsweepers, loaders, backhoes, and excavators) is likely to be some time away as there is very limited availability of these types of vehicles in the market. As such, high level commentary and advice on likely timeframes and emerging opportunities will be included in the Plan.

Committee input and thinking on the following will be sought in the meeting:

- Vehicle Options:
  - Availability in Australia – short-term and longer term
  - Business needs – vehicle selections
- Infrastructure Upgrades:
  - Timing – staged approach, future proofing
  - Budgets – short-term and longer-term
  - Charging infrastructure

A presentation will be provided by Mr Jake Bugden, Energy Consultant, Gething Pty Ltd. in the meeting to provide an update on information gathered to date and seek input from the Committee.

A skeleton Fleet Transition Plan that includes input provided by ELT will be available to guide discussion at the Assets and Sustainability Committee meeting.

ATTACHMENTS

1. ASC20220802 - Attachment 1 - Fleet Information [**7.1.1** - 2 pages]

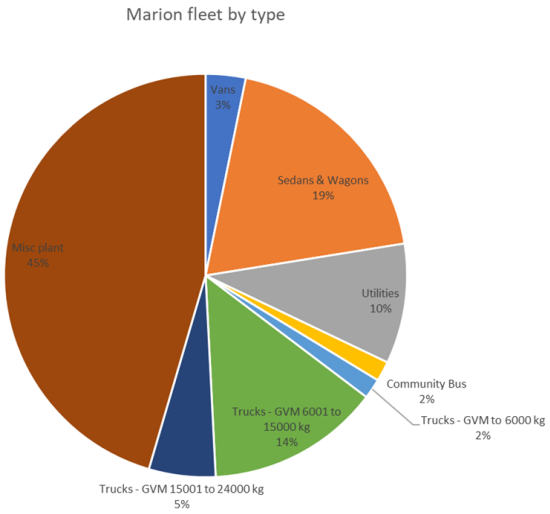
ASC 20220802

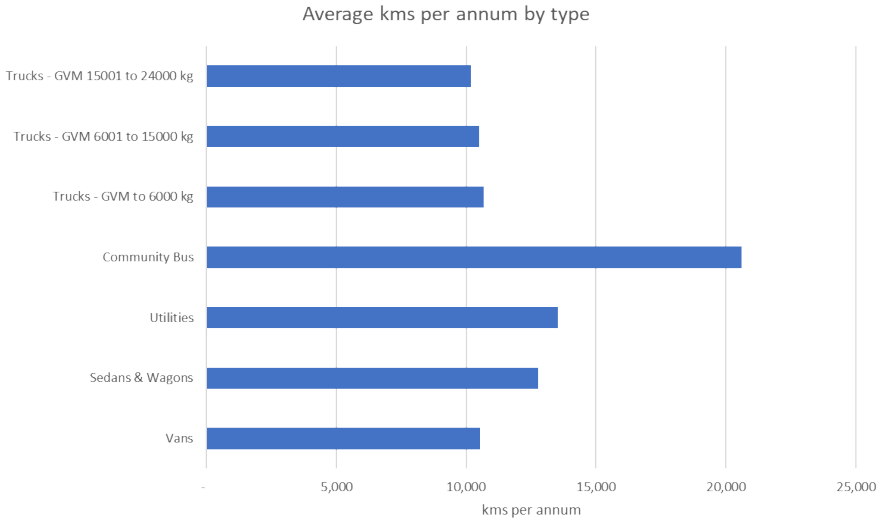
Attachment 1: City of Marion Fleet Information

The following information will be discussed during the meeting.

Preliminary Data:

- 187 vehicles in total
- Fleet utilisation is low – average 12,000km pa
- 'Optimal utilisation' targets seem low (10,000km for sedans/wagons)
- Sedans and Wagons
    - Prime opportunity for electrification - 35 vehicles
        - ~30% Corolla hybrids
        - ~50% Mitsubishi ASX and Outlander
    - For Corolla hybrids ~50% emission saving BEV
    - For others ~70% emission saving BEV



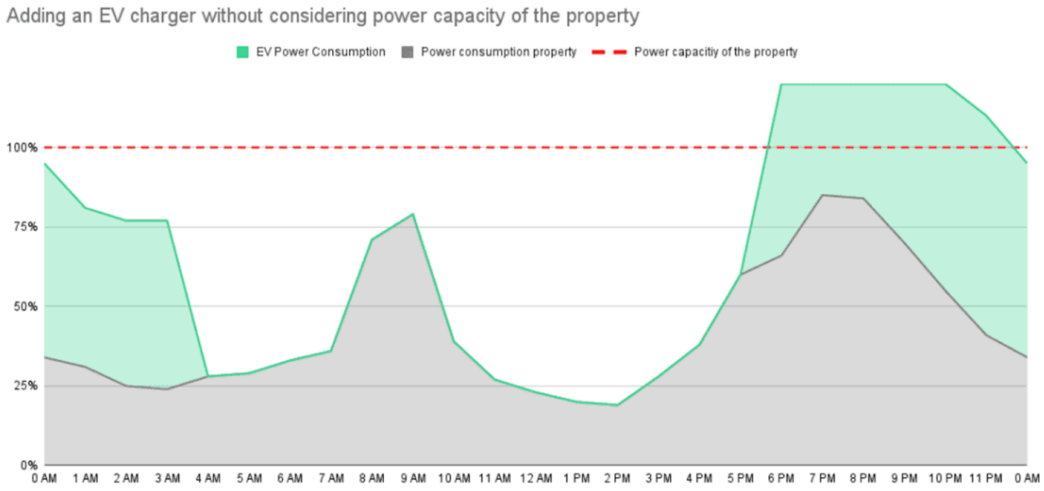


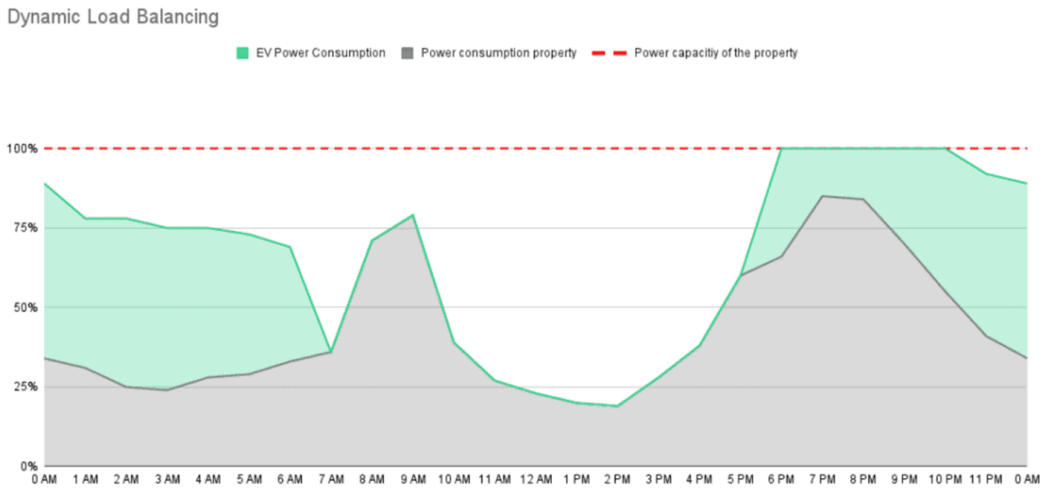
Trials of battery powered plant and equipment is underway including:

- Handheld Blowers trialled; further trials are scheduled to occur later this year (2022) with Husqvarna
- Ecoteq Ride-On EV Mowers have been trialled by the Open Space Operations team.

Charging Infrastructure:

- Potentially large increases in load and electricity consumption (up to 10-fold), particularly at depots
- WGA investigations: report received for City Services, Admin Building investigations underway
- Opportunity for dynamic load management (images courtesy SolarGain)





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7.2 Walking and Cycling Guidelines (2023-2028)	
Report Reference	ASCYYMMDDR7.2
Originating Officer	Unit Manager Engineering – Carl Lundborg
Corporate Manager	Manager Engineering, Assets and Environment - Mathew Allen
General Manager	General Manager City Services - Ben Keen

REPORT HISTORY

Report Reference	Report Title
GC280812R05	City of Marion Walking and Cycling Strategy (2012-2017)
GC080915R03	City of Marion Walking and Cycling Network Program
GC080518R04	Walking and Cycling Guidelines (2018-2022)

REPORT OBJECTIVE

The purpose of this report is to seek the Asset and Sustainability committees support to review the Walking and Cycling Guidelines (2023-2028) and to seek comments on the scope and feedback on a proposed approach.

RECOMMENDATION

That the Asset and Sustainability Committee:

1. **Supports the review of the City of Marion Walking and Cycling Guidelines (2023-2028).**
2. **Provides feedback on a proposed scope and approach for the review.**

BACKGROUND

On 28 August 2012, Council endorsed the Walking and Cycling Strategy (2012-2017) for the City of Marion (GC280812R05). The strategy was to provide direction and information to facilitate an integrated strategic approach to the planning, design, construction, and maintenance of existing and future walking and cycling paths, so they optimise the amenity and benefit of their individual contribution to present and future users and the overall regional walking and cycling network.

On 8 May 2018, Council endorsed the Walking and Cycling Guidelines (2018-2022), an update of the Walking and Cycling Strategy (2012-2017), with a revision of the 4-year walking and cycling priorities (GC080518R04).

DISCUSSION

The Walking and Cycling Guidelines for the City of Marion provides multiple benefits for active travel modes such as:

- Identifies opportunities for expanding the pedestrian and cycle network.
- Identifies a hierarchy of streets and movement corridors favouring cycling and walking.
- Identifies strategic opportunities for the City of Marion from State and Regional transport proposals.
- Develops principles and guidelines for designing pedestrian and cycle friendly streets.
- Explores opportunities to integrate public transport with cycling and walking facilities.

- Investigates ways to improve pedestrian and cyclist safety, legibility and signage.
- Develops where appropriate alternative and innovative streetscape design options.
- Provides best practice examples of urban design and streetscapes.

Additionally, the Guidelines enables Council to advocate with other partners and agencies to ensure that the delivery of infrastructure is integrated and consistent with the strategic vision of Council. Council's advocacy role extends to the following projects:

- Flinders Link and Greenway with the Department of Infrastructure and Transport (DIT) and Renewal SA
- Provision of bike paths and connections as part of the Darlington Project
- Provision of bicycle paths as part of the Oaklands Crossing Project
- Marino Rocks Greenway advocated for DIT to construct the section adjacent to the Edwardstown Train Station
- Major's Road Shared Path with DIT and the Department of Environment and Water (DEW)

Furthermore, the Guidelines has been integral to the planning of the Walking and Cycling Program. The program has delivered projects totalling a combined expenditure of $10.23 million (City of Marion $5.2 million + $5.03 million grant funding) over the period of 10 years (2012 – 2022).

5 Year Planning Period	City of Marion	Grant Funding	Total
2012 – 2017	$1.5 million	$1.48 million	$2.98 million
2018 – 2022*	$3.7 million	$3.55 million	$7.25 million
TOTAL (10 years)	$5.2 million	$5.03 million	$10.23 million

*City of Marion Streetscape Program was developed in 2018, which has increased budget for walking and cycling infrastructure (Marino Rocks Greenway/Railway Terrace & Flinders Greenway/Birch Crescent).

WALKING AND CYCLING 2023 – 2028 REVIEW

A review is required for the Walking and Cycling Guidelines to identify the next 5 years of design and construction priorities and strategic direction (2023-2028). Staff are developing a scoping brief for the review and would like to define what the key objectives could be.

We are seeking the Asset and Sustainability comments regarding:

- What should be considered in the scope of the Walking and Cycling Guidelines review?
- Is the Walking and Cycling Guidelines the right title for the document?
- Should we include targets for cycling?

The stages involved for the development of the Walking and Cycling Guidelines are:

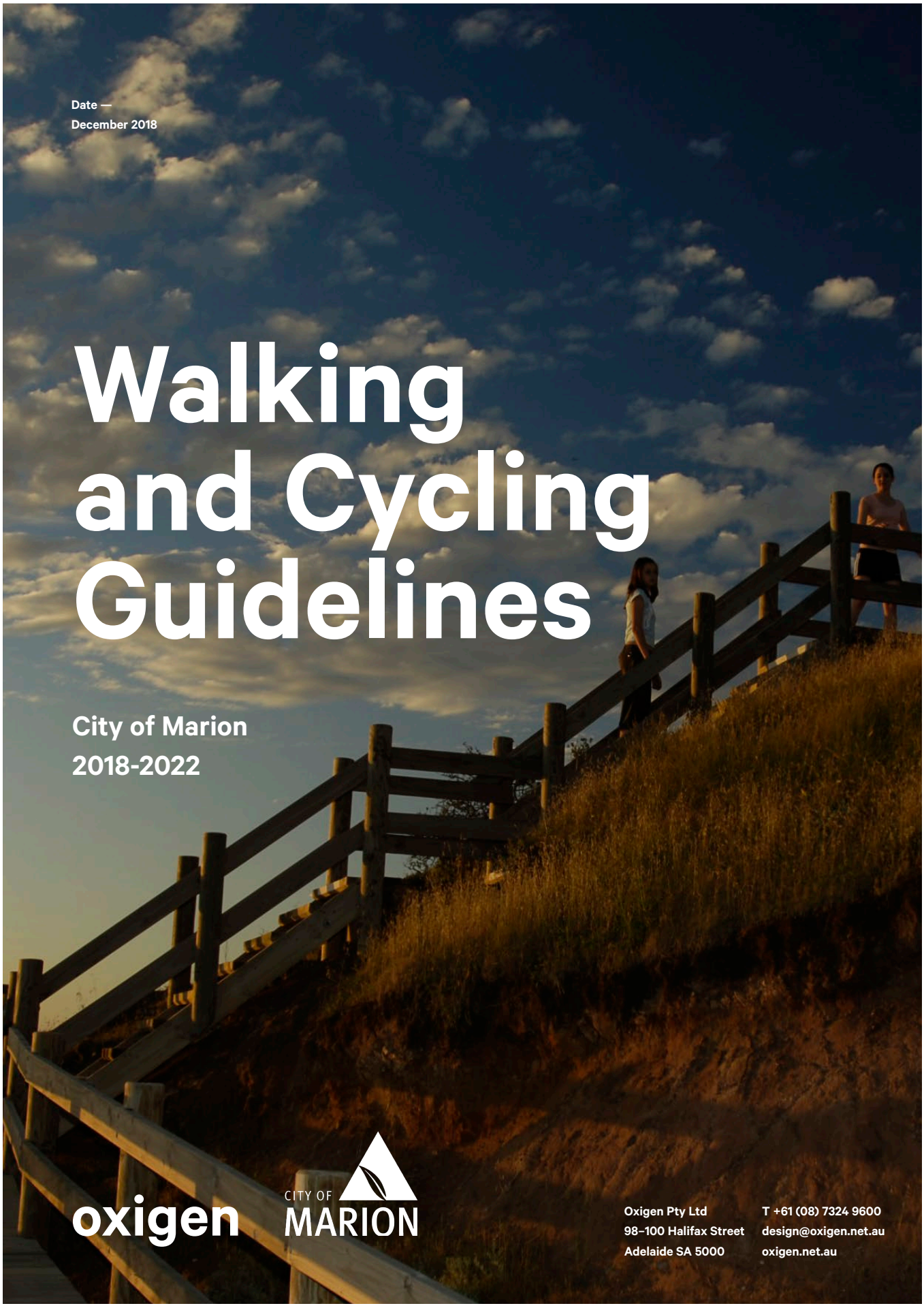
- ***Scoping and Research (3 months)***
  - Develop a scope for the Guidelines from the feedback from the ASC
  - Undertake a review of surrounding Councils' walking and cycling strategies
  - Research the state and federal strategies to ensure strategic alignment
- ***Planning (1 month)***
  - Develop consultation and workshop agendas and questions
  - Schedule dates with stakeholders to discuss
- ***Engagement (2 months)***
  - Undertake workshops with internal and external stakeholders
  - Early community engagement
- ***Draft Plan (4 months)***
  - Develop draft plan with the feedback and comments from the engagement

- ***Report to Council (1 month)***
    - Seek endorsement to undertake community consultation
- ***Consultation (2 month)***
    - Undertake 4 week consultation with the community through Making Marion
- ***Final Report for Endorsement (Mid 2023)***

Speakers:
Carl Lundborg – Unit Manager Engineering
Mathew Allen – Manager Engineering, Assets & Environment

ATTACHMENTS

1. City of Marion Walking and Cycling Guidelines 2018-2022 [**7.2.1** - 100 pages]



Date —
December 2018

Walking and Cycling Guidelines

City of Marion
2018-2022

oxigen

CITY OF MARION

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Acknowledgements —

This review of the Walking and Cycling Guidelines was commissioned by the City of Marion under the direction of the Project Steering Group:

- **Mathew Allen**
- **Keith Davis**
- **Elaine Delgado**
- **Mark Griffin**
- **Brett Grimm**
- **Georgie Johnson**
- **Joyce Louey**
- **Rudy Tieman**

Revision —	Date —	Author —
G	December 2018	Oxigen 2018

Prepared For —
City of Marion

Contents


Marino Rocks Greenway

Introduction

Overview

This is an aspirational document that details options for improving the walking and cycling network in the City of Marion.

Walking and cycling encourages healthy and active lifestyles, reduces traffic congestion and supports environmental sustainability.

These guidelines describe the benefits of walking and cycling to the community, environment and economy and outline relevant policies, best practices and case studies.

With rising obesity levels, concerns about climate change and dependency on cars, the *Walking and Cycling Guidelines* are a positive vision for the City of Marion.

Background

Since the Second World War, the City of Marion has experienced significant growth and expansion of low-density development structured on car-based transport. Most 'greenfield' land in the city has been developed, and now future growth is focused on infill, transit corridor focused development and urban renewal.

The 30-year Plan, and other key policy documents, promote walking and cycling as sustainable transport modes. Providing supportive environments for walking and cycling, such as safe street networks and connected parks, is essential for active and healthy urban living.

Railway Terrace, Ascot Park (Marino Rocks Greenway)

Structure of this Document

Part 1. Value of Walking and Cycling

— Describes the range of benefits gained from walking and cycling.

Part 2. Vision for Walking and Cycling

— Sets out a clear vision for walking and cycling in the City of Marion.

Part 3. Setting the Scene

— Summarises the City of Marion's character, destinations, key routes, demographics, policy context and major projects.

Part 4. Existing Walking and Cycling Network

— Evaluates the existing walking and cycling network, including key assets, how they perform and barriers to walking and cycling. Achievements in the previous Walking and Cycling Strategy 2012-2017 are described.

Part 5. Best Practice and Case Studies

— Reviews different pedestrian and cycle path options to provide a 'tool-box' of best practice solutions that may be applied within the City of Marion.

Part 6. Recommendations

— Sets out strategies to improve walking and cycling in the City of Marion.

Part 7. Implementation

— Summarises the actions and priorities for delivering an improved walking and cycling environment.

About the Guidelines

The City of Marion defines a connected city at the heart of its strategic planning and decision-making agenda (City of Marion Community Vision > Towards 2040). These Walking and Cycling Guidelines play a key role in delivering Council's goals and supporting connected neighbourhoods.

The guidelines provide direction for ongoing improvement of walking and cycling in the City of Marion. As the urban structure of the City of Marion is essentially determined, the primary method for delivering walking and cycling improvements is through 'retro-fitting'. This includes ensuring walking and cycling is a key component in the planning of future developments and projects (for example, currently consideration is given to projects associated with electrification of the metropolitan rail network, cycling 'Greenways', Tonsley Innovation District, Oaklands Crossing and Oaklands Park transit corridor, and Darlington Upgrade Project and Flinders Link).

These guidelines contain the 'building blocks' for walking and cycling. They inform future developments and strategic planning decisions whilst providing guidance for walking and cycling initiatives into Council urban planning, projects and budget considerations. Collaborative planning with neighbouring Councils and State Government to connect communities is considered.

These guidelines use the terms walking and cycling in their broadest sense. They are inclusive of wheelchairs, prams, mobility scooters and other similar devices, as well as skateboards, kick scooters, rollerblades and the like. It also includes walking and cycling for recreation, fitness and commuting purposes.

These guidelines are intended to guide Council over the next four years (2018-2022).

Minchinbury Terrace, Marion

Purpose of the Guidelines

These guidelines are intended for use by the City of Marion in collaboration with the State Government, other councils, developers and the community, to:

— Provide an appreciation of the benefits of walking and cycling.

— Evaluate existing walking and cycling networks and conditions to assess their adequacy in operation, connectivity, safety, comfort and amenity.

— Propose a walking and cycling network that enhances connected communities and social inclusion.

— Form part of Council's focus on achieving a more integrated and sustainable transport network promoting walking and cycling as viable transport alternatives.

— Provide Council with information that helps assist in assessing existing and future State Government-led transport strategies.

— Deliver strategies for improving the function and amenity of walking and cycling, and reinforce connected transport and recreation options.

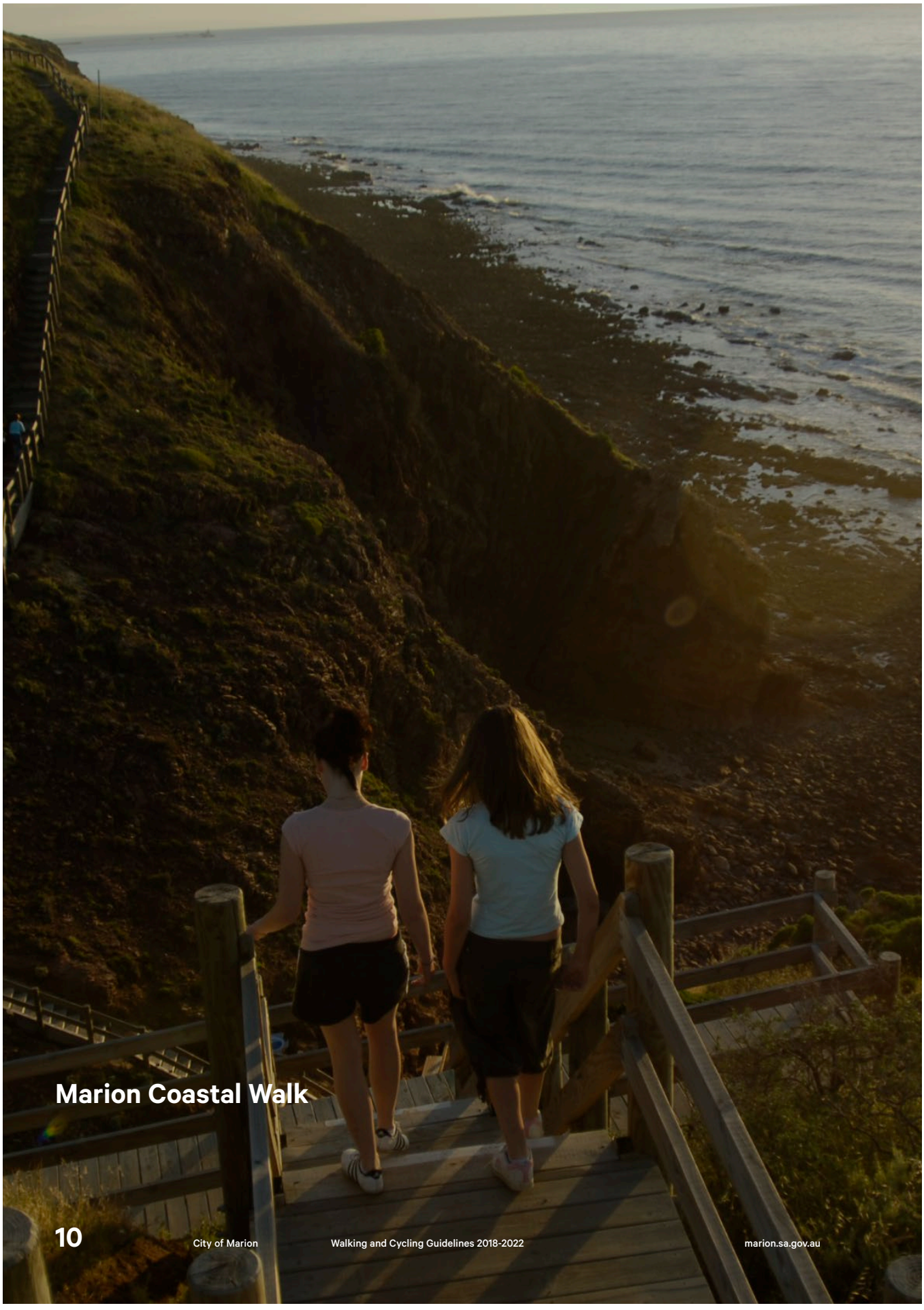
— Coordinate planning and delivery of walking and cycling infrastructure.

— Develop long-term management plans for renewing and upgrading Council roads, footpaths and cycle infrastructure.

— Plan for maintenance and management of walking and cycling networks.

— Develop strategies for promotion, education, advocacy and support of walking and cycling.

Mike Turtur Bikeway and 'Which Way' artwork by CHEB Art


Marion Coastal Walk

Part 1

Value of Walking and Cycling

Value of Walking and Cycling

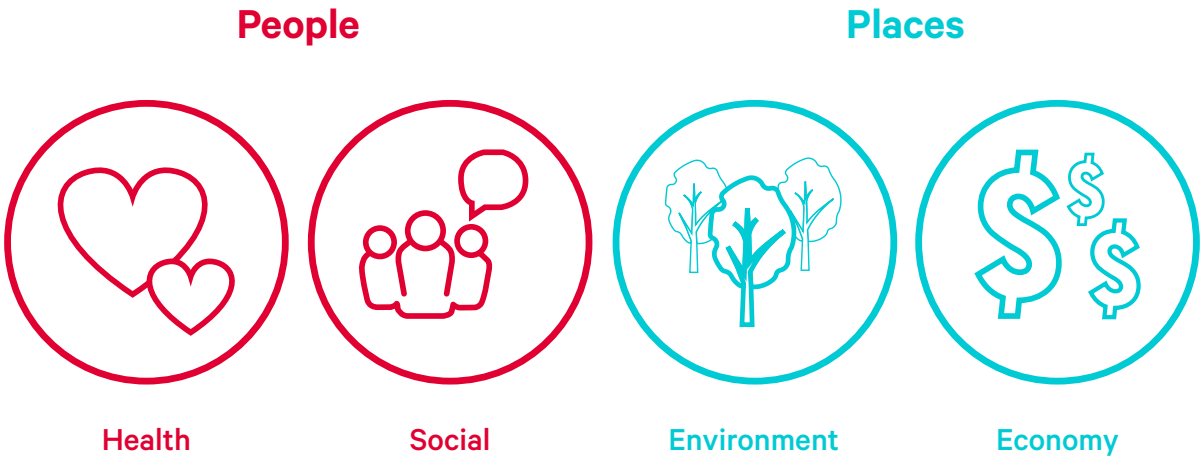
Walking and cycling benefits people and places.

People who participate in walking and cycling are rewarded through improved health and social wellbeing.

Places that offer good walking and cycling opportunities contribute to a healthy community and robust economy.

- Almost 5 out of 10 Australian adults do not meet the recommended guidelines for daily physical activity.[1]
- 8 of 10 Australian children do not meet the recommended guidelines for daily physical activity. [2]
- If no further action is taken to slow the growth of obesity then there will be 2.4 million more obese people in 2025 than in 2011-12 and $87.7 billion in additional costs[3]

1 Australian Bureau of Statistics, 2015
2 Active Healthy Kids Australia: Report Card on Physical Activity for Children and Young People, 2016
3 PWC: Weighing the Cost of Obesity: A Case for Action, 2015



Cost-benefit Examples

Investment in walking and cycling makes economic sense. More and more research is showing evidence that walking and cycling results in significant economic benefits, particularly in the area of health (refer diagram, bottom-right).

— Results indicate that the Queensland economy could expect almost $5 in economic benefits for every $1 invested in cycling infrastructure. **Economic return based on population data, user profiles and path typology.*

Source: Economic Benefits of Cycling Infrastructure At The Program Level, AITPM National Conference, 2017

— A benefit-cost comparison for selected infrastructure projects show for every $1 invested in bicycle infrastructure there are positive returns to the economy of between $3.80 - $7.40 (refer diagram right). This includes quantifiable benefits and costs.

Source: Queensland Government, State of Cycling Report, 2017

— The 2013 monetary value of the health benefits of walking is $2.77 per km and the monetary value of the health benefits of cycling is $1.40 per km for Australian adults aged 18 years and older.

Source: Transport and Infrastructure Council, M4 Active Travel, 2016

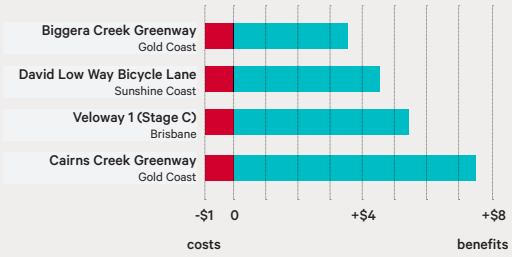
— The NSW Government Premier's Council for Active Living (PCAL) commissioned a study for developing a cost benefit methodology of walking. The methodology estimates that switching 5% of Sydney Metro daily car trips of under 1km to walking would save $134 million over five years.

Source: PWC, Estimating the Benefits of Walking, 2010

— Walk Score is an online interface that measures the walkability of any address. Walk Score aims to make it easier for people to evaluate walkability and transportation when choosing where to live. Houses with the above-average levels of walkability command a premium from $4,000 to $34,000 over houses with just average levels of walkability in the typical metropolitan areas studied.

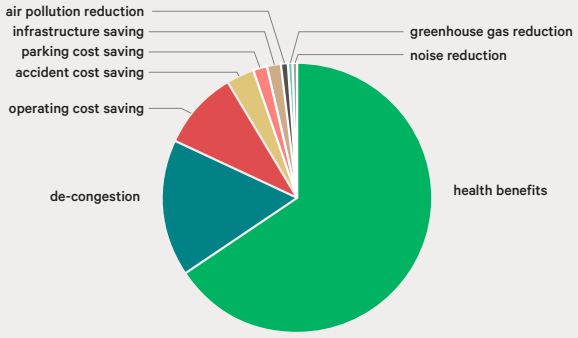
Source: CEO'S For Cities, Walking the Walk, 2009

Example Cost-benefit of Bicycle Infrastructure



Source: Queensland Government, State of Cycling Report, 2017

Possible Distribution of Benefits from Walking



Source: PWC, Estimating the Benefits of Walking, 2010

Refer also:

— Cycling Promotion Fund, Economic Benefits of Cycling for Australia, 2008
— Heart Foundation, Good for Business, 2011
— Victoria Transport Policy Institute, Evaluating Active Transport Benefits and Costs, 2017
— Victoria Transport Policy Institute, Economic Value of Walkability, 2017

Benefits of Walking and Cycling

Health

Research estimates about 65% of the overall benefits of walking are related to health (PWC, Estimating the Benefits of Walking, 2010).

In Australia, walking is the most popular form of regular exercise. Cycling is also popular. Australians are increasingly becoming less active and more overweight, posing significant health risks and increased pressure on public health services (Heart Foundation, Blueprint for an Active Australia, 2014).

Providing a supportive urban environment to encourage walking and cycling in the community. A key part of this is overcoming the barriers that discourage walking and cycling.

Improving public transport (trains, trams and buses) is important as it often involves walking or cycling to and from bus stops and stations.

Walking and cycling:

- Improves general health.
- Lowers blood pressure and improves heart health.
- Reduces weight and obesity levels.
- Improves mental health and wellbeing.
- Improves fitness.
- Increases life expectancy by reducing the risk of heart disease and stroke through improving conditions like high blood pressure, high cholesterol and diabetes.
- Reduces joint and muscular stiffness and pain.
- Increases happiness by reducing stress.
- Reduces stress and depression.

Social

Walking and cycling helps build communities by activating our streets and encouraging social interactions.

It increases our knowledge of local areas and people in the community. Walking and cycling movements are conducive to making connections with people through a nod, smile or greeting.

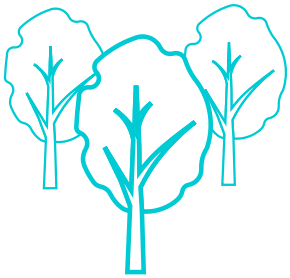
Connected communities are safe as more people out are and about providing passive surveillance of streets and parks.

The inclusive nature of walking and cycling means that everyone receives the rewards of improved health and social wellbeing. In particular, children and the elderly can gain greater independence.

Walking and cycling:

- Increases social interaction.
- Supports community life and more active and interesting streets.
- Reduces crime through passive surveillance.
- Increases road safety, with research showing increased street activity slows vehicles and increases driver alertness.
- Reduces traffic congestion.
- Enhances community pride through tactile experiences of place.
- People walking and cycling make environments safer and more enjoyable, and encourages others to do the same.

Environment



The environmental benefits of walking and cycling are largely related to shifts away from other transport modes. Moving from car-based transport reduces congestion and carbon emissions, whilst improving air-quality and local amenity.

Walking and cycling can connect with public transport for longer journeys that would normally be taken by car. This is important for the City of Marion given its distance from the Adelaide City CBD.

The combined environmental benefits of reducing noise and greenhouse gas emissions, and improving air quality equates to around 5.9 cents per km walked or cycled (SKM and PWC, Benefits of Inclusion of Active Transport in Infrastructure Projects, 2011).

Walking and cycling:

- Are sustainable transport options.
- Do not produce air-pollutants, noise pollution or carbon emissions.
- Increases local amenity by reducing the number of vehicles.

Associated infrastructure, such as appropriate street trees, provide shade, biodiversity and amenity.

Economy

Walking and cycling has many economic benefits and helps alleviate the societal and economic costs related to poor health, traffic congestion and carbon emissions.

At an individual level, walking and cycling is financially rewarding – being a low-cost alternative to the car.

Research demonstrates that connected communities which are pedestrian and cycle friendly boost local businesses. The findings show people who walk and cycle to shops are more likely to stay longer, visit more often and spend more money (Heart Foundation, Blueprint for an Active Australia, 2014). People who walk and cycle are more likely to shop in their local area, supporting jobs and revenue.

Investments in walking and cycling infrastructure are shown to increase the value of nearby residential and commercial properties, and sustain local retail areas and attract new small businesses.

Walking and cycling:

- Reduces economic costs related to poor health, including fewer sick days, and reduces pressure on public health services.
- Reduces congestion for quicker travel times and the number of road accidents.
- Improves urban quality.
- Improves local retail trade.
- Infrastructure is more efficient to maintain compared to roads.
- Has no parking, petrol, car repair and insurance costs.
- Infrastructure can increase the value of residential and commercial properties nearby.

Part 2

Vision for Walking and Cycling

Vision for Walking and Cycling

The City of Marion aims to provide infrastructure to support walking and cycling as an attractive and viable option for recreation and transport.

How walking and cycling aligns with the City of Marion Community Vision - Towards 2040.

Liveable

Where the viable use and amenity of walking and cycling environments is improved by the provision of shady street trees, planting and public art; where streets function as places that contribute toward community life.

Valuing Nature

Where walking and cycling provisions support community connection and interaction with the natural environment with resulting benefits to local flora and fauna.

Engaged

Where integrated promotion, education and advocacy encourages and increases participation in walking and cycling with resulting benefits to community health and wellbeing.

Innovative

Where innovative planning and design facilitate walking and cycling provisions that are inclusive, viable and safe transport options.

Prosperous

Where increased walking and cycling supports local business and drives economic development in the city.

Connected

Where a continuous and integrated network of walking and cycling routes connects people and places, both within and outside of the City of Marion.

City of Marion Community Vision > Towards 2040

New Directions

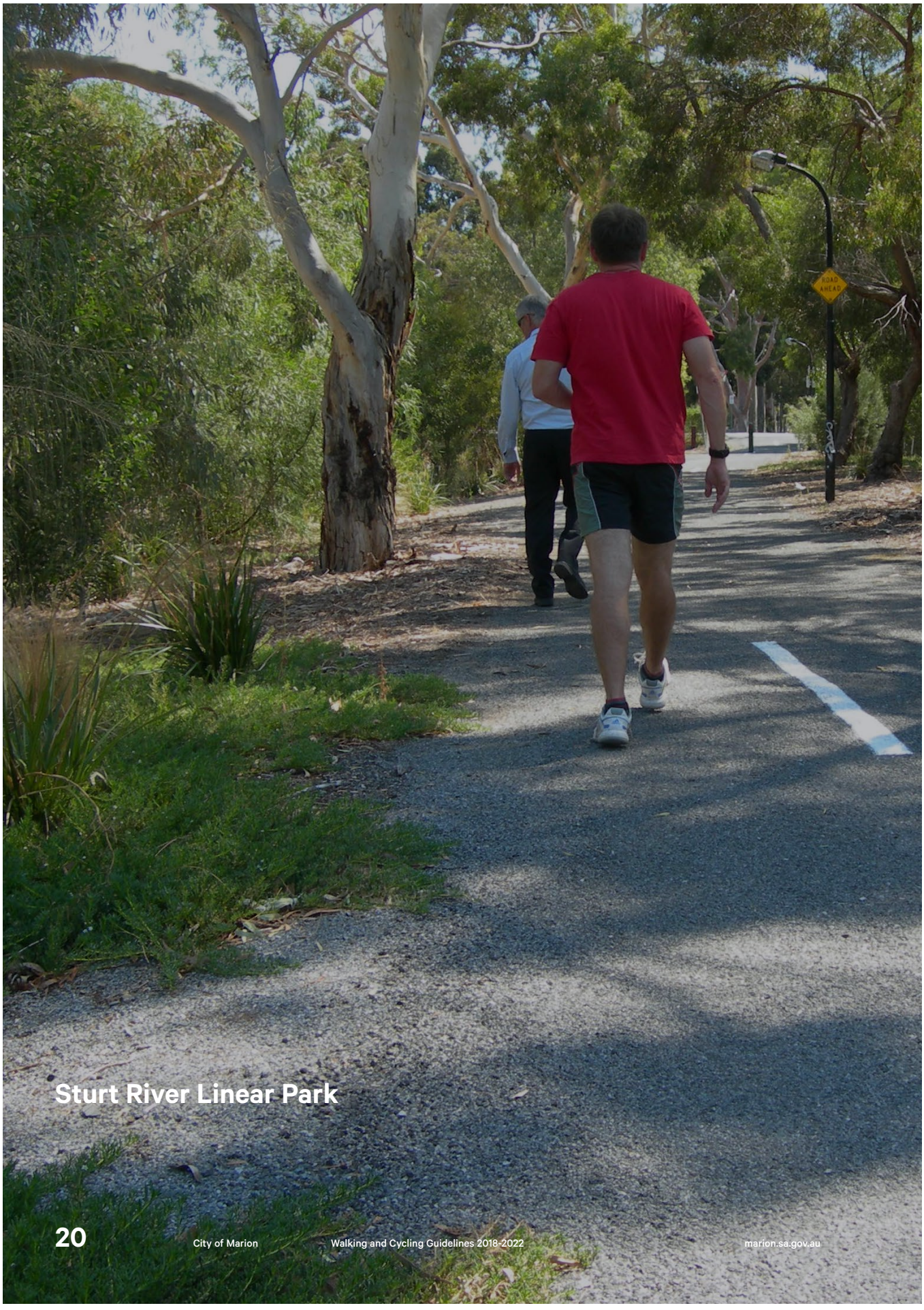
To achieve this vision, the emphasis is towards public realm, transport planning and design.

Walking and cycling is more than a transport option - it is a key part of city life. Many believe the best places in the world are those that are walking and cycling friendly. Places that integrate pedestrians and bike riders are often valued as the most liveable urban communities.

This vision for the City of Marion requires consideration of an integrated approach to all forms of transportation, where the health and wellbeing of the community is prioritised. Its focus supports an emphasis towards urban infill, increasing densities and transport corridor development as described in The 30-Year Plan for Greater Adelaide 2017 Update.

Progress has been made since the City of Marion adopted its initial Walking and Cycling Strategy in 2012. Implementation of projects, including the Mike Turtur Bikeway, Marino Rocks Greenway (Railway Terrace), Coast to Vines (Patpa Drive) and Ragamuffin Drive have enhanced the network.

Planning and design for implementation of the Tonsley Greenway, Marino Rocks Greenway (from Cross Road to Sixth Avenue) and Oaklands Crossing is underway.



Sturt River Linear Park

Part 3

Setting the Scene

This section 'sets the scene' within the City of Marion, including description of its character, demographics, policy context and major projects.

Key components include:

— Description
— North and South Character
— Destinations
— Major Routes
— Major Projects
— Policy Context
— Demographics

Description

The City of Marion is located about 10km south of the Adelaide CBD, covers 55 square kms, and stretches from the Glenelg to Adelaide Tramline in the north to Hallett Cove in the south.

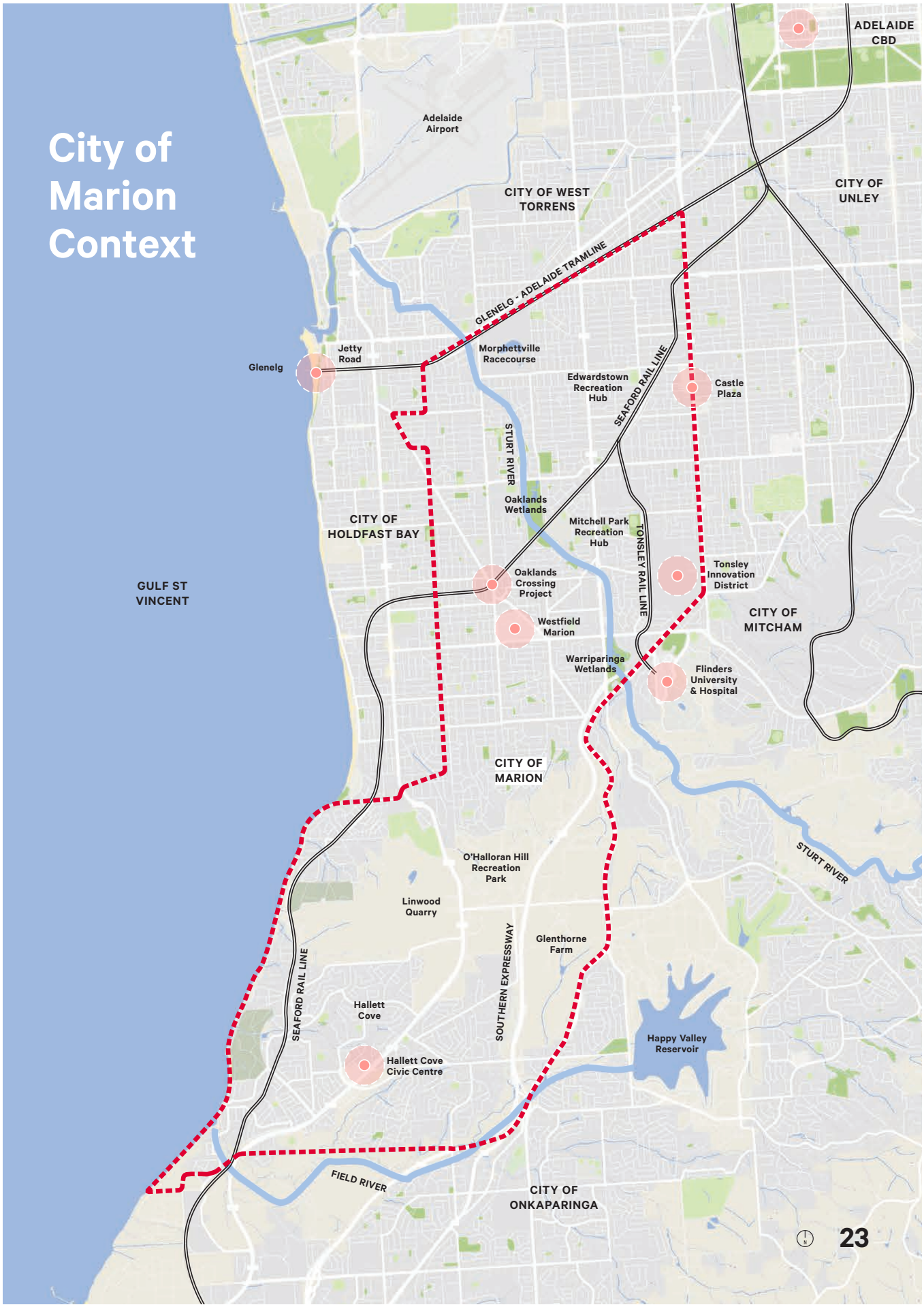
The City of Marion is predominantly residential in land use, with additional commercial, industrial and open space uses distributed throughout the area.

The map on the page opposite shows the council area and key features.

City Snapshot

Council area (hectares)	5,605ha
Council Length (north-south)	15km
Council Width (east-west)	4km
Distance from Adelaide CBD	5-20km
Estimated residential population (ABS, 2016)	90,602
Total (sealed) roads managed	470km
Shared-use paths (sealed)	20.75km
Footpaths	816.39km
Cycle lanes (kms)	25.71km
Walk only to work (2016, ABS) *Note: Does not include people who walk to public transport	1.4%*
Cycled to work (ABS, 2016)	0.9%
Public transport (bus, tram, train) to work (ABS, 2016)	10.8%
Households that do not have a car (ABS, 2016)	8.6%
Bus stops	528
Tram stops	8
Railway stations	13
Schools	24

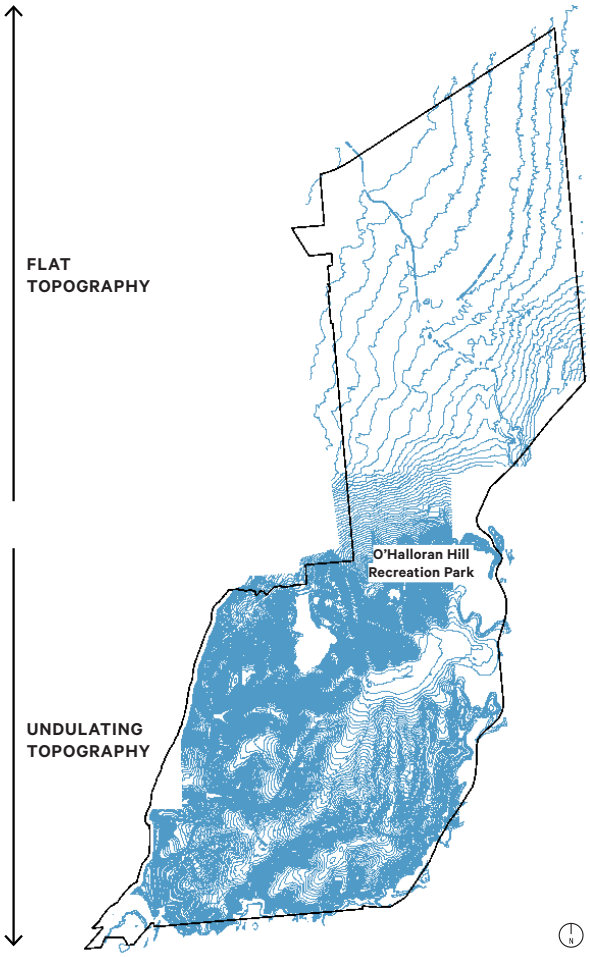
Source: Profile.id, 2016


City of Marion Context
ADELAIDE CBD
Adelaide Airport
CITY OF WEST TORRENS
CITY OF UNLEY
GLENELG - ADELAIDE TRAMLINE
Glenelg
Jetty Road
Morphettville Racecourse
Edwardstown Recreation Hub
SEAFORD RAIL LINE
Castle Plaza
STURT RIVER
Oaklands Wetlands
CITY OF HOLDFAST BAY
Mitchell Park Recreation Hub
TONSLEY RAIL LINE
Tonsley Innovation District
GULF ST VINCENT
Oaklands Crossing Project
Westfield Marion
CITY OF MITCHAM
Warriparinga Wetlands
Flinders University & Hospital
CITY OF MARION
O'Halloran Hill Recreation Park
STURT RIVER
Linwood Quarry
Glenthorne Farm
SOUTHERN EXPRESSWAY
SEAFORD RAIL LINE
Hallett Cove
Happy Valley Reservoir
Hallett Cove Civic Centre
FIELD RIVER
CITY OF ONKAPARINGA
23

North and South Character

The City of Marion's geography presents two distinct landscape character areas (north and south) as a result of different topography and form of development. Northern suburbs were primarily developed prior to the Second World War and follow a grid pattern. The southern suburbs, such as Sheidow Park and Trott Park, have developed incrementally over the past 40 years on undulating topography resulting in a more 'organic' urban layout. The north and south are separated by O'Halloran Hill Recreation Park and Marino Conservation Park.

Approximately three-quarters of City of Marion's population lives in the northern sector of the City.



North

— Older suburbs
— Grid-pattern
— Flatter topography
— Set-back from coast
— Some mixed use development
— Less open space and reserves
— Few large street trees, some in reserves
— Industry (South Road)

South

— Newer suburbs
— Curved layout with cul-de-sacs
— Undulating topography
— Adjacent to coast
— Views to coast
— Predominantly residential land use
— More open space reserves
— Few large street trees, some large copses in reserves

NORTH
Grid Layout. Few large street trees (St Lawrence Avenue, Edwardstown is the exception). Some larger trees in reserves and backyards.

SOUTH
Curved layout with cul-de-sacs. Very few large street trees. Some larger trees located in reserves.

Destinations

Key destinations within the City of Marion include:

1. Edwardstown District Growth Precinct
   - Castle Plaza Shopping Centre
   - Edwardstown Oval Soldiers Memorial Ground
2. Oaklands Recreation Precinct
   - Oaklands Wetland
   - Oakland Recreation Plaza
   - Marion Outdoor Swimming Centre
3. Oaklands Hub Growth Precinct
   - State Aquatic and Leisure Centre
   - Marion Cultural Centre
   - Westfield Marion
4. Warraparinga
   - Living Kaurna Cultural Centre
   - Warraparinga Wetland
   - Marion Holiday Park
5. Tonsley Growth Precinct
   - Tonsley Innovation District
   - Mitchell Park Sport and Community Centre
6. Marion Growth Precinct
   - City of Marion Administration Centre
   - Cooinda Community Centre
   - Marion Sports and Community Club
7. Hallett Cove Growth Precinct
   - Cove Civic Centre
   - Hallett Cove Shopping Centre
   - Cove Sport and Community Centre
8. Hallett Cove Foreshore

Major centres

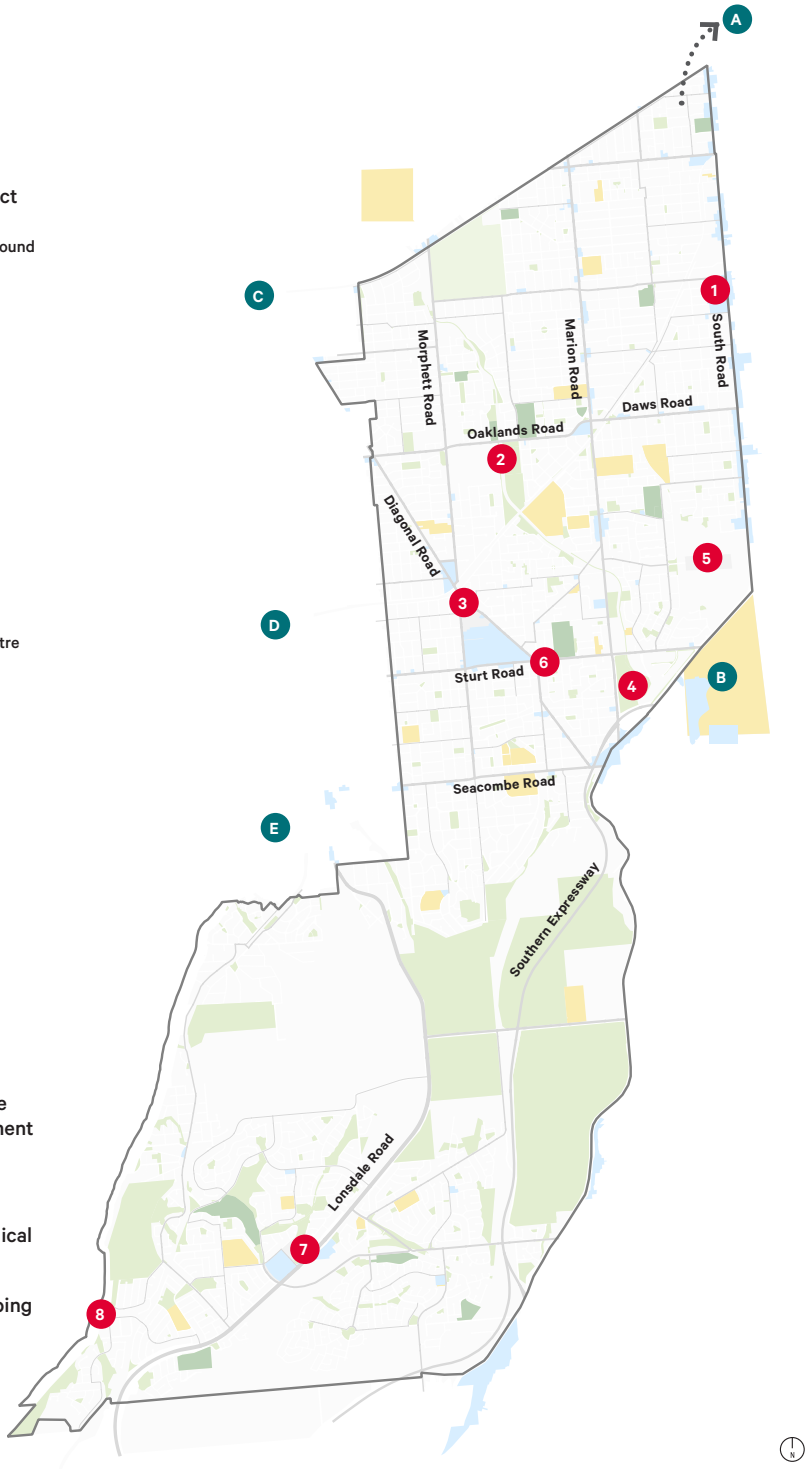
Schools and child care facilities

Key reserves / open spaces

Key sport and recreation

While located outside the City of Marion, the following destinations also influence movement patterns:

- A Adelaide CBD
- B Flinders University and Flinders Medical Centre
- C Glenelg Beach and Jetty Road Shopping Precinct
- D Brighton Beach and Jetty
- E Seacliff Beach and Brighton Caravan Park



Major Routes

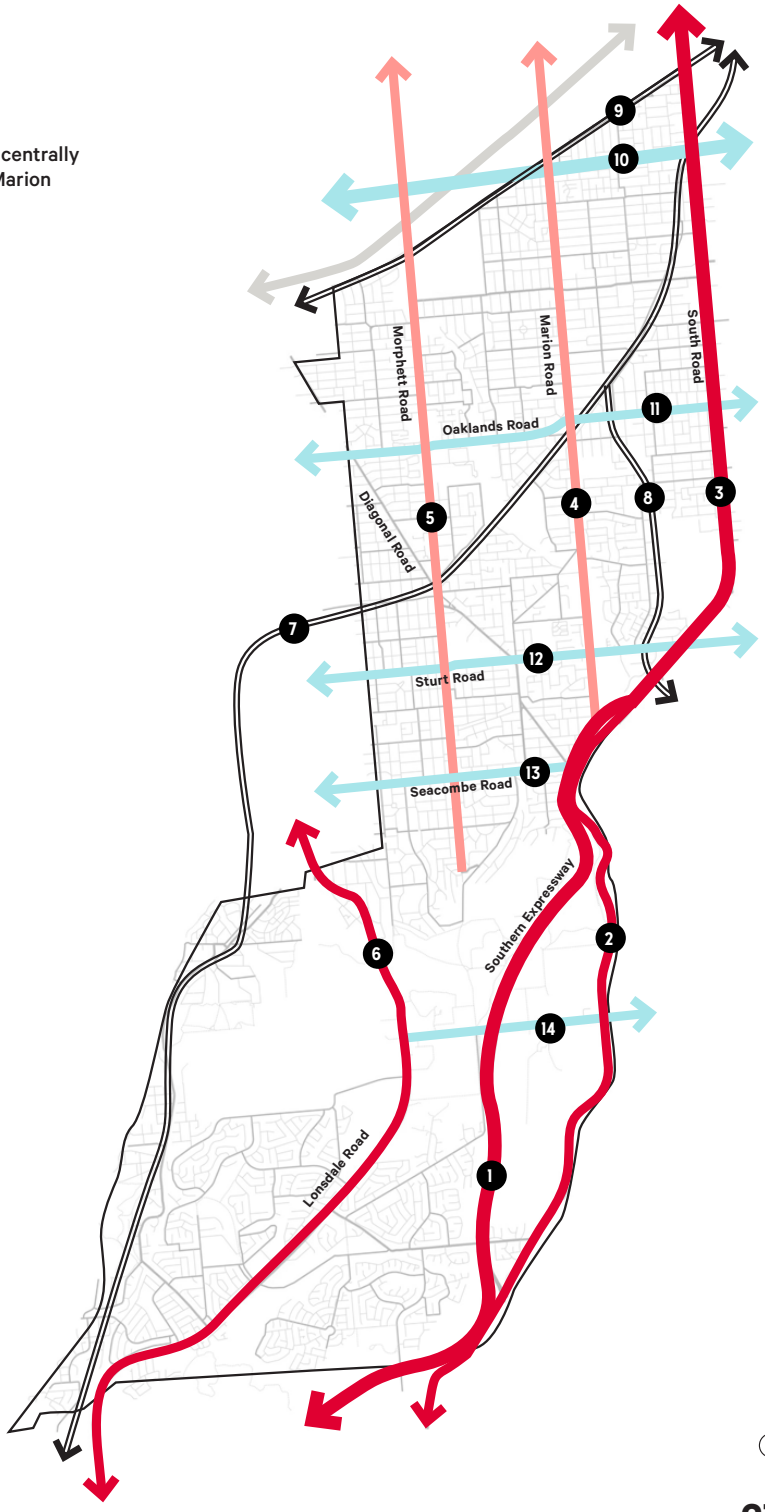
The City of Marion is located in the middle of Adelaide's southern suburbs. Like many other centrally located Local Government Areas, the City of Marion has a high proportion of through traffic.

Key north/south routes include:

1. Southern Expressway
2. Main South Road
3. South Road
4. Marion Road
5. Morphett Road
6. Ocean Boulevard / Lonsdale Road
7. Seaford Rail Line
8. Tonsley Rail Line and Flinders Link

Key east/west routes include:

9. Glenelg to Adelaide Tramway
10. Cross Road
11. Oaklands / Daws Roads
12. Sturt Road
13. Seacombe Road
14. Majors Road



Major Projects

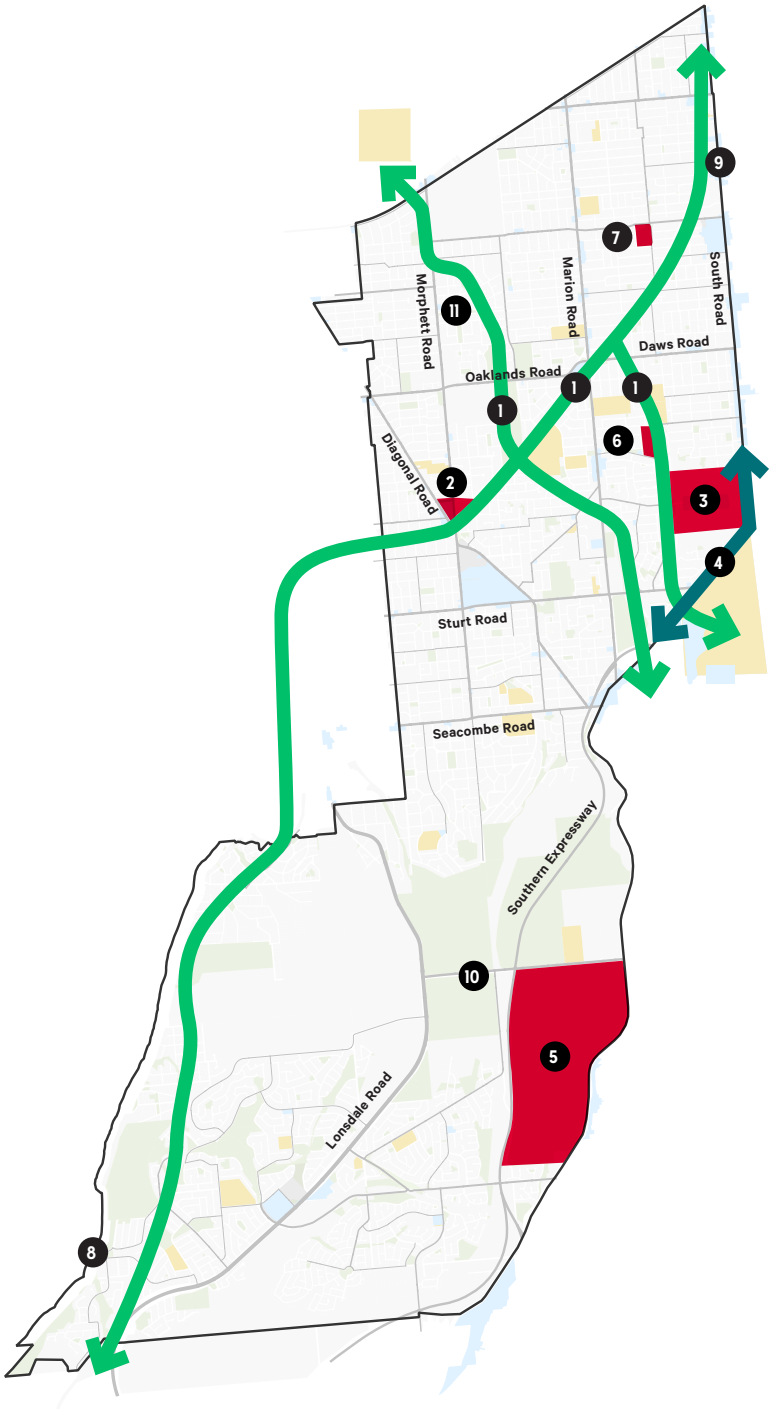
The City of Marion is undergoing change, with a number of major projects currently in the planning and development stage. A strategic approach is required for walking and cycling connections to be efficiently planned, integrated and implemented.

Major projects currently being planned and developed in the City of Marion include:

1. Greenways program for walking and cycling, including Tonsley Greenway, Marino Rocks Greenway and Sturt River Linear Park
2. Oaklands Crossing Project
3. Tonsley Innovation District
4. Darlington Upgrade Project and Flinders Rail Link
5. Planning for Glenthorne Farm
6. Mitchell Park Sports and Community Centre
7. Edwardstown Oval Soldiers Memorial Ground
8. Hallett Cove Foreshore Master Plan
9. Castle Plaza
10. Soccer Facility
11. Morphettville Park Sporting Club Re-development

Key walking and cycling considerations include:

- Connections and links being provided to the surrounding networks.
- Safe, convenient and enjoyable walking and cycling facilities.
- Appropriate input by suitably qualified transport planners, urban designers and/or landscape architects focusing on the needs of walking and cycling to DPA's.

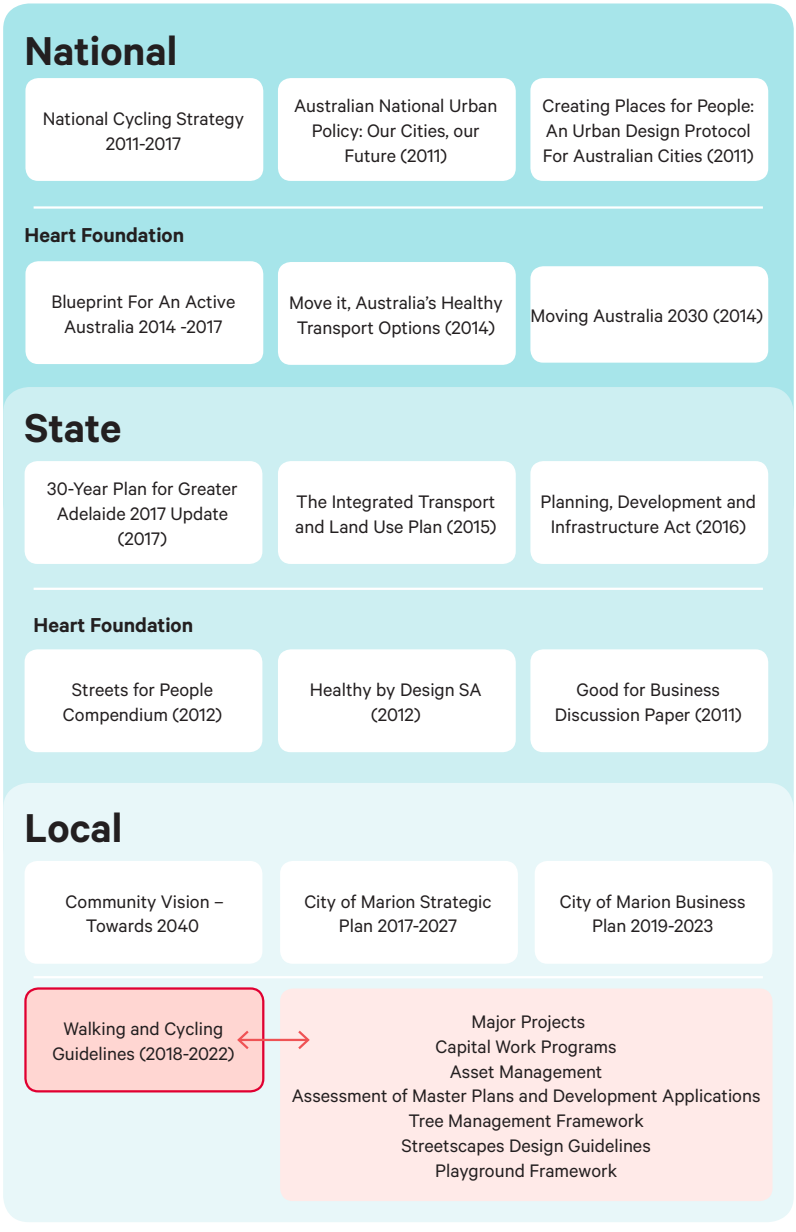

Morphett Road
Marion Road
South Road
Daws Road
Oaklands Road
Diagonal Road
Sturt Road
Seacombe Road
Southern Expressway
Lonsdale Road
1
2
3
4
5
6
7
8
9
10
11

Policy Context

Some of the key public policies and guidelines affecting walking and cycling are summarised in the adjacent graphic.

These Walking and Cycling Guidelines:

- Coordinate and direct pedestrian and cycle movement in the City of Marion in support of the strategic goals of Council for a Connected City.
- Align with key planning documents of the South Australian Government, including The 30-Year Plan 2017 Update.
- Inform the development of local policies as well as future capital and recurring work's budgets and transport strategies.



City of Marion Business Plan 2019-2023 *(to be resolved 2019)*

National

National Cycling Strategy 2011-2017

The National Cycling Strategy 2011-17 provides a framework that identifies the responsibilities of government, community and industry stakeholders to encourage more people to cycle.

While the National Cycling Strategy was due to finish at the end of 2016, the strategy has been extended until the end of the 2017. This provides an opportunity for the Australian Bicycle Council to conduct the fourth National Cycling Participation Survey in 2017. The future national approach to cycling (and walking) will be determined in 2018.

The Strategy is underpinned by six key priorities and objectives:

1 Cycling promotion.
2 Infrastructure and facilities.
3 Integrated planning.
4 Safety.
5 Monitoring and evaluation.
6 Guidance and best practice.

Blueprint for an Active Australia 2014-2017

'Blueprint for an Active Australia' provides the information for a national physical activity plan.

The aim of the national physical activity plan is to achieve increased levels of physical activity, leading to community-wide benefits in health, the environment, social policy and the economy.

Implementation will require Federal, State and Local Governments giving priority to physical activity and supporting the community.

State

The 30-Year Plan for Greater Adelaide (2017)

The 30-Year Plan for Greater Adelaide promotes a built-form structure that focuses Adelaide's growth along transport corridors and nodes.

Key targets of the 30-Year Plan relevant to this project are:

1 Containing our urban footprint and protecting our resources.
2 More ways to get around.
3 Getting active.
4 Walkable neighbourhoods.
5 A green liveable city.

There are limited areas available for greenfields development in the City of Marion. Future growth will focus development along train and tram corridors with strategic sites identified in the 30-Year Plan for growth and re-development. These include the Tonsley Innovation District (the former Mitsubishi site) and Transit Corridor Focused Developments at Edwardstown (Castle Plaza) and Oaklands Park (Oaklands Park-Marion Centre). Higher residential densities are planned for these areas.

Designated State Government 'Greenways', including Marino Rocks Greenway and Tonsley Greenway follow rail corridors and connect transit corridor focused developments. Transit corridor focused developments, in particular, are key pedestrian focus areas and necessitate a high-level of urban quality.

The Integrated Transport and Land Use Plan (2015)

The Integrated Transport and Land Use Plan seeks to facilitate a more vibrant Adelaide and a more connected South Australia. The Plan also focuses on active transport, extending our cycling and walking networks and catchments and working to improve the attractiveness and convenience of cycling and walking. Particularly for short trips.

One of the key objectives of the plan is to boost public transport patronage, walking and cycling, reduce reliance on cars, enhance health outcomes and improve the city's liveability.

Key walking and cycling objectives identified in the plan are:

— Extend and improve cycling and walking networks.
— Expand walking/cycling catchments.
— Incorporate cycling and walking options in planning.
— Improve driver education and awareness.

Development Plan Amendments (2018)

The proposed Development Plan Amendment (DPA) aims to amend the Marion Council Development Plan to support development of a range of housing types throughout the council. The proposed DPA also anticipates the introduction of mixed use within and adjacent to activity centres and along transit corridors. The DPA is subject to ministerial review and approval.

Planning, Development and Infrastructure Act (2016)

The Planning, Development and Infrastructure (PDI) Act 2016 establishes a planning and development scheme to replace the Development Act 1993. In addition, the PDI Act 2016 provides for infrastructure planning, implementation and funding.

Key outcomes of the PDI Act affecting walking and cycling include:

— Provision for infrastructure planning, implementation and funding.
— A recognition of ecological sustainability and the needs of diverse communities within the primary object of the State's planning system.
— Engagement of the community in the setting of planning policy through a Community Engagement Charter.

Streets for People: Compendium for South Australian Practice (2012)

The Streets for People: Compendium for South Australian Practice was released in 2012.

The Compendium:

— Identifies appropriate approaches to designing people-friendly streets.
— Collates national and international practice examples.
— Addresses standards and guidelines and their applicability.

Local

Community Vision – Towards 2040

The Community Vision - Towards 2040 identifies six themes that represent the shared values and aspirations that will guide how our city develops.

The six themes include:

— Liveable.

— Prosperous.

— Valuing Nature.

— Innovative.

— Engaged.

— Connected.

Greenways Program

The State Government's Policy is to promote Greenways (walking and cycling paths) that provide links across Metropolitan Adelaide.

Seven Greenway priority projects have been identified, with three of these passing through the City of Marion:

— Mike Turtur Bikeway.

— Marino Rocks Greenway.

— Tonsley Greenway.

City of Marion Strategic Plan 2017-2027

The City of Marion Strategic Plan provides a clear line of sight between the Community Vision – Towards 2040 and everyone involved in contributing to the vision, including Elected Members and staff.

The key themes relevant to the Walking and Cycling Guidelines are 'liveable', 'valuing nature' and 'connected'.

The plan outlines the following opportunities and strategies related to walking and cycling:

— Create a series of streetscaped avenues to improve the amenity of neighbourhoods.

— Provide communities that are safe and inclusive, embracing active living and healthy lifestyles.

— Encourage, where economically feasible, provision for the daily needs of residents within a short walk or bike ride.

— Provide a road network that connects neighbourhoods and supports safe walking, cycling and vehicle travel.

— Support a city that advocates improved public transport systems, linkages and networks that connect people to destinations.

City of Marion Business Plan 2019-2023

The City of Marion Business Plan explains the projects and programs Council will deliver over four years.

This document will be resolved by Council in 2019.

Demographics

Some of the key demographic data relating to walking and cycling is described below.

Journey to Work

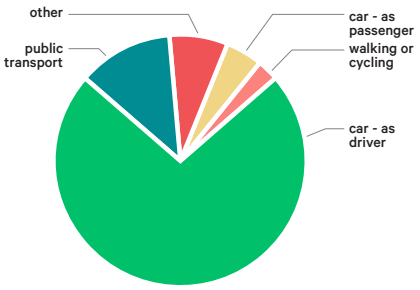
The method of travel to work for residents living within the City of Marion (ABS, 2016) shows that the most common transport method was private vehicles (69.3%).

Within the City of Marion (2016):

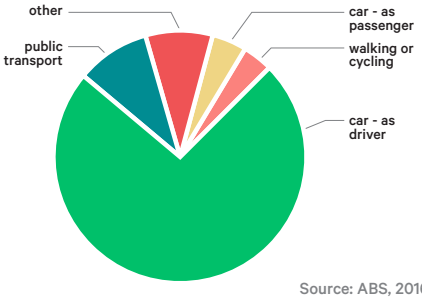
— **1.3% walked only*** to work compared to **2.1%** in Greater Adelaide.
— **0.9% cycled to work** compared to **1.1%** in Greater Adelaide.
— **10.8%** used **public transport** compared to **8.5%** in Greater Adelaide.
— **8.6%** (3,145) of households in the City of Marion **did not have a car** compared to **7.8%** in Greater Adelaide.

* The walk to work figure should be treated with some caution. It counts those that walk only and does not include those that walk to access public transport (estimated at approximately 80-90% of public transport passengers) and other forms of transport.

City of Marion



Adelaide Metropolitan Region



Source: ABS, 2016

Key points in developing the Walking and Cycling Strategy:

— With 69% of journeys by car there is significant scope for shifting towards other modes of commuting.
— The increasing understanding of the benefits of walking and cycling and with continuing improvements to walking and cycling infrastructure, it is anticipated that future figures will show an increase in numbers of persons walking, cycling and using public transport for commuting.

Ageing Population

Like many areas of Australia, the City of Marion has an ageing population.

Forecasts suggest that by **2036**, the City of Marion will have **18,955** persons over **65**, representing approximately **19%** of the total population (Forecast.id, 2016).

Key points in developing the Walking and Cycling Strategy:

— The ageing population increases the need to cater for gophers, wheelchairs and accessible path networks connecting to key facilities.

Size and Commuting Pattern

The City of Marion is approximately 5,600 hectares. As a means of comparison, this is about five times the size of Adelaide City Council (refer image bottom-left).

The area is 15 kms from north to south and 4 kms from east to west. At the northern end it is 5 kms from the centre of Adelaide and approximately 20 kms at the southern end (refer image bottom-centre).

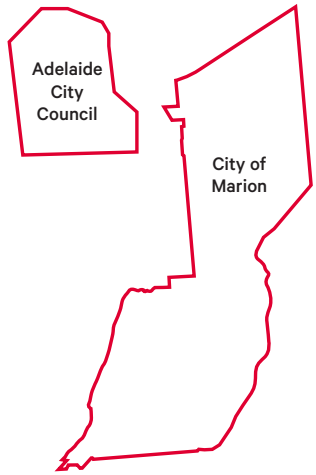
ABS data (2016) indicates most City of Marion residents work within the City of Marion (**18%**). The next highest is in the Adelaide City Council (**20%**). The neighbouring Councils follow next: West Torrens, Mitcham, Onkaparinga and Holdfast Bay (refer image bottom-right).

Combined, **72%** of City of Marion residents work in either the City of Marion, Adelaide City Council or an adjoining Local Government Area. This presents a significant opportunity for commuting by walking and cycling, or in combination with public transport.

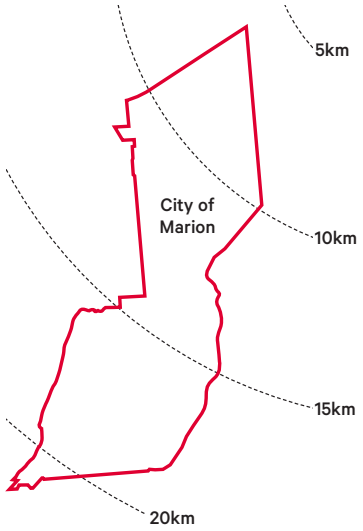
Key points in developing the Walking and Cycling Strategy:

- City of Marion is a large Local Government Area.
- Walking and cycling needs to effectively link with public transport for longer journeys.
- Public transport is seen as a leg of a walking or cycling trip. For example, providing walking and cycling facilities at the start and end of public transport journeys will help achieve greater participation.
- People who take public transport are 3.5 times more likely to meet the recommended physical activity levels for healthy lifestyles.

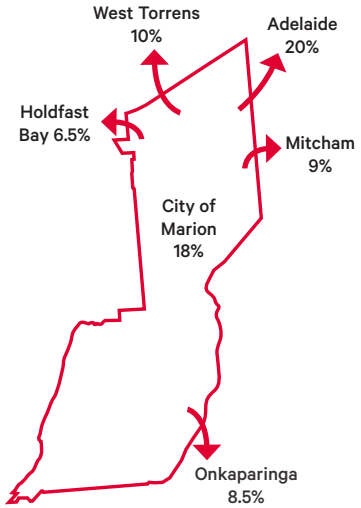
Size Comparison



Distance to Adelaide CBD



Where City of Marion Residents Work



Source: ABS, 2016


Marion Coastal Walk
36
City of Marion
Walking and Cycling Guidelines 2018-2022
marion.sa.gov.au

Part 4

Existing Walking and Cycling Network

This section reviews and evaluates the existing walking and cycling network within the City of Marion. It assesses the general performance of infrastructure and streets and includes a summary of the barriers to walking and cycling.

Key components include:

— Existing Walking and Cycling Network
— Key Walking and Cycling Assets
— Existing Streets
— Barriers to Walking and Cycling

Existing Walking and Cycling Network

Overview

The City of Marion has an established walking and cycling network that can be enhanced with investment in maintenance and asset upgrades.

Completion of the Mike Turtur Bikeway through Marion, sections of the Marino Rocks Greenway and upgrades to streets have enhanced the network since adoption of the Walking and Cycling Strategy 2012-2017.

Bikedirect

The Government of South Australia has developed Bikedirect maps locating bicycle routes across the Adelaide metropolitan area. The Bikedirect maps provide options for people with different abilities, illustrating main roads, bicycle lanes, local streets and off-road paths. The Bikedirect program has helped develop key routes, road crossings, and integrated facilities across different Local Government Areas.

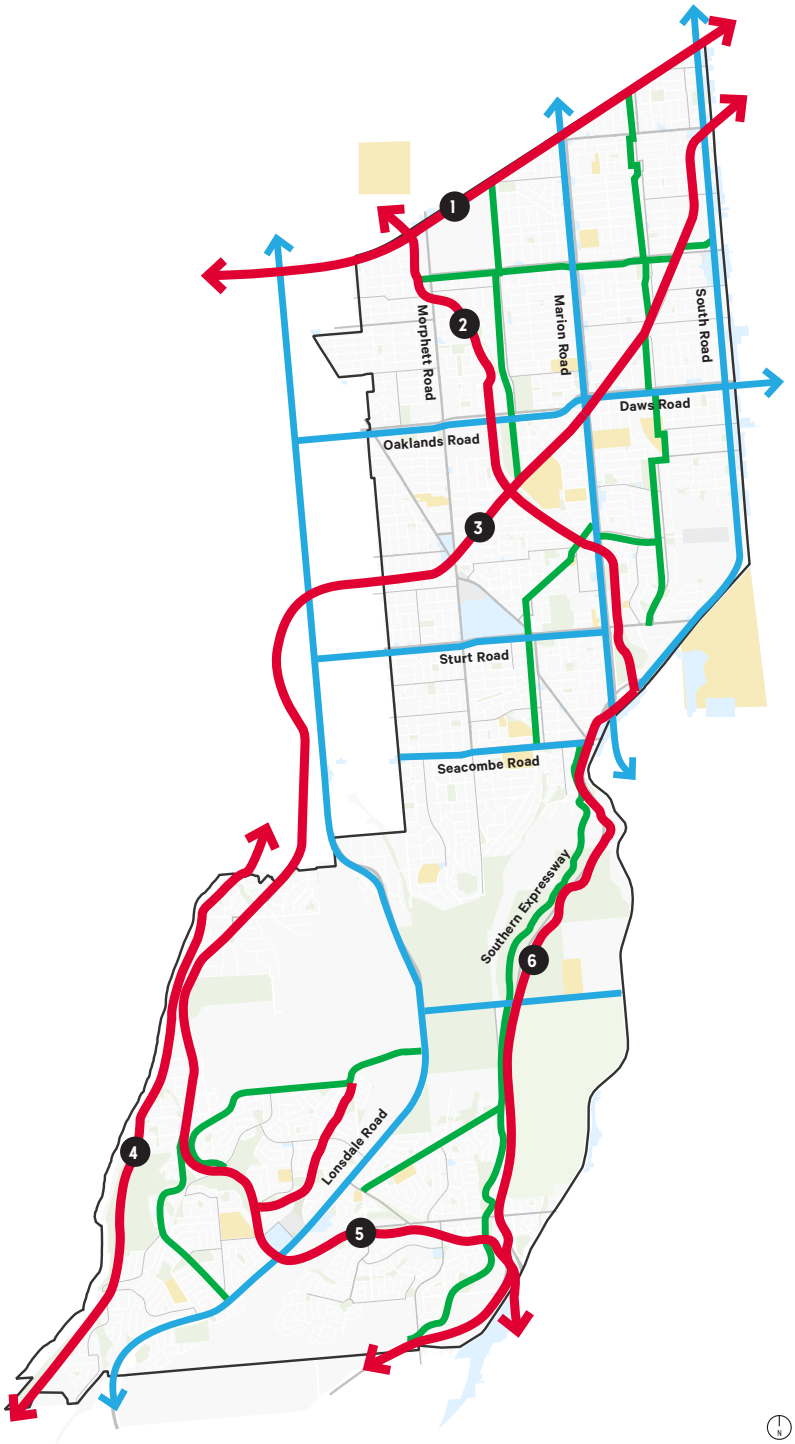
The Cycle Instead Journey Planner uses the Bikedirect network to generate cycling routes along main roads, bike lanes, local streets, off-road paths and some unsealed paths. The Journey Planner allows users to choose different options for considering topography, experience, road conditions and travel speed.

Key Existing Routes

Key existing walking and cycling routes within the City of Marion include:

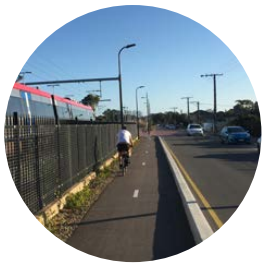
1. Mike Turtur Bikeway
2. Sturt River Linear Park
3. Marino Rocks Greenway
4. Marion Coastal Walk
5. Coast to Vines Rail Trail
6. Patrick Jonker Veloway

- Greenways (existing)
- Regional (existing)
- Local (existing)



Existing Walking and Cycling Network

The existing walking and cycling network in the City of Marion is comprised of the following infrastructure.

	Greenways	Arterial Roads	Sub-Arterial, Distributor and Collector Roads
			
Description	Major infrastructure corridors such as train lines, tramways, expressways and river corridors.	Major roads in State-level ownership, roads with heavy vehicles (Southern Expressway is included in Greenways).	Roads and streets that carry traffic within a particular area only. These connect residential streets with arterial roads.
Typical Existing Walking Infrastructure	Generally sealed shared-use pathways, 2.0-3.0m-wide.	North — Full-width, 'Brick' paving footpaths for main arterial roads and in front of schools. South — 1.2m-wide concrete footpaths on both sides of the street. Some sealed off-road paths are also provided.	— Generally similar to residential streets (refer adjacent). — Some sub-arterials have sections of full-width paving.
Typical Existing Cycling Infrastructure	Generally sealed shared-use pathways. Some mixed traffic on streets adjacent to railway corridor.	North — Most arterials have 1.2-1.5m on-road bicycle lanes. Cycle lanes often 'disappear' at intersections and most are periodic (clearways). South — Some roads have 1.2-1.5m bicycle lanes. Some sealed off-road paths are also provided.	— Most have mixed traffic. — Some provide bicycle lanes or marked shoulders (more so for sub-arterials). — Some are major bus routes.
Examples	Mike Turtur Bikeway, Sturt River Linear Park, Marion Coastal Walk (walk only), Marino Rocks Greenway (in development), Tonsley Greenway (future) Coast to Vines Rail Trail and Patrick Jonker Veloway.	Cross Road, South Road, Marion Road, Lonsdale Road, Oaklands Road, Daws Road, Morphett Road, Diagonal Road, Majors Road, Sturt Road, Seacombe Road, Main South Road and Flinders Drive.	Bray Street, Raglan Avenue, The Cove Road, Lander Road, Towers Terrace, Adams Road, Perry Barr Road, Davenport Terrace, Alawoona Avenue, Celtic Avenue.

Residential Streets	Parks and Reserves	Growth Precincts
		
Local streets, generally short lengths of street with a speed limit of 50km/h or less.	Urban parks, open space reserves, wetlands and formal gardens.	Key activity areas and retail centres.
North — 0.9-1.2m-wide concrete footpaths on both sides of the street. South — 0.9-1.2m-wide concrete (or brick paved) footpaths on one-or two sides of the street – most located against the kerb.	Mostly narrow 'footpath-style' concrete pathways, some shared-use, some walking only, some unsealed tracks.	Tends to reflect the surrounding road network rather than specific treatments. Hubs are often located adjacent to major roads (refer above).
Mixed traffic.	Limited 'formal' cycle paths or shared-use paths through reserves, particularly in the north.	Tends to reflect the surrounding road network. In some places bicycle lanes 'disappear' reverting to car parking.
Many and various, eg: William Street, South Plympton; Ailsa Avenue, Warradale; Wangary Terrace, Seaview Downs; Curlew Street, Sheidow Park; Allan Street, Marino.	Includes local and regional parks such as Oakland Reserve, Hazelmere Reserve, Glade Crescent Reserve and Cove Sport Reserve as well as DEWNR managed areas, including Hallett Cove Conservation Park, Marino Conservation Park and O'Halloran Hill Recreation Park.	— Oaklands Hub incorporating Westfield Marion, South Australian Aquatic and Leisure Centre, and Marion Cultural Centre. — Tonsley Innovation District , including Flinders University (adjacent to the City of Marion). — Hallett Cove Growth Precinct. — Edwardstown District Growth Precinct.

Key Walking and Cycling Assets

The following assets form the 'backbone' of the City of Marion Walking and Cycling Network.

Coast To Vines Rail Trail

The Coast to Vines Rail Trail is a sealed shared-use path for cyclists and pedestrians that follows the route of the original rail corridor from Marino to Willunga. The 3m-wide trail is approximately 37km in length, of which 8 kms is within the City of Marion.

The trail starts just south of the Marino Rocks Railway Station and travels south between Cove Road and the Seaford Rail line. The trail crosses the railway line at Hallett Cove Station, travelling east, crossing the Southern Expressway shared-use path near the intersection of Panatalinga, Southern Expressway and Main South Road, where it leaves the City of Marion Local Government Area. From there the trail continues south through Morphett Vale, Hackham, Seaford Rise, McLaren Vale and on to Willunga.

Sturt River Linear Park

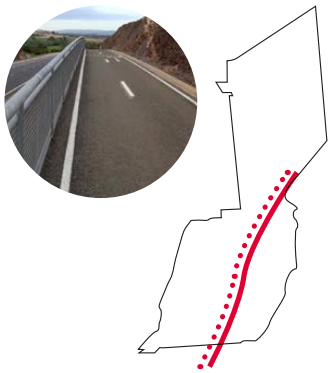
The Sturt River Linear Park includes a shared-use trail adjacent the Sturt River. Within the City of Marion the trail travels approximately 5 kms from Anzac Highway to Warriparinga (Sturt Triangle). The sealed shared-use path is 1.8-3.0m-wide and accessible by pedestrians, cyclists, prams and wheelchairs. Some sections of the trail are developed to a higher standard than others.

The Linear Park extends from the coast at Glenelg to the hills at Coromandel Valley. The Linear Park also links to walking trails at Warriparinga.

Mike Turtur Bikeway

The Mike Turtur Bikeway, previously known as Tramway Park, provides a 10 km shared-use path and recreational linear park extending from the Adelaide Parklands to Glenelg alongside the Glenelg to Adelaide Tramline.

The Bikeway links to Sturt River Linear Park at Maxwell Terrace.



Patrick Jonker Veloway

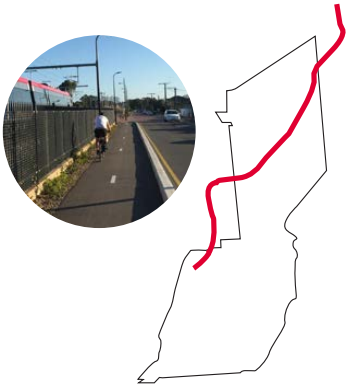
The Patrick Jonker Veloway is a sealed path on the eastern side of the Southern Expressway corridor. It is for exclusive use by cyclists. Pedestrians are not permitted.

The 3.5m-wide path is steep in places. It starts at the intersection of Marion and Main South Roads, heading south to intersect with the Coast to Vines Rail Trail, where it continues as a shared-use path.

Shared-use Paths

The western side of the Southern Expressway includes a series of unsealed paths and maintenance tracks.

A well-established trail follows the Southern Expressway corridor for the same extent as the Veloway (cycle only), providing an important pedestrian link. The path also links into trails of the O'Halloran Hill Recreation Park and Field River.



Marino Rocks Greenway

The Marino Rocks Greenway provides a 15 km long shared-use path extending from the Adelaide Parklands to the Coast to Vines Rail Trail at Marino Rocks and following the Seaford railway line.

The path alignment varies along the length of the route and includes off-road and on-road sections.

The path provides important connections to other walking and cycling infrastructure within metropolitan Adelaide, including the Patrick Jonker Veloway via the proposed Tonsley Greenway, Sturt River Linear Park and the Coast to Vines Rail Trail.

Marion Coastal Walk

Marion Coastal Walking trail forms part of the Adelaide Coast Park. This pedestrian trail (no cycle access) is 7.2 kms in length from Marino Esplanade to Hallett Headland Reserve. The trail is divided into five 'Walks' and travels through the Hallett Cove Conservation Park.

The trail surface varies, including sections of boardwalk, paving and compacted gravel.

Existing Streets

Whilst progress has been made since the adoption of the Walking and Cycling Strategy in 2012, many streets in the City of Marion are still car-focused providing little amenity for pedestrians or cyclists.

The following examples represent typical streets in the City of Marion that provide opportunities for enhanced walking and cycling facilities.

Opportunities for Upgrade

Seacombe Road

Arterial Road

Existing condition

— Small street trees.

— High vehicle speeds and volume.

— Wide vehicle lanes (~4.20m).

— Narrow bikelane (~1.2m).

— Wide footpath (up to 6m).

— Provides an important east-west link, particularly for cyclists accessing the Patrick Jonker Veloway.

Refer to Part 7 for streetscape upgrade opportunities

Minchinbury Terrace

Local Street

Existing condition

— Wide verge.

— Narrow footpath.

— On-street parking.

— Green Street sharrow linemarking.

— Forms part of the Marino Rocks Greenway.

Refer to Part 7 for streetscape upgrade opportunities

Images sourced from Google Maps

The following streets have been upgraded since adoption of the Walking and Cycling Strategy 2012-2017. The upgraded streets provide safer and more accessible walking and cycling supported by tree planting, signage, incorporation of Water Sensitive Urban Design (WSUD), furniture and amenity.

Recently Upgraded Streets

Railway Terrace

Collector Road

Key outcomes

— Off-road shared-use path with vegetated buffer to vehicles.

— Street trees for shade and amenity.

— WSUD for managing and filtering stormwater runoff.

Ragamuffin Drive

Local Street

Images sourced from Google Maps

Key outcomes

— Shared street with equal priority given to pedestrians, cyclists and vehicle users.

— Trees for shade and amenity.

— WSUD for managing and filtering stormwater runoff.

— Seating, bicycle parking and pedestrian amenity.

Barriers to Walking and Cycling

There are a number of barriers that discourage pedestrians and bike riders from using the walking and cycling network. A continued focus is needed to fund, plan and design walking and cycling friendly environments.

	Barriers	Issues	Response
1	**Poor Walking and Cycling Routes**  Narrow footpaths	Footpaths are often: — Narrow (often 0.9m). — Only one-side of the street (southern suburbs). — Disrupted by objects and furniture. — Located adjacent to the road edge (southern suburbs). — Not supportive of access for all (eg. wheelchairs and gophers). Bicycle lanes are often: — Narrow, (often 1.2m) with little separation from parked cars and travel lane. — Discontinuous, particularly at intersections of Greenways with main roads (eg. Sturt River Linear Park at intersection with Marion Road). — Inconsistent with adjoining Councils and DPTI roads. — Periodic, with parallel parking and clearways on most arterial roads (eg. Daws, Diagonal, Seacombe, Cross Roads).	Provide suitable walking and cycling routes that allow the physical space to walk and cycle safely and comfortably. This requires a shift from the minimum provision to encourage walking and cycling as viable transport options. Refer Part 6 - Strategy 1.
2	**Car Dominance in Streets**	— Lack of safety (and feeling vulnerable) from fast moving vehicles and higher numbers of vehicles. — Lack of pedestrian and cycling priority at traffic lights (long waits and distances to cross). — Lack of safe crossing points and often many vehicle lanes to cross.	Work with the requirements for safe and efficient traffic flow to balance the needs of pedestrians and cyclists. Refer Part 6 - Strategy 2.
3	**Poor Supporting Infrastructure**  Streets with no large street trees for shade	— Lack of large street trees for comfort and amenity (shade). — Limited rest spots such as seats. — Lack of priority for walking (eg. vehicle slip-lanes that disrupt access and driveway paving over footpaths (particularly in the southern suburbs that indicate priority is for vehicles). — Poor lighting along designated walking and cycling paths.	Develop routes for walking and cycling with supporting infrastructure, such as street trees and furniture for comfort and amenity. Refer Part 6 - Strategy 3.

	Barriers	Issues	Response
4	**Planning and Layout**  Periodic bicycle lanes	— Low-density and single land-use environments (as opposed to mixed-use) means residents often have large distances to travel to work or shops. — Indirect routes created by cul-de-sacs (particularly southern suburbs). — Poor integration of walking and cycling with public transport for longer journeys (eg. bikes not permitted on buses and trams - permissible on trains - uninviting bus shelters, lack of seats at bus stops. — Steep terrain (southern suburbs). — Main transport routes (eg. Main South Road, Southern Expressway, Noarlunga rail line) disrupt and limit movement, particularly east-west links.	Integrate walking and cycling with transport planning and the built form. Refer Part 6 - Strategy 1.
5	**Lack of Maintenance**  Poor construction maintenance of routes	— Walking and cycle paths can have cracks, holes, raised paving, broken glass, overhead vegetation, etc.	Develop plans for maintenance and management of walking and cycling infrastructure. Provide adequate maintenance budgets. Refer Part 6 - Strategy 4.
6	**Promotion and Education**	— Lack of information (eg. signage, maps) on walking and cycling routes and facilities.	Develop strategies for promotion, education, advocacy and support to encourage walking and cycling. Refer Part 6 - Strategy 5.

Part 5

Best Practice and Case Studies

This section reviews best practice examples and outlines opportunities for the City of Marion.

Walking and cycle path techniques include:

- Shared-use Paths
- Footpaths
- On-road Bicycle Lanes
- Separated Bicycle Paths
- Shared Spaces
- Green Streets

Walking and Cycling Techniques

Shared-use Paths

Technique 1

What

— Shared-use paths are where pedestrians and cyclists use the same infrastructure. They are mostly located off-road (in verges), parks and reserves.

Advantages

— Efficient in providing both cycle and pedestrian access together.
— Improves cyclist safety compared to on-road lanes, particularly for roads with higher speeds and vehicle numbers.
— 'Sharing' the path is generally well-understood by the community.

Disadvantages

— Can create conflicts between pedestrians and cyclist. Centre-line markings to encourage pedestrians and cyclists to travel on the left.

Footpaths

Technique 2

What

— Footpaths are areas designated for use primarily by pedestrians.
— Bicycle riders of all ages are now permitted to ride on the footpath unless a 'no bicycles' sign is present.

Advantages

— Provides a separate facility for pedestrians and slow moving cyclists.

Disadvantages

— Does not provide dedicated provision for cyclists.
— Risk of potential conflict between walkers and cyclists.

On-road Bicycle Lanes

Technique 3

What

— On-road bicycle lanes are marked lanes on roadways for exclusive use by cyclists.
— Buffered lanes provide extra clearance from adjacent parking and/or vehicle lane.

Advantages

— Cost-effective to existing streets with line marking.
— Generally well understood by the community (although not always respected).

Disadvantages

— Not kerb separated, therefore bicycle lanes may be encroached by vehicles (eg. veering left, accessing parking, opening doors).
— Can be an uncomfortable cycling environment particularly for less-experienced bike riders when there are higher vehicle volumes and speeds.

Separated Bicycle Paths

Technique 4

What

— Bicycle paths adjacent to a roadway but separated and protected by a kerb or other barrier.
— Separated bicycle paths can include contraflow lanes where a single bicycle path allows for multi-directional travel.

Advantages

— Provides a physically separated facility that offers increased safety and comfort for cyclists. The separation provides extra protection for cyclists compared to on-road lanes.

Disadvantages

— May require removal of parking or travel lane to install.
— More expensive than on-road cycle lanes.
— Can reduce pedestrian footpath space.
— Difficult to integrate where intersections are closely spaced.
— Can create potential conflict points at intersections, particularly with left turning vehicles.

Shared Spaces

Technique 5

What

— Where road space is shared between pedestrians, cyclists, vehicles and other road users.

Advantages

— Makes streets places for people, not just for vehicles.
— Creates a more vibrant place and an environment more suited to outdoor dining and personal interaction.
— Improves amenity and reduces through traffic.

Disadvantages

— Perceived increase in vehicle travel times.

Green Streets

Technique 6

What

— Green Streets prioritise walking and cycling over cars.
— Bike riders share the full-width of the roadway with vehicles.
— Pedestrian amenity is improved through increased trees and plantings.
— Also known as 'Bicycle Boulevards', 'Complete Streets' or Neighbourhood Greenways'.

Advantages

— Creates direct, comfortable and safe routes.
— Promotes lower vehicle volumes and speeds.
— Street trees and plantings provide an attractive and comfortable route for pedestrians and assist in stormwater management.
— Provides cyclists with alternatives to arterial road bicycle lanes and more comfortable conditions for less experienced riders.
— Cost-efficient, using existing infrastructure.

Disadvantages

— Difficulties in implementing slower speed limits.
— Perception of cyclists having control of the street and potential conflict.

Technique 1
Shared-use Paths

Design Guidance

1 Width

— Provide adequate width to comfortably accommodate pedestrians and bike riders. Preference for 4.0m width (5.0m in high-activity areas). Minimum width 3.0m.

— Allow 0.5m clearance from fixed objects on both sides of the path.

2 Paving

— Provide Hotmix (AC7) surface to pathways. Hotmix (AC7) uses a small aggregate to provide a smooth and consistent surface for walking and cycling. It is easily maintained and less likely to cause a trip hazard when compared to unit pavers.

— Refer also DPTI Guide to Bikeway Pavement Design, Construction and Maintenance for South Australia.

3 Line marking

— Provide centre-line marking to pathways with higher volumes of pedestrians and cyclists (as per Australian Standards). Line marking is generally not required for less busy routes (eg. local parks).

4 Planting and trees

— Use tree and groundcover planting adjacent pathways to assist in water management and provide shade and amenity.

5 Intersections and cross-overs

— Preference is for shared-use paths to be designed to have priority over driveways and minor side streets.

— Pedestrian and cyclist activated crossings should be provided at signalised intersections.

Useful references:

— DPTI Guide to Bikeway Pavement Design, Construction and Maintenance for South Australia.

— City of Marion Streetscapes Design Guidelines.

— Austroads Guide to Road Design Series.

Winsor Street, Unley

Marino Rocks Greenway, Railway Terrace, Ascot Park

Mike Turtur Bikeway
Case Study

The Mike Turtur Bikeway provides a 10km shared-use pedestrian and bicycle path along the Glenelg to Adelaide Tramline from South Terrace to Glenelg.

The City of Marion completed 4.6 km of the shared-use path in 2013 as an outcome of the Walking and Cycling Strategy 2012-2017. The section from Morphett Road to Brighton Road has been completed in partnership with the City of Holdfast Bay.

The bikeway provides the community with a high standard shared-use path that supports sustainable transport, community health and wellbeing and connections to tram stops and local destinations.

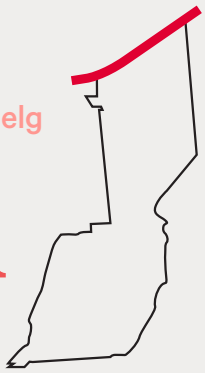
The bikeway links to sections of the Sturt River Linear Park and the Westside Bikeway (City of West Torrens).

The Mike Turtur Bikeway supports Marion's Walking and Cycling network by providing the infrastructure that makes walking and cycling viable for recreation and transport.

The shared-use path is supported with signs, public art and amenities.

10km
from CBD to Glenelg

4.6km
within COM



Mike Turtur Bikeway through Marion

'Link People' artwork by Groundplay

Signage and wayfinding

'Which Way' artwork by CHEB Art

Technique 2
Footpaths

Design Guidance

1 Width

— Provide footpaths of sufficient widths to allow comfortable pedestrian movement and clear access for all (eg. pram or wheelchair). Provide wider paths around activity areas such as shops and schools.

Street	Width
Local (minor streets)	— 1.8m preferred width (allows two wheelchairs to pass). — Consider full-width paving (kerb to property boundary) where appropriate. — 1.2m (absolute minimum) is permissible over a short distance where significant constraints exist. This allows one wheelchair access.
Arterials, hubs, schools, shops and activity areas:	— Full paving kerb to property boundary preferred. In the City of Marion this is generally 3m. — 2.4m minimum.

2 Paving

— Use surfaces that are flat and even, and slip resistant in accordance with Australian Standards.

— Consider use of permeable paving for stormwater run-off and to enhance street tree growth.

3 Trees

— Plant streets with suitable tree species that provide shade and amenity. Large street trees can improve a walking and cycling environment. Refer also Part 6 - Strategy 3 'Trees'.

4 Layout

— Give priority to footpaths over driveways and minor streets. Provide suitable paving at driveway crossovers to allow vehicle movement.

— Provide adequate sight distance for pedestrians and approaching vehicles at crossing points.

— Keep footpaths, kerb lines and medians straight where possible.

— Ensure footpath crossfall slope is less than 1 in 40 (2.5%). Incorporate access for people with disabilities.

— Avoid the use of barricades and bollards.

— Locate objects (street furniture, shop signage) in consistent locations along footpaths to provide a clear and predictable pedestrian walkway.

— Align paths and kerb ramps to provide direct routes for crossing intersections.

Useful references:

— DPTI Guide to Bikeway Pavement Design, Construction and Maintenance for South Australia.

— City of Marion Streetscapes Design Guidelines.

Typical footpath

Footpath and cycle lane with two rows of large trees providing shade and amenity

Technique 3
On-road Bicycle Lanes

Design Guidance

1 Width

— Provide on-road bicycle lanes of appropriate width (Austroads, 2017: Cycling Aspects of Austroads Guides).

Speed limit	Width
60km/h	1.5m (preferred) 1.2 - 2.5m (acceptable range)
80km/h	2.0m (preferred) 1.8 - 2.7m (acceptable range)

2 Buffers

— Where space allows, provide buffers to:

a. Parallel parking for door opening clearance.

b. Vehicle travel lanes.

— Buffers provide cushion space between cyclists and vehicles in the travel lane and parked cars. Buffers are important where there are higher vehicle speeds and volumes. The Austroad Guide recommends a 'buffer' width of 0.4-1.0m to parallel parking (widths vary for angle on-street parking). Where space prohibits a full-buffer, an extra thick white edge line to the travel lane can also be effective.

3 Surface

— Provide smooth surfaces for comfortable and safe travel without obstacles. Bikes have narrower tyres than vehicles and are more vulnerable to rough surfaces.

4 Colouring

— Provide green coloured surface treatment at busy intersections and conflict points to promote cyclist safety. Green coloured treatments are used to distinguish the bicycle lane and alert drivers and cyclists of conflict areas. The Cycling Aspects of the Austroads Guide states that green coloured surface treatments 'should be used sparingly to maintain effectiveness'.

5 Intersections

— Provide exclusive space for cyclists at intersections (refer image bottom right). Ensure bicycle lane continuity at intersections ensuring they do not 'disappear'.

6 Maintenance

— Provide regular maintenance for a smooth cycling surface.

Summary:

On-road bicycle lanes can provide a safe and efficient cycle facility when implemented with:

1 Appropriate width.

2 Buffers to parallel parking and travel lane as required.

3 Smooth surface treatment.

4 Colouring at conflict points.

5 Continuity at intersections.

6 Regular maintenance.

Standard on-road bicycle lane

On-road bicycle lane with colouring at intersection

Technique 4
Separated Bicycle Paths

Types of separated bicycle paths

There are three main types of separated bicycle paths (refer diagram and images across):

Channel Bicycle Path

— Channel paths use existing road paving and stormwater infrastructure but add a wide-kerb separating the bicycle lane from vehicles. The bicycle lane is a 'channel' between the footpath and new kerb.

Raised Bicycle Path

— A raised path is located on footpath level and provides an exclusive bicycle path clearly distinguished from a walkway for pedestrians.

Parking Protected Bicycle Path

— Parking protected bicycle paths are exclusive bicycle lanes located against the kerb and separated from the vehicle travel lane by a parallel parking lane.

Determining whether to use a channel, raised or parking protected path depends on existing site conditions such as width of road reserve, footpath condition and location of stormwater infrastructure.

Design Guidance

1 Extent

— Implement over a reasonable length to provide a useful link.

2 Width

— Provide adequate width (refer Austroad Guides).

— Provide a buffer that is sufficiently wide to allow bicycles to safely pass open car doors on the passenger's side and allow room for passengers to disembark or unload.

3 Kerb

— Consider whether to use full-kerb, semi-mountable kerb or flush kerb.

4 Planting

— Provide trees and plantings for amenity and shade, and to define the separated bicycle path areas.

— Include WSUD planting adjacent paths where possible.

5 Intersections

— Give priority to cyclists at intersections with minor streets and driveways.

— Restrict parking at main intersections and convert the raised bicycle paths to cycle lanes to increase visibility of cyclist for motorists.

— Consider priority signal phases for cyclists.

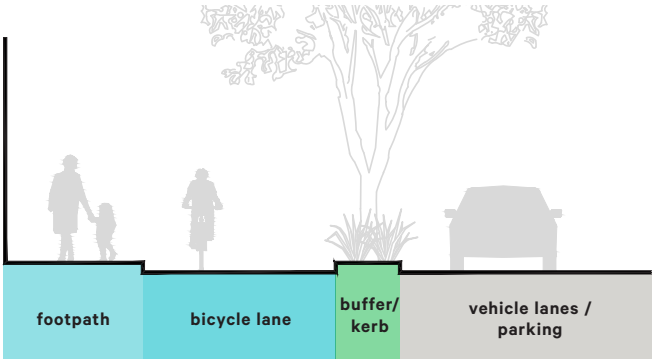
6 Colouring

— Provide green surface treatment at intersections to differentiate the bicycle lane from other roadway and footpath features.

Useful reference:

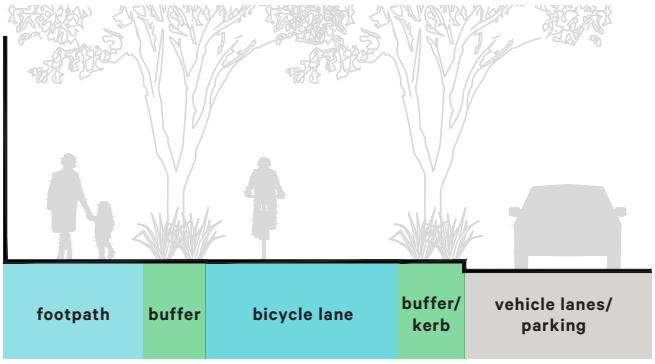
— Austroads Guide to Road Design Series.

Channel Bicycle Path



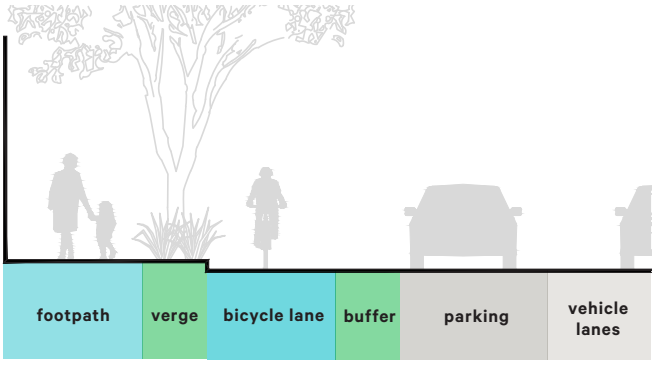
Channel bicycle lane, Frome Street Bikeway, Adelaide

Raised Bicycle Path



Raised bicycle lane, Bourke Street Cycleway, Sydney

Parking Protected Bicycle Path



Parking protected bicycle lane, Portland

Technique 5
Shared Space

Design Guidance

1 Layout and design

— Design shared spaces with people in mind.

— Do not 'over-design' streets with clutter and infrastructure.

— Increase the level of ambiguity for drivers so they drive slowly and understand pedestrians and cyclist have priority.

— Allow access for loading and emergency vehicles.

— Integrate tree planting to improve amenity and assist circulation.

— Incorporate street furniture that enhances pedestrian priority and amenity.

2 Paving

— Use paving to define shared spaces as a pedestrian-focused environment (refer Part 6 - Strategy 3 'Paving').

— Consider a single surface (ie. no kerb and gutters) that allows free flow of pedestrian movement and water sensitive urban design opportunities.

3 Vehicle speeds and volumes

— Use traffic calming devices and speed limits (refer Part 6 - Strategy 2).

— Use diversion techniques to reduce traffic from adjoining streets.

Useful Reference:

— Streets For People: Compendium For South Australian Practice.

— City of Marion Streetscapes Design Guidelines.

Shared space, Charenton-le-Pont Town Centre, France

Shared space, Leigh Street, Adelaide

The rebuilding of New Road, Brighton, UK as a shared space resulted in a 162% increase in pedestrians and a 600% increase in people gathering and socialising.

2010, Gehl Architects: Paving the way for city change: Brighton New Road Case Study.

Ragamuffin Drive
Case Study

Ragamuffin Drive in Hallett Cove demonstrates this approach to a shared space design for pedestrians, cyclists and motorists.

The design slows traffic through diversion techniques, paving and landscaping.

The street integrates WSUD initiatives, including raingardens, to capture and filter stormwater runoff.

85% percentile average vehicle speed

42 km/h
before upgrade

28 km/h
after upgrade

Shared space, Ragamuffin Drive, Hallett Cove

Example of pavement treatment used to slow vehicle traffic

Technique 6
Green Streets

Design Guidance

1 Traffic calming

— Reduce vehicle speeds to 40km/h (or below) using traffic calming methods and speed limits.

— Reduce the width of streets, plant street trees in parallel parking areas and narrow entrance and exit points to promote pedestrian and cycle priority (refer Part 6 - Strategy 2).

2 Traffic reduction

— Undertake Local Area Traffic Management to divert through-traffic and reduce vehicle numbers. Preference is for less than 500 per day.

— Consider strategic 'dead-ends' for vehicle traffic and creation of pocket parks. Ensure pedestrian and cycle access is maintained.

— Maintain local traffic access.

3 Branding Green Streets

— Provide a distinctive look to Green-Streets recognisable to motorists, cyclists and pedestrians.

— Use large cycle pavement signs (sharrows) and directional signage.

4 Prioritise travel

— Undertake Local Area Traffic Management to adjust give ways/stops allowing Green Streets to have priority for travel and reducing disruptions for bicycle riders.

5 Intersection treatments

— Provide safe crossing of major roads to link Green Streets.

6 Pedestrian amenity

— Enhance pedestrian amenity through suitable paving, large street trees and planting to assist in stormwater management (refer Part 6 - Strategy 3).

Green Street, Mike Turtur Bikeway

Neighbourhood green street, Portland

Minchinbury Terrace, Marion

Beulah Road bicycle boulevard
Case Study

Beulah Road bicycle boulevard provides a safe on-street cycling route between Portrush Road and Fullarton Road, Norwood.

The bikeway offers an alternative to cycling on main arterial roads, such as The Parade.

The design incorporates safety and amenity improvements, including paving, trees, planting and signs.

The boulevard incorporates bicycle safe round-a-bouts and crossings at intersections with local streets.

Key objectives of the boulevard include:

— Providing safer and more attractive routes for people to cycle.

— Reducing traffic volumes and speeds.

— Providing shared roadway for vehicles and cyclists.

— Improving pedestrian accessibility and safety.

— Enhancing connections to local hubs.

— Providing Streets for People.

Proposed intersection design incorporating bicycle oriented crossing

Bicycle oriented intersection

Summary

Walking and cycling solutions are influenced by individual circumstances such as vehicle speed and volumes, movement hierarchy and physical constraints. Low vehicle speed and less busy streets are generally more suited to mixed traffic solutions. Higher vehicle speeds and busier streets are more suited to off-road separated paths.

Best practice examples provide a 'tool-box' of walking and cycling solutions that may be applied within the City of Marion.

The various techniques are by no means definitive. Other solutions may be explored to ensure appropriate practical outcomes for specific sites.

The City of Marion Streetscapes Design Guidelines provides design solutions, materials and templates.

The table below provides a general guide on where to integrate different path options.

Path Option	Where to Apply					
	Greenways	Arterials	Collectors	Residential streets	Parks and reserves	Hubs
Shared-use off-road paths	●				●	
On-road bicycle lanes		●	●			●
Separated bicycle lane	●	●	●		●	●
Footpaths	●	●	●	●	●	●
Shared spaces					●	●
'Green-Streets'	●		●	●		

Table: General guide on where to investigate different path options

Best Practice - Jan Gehl

Jan Gehl is a Danish architect and urbanist who focuses on city's activation through walking and cycling. He has undertaken studies in Australian cities, including Adelaide.

Recommendations from Jan Gehl to enhance walking and cycling are:

1 Locating the cycle path between parking and footpath.
2 Providing wide footpaths clear of obstacles.
3 Providing bicycle lanes on a raised level.
4 Avoiding guard rails to allow freedom of movement for pedestrians.
5 Increased presence and width of walking and cycling infrastructure.
6 Eliminating slip lanes.
7 Using parallel parking rather than angle parking.
8 Providing active built edges.

Jan Gehl, Cities for People, 2010

'The best cities in the world are those that are pedestrian and cycle friendly'.

Jan Gehl

Examples of best practice walking and cycling infrastructure


Example Footpath and Water Sensitive Urban Design
Adelaide
64
City of Marion
Walking and Cycling Guidelines 2018-2022
marion.sa.gov.au

Part 6

Recommendations

This section sets out strategies to continue the improvement of walking and cycling in the City of Marion.

The preferred approach to delivery is an integrated program that responds to challenges and opportunities. Where possible the emphasis is on achieving outcomes through existing processes rather than new ones.

The Strategic Approach

This section of the guidelines is divided into five-strategies:

Strategy 1. Planning the Route

— Allowing space to walk and cycle.

— Integrated with built form.

— Shift to a balanced planning approach considering the needs of pedestrians, cycles and cars.

Strategy 2. Working with Vehicles

— Shift from car-dominance.

Strategy 3. The Details

— For safety, comfort and amenity.

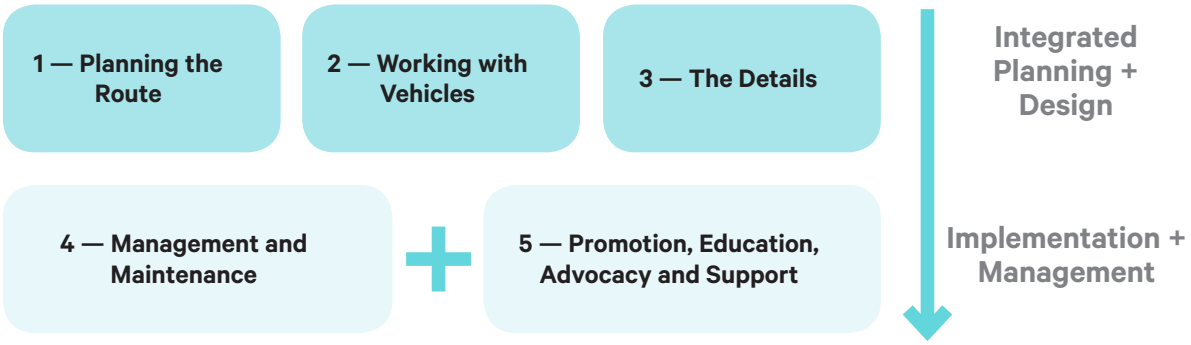
Strategy 4. Management and Maintenance

— For ongoing use and function.

Strategy 5. Promotion, Education, Advocacy and Support

— Encouraging walking and cycling.

Continued implementation of the recommendations outlined in these guidelines will provide the platform for improving the function and amenity of walking and cycling so they continue to be viable transport and recreation options.



Strategy 1
Planning the Route

Recommendation 1: Develop an integrated network of walking and cycling routes, in accordance with the Walking and Cycling Network Plan.

Overview

'Planning the Route' includes new projects and upgrade and maintenance of existing infrastructure.

The Walking and Cycling Network Plan (refer overleaf) illustrates existing and proposed routes for expanding the pedestrian and cycle network across the City of Marion.

The plan provides an integrated network and hierarchy of routes. The routes are indicative and subject to area specific studies (eg. Castle Plaza precinct).

For many areas within the City of Marion, improving the walking and cycling environment simply means making better use of the existing space.

The plan will be reviewed and updated as State Government, development projects, new facilities and community needs develop.

Walking and Cycling Network Plan

The Walking and Cycling Network Plan:

— Provides an integrated network connecting key locations, including retail hubs, schools and major open spaces.

— Offers a hierarchy of Greenways, Regional and Local walking and cycling routes.

— Plans efficiently, by connecting with and expanding from existing walking and cycling infrastructure.

— Includes routes that connect to key places and locations adjacent the City of Marion (eg. Flinders University and Glenelg).

— Incorporates the Bikedirect network as well as providing new opportunities.

The Walking and Cycling Network Plan is structured on three 'levels' - Greenway, Regional, and Local, based on the significance and context of the route. The hierarchy assists in the legibility of the network both on the ground and on paper.

Greenways

Greenways are located along major infrastructure corridors such as train lines, tramways and expressways providing important connections throughout Adelaide.

In the City of Marion, Greenways include the Coast Park, Mike Turtur Bikeway (along the Tramline), Sturt River Linear Park, Marino Rocks Greenway (along the Seaford Rail line), Tonsley Greenway (along the Tonsley Rail line), Patrick Jonker Veloway (along the Southern Expressway) and Coast to Vines Rail Trail.

Greenways form the 'backbone' of the walking and cycling network in the City of Marion. Typically, Greenways are shared-use off-road paths. In some locations, Greenways may include streetscape upgrades (Green Streets) or pedestrian only paths (Marion Coastal Walking Trail).

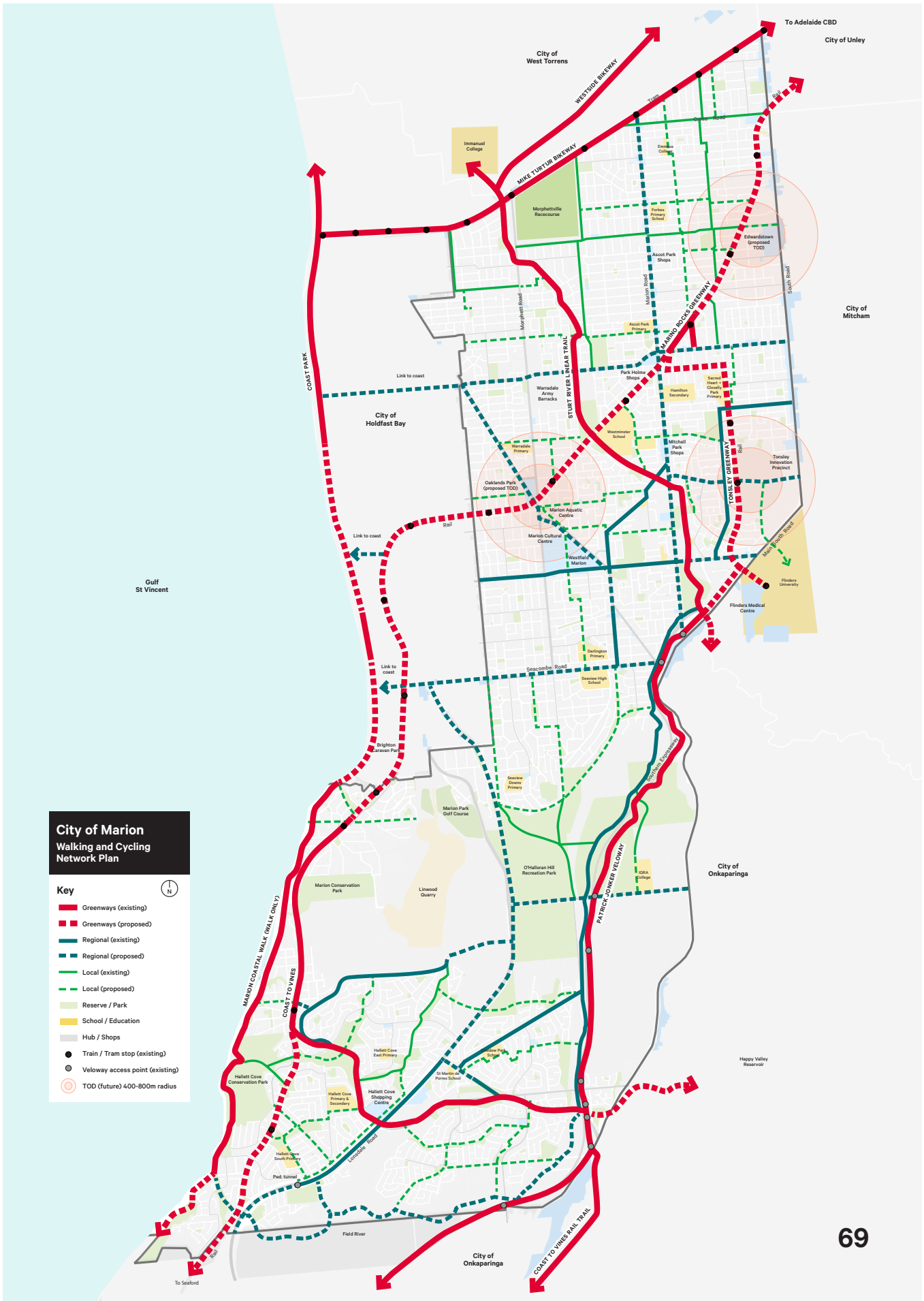
Regional

Regional routes are a level below Greenways and provide regional connections. They include both off-road and on-road treatments.

In the City of Marion regional routes include Field River shared-use path (proposed), Lonsdale Road shared-use path, Seacombe Road, Marion Road, Daws Road, Oaklands Road and Perry Barr Road. They include the existing shared-use paths adjacent to the Southern Expressway.

Local

The local network is generally located in reserves, local and collector roads. These provide connections to local destinations and act as links to Greenways and Regional routes.


City of Marion
Walking and Cycling Network Plan
Key
Greenways (existing)
Greenways (proposed)
Regional (existing)
Regional (proposed)
Local (existing)
Local (proposed)
Reserve / Park
School / Education
Hub / Shops
Train / Tram stop (existing)
Veloway access point (existing)
TOD (future) 400-800m radius
To Adelaide CBD
City of Unley
City of West Torrens
WESTSIDE BIKEWAY
MIKE TURTUR BIKEWAY
Immanuel College
Morphettville Racecourse
Edwardstown (proposed TOD)
Ascot Park Shops
South Road
City of Mitcham
MARINO ROCKS GREENWAY
COAST PARK
Link to coast
City of Holdfast Bay
STURT RIVER LINEAR TRAIL
Park Holme Shops
Hamilton Secondary
Westminster School
Mitchell Park Shops
TONSLEY GREENWAY
Tonsley Innovation Precinct
Oaklands Park (proposed TOD)
Marion Aquatic Centre
Marion Cultural Centre
Westfield Marion
Marion Road
Flinders University
Flinders Medical Centre
Gulf St Vincent
Seacombe Road
Darlington Primary
Seaview High School
Brighton Caravan Park
Seaview Downs Primary
Marion Park Golf Course
O'Halloran Hill Recreation Park
IQRA College
City of Onkaparinga
PATRICK CONNER VELOWAY
MARION COASTAL WALK (WALK ONLY)
COAST TO VINES
Marion Conservation Park
Limewood Quarry
Hallett Cove East Primary
Hallett Cove Conservation Park
Hallett Cove Primary & Secondary
Hallett Cove Shopping Centre
Hallett Cove South Primary
Ped. tunnel
Lonsdale Road
Happy Valley Reservoir
Field River
COAST TO VINES RAIL TRAIL
To Seaford
69

Recommendation 2: Work with developers to achieve a built form that supports walking and cycling.

1 — Accessibility and Circulation

Accessibility and circulation in the street network and choice of route is important for pedestrians and cyclists. The grid plan works best, providing connections and choice of routes, and should be encouraged for large scale re-developments (eg. Tonsley Innovation District).

— Cul-de-sacs should be avoided for streets and site designs. Where unavoidable, ensure pedestrian and cycle links are maintained.

— Undertake Local Area Traffic Management with consideration for pedestrians and cyclists (refer Strategy 2).

2 — Built Form

The built form has significant influence on encouraging or discouraging walking and cycling. Design objectives should consider:

— Active frontages that avoid blank walls/fences. This encourages walking and cycling by creating interesting environments with improved safety through passive surveillance.

— Shift from 'big-box' built form to pedestrian-scale environments (refer image below).

— Verandahs and pergolas for shelter on footpaths.

— Destinations that encourage walking and cycling.

— Quality urban design that is comfortable at a human scale.

— Car parking to the rear of developments for an active frontage and to encourage arrival by walking or cycling.

— Street furniture such as seating and bicycle parking.

Example of permeable shared street

Example of active and engaging building frontage

3 — Mixed Land Use

Mixing compatible land uses provides a range of uses (eg. shops, housing, offices) closer together and increased accessibility for walking and cycling. It also increases activity, improving safety and adding interest to the street environment.

The 30-Year Plan for Greater Adelaide 2017 Update supports mixing compatible land uses particularly along transit corridors.

‘If you plan cities for cars and traffic, you get cars and traffic. If you plan for people and places, you get people and places’.

Streets are People Places, Fred Kent

4 — Site Layout and Car Parking

The City of Marion has a large amount of off-street and on-street parking.

Destinations with large areas of car parking addressing the street are visually unattractive and discourages travel and arrival by walking or cycling. Design objectives should consider:

— Appropriate site planning and building designs that focus on pedestrian and cyclist arrival.

— Location of off-street car parking behind the building line.

— Investigate pedestrian and cycle movements in the same way traffic studies are undertaken.

— Prominent walking and cycling links through surface car park areas to the local network.

— A review of planning policies (eg. car parking requirements) to provide a balanced approach to provision of other modes of transport.

— Provision of end-of-trip facilities (eg. bicycle parking).

— Traffic management planning to redirect vehicle access to the preferred arterial or collector and not local streets (ie. reduce vehicle volumes on the local network).

5 — Planning System

The following table summarises opportunities within the existing planning system for the incorporation of the strategies outlined in this report.

Overview	Description
Structure Plans *Embed Walking and Cycling strategies into spatial planning for growth areas*	The State Government is preparing a feasibility study for the remaining north-south corridor between Darlington and Anzac Highway. The plan will set out a spatial vision for urban growth and infrastructure delivery. There is an opportunity to integrate walking and cycling into the plan for the north–south corridor.
Precinct Plans *Embed Walking and Cycling into the detailed planning and approval of defined regeneration areas.*	Precinct Plans aim to provide an area-wide approval instrument for integrated planning of defined mixed-use regeneration areas. Precinct planning provides a powerful tool for delivering urban renewal around transit nodes. Precinct planning should ensure that walking and cycling strategies form an integrated component of area-wide re-development schemes. Planning for walking and cycling should happen up-front rather than at the end. Priority should be on walking and cycling linked with public transport.
Master Plans *Embed Walking and Cycling into plans for urban projects*	Master plans have a direct influence on the range and quality of walking and cycling environments delivered from new and re-developed urban spaces and buildings. Government Agencies prepare master plans for infrastructure projects (such as new schools, hospitals or highways) and for major urban development projects (such as Tonsley Innovation District). Councils prepare master plans for public realm upgrades (squares, parks and town centres). The private sector prepares master plans for development projects, including new residential estates or major commercial buildings. Master plans should reflect walking and cycling strategies and key routes at the project and/or area scale. As with Precinct Plans, Master Plans should have priority on walking and cycling, then public transport and then car movement. The focus should be on creating a walking and cycling focused precinct that links with the broader walking and cycling network (particularly Greenways), public transport and the surrounding community.
Planning and Design Code *Embed Walking and Cycling directions into the Planning, Development and Infrastructure Act 2016*	The Planning, Development and Infrastructure Act 2016 includes the Planning and Design Code to guide development and desired character. There is opportunity to integrate walking and cycling directions into the Planning and Design Code to have a direct influence on new developments. This may include translating key walking and cycling principles and plans to the Code. This will assist Council staff and developers to plan and design for walking and cycling and ensure they are integrated and considered up-front for new developments.
Council Plans *Embed Walking and Cycling directions into Council plans and policies* *Embed Walking and Cycling facilities into Council plans for infrastructure delivery*	The City of Marion are involved in preparing a range of strategic, statutory and operational plans. It is recommended that the City of Marion integrate walking and cycling directions across all its plans and policies. For example, walking and cycling strategies and implementation should inform Asset Management Plans, Recreation Plans, Traffic Management Plans, Road Re-sealing Programs, Public Arts Strategies, Street Tree Strategy reviews etc. The process of informing and aligning with other plans and policies will allow for increased efficiency in infrastructure delivery.


Marino Rocks Greenway
Part 6 - Recommendations
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Strategy 2
Working with Vehicles

Recommendation 3: Investigate the reduction of vehicle speeds and volumes on local streets.

'Working with vehicles' involves a series of moves to shift the balance from cars dominating the streetscape to a balance of alternative means of movement. This requires a change in thinking to a pedestrian and cycle integrated approach.

Priority is for local streets identified as key walking and cycling routes and streets identified in Asset Management Plans for renewal or replacement.

Advantages

Reducing vehicle speeds and numbers on local streets:

- Provides a safer pedestrian and cycle environment.
- Reduces vehicle crashes.
- Reduces noise.
- Improves physical and mental health and associated economic benefits.
- Improves residential amenity.
- Increases property values.
- Improves quality of life and wellbeing.
- Enables opportunities for streets to become 'places'.

Key considerations include:

1 — Lowering vehicle speeds
2 — Calming traffic and narrowing streets
3 — Reducing vehicle numbers
4 — Providing separate space on arterial roads

1 — Lowering Vehicle Speeds

Lowering vehicle speeds significantly increases safety for people. The priority is for slowing vehicles on local streets, particularly those identified as key walking and cycling routes (refer Proposed Walking and Cycling Network Plan).

‘As soon as you take out cars, or [slow] cars down to a walking pace, people [start] to change their behaviour. People [start] to connect. Because a new layer of intimacy has been created’.

Gilbert Rochecouste

Design Considerations

— Slow vehicle speeds through changing the physical environment (eg. traffic calming and narrowing of streets) that tend to ‘self-regulate’ rather than requiring enforcement.

Advantages

— Improves safety for pedestrians, cyclists and motorists.

— Discourages motorists from cutting through residential streets.

— Relatively cost-effective.

— Enhances neighbourhood amenity.

— Reduces vehicle numbers within residential areas.

Disadvantages

— Some traffic calming measures (eg. speed bumps) can increase traffic noise through braking and accelerating vehicles.

— Can result in anti-social behaviour.

Example of slowing local traffic, Railway Terrace, Ascot Park

2 — Calming Traffic and Narrowing Streets

Traffic calming includes a variety of methods intended to slow vehicle speeds and reduce vehicle numbers.

Most of the City of Marion's streets, particularly in the north, were designed wide and straight, which tends to support fast vehicle movement and high traffic numbers.

Narrowing of streets is one way to slow traffic and increase safety for cyclists and pedestrians. Narrow streets slow drivers in comparison to wide streets which lead to faster speeds.

Example of traffic calming by narrowing street

Design Considerations

— Reduce the width of vehicles lanes (2.8-3.2m instead of 3.5-4.0m).

— Plant trees between on-street parallel parking to 'enclose' the street.

— Provide raised central medians.

— Use on-street parallel parking.

— Provide mid-block pedestrian crossings and kerb out-stands at intersections.

— Provide vehicle slow-points while ensuring they are pedestrian and cycle-friendly.

— Traffic calming measures are pedestrian and cyclist friendly.

— Integrate Water Sensitive Urban Design (WSUD) to support amenity and sustainability outcomes.

— Preserve and enhance streetscape aesthetics.

Advantages

— Can be as simple (and cost-efficient) as repainting lines to 'narrow' vehicle lanes.

— 'Narrowing' can provide more space for footpaths and street tree planting.

— 'Self-regulates' rather than requiring enforcement (eg. speed limits).

Disadvantages

— Speed bumps and raised 'driveway-links' can create noise for residents.

— Can delay emergency vehicles.

3 — Reducing Vehicle Numbers

Roads and streets within the City of Marion accommodate a high proportion of through-traffic (refer Part 3). Most through-traffic is focused on the main arterial roads. In some cases 'rat-running' (people taking short cuts) occurs increasing vehicle numbers on local streets.

'Rat-running' should be discouraged to help support local streets becoming places that people can enjoy.

A way to improve local streets is through Local Area Traffic Management. One option is to consider strategic 'dead-ends' for traffic where it will create a better environment for pedestrians and cyclists. It is then possible to create pocket parks at the end of streets. Where pocket parks are created it is important to maintain pedestrian and cycle access.

4 — Providing Separate Space on Arterial Roads

Arterial roads carry high numbers of fast moving vehicles. Dedicated space for walking and cycling on these roads is vital for the safety and comfort of pedestrians and bike riders. Where off-road routes cannot be provided, space and separation for cyclists is desired.

Design Considerations

— Continue bike lanes at intersections.

— Opportunities for advanced bicycle stop lines at intersections to allow space and increase visibility of cyclists.

— Opportunities for separated bicycle lanes (refer Part 5 - Technique 3 Separated 'Bicycle Paths').

— Provide green surface treatments for bike lanes at intersections and conflict points.

— Explore traffic management solutions to improve safety for pedestrians and cyclists at locations with reduced vehicle slip lanes.

Example of Local Area Traffic Management, Railway Terrace, Marion

Example of bicycle oriented crossing, Christchurch, NZ

Strategy 3
The Details

Recommendation 4: Provide the infrastructure that supports walking and cycling; in particular quality paving and large street trees.

Successful implementation of these guidelines depends on provision of infrastructure and consideration of functionality.

This strategy provides guidance for the following:

1 — Paving
2 — Trees
3 — Planting
4 — Furniture
5 — Signage
6 — Public art
7 — Lighting
8 — Crossings
9 — Standards and guidelines

For additional reference refer to City of Marion Streetscapes Design Guidelines

1 — Paving

Providing suitable paving is important for encouraging walking and cycling.

Generally hotmix (AC7) is preferred to segmented paving which has a tendency to lift and cause trip hazards.

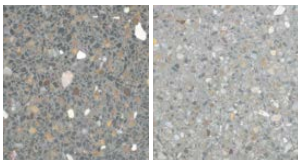
Footpaths should take priority over driveways.

Refer to the following for further details and guidance.

— Part 5 - Technique 2 'Footpaths'.

— City of Marion Streetscapes Design Guidelines.

— DPTI Guide to Bikeway Pavement Design, Construction and Maintenance for South Australia.

Paving Type	Use	Benefits	Example
Type 1 High-quality unit paving	— Limited to key pedestrian gathering areas / civic precincts	— High-quality finish	
Type 2 Insitu concrete	— Higher use areas near hubs, commercial precincts and local centres (eg. Tonsley)	— Attractive and long lasting solution	
Type 3 Hotmix (AC7) — Black — Line marking	— Most footpaths (excluding Types 1, 2 and 4) — Shared-use paths	— Avoids lifting — Ease of maintenance — Cost-effective	
Type 4 Compacted sand/gravel	— Lower use paths and trails in reserves and parks.	— Blends well in 'natural' settings — Cost-effective — WSUD around trees	

2 — Trees

Large trees help provide effective shade, vertical scale and streetscape presence as well as environmental benefits.

Smaller trees should be restricted to narrower, minor streets where space limits planting larger species.

Power line infrastructure and services should be addressed prior to tree selection.

Tree planting should be formal and regular. Continuity and consistency should be promoted along the length of the street. Preference is to establish a single character along the length of a street rather than breaking streets into a number of precincts with different species.

A mix of evergreen and deciduous, as well as native and exotic species should be used to reinforce identity and promote diversity.

WSUD treatments for street tree establishment should be considered.

For tree selections and design guidance refer to:

— City of Marion Street Tree Strategy
— City of Marion Streetscapes Design Guidelines

Street tree canopy cover: Castle Street compared to St Lawrence Avenue, Edwardstown

Example of streets and cycle lanes with large trees

3 — Planting

Support planting that contributes to local character and amenity by:

— Enhancing biodiversity and habitat.

— Offering structure and marking key locations (eg. corners, entries).

— Assisting in stormwater management.

— Defining edges and paths.

— Providing seasonal change to the area.

Opportunities for the City of Marion include:

— Planting low-maintenance vegetation adjacent to walking and cycling paths, in particular off-road shared-use paths and Greenways.

— Utilising new walking and cycle path development as an opportunity to remove weeds and exotic species and replace with native grasses, groundcovers and trees, particularly along watercourses and railway lines.

— Selecting species appropriate to the site conditions, with suitable form, compliance with CPTED principles, maintenance and watering requirements.

— Using native plants to increase the biodiversity of vegetation, assist with Water Sensitive Urban Design (WSUD) and habitat creation in the area.

— Incorporating WSUD initiatives along Greenways and off-road shared-use paths.

Example of planting adjacent walking and cycling routes, including WSUD

4 — Furniture

Furniture is part of a well-integrated and functional public realm.

Street furniture should be located close to the kerb to maintain a clear path of travel against the buildings/property line in addition to other safety requirements.

Design Considerations

Furniture and amenities supporting walking and cycling include:

Seating

— Providing seating adjacent to paths in locations that correspond with public need and usage.

Shelters and picnic settings

— Locating within reserves and parks in accordance with open space policy and playground policy.

Bike stands

— Providing at destinations and reserves responding to public needs and usage.

Bins

— Locating suitably in response to usage and collection.

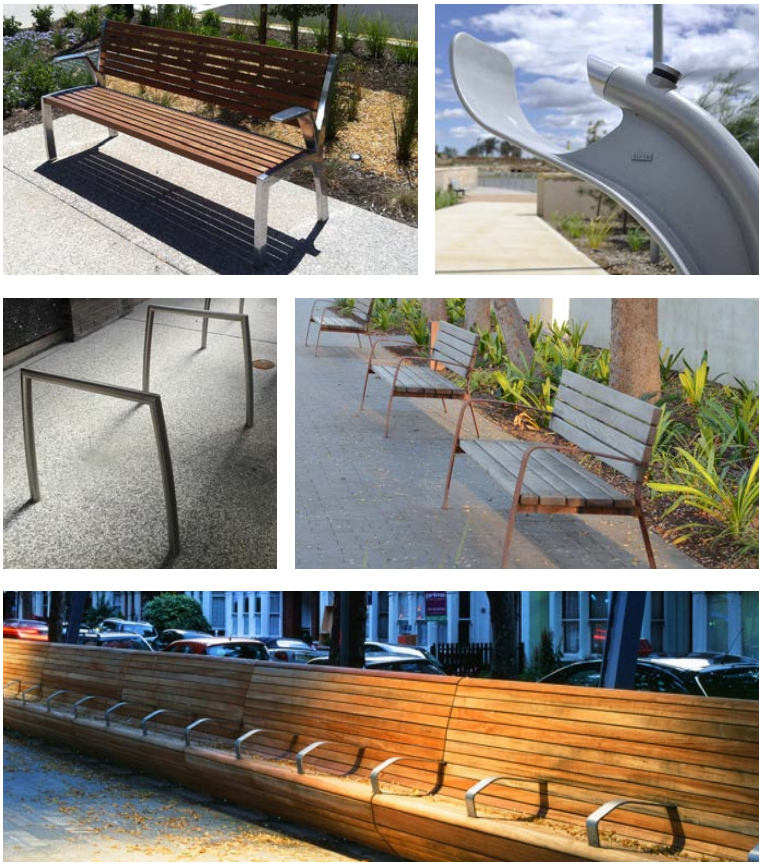
Drinking fountains, and dog-bowls/ bag dispensers

— Providing within parks and reserves accessed via the walking and cycling network.

Toilets

— Considering the planning of assets such as public toilets with key walking and cycling routes.

For furniture selections and design guidance refer to:
— City of Marion Streetscapes Design Guidelines
— Open Space Framework
— Playground Framework
— Asset Management Plans



Examples furniture, refer City of Marion Streetscapes Design Guidelines for selections

5 — Signage

Signs should promote walking and cycling routes and include clear directions and information about local landmarks, and flora and fauna.

Design Considerations

— Directional signage guides routes and indicates open spaces, community facilities and other destinations. Directional signage may include arrows, 'markers' and maps.

— Interpretive signage can inform of local history, flora and fauna, cultural heritage, etc.

— Advisory signs provide legal information (eg. 'give way') and advises of potential hazards (eg. road crossing). Signage requirements are detailed in the Australian Standards.

— Innovative technology solutions can be integrated to enhance accessibility.

Examples of signage and wayfinding along walking and cycling routes

6 — Public Art

Public art helps communicate a socially and culturally rich environment. It provides identity and creates a unique and meaningful sense of place.

Design Considerations

Opportunities for integrating public art in the City of Marion walking and cycling network include:

— Activating places by providing an original, innovative and stimulating environment.

— Linking and highlighting key transport nodes and places of interest, interpreting of local cultures and natural character.

— Proposing narrative elements that connect different parts of the network.

— Fostering a sense of place, social interaction, community ownership and capacity building.

— Integration of art into street furniture and directional signage.

'Link People' artwork by Groundplay and 'Which Way' artwork by CHEB Art, Mike Turtur Bikeway

'Locally Indigenous' artwork by Aurelia Carbone

7 — Lighting

Lighting provides safety and extends the usability of the network into the night.

For many areas existing street lighting is sufficient for walking and cycling.

Design Considerations

Lighting options for walking and cycling pathways include:

— Pole top lights (4.5m – 6m).

— Bollard lights.

— Incorporating fittings into built structures (eg bridges, underpasses).

— Automatic control and sensing.

— Illuminating key features such as landmark buildings, trees, bridges and pedestrian gathering points.

— LED and solar lights.

— Street lights (may include a pathway outreach).

Pathway lighting service standards should be determined by an assessment on safety and Crime Prevention Through Environmental Design (CPTED).

Lighting design and implementation to comply with Austroads Guidelines, Australian Standards and DPTI requirements.

For lighting selections and design guidance refer to:

— City of Marion Streetscapes Design Guidelines

Example LED path lighting

Example LED Street lighting

Example bollard lighting

Example feature lighting

8 —Crossings

There are a number of major road and rail routes that pass through the City of Marion (refer Part 3). Safe pedestrian and cycle crossings are required to connect communities.

Design Considerations

- Providing safe pedestrian and cycle crossings where key routes meet major roads and rail lines.
- Providing pedestrian and cycle overpasses/underpasses with the Darlington Upgrade, Oaklands Crossing Project and Flinders Link.
- Providing pedestrian and cycle traffic signals for main roads along Greenways and connections to activity centres.
- Providing generous width crossings and consider 'land-bridges' for major connections (eg. Oaklands Park).
- Increasing 'green' crossing times for pedestrian and cyclists, particularly around hubs.
- Providing median 'safe-havens' with cyclist hand-rails for cyclists (at road edge and median) to assist crossing of wide and busy roads.
- Providing adequate site-lines at crossings.
- Avoiding barricades and bollards that can be a hazard.
- Providing pedestrian and cycle priority at local street crossings, particularly in activity hub areas.
- Designing crossings to comply with Australian Standards.
- Considering Crime Prevention Through Environmental Design Principles (CPTED).

Example of designated cycle crossing, Christchurch, NZ

Marion Road crossing

Pedestrian and cycle connection along Mike Turtur Bikeway

9 — Standards and Guidelines

The detailed design of walking and cycling infrastructure is required to comply with the relevant standards and guidelines. Key standards and guidelines are summarised below.

Austroads

The Austroads Guides provide useful guidance and measures to assist with the planning and design of streets and pathways for pedestrians and cyclists.

Key considerations include (but are not limited to):

- Austroads Guide to Traffic Management Series
- Austroads Guide to Road Design Series, in particular:
  - *Guide to Road Design Part 6A: Pedestrian and Cyclist Paths.*
  - *Cycling Aspects of Austroads Guides.*

Australian Standards

The Australian Standards outline the minimum requirements for pedestrian and cycling infrastructure.

Key considerations include (but are not limited to):

- AS 1742 Manual of uniform traffic control devices; in particular 'Bicycle facilities' and 'Pedestrian control and protection'.
- AS 1428 Design for Access and Mobility.
- Lighting for roads and public spaces.

Department of Planning, Transport and Infrastructure (DPTI) Standards and Guides

The South Australian Department of Planning, Transport and Infrastructure (DPTI) has also published useful Standards and Guides, for example:

- Guide to Bikeway Pavement Design, Construction and Maintenance for South Australia.

Strategy 4
Management and Maintenance

Recommendation 5: Recognise the need and plan for increased funding for maintenance and upgrading of walking and cycling infrastructure.

Opportunities for the City of Marion to improve management and maintenance of walking and cycling infrastructure include:

- Appropriate funding for maintenance and upgrade of existing facilities in accordance to service levels.
- Developing a business case for a small street-sweeper, dedicated to walking and cycling maintenance, including key public spaces, shared-use pathways and footpaths.
- Ensuring maintenance of walking and cycling infrastructure and routes is included in Council maintenance staff programs and budgets.
- Undertaking regular paving audits and maintenance for walking and cycling infrastructure.
- Exploring opportunities for upgrading walking and cycling facilities when undertaking scheduled maintenance such as road resurfacing etc.

Well maintained paths, Marino Rocks Greenway

Maintenance and Servicing

The table below provide a list of maintenance tasks and frequency for servicing walking and cycling infrastructure. Regular maintenance supports public use and safety and also extends the life assets through timely maintenance and rehabilitation.

Maintenance frequency is to be reviewed in line with Council's Asset Management Plan Framework and Council budgets. Frequency of street-sweeping may need to increase during autumn or following heavy wind or rain events.

Cycling and Shared-use Paths

Maintenance Task and Frequency (Indicative Timing)	Greenways	Other Shared-use Paths / Off-road Cycle	Major Roads and Veloway	On-Road Cycle Lanes and Shoulders
Street sweeping	Every 3 months	Every 3 months	DPTI	Every two-months
Pruning of vegetation	Every 12 months	Every 18 months	DPTI	Every 18 months
Inspect surface (including shoulders) and repair and re-line mark as needed.	Every 2 years	Every 2 years	DPTI	Every 3 years

Footpaths

Maintenance Task and Frequency (indicative timing)	High Use (Hubs, Shopping precincts)	Medium Use (Schools, parks)	Low Use (Local, residential)
Street sweeping	Every 3 months	Every 3 months	On demand
Pruning of vegetation	Every 12 months	Every 18 months	Every 18 months
Inspect surface (including shoulders)	Every 2 years	Every 2 years	Every 2 years

Strategy 5
Promotion, Education, Advocacy and Support

Recommendation 6: Promote and advocate for walking and cycling through a range of Council initiated programs.

Overview

The guidelines support advocacy and promotion of walking and cycling as an alternative mode of transportation for commuters and recreation.

1 — Promotion and Education

Opportunities include:

- Using Council's marketing resources (including newsletter and website) to promote walking and cycling.
- Educating and updating the community about new or upgraded walking and cycling facilities.
- Developing maps, signage and logos to assist in the community's use and legibility of walking and cycling infrastructure. Link with broader network promotion (eg. Bikedirect).
- Exploring new-technology such as smart-phones, Google Maps and GPS to promote walking and cycling routes.
- Working with the Department of Planning, Transport and Infrastructure (DPTI) to keep Bikedirect and 'Cycle-instead Journey Planner' up to date.
- Working the Heart Foundation to develop local walking and cycling programs.

2 — Measuring Performance

In an effort to measure performance and quantify outcomes of walking and cycling improvement, it is recommended that indicators are developed.

Opportunities include:

— Monitoring trends and usage of infrastructure.

— Working with the Heart Foundation to develop other key performance indicators (KPIs) and gather baseline data to measure walking and cycling levels in the community. Understanding travel to school data may be a useful starting point. Some information may be available through SA Health and SA Walks.

— Obtaining measuring equipment to ascertain the level of walking and cycling activity.

— Seeking opportunities to partner with university research to collect and monitor data.

Providing broader indicators that link with the Strategic Plan, including healthy lifestyles, cultural vitality and healthy environments.

3— Advocacy and Support

Advocacy and support for walking and cycling from community leaders such as City of Marion staff and elected members is vital for successful implementation.

Opportunities include:

— Supporting the development of community walking and cycling groups.

— Coordinating with adjoining Councils, Government agencies, developers and the community.


Mike Turtur Bikeway
'Which Way' artwork by CHEB Art

Part 7

Implementation

This section outlines strategies and actions for implementing walking and cycling in the City of Marion.

Implementation strategies include:

— Actions and Priorities
— Funding Opportunities
— Partners

Action Plan

The following table summarises key actions for implementing walking and cycling improvements in the City of Marion. The suggested priority is related to upcoming external projects and needs identified.

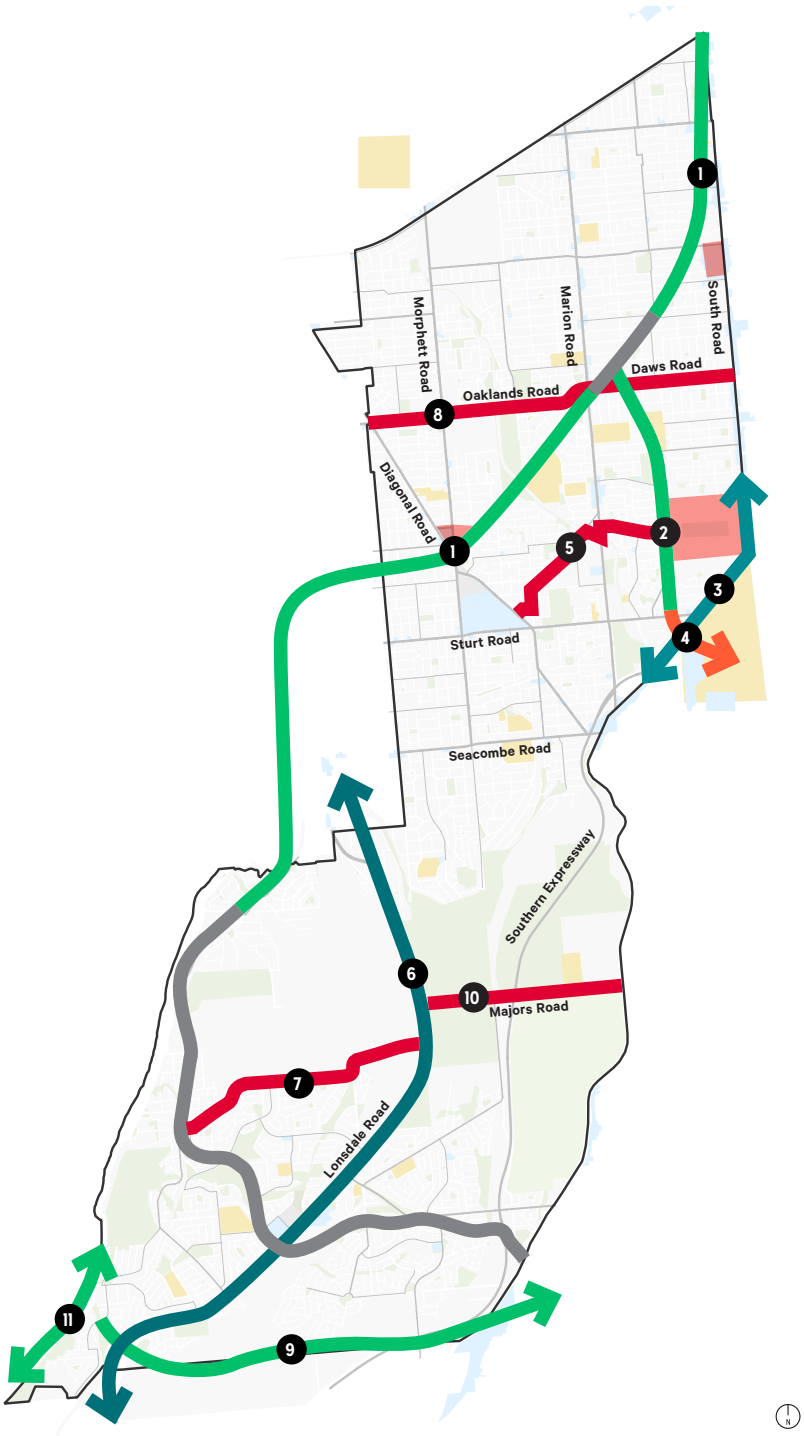
Strategy and Action	Priority
Strategy 1: Planning the Route	
Greenways	
Marino Rocks Greenway – Complete the northern section first. Prepare a Master Plan for development of the corridor and align implementation with other projects for efficiency.	High
Tonsley Greenway – Align timing with other projects, including the Darlington Upgrade, Tonsley Innovation District, Flinders Link and Sturt Road.	High
Sturt River Linear Park– Review alignment, width and upgrade remaining sections.	High
Coast Park upgrade – Work with State Government and adjacent councils to upgrade signage, boardwalks and sections of path not completed.	High
Upgrade links through Warriparinga (Sturt Triangle).	High
Maintain the existing Coast to Vines Rail Trail.	Ongoing
Regional	
Link Tonsley Innovation District site to Westfield Marion via Finnis Street (Chrysler Trail).	High
Seacombe Road – Explore opportunities to improve infrastructure (DPTI road).	Low
Field River shared-use path from coast to Expressway (land ownership to be considered).	Low
Lonsdale Road - complete off-road shared-use path (DPTI road).	Medium
Daws/Oakland Road. – Explore route opportunities (DPTI road).	Medium
Perry Barr Road – Explore route opportunities.	Medium
Castle Plaza to Marino Rocks Greenway (Development partnership opportunities).	Medium
Local	
Streetscape upgrades – Footpaths and tree planting of large species in line with ongoing capital works and maintenance programs.	Ongoing
Integrated with Planning and Built Form, and Shifting the Balance	
Add the proposed Walking and Cycling Network Plan to the City's mapping system to assist in day-to-day management decisions.	Medium
Integrate walking and cycling directions across other City of Marion plans and policies as necessary.	Ongoing
Avoid creating dead-ends and cul-de-sacs. Enhance pedestrian and cycle links for existing cul-de-sacs.	Ongoing
Ensure developments have appropriate site planning and building design that focus on movement and scale of pedestrians and cyclists.	Ongoing
Review existing planning policies (e.g. car parking requirements).	Medium
Seek opportunities for PLEC funding to underground power lines, supporting mature tree establishment.	Medium

Strategy and Action	Priority
Strategy 2: Working with Vehicles	
Reduce the width of vehicles lanes (2.8-3.2m instead of 3.5-4.0m) and increase cycle lane widths through road line-marking renewal process where appropriate.	Ongoing
Provide traffic calming that is walking and cycling friendly. Priority is for local streets identified as part key walking and cycling routes (e.g. Proposed Walking and Cycling Network Plan) and streets identified in Asset Management Plans for renewal or replacement.	Ongoing
Advocate with DPTI to provide space for cyclists on arterial roads (e.g. continuous cycle lanes) and separation at intersections (e.g. bicycle boxes).	Ongoing
Integrate Water Sensitive Urban Design (WSUD) in local streets. Priority is for streets identified for upgrade in long-term Asset Management Plans and the Proposed Walking and Cycling Network Plan where appropriate.	Ongoing
Strategy 3: The Details	
Street trees – Plant street trees of larger species (where appropriate) to provide shade. Aim to increase canopy cover of the public realm. Coordinate incremental tree planting program with ongoing capital works and maintenance programs.	High
Planting – Provide planting of native species along walking and cycling routes, particularly Greenways.	High
Furniture – Provide furniture at key locations along walking and cycling routes.	Medium
Paving – Continue the use of hotmix (AC7) for shared-use paths and increase footpath widths where appropriate.	Ongoing
Public Art – Integration of public art where appropriate.	Medium
Lighting – Integrate lighting (where necessary) for walking and cycling routes.	Medium
Crossings – Advocate for safe pedestrian and cycle crossings where key routes meet major roads and rail lines (DPTI).	High
Strategy 4: Maintenance and Management	
Appropriate funding for maintenance and upgrade of existing walking and cycling facilities.	Ongoing
Continue to upgrade walking and cycling facilities with ongoing maintenance works.	Ongoing
Undertake regular paving audits and maintenance for walking and cycling infrastructure.	Ongoing
Strategy 5: Promotion, Education, Advocacy and Support	
Use Council's marketing resources (including Council's e-news, social media and website) to promote walking and cycling to local residents.	Ongoing
Develop maps, signage and logos to assist in the community's use and legibility of walking and cycling infrastructure. Link with broader network promotion (e.g. Bikedirect).	Medium
Monitor walking and cycling trends.	Ongoing
Support the development of local programs (e.g. 'Active Communities', walking school bus) and community walking and cycling groups.	Ongoing

Key Walking and Cycling Opportunities

Key projects from the Proposed Walking and Cycling Network Plan include:

1. **Marino Rocks Greenway**
   — Complete the northern section first
2. **Tonsley Greenway (partnership with Renewal SA)**
   — Provide off-road shared-use path adjacent rail corridor. Complete section adjacent Tonlsey Innovation District first
3. **Darlington Upgrade (DPTI)**
   — Off-road shared-use paths
4. **Flinders Link (DPTI)**
   — Off-road shared-use paths incorporated within proposed rail overpass
5. **Chrysler Trail**
   — Provide shared-use path from Tonsley Innovation District to Westfield Marion, including Alawoona Avenue
6. **Lonsdale Road**
   — Advocate to complete the shared-use path
7. **Perry Barr Road**
   — Provide on- and off-road bicycle paths
8. **Daws and Oakland Roads (DPTI)**
   — Improve pedestrian and cycle routes
9. **Field River Trail (dependent on land ownership)**
   — Advocate to provide off-road shared-use path to link coast with the Expressway
10. **Majors Road O'Halloran Hill (DPTI)**
    — Advocate with State Government to improve walking and cycling connections
11. **Coast Walk**
    — Complete section of trail south of Hallett Cove Foreshore


1
Morphett Road
Marion Road
South Road
Daws Road
Oaklands Road
8
Diagonal Road
1
5
2
3
4
Sturt Road
Seacombe Road
Southern Expressway
6
10
Majors Road
7
Lonsdale Road
11
9
N

Funding Opportunities

Funding opportunities for detailed design and implementation of walking and cycling projects include:

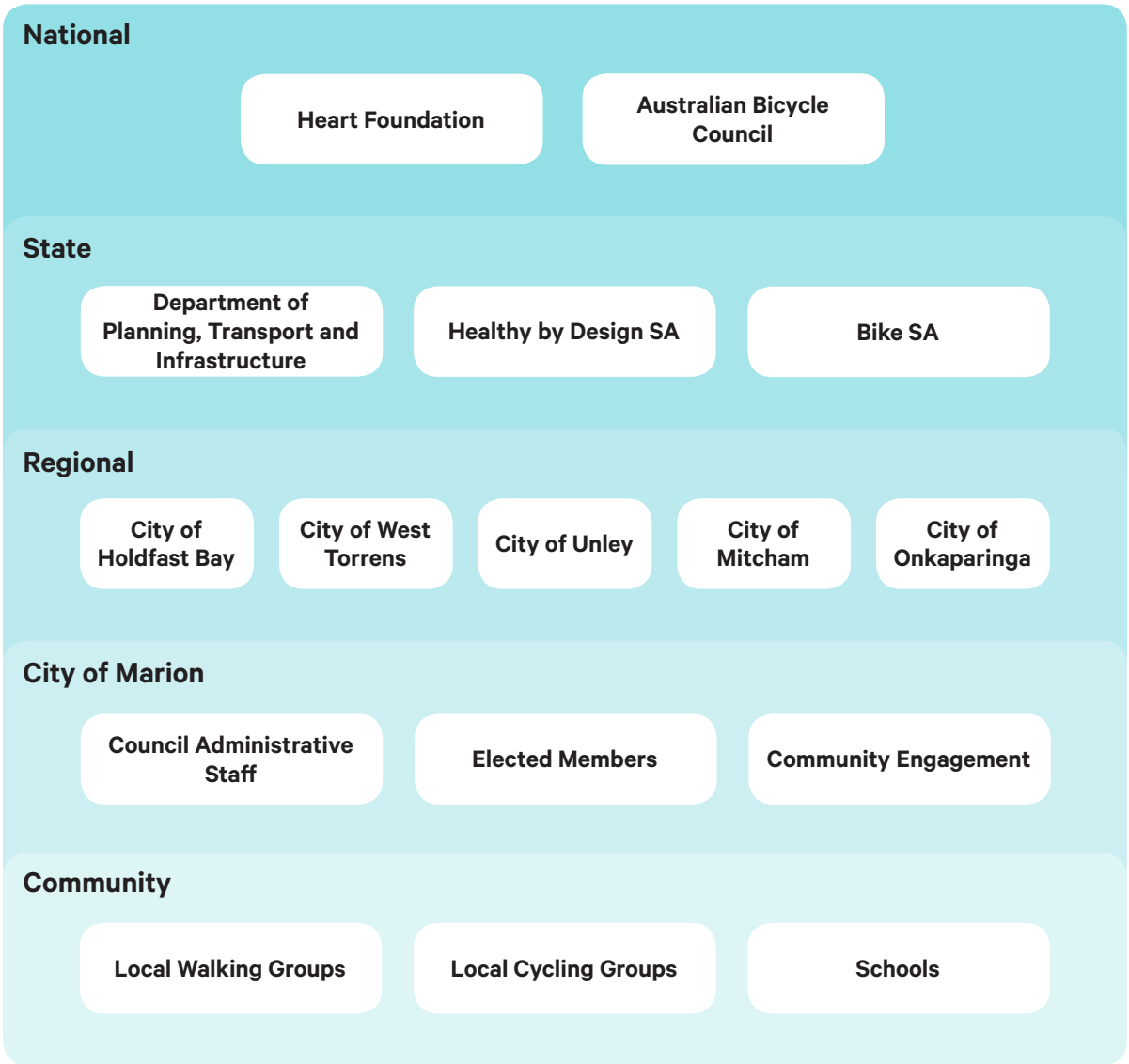
— Developer contributions
— State Bicycle Fund
— Places for People grants
— Open Space grants
— Department of Planning, Transport and Infrastructure
— Office of Local Government
— Office for Recreation and Sport
— Community grants
— Arts South Australia
— Power Line Environment Committee (PLEC)
— Black Spot Programme
— Cycling Promotion Fund

Funding opportunities may also be available through Federal Government programs.

Plan ahead on walking and cycling projects to take advantage of Federal and State Government funding opportunities as they arise.

Partners

Possible partners for input and delivery of walking and cycling improvements are summarised below.



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CITY OF MARION

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7.3 Asset Management Update	
Report Reference	ASCYYMMDDR7.3
Originating Officer	Unit Manager Asset Solutions – Brendon Lyons
Corporate Manager	Manager Engineering, Assets and Environment - Mathew Allen
General Manager	General Manager City Services - Ben Keen

REPORT OBJECTIVE

To provide an update on current and emerging priorities and projects related to Asset Management and to receive feedback from the Asset and Sustainability Committee.

EXECUTIVE SUMMARY

Asset Management requires ongoing resource, training, and commitment to maximise asset lives and deliver optimal outcomes for the community.

This report introduces three presentations that reflect the City of Marion's emerging priorities and projects related to Asset Management covering:

1. The Maturity of Asset Management at the City of Marion from 2017 – 2022;
2. The progress of the Asset Management Information System implementation; and
3. The Resilient Asset Management Project.

RECOMMENDATION

That the Asset and Sustainability Committee:

1. **Notes the report and provides feedback to support the progress of Asset Management at the City of Marion.**

DISCUSSION

1. **The Maturity of Asset Management at the City of Marion from 2017 – 2022**

The City of Marion (Council) owns and manages a large and diverse asset portfolio with a current value of over $1.3 billion. These assets represent the social and economic infrastructure that enables the provision of services to the community and local businesses. They are vital for the operation of Council's business, sustaining the local economy and to provide a high quality of life for our residents.

Council's Asset Management vision is: *To maintain the City of Marion's assets to agreed levels of service, which maximise community value throughout an asset's life.*

In the years 2017, 2019, 2020 and 2021, Council conducted asset management maturity assessments using the IPWEA NAMS+ structured on-line questionnaire, the National Asset Management Assessment Framework (NAMAF).

In the 2021 assessment, Council achieved Core Maturity in all assessment elements, except Data & Systems.

Council recently engaged the University of Newcastle to facilitate a further assessment of the council's asset management maturity using the NAMAF model. Council required the assessment to

be conducted in a 'guided' and 'conservative' manner. A comparison of the results is shown in Table 1:

Table 1: 2017, 2021 and 2022 Assessment Scores

Area	Assessment Element		2017 Baseline Score	2021 Score	2022 Score	Score Difference 2017: 2022
Financial Planning & Reporting	1.1	Strategic Longer-Term Planning	4.0	4.6	4.7	+ 0.7
	1.2	Annual Budget	4.0	4.4	4.8	+ 0.8
	1.3	Annual Report	4.2	4.5	4.6	+ 0.4
Asset Management & Planning	2.1	Asset Management Policy	3.1	4.8	5.0	+ 1.9
	2.2	Asset Management Strategy	0.0	4.4	4.4	+ 4.4
	2.3	Asset Management Plans	2.8	4.5	4.4	+ 1.6
	2.4	Governance & Management	1.0	4.0	4.2	+ 3.2
	2.5	Levels of Service	1.4	3.6	4.2	+ 2.8
	2.6	Data & Systems	1.4	2.7	3.3	+ 1.9
	2.7	Skills & Processes	1.8	3.8	3.9	+ 2.1
	2.8	Evaluation	0.8	4.2	4.0	+ 3.2
		Overall Maturity	1.9	4.1	4.3	+ 2.4

Although the differences between the 2021 and 2022 assessments appear marginal, Council has achieved significant improvement in "Levels of Service" and "Data & Systems".

2. The progress of the Asset Management Information System implementation

The Asset Management Information System (AMIS) project aims to improve how the City of Marion plans, manages, monitors, maintains, and renews more than $1.2 billion of assets. The AMIS will deliver value for ratepayers and ensure Council provides the services and facilities our community needs. It will integrate with our Finance and CRM systems, plus have close links with the Geographic Information System (GIS).

The project is making great progress and the organisation is moving towards using and maintaining asset data in the Asset Management Information System – Assetic.

AMIS training sessions and User Acceptance Training have been scheduled. Once the data in the system is accepted, the City of Marion will be able to manage asset data in one system. The implementation of the AMIS will be a significant improvement for the City of Marion in the evolution of its asset management practices.

3. The Resilient Asset Management Project

The Resilient Asset Management Project (RAMP) is a collaborative project between the four Resilient South Councils (Cities of Marion, Holdfast Bay, Mitcham and Onkaparinga).

The RAMP will assess the suitability of market ready and in-development products, tools, and guidelines for assessing physical and non-physical climate change risks to assets, the impact of these risks to the community and identify options to mitigate these risks and build regional resilience. Mitigation options could include modifying service standards and innovation of new financial models to maintain assets. The pilot project will commence shortly and build the capacity of council staff to understand and manage climate risk to roads and major buildings. It will also identify mechanisms for funding the preferred risk management approaches. We envisage this approach will be applied to further asset classes in the future.

Research in recent years has found that a systems approach is needed to achieve resilience. This means thinking beyond the resilience of assets themselves to how the assets contribute to the resilience of the system and requires consideration of how to strengthen the asset and network in relation to the place, city and region.

ATTACHMENTS

Attachment 1 - The Maturity of Asset Management at the City of Marion from 2017 – 2022

Attachment 2 - The progress of the Asset Management Information System implementation, and

Attachment 3 - The Resilient Asset Management Project

CITY OF MARION

ASSET MANAGEMENT MATURITY UPDATE

Asset and Sustainability Committee - 2nd August 2022

Brendon Lyons
Unit Manager Asset Solutions Team

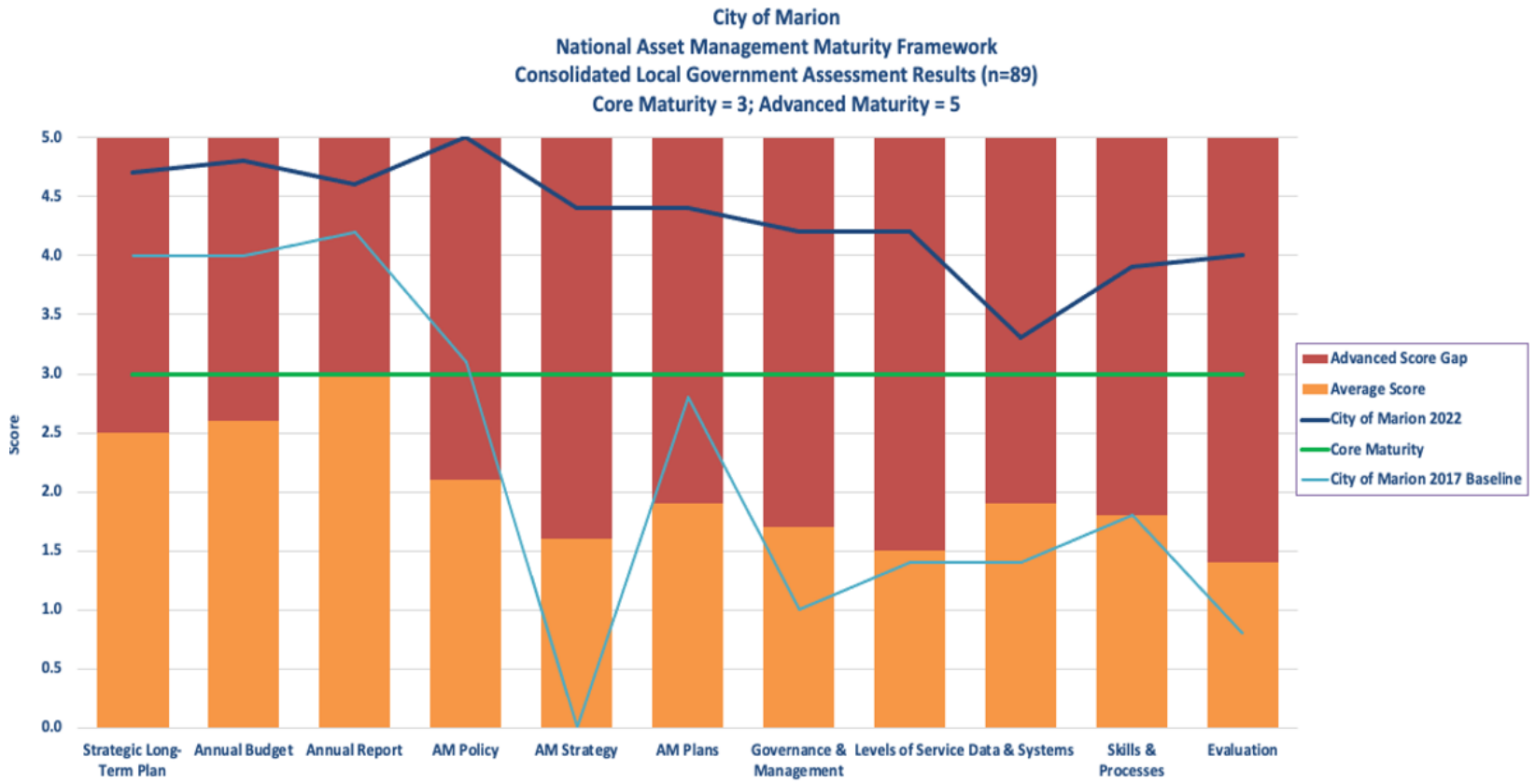
Catrin Johnson
Asset Strategy Officer

marion.sa.gov.au

CoM Asset Maturity

Area	Assessment Element		2017 Baseline Score	2021 Score	2022 Score	Score Difference 2017: 2022
Financial Planning & Reporting	1.1	Strategic Longer-Term Planning	4.0	4.6	4.7	+ 0.7
	1.2	Annual Budget	4.0	4.4	4.8	+ 0.8
	1.3	Annual Report	4.2	4.5	4.6	+ 0.4
Asset Management & Planning	2.1	Asset Management Policy	3.1	4.8	5.0	+ 1.9
	2.2	Asset Management Strategy	0.0	4.4	4.4	+ 4.4
	2.3	Asset Management Plans	2.8	4.5	4.4	+ 1.6
	2.4	Governance & Management	1.0	4.0	4.2	+ 3.2
	2.5	Levels of Service	1.4	3.6	4.2	+ 2.8
	2.6	Data & Systems	1.4	2.7	3.3	+ 1.9
	2.7	Skills & Processes	1.8	3.8	3.9	+ 2.1
	2.8	Evaluation	0.8	4.2	4.0	+ 3.2
		Overall Maturity	1.9	4.1	4.3	+ 2.4

National Comparison



Continual Improvement

Asset Management is a journey of continual improvement and is one that never truly ends.

Key complimentary focus areas are:

- Ongoing asset data cleanse to support AMIS
- Documentation of Levels of Service (LoS)
- Clarity on roles and responsibilities
- High level process mapping of asset processes
- Implementation of an integrated Asset Management Information System (AMIS)
- Identifying impacts of Climate Change on assets (RAMP)

CoM monitors its progress through the Asset Management Improvement Plan (AMIP)

CITY OF MARION

ASSET MANAGEMENT UPDATE

Do you have any questions?

marion.sa.gov.au

CITY OF MARION

ASSET MANAGEMENT SYSTEM UPDATE

Asset and Sustainability Committee - 2nd August 2022

Lisa Jones
Senior Project Manager
DTP Team

marion.sa.gov.au

Asset Management System

AMIS - Assetic

Background

The Asset Management System purchased by the City of Marion is called Assetic.

Assetic is branded as a product owned by Brightly, however this will soon change; Siemens has now purchased Brightly, which is exciting news for the future investment of the product.

What is happening on the Project?

- New Project Manager completing due diligence and planning
- 90% of data loaded (this does not include Building & Property and Plant & Fleet – this will be loaded over the next few months)
- Initial Training complete to enable us to test the system and see how the system hangs together with our data
- Reinvigorated engagement throughout the business
- Change Manager engaged
- Working in collaboration with all business areas to ensure best practice, standard processes are introduced

Focus Areas

- Realising immediate value from Assetic is a high priority. The project is focusing on elements such as data and system configuration to assist with testing the system. This will give us access to the new system for managing our asset data in one place as early as October.

- Alongside the implementation, planning the detailed delivery of the next phases of the project is underway. This includes carefully and transparently managing risks.
- Change Management has been a gap on this project. A change manager has now been engaged.

- Keeping our Project site up to date.

The next 6 months

COM 4: Asset Management – AMIS Project Roadmap

Enabling Asset Management Excellence.

ONE MARION

HIGH LEVEL TIMELINE

	June '22	July '22	Aug '22	Sept '22	Oct '22	Nov '22
	Asset Information Training & UAT		Asset Information GO LIVE	PILOT	Integration MVPs	Full open spaces rollout
Milestone Elements	**Elements:** Asset System Administrator Training • Asset Information Training **Input:** Training Support Material is ready • Staff Identified **Output:** • Accept Data in System • Achieve System Milestone 1		**Elements:** • Assets are now maintained in Assetic • Pilot Group Training and UAT approved **Input:** Training Support Material is ready for Asset Maintenance Training • Staff Identified **Output:** • Pilot Group trained and ready to use system • Achieve System Milestone 2		**Elements:** • MVP Integrations operational • Wider Open Spaces team Trained to use Asset Maintenance **Input:** Integration workshops complete • Data Governance workshops complete and approved. **Output:** • Pilot Group trained and ready to use system • Achieve System Milestone 2	Business Rollout planned and Change Activities identified.
Additional Activities	**Workshops** • Data Governance • Finance/AMIS Processes **Business Analysis** • Building and Property data prep and import • CRM Integration analysis • GIS Integration concept		**Workshops** • Data integration gaps addressed **Business Analysis** • Building and Property data loaded • CRM, HRIS, GIS and Finance Integration future state complete		**Change Activities** • Focussing on adoption and support • Ramp up of engagement for rollout	

CITY OF MARION

ASSET MANAGEMENT SYSTEM UPDATE

Do you have any questions?

marion.sa.gov.au

CITY OF MARION

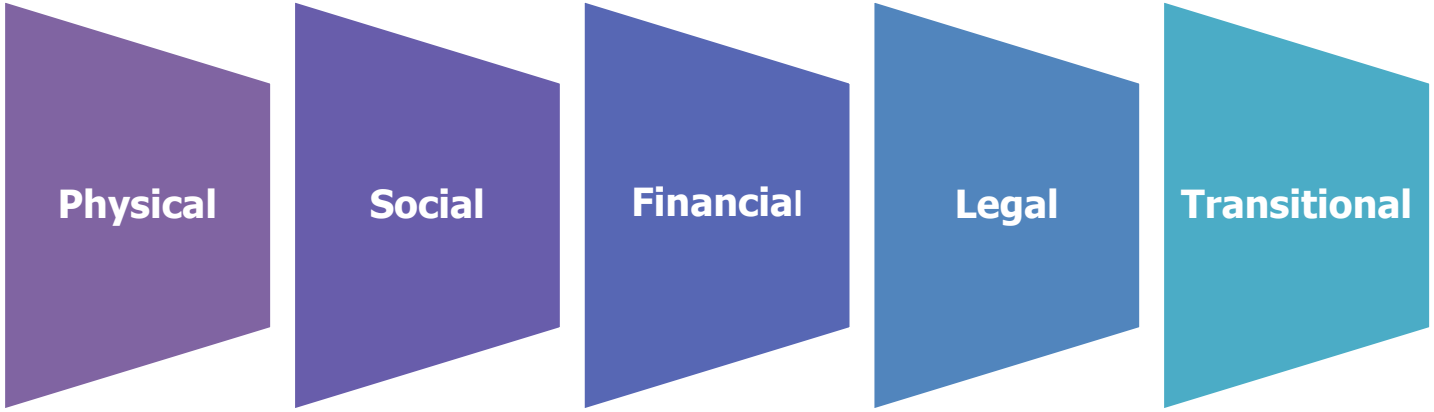
RESILIENT ASSET MANAGEMENT PROJECT UPDATE

Asset and Sustainability Committee - 2nd August 2022

Dr Stefan Caddy-Retalic
Regional Coordinator
Resilient South

marion.sa.gov.au

Climate risks for councils



- Climate change affects all aspects of our business
- Often adaptation is not recognised as a climate change issue
- Need to integrate climate change into all of our systems
- Necessity to maintain current service levels and meet community expectations

Legal risk and insurance

insuranceNEWS

Insurers face higher reinsurance costs as c risk bites

17 June 2020

Reinsurance costs for Australia's three leading insurers are set to rise at J Stanley has warned, and the upward trend is likely to persist, reflecting th risk they face from climate change.

A report from the US investment bank and financial services company say appetite has hardened considerably after two years of underwriting losse Suncorp, IAG and QBE took a hit from bushfires, floods and other severe

THE AUSTRALIAN FINANCIAL REVIEW

Insurers hit back over climate risk fears

James Fernyhough
Reporter

Jan 12, 2021 – 5.02pm

Save Share

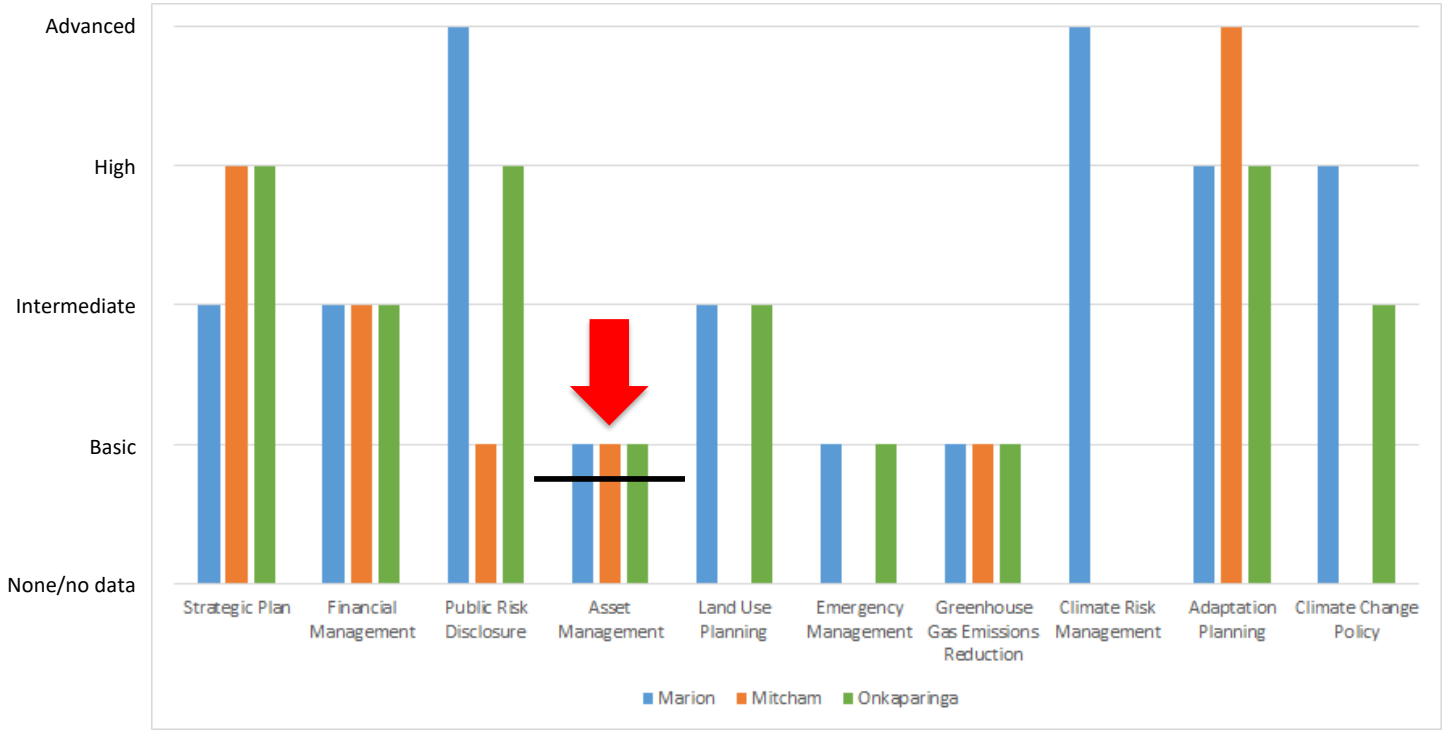
Major insurers insist they can deal with the worsening physical effects of climate change, after $90 billion super fund UniSuper revealed this week it was avoiding the sector because of the risk.

Insurers acknowledged UniSuper's right to make a call on the sector, but all insisted they could not be accused of failing to take the risk seriously.

They pointed to their in-house climate experts, their steady stream of publications and climate risk reporting, their collaborative work with scientists, and their campaign for federal and state governments to invest more in climate adaptation and resilience, through initiatives such as flood protection infrastructure and better-informed planning rules and building standards.

Mutual Liability Scheme
Local Government Association of South Australia

Climate risk governance assessments



Planning, risk and regulatory context

Local Government Act 1999

Provide infrastructure for its community and for development (Section 7)	→	Providing local roads, stormwater management and community facilities that are able to function effectively at all times
Prepare an infrastructure and asset management plan (Section 122)	→	Consider future drivers of demand (including climate change) and how these may impact budgets for maintenance and renewal
Undertake prudential review of major projects (Section 48)	→	Review whole of life costs and risks to major projects. Climate risk should be considered in the prudential review.
Make informed decisions (Section 6)	→	Take account of readily available information (such as climate risk data and climate projections)

Statutes Amendment (Local Government Review) Bill 2020

Councils to provide information on proposed rates changes to a designated authority, including how consistent with long term financial plan and asset management plan

Resilient Asset Management Project (RAMP)

- Conceived to fill the gap identified in the climate risk governance assessments
- Enthusiastically supported by SA LGA ($99k), SAFECOM & Commonwealth ($250k)
- The RAMP will integrate climate risk into asset management planning to:
  - build resilience to climate-related risks and natural disasters,
  - optimise council expenditure, and
  - reduce local government exposure to legal and financial liabilities.
- Working across councils delivers financial efficiencies, reduces duplication of effort and builds a consistent approach across the sector.

"Striding towards climate resilience rather than running from risk"

RAMP Goals

- Understand the climate related risks to our assets and infrastructure
- Develop ways to consider climate in asset planning and management, risk frameworks and financial planning
- Develop a mechanism to assess financial value of addressing climate risk and options for financing
- Ensure climate risk and adaptation is incorporated into governance processes
- Create a training package to build staff understanding and capability to incorporate climate adaptation into planning and management
- Deliver pilot programs to test framework, tools, value assessment and training
- Develop a framework and tools that can be used by other councils and other government agencies

Progress report

Completed

- Funding secure, governance established
- Project manager appointed
- Research and recommendations report complete
- Asset classes selected

Current work

- Tender process underway to select a delivery partner to work with council asset managers

Next steps

- Develop frameworks and tools to consider climate in asset planning and management, risk frameworks and financial planning
- Develop a mechanism to assess financial value of addressing climate risk and options for financing
- Incorporate climate risk to assets into governance processes
- Build staff capacity within Resilient South councils
- Develop a framework and tools that can be used by other councils and other government agencies

CITY OF MARION

RESILIENT ASSET MANAGEMENT PROJECT UPDATE

Do you have any questions?

marion.sa.gov.au

8 Reports for Noting

8.1 Environmental Sustainability Update	
Report Reference	ASCYYMMDDR8.1
Originating Officer	Unit Manager Environment and Sustainability – Ann Gibbons
Corporate Manager	Manager Engineering, Assets and Environment - Mathew Allen
General Manager	General Manager City Services - Ben Keen

REPORT OBJECTIVE

The purpose of this report is to provide an update on key environmental sustainability projects and initiatives being delivered by the City of Marion.

EXECUTIVE SUMMARY

There is strong community interest in the environment and increasing participation in community environmental events and activities. There is also an increasing community interest in Council's response to climate change.

This report provides a high-level update on current and emerging environmental themes with a summary of external influences and observations and an overview of how Council is responding to each theme (Attachment 1). Regular public-facing reports on key outcomes are provided in February each year via the Environment Report Card.

An update on implementation of the Carbon Neutral Plan is provided in Attachment 2.

The environmental themes identified in this update can be used to inform the development of the new 4 Year Business Plan 2023-2027.

RECOMMENDATION

That the Asset and Sustainability Committee:

1. **Notes the environmental sustainability update and provides feedback on the environmental themes covered in the report.**

DISCUSSION

This update is structured around key environmental themes and provides a summary of external influences and observations for each theme along with an update on the City of Marion's response and key actions (refer to Attachment 1).

The environmental themes included in this update are:

- Climate change (abatement and adaptation)
- Electric vehicles
- Urban greening
- Biodiversity
- Water management
- Coastal management
- Waste and recycling
- Environmental engagement
- Regional planning and partnerships

- Environmental monitoring and reporting

Community interest and engagement in environmental initiatives and outcomes continues to grow and is reflected in increasing participation in local planting days with 'Friends' groups, attendance at environmental workshops and presentations, and provision of feedback via community surveys and consultations.

Regional environmental planning provides a major opportunity to deliver strategic environmental projects efficiently across council borders and reduces duplication by individual councils. South Australian councils demonstrate excellent capacity to establish these partnerships including hosting of regional officers and provision of regional services. Examples of regional collaborations include the Resilient South Regional Climate Partnership (RSRCP), the Southern Region Waste Resources Authority (SRWRA), and the Metropolitan Seaside Councils Committee (MSCC).

Other project highlights include:

- Installation of five CoastSnap photo points along Marion's coastline to engage the community in understanding coastal change;
- Trialing of a new Verge Incentive Fund to assist residents with the costs of improving the landscaping on council-owned road verges outside their properties;
- Development of a Sturt River Biodiversity Report to identify priorities to improve biodiversity along the Sturt River and its connected areas;
- Commissioning of kerbside audit to inform the evaluation of the food waste recycling / kitchen caddy program delivered in 2021;
- Completion of major capital works at Glade Cresent Wetland and Lucretia Way Wetland; and
- A project to replace some of the gas water boilers at the Marion Outdoor Pool with electric water heaters. A review of solar capacity at the site is also underway to identify the feasibility of increasing the size of the existing 17.1kW rooftop solar system to meet increased electricity demand at the site.

An annual report card highlighting significant achievements has been developed and will be updated and released each February. Two editions have been released to date for 2020 and 2021. They are both available on the City of Marion website.

An update on implementation of the Carbon Neutral Plan is provided in Attachment 2. The focus during 2022 has been development of a Fleet Transition Plan (to be discussed in this agenda) and participation in a LG Procurement-led process for electricity supply contracts from 1 January 2023. Progress towards Councils carbon neutral by 2030 target is provided in the table against Initiative 1.1 and will be reported in the fourth quarter Corporate KPI report.

The development of a new **4 Year Business Plan 2023-2027** has recently commenced. The environmental updates provided in this report can be used to inform the development of the new Business Plan and prioritise actions for the next four years.

A short presentation will be provided in the meeting to highlight key achievements and enable questions from the Committee.

ATTACHMENTS

1. ASC20220802 - Attachment 1 - Environmental Update [**8.1.1** - 7 pages]
2. ASC220802 - Attachment 2 - Carbon Neutral Plan Implementation [**8.1.2** - 5 pages]
3. ASC 220802 - Environmental Update [**8.1.3** - 5 pages]

Attachment 1: Environmental Update, August 2022

Environmental Theme	External Influences and Observations	City of Marion Response / Action

Climate Change
 	
(Abatement & Adaptation)
	• The **Intergovernmental Panel on Climate Change** (IPCC) finalised the second part of the Sixth Assessment Report, Climate Change 2022: Impacts, Adaptation and Vulnerability in February 2022. The report states that *"Climate change impacts and risks are becoming increasingly complex and more difficult to manage."*
	• **Community interest:** Increasing interest and expectations from the community regarding how the Council will respond to climate change impacts and what support and assistance will be provided to the community.
	• **Climate Risks and Asset Management:** Every asset is designed to withstand a climate threshold as climate risk increases those thresholds will be exceeded. Risks could be nonlinear as damage changes from minimal to critical (McKinsey & Co 2020).
	• **Hydrogen Economy:** The SA Government has a strong focus on the hydrogen economy and is investing more than half a billion dollars to accelerate new hydrogen projects, shipping infrastructure and modelling tools for investors and developers. Focus areas include green hydrogen made with renewable electricity and recycled water; Hydrogen Hub being established at Tonsley.
	• The new **SA Government** has declared a **Climate Emergency** (May 2022). Previous SA Liberal Govt had set a goal of reducing greenhouse gas emissions by more than 50% by 2030 and achieving net zero emissions by 2050.
	• The new **Federal Government** has set an **emissions reduction target** of 43% on 2005 levels by 2030 and net zero by 2050.
	• Continued funding to 30 June 2023 for a **Resilient South Regional Coordinator** (hosted at City of Marion) has been provided by Green Adelaide.
		• An update on the Council's action on climate change was provided to the General Council meeting on 28 June 2022 (GC220628R12.1).
		• **Carbon Neutral Plan:** target to be carbon neutral for Council operations by 2030 (refer to Attachment 2 for a more detailed implementation update).
		  ○ An update on **progress towards carbon neutral by 2030** goal will be included in the 4th Quarter KPI report.
		• **Resilient South Regional Climate Partnership**
		  ○ During 2022/23 the **Resilient South Regional Climate Action Plan** is to be renewed. A $99,000 Preparing Australian Communities grant has been received from the Commonwealth Government to support the plan development. There will be opportunities early in 2023 for Elected Members from the four partner Councils to contribute to the Plan development and assist in the prioritisation of actions for delivery over the next five years.
		  ○ **Resilient Asset Management Project (RAMP):** This work is industry-leading and, in addition to attracting funding from the LGA Research and Development Scheme ($99,000) and National Disaster Risk Reduction Fund ($250,000), has attracted strong interest from other Councils and the South Australian Government who wish to participate in or observe the project as it progresses. (a more detailed update is included in the 'Asset Management' item on this agenda).
		  ○ A reviewed and updated **Resilient South Climate Change Sector Agreement** with SA Government will be brought to Council for consideration early in the new Council term.
		  ○ The **Resilient South website** (www.resilientsouth.com) provides public access to Resilient South plans and resources.
		• **Embodied Carbon**
		  ○ Current focus on building understanding of council's carbon footprint from embodied carbon (contained within construction materials used in assets and infrastructure).
		  ○ Opportunities to reduce the embodied carbon from future projects will be sought through more informed design and procurement decisions.

Environmental Theme	External Influences and Observations	City of Marion Response / Action
Electric Vehicles	• **EV (Electric Vehicle) Demand and Availability:** There is strong demand for EVs (Electric Vehicles) in Australia and long waiting lists. Although supply has been constrained, sales more than doubled in 2021, to almost two percent of total new vehicle volume. Further increases are expected in 2022, as more electric cars arrive in Australia. (EVs available now/soon in Australia - https://www.aeva.asn.au/files/603/) • **SA Govt EV Fleet Pledge Program** is a commitment by businesses to undertake and transform their fleets to zero emission electric vehicles (CoM has joined). • **Infrastructure investments** will be required to support the transition to EVs. • **Increasing fuel prices** will impact on Council budgets in the short term.	• **Fleet Transition Plan** for CoM (to be discussed in this agenda).
Urban Greening	• **Urban infill.** Residential infill developments continue to increase. There is a risk that loss of canopy cover in residential areas might outweigh the increase in canopy from council planting. • **Increased community awareness.** Ongoing community concern around the loss of urban green spaces and loss of large trees continues with articles regularly appearing around community concern in the media. Advocacy groups such as the Conservation Council of South Australia are running campaigns to raise awareness and call for action. • **Data on urban greening.** There are new technologies and mapping of tree canopy and green cover being used throughout the world to document trends in urban green cover in urban areas. Collection techniques vary in local accuracy. The State Government has coordinated a high-resolution data capture of Adelaide for urban heat, tree canopy and landscape permeability. • **Increased pressures in public green space**. With losses in private urban green spaces occurring with urban infill, there is increased pressure for increasing benefits of public green space in streetscape and reserves through additional tree planting and water sensitive urban design (WSUD). This increased effort increases the resourcing required from councils to invest in redevelopment and ongoing maintenance. Complexities with managing verge spaces are increasing – particularly in making allowances for utilities.	• **Council awareness and engagement.** A "Green City Update" was provided to the Assets and Sustainability Committee in April 2022. The update included a detailed report and presentations from staff and a Green Adelaide representative on trends and responses around urban greening (ASC220405R8.1). • **Urban heat and tree canopy mapping.** The City of Marion is contributing to the State Government's collection and analysis of improved spatial data for urban heat and greening (GC210727M14.3). Local results for City of Marion will be available in late 2022. Council staff are actively engaging with Green Adelaide on the new data and the proposed Urban Greening Strategy. • **Increased Tree Planting.** The council is aiming to plant 30,000 trees by 2028 with a focus on Edwardstown, Clovelly Park, Mitchell Park and Oaklands Park. In 2021 4,187 trees were planted. • **Tree Asset Management Plan.** The City of Marion Tree Management Framework is currently being reviewed. The updated document will be developed following the council's Asset Management Framework and will formally recognise trees as a council asset – including the description of a valuation methodology. • **Trees and utility providers**. SA Power Networks has identified approximately 600 immature street trees in the City of Marion that may not be compliant with the provisions of the *Electricity (Principles of Vegetation Clearance) Regulations 2021.* Similar non-compliant plantings have also

Environmental Theme	External Influences and Observations	City of Marion Response / Action
	• **State Government – Adelaide Urban Greening Strategy.** Current trends in urban infill suggest that the state government's target of a 20% increase in green cover by 2045 will be difficult to meet. Green Adelaide is leading the state government in the development of the Urban Greening Strategy for Adelaide that aims to increase tree canopy and reduce hard surfaces.	been identified in neighbouring councils. Marion is working with our Resilient South partners to develop a negotiating position to retain as many trees as possible. • Opportunities for residents to help green and cool the urban environment include: ○ **Urban Tree Warriors:** volunteers helping new plantings establish and develop into trees that will benefit their whole street as well as the wider community. ○ **Adopt-a-Tree Program:** free watering bucket and detailed tree care instructions for residents to help protect old and new plants across the city. ○ **Local Conservation Groups:** there are eight active Friends groups across Marion and six Bushcare groups volunteering time to protect and restore native vegetation. ○ **Regulated Tree Maintenance Fund:** financial assistance for property owners to take action that helps maintain regulated/significant trees on their property. An update on the 2021/22 trial was provided to Council in May (GC220510R11.3). ○ **Verge Incentive Fund:** trial commenced in April 2022; funds to assist residents with the costs of improving the landscaping on council-owned road verges outside their properties (GC220308R11.1).
Biodiversity	• **No species loss goals.** Strategies and plans to halt the loss of biodiversity exist at the local and global levels (including UN Sustainable Development Goals). Australia continues to have one of the highest extinction rates in the world. • **Native vegetation clearance.** Clearance and poor management of remnant native vegetation continues in metropolitan Adelaide (including sites in City of Marion not managed by council) without the involvement of the Native Vegetation Council. • **Adelaide National Park City.** Adelaide was declared as the world's second South Australia 'National Park City' in November 2021 following a bid led by Green Adelaide (state government). www.adelaidenationalparkcity.org	• **City of Marion Remnant Vegetation Management Plan.** The council's biodiversity plan continues to be implemented with ongoing revegetation and weed control programs being delivered annually to over 29 priority sites (82ha). This plan is due for review in 2023. Outcomes for 2021 include: ○ 15,000 local native seedlings were planted. ○ Annual condition monitoring indicates that 83% of sites have improved in condition. • **Sturt River Biodiversity.** With support of a Green Adelaide grant, staff are working with Friends of Sturt River Landcare, Friends of Warriparinga, Green Adelaide and SA Water to identify priorities to improve biodiversity along the Sturt River and its connected areas. A report will be brought to Elected Members in 2022.

Environmental Theme	External Influences and Observations	City of Marion Response / Action
	• **Threatened species protection in urban areas**. Species at risk of extinction are being translocated to actively managed urban areas for improved protection and public awareness (led by the state government). • **Weed control**. Declared weeds continue to spread throughout unmanaged open spaces reducing biodiversity and increasing fire risk. • **Fire risk**. Increased urban heat and reduced rainfall (climate change trends for Adelaide) can increase the bushfire risk.	• **Fuel (fire) management program.** The council manages ongoing fuel reduction, firebreaks and block clearing in high-risk areas. Control of woody weeds in gullies has been a priority for the council in 2021. • **Threatened Species.** Sites in the City of Marion are being used to re-establish threatened and/or locally extinct species e.g., Winter Spider Orchid, Southern Purple-Spotted Gudgeon (fish). Staff are working with Green Adelaide to identify other potential sites and threatened species for translocation and monitoring the presence of existing threatened species e.g., Australasian Bittern (bird at Oaklands Wetland) using audio monitoring technology.

Water Management	• **Increasing water run-off.** Ongoing urban infill and loss of landscape permeability, coupled with climatic trends towards increased high-intensity rainfall trends results in increased peak volumes of stormwater and may result in more frequent localised flooding.
	• **Stormwater quality**. Loss of permeability in the landscape (due to urban infill) is continuing to result in increased stormwater runoff and increased pollutant loads to the Gulf (Adelaide Coastal Waters Studies). Urban fill needs to be delivered with consideration of "water sensitive urban design" (WSUD) to increase permeability and improve water quality.
	• **Water Sensitive Urban Design (WSUD)**. Industry understanding of cost-benefit along with the selection, design, construction, and maintenance of WSUD has improved significantly over the past five years in South Australia, particular with the support of **Water Sensitive SA**. Standard designs and industry-led manuals now exist and widespread application of WSUD is becoming standard – particularly in streetscapes and civic spaces.
	• **Watercourse management** is a priority for council where natural watercourses cut through council reserves particularly in the southern areas of City of Marion. Erosion control, management of gross pollutants and woody weed control are ongoing priorities.
		• **Stormwater Planning**. Four stormwater planning catchments cover the City of Marion each requiring a dedicated Stormwater Management Plan (SMP). Plans have been finalised and approved by the Stormwater Management Authority and regional councils for the **Coastal (Holdfast – Marion) SMP** (coastal catchment east of the Sturt River channel and north of Seacombe Road) and **Hallett Cove Creeks Catchments SMP** (north of Field River). A **Sturt River (Mitcham-Marion) SMP** is currently being developed for catchments east of the Sturt River channel pending the outcomes of a major **State Government flood hazard mapping** study being undertaken for proposed amendments to the Planning and Design Code. A **Field River SMP** is also yet to be completed with City of Onkaparinga.
		• **Water Sensitive Urban Design (WSUD)** projects are implemented across the City - opportunities have been discussed recently at the Assets and Sustainability Committee (ASC220705R7.1). Opportunities for WSUD are identified in each of the Stormwater Management Plans.
		  ○ The **City of Marion Water Treatment and Resources Asset Management Plan** has been endorsed with ongoing maintenance and replacement budgeted.
		  ○ A **WSUD Maintenance Guidelines** developed collaboratively with Water Sensitive SA guides ongoing maintenance requirements.
		• Major capital works have been completed at **Glade Cresent Wetland** and **Lucretia Way Wetland**. Minor works for ongoing erosion and woody weed control continue on an annual basis throughout the coastal drainage lines and creeks in the southern part of the City.

Environmental Theme	External Influences and Observations	City of Marion Response / Action
		• The **City of Marion Water Business** (recycled water network) continues to operate and expand. The existing Oaklands Reticulation Network will be expanded with funding for the new **Seacliff Extension** being announced by the Federal Government.
Coastal Management	• **Coastal erosion.** Coastal erosion is actively occurring in many areas along the South Australian coastline. Increased coastal erosion due to climate change is expected for South Australia. Councils have conservatively estimated capital works and operating expenses required to manage the coast will cost more than $200 million+ over the next 10 years. This dramatically outweighs the available state government funding support. • **Coastal monitoring and hazard assessment.** Due to the dynamic and localised nature of coastal change, careful monitoring of coastal hazards and ongoing assessments of risks are needed to determine the best timing for decisions around coastal climate change adaptation. Limited coastal hazard mapping is available for South Australia. • **Coastal Climate Change Adaptation Planning.** The LGA (Local Government Association) has developed a Local Government Coastal Climate Change Adaptation Guideline to assist councils in this process. Legislation is in place for all east coast states to mandate the development of coastal climate change adaptation plans for local government.	• **City of Marion Coastal Climate Change Study.** With support from the Department for Environment and Water, a City of Marion Coastal Climate Change Study was developed in 2018. This study is currently being updated. An updated report is expected in 2022. • **City of Marion Coastal Monitoring Program**. Council is delivering an annual coastal monitoring program with grant support from the Department for Environment and Water. Results from the 2021 program have indicated: o No visible evidence of slides, slumps, or collapses on the coastal cliffs o Minor erosion on embankments and at cliff bases in high-risk areas (not need for remedial action) o Up to 100cm of loss of sand in intertidal zone in sections of Hallett Cove beach o Movement of beach rock up the beach at Hallett Cove beach o Ongoing erosion of the dune south of Field River mouth. • **Coast Snap.** City of Marion is the first council in South Australia to join the international CoastSnap initiative. With funding support from the Department for Environment and Water, we have five new stations located in Hallett Cove and Marino where people can take photographs and contribute to the collection of coastal monitoring data. The citizen science initiative aims to engage the community in understanding coastal change. • **Regional planning.** The City of Marion is a member of the Metropolitan Seaside Councils Committee (MSCC). Collaboration with other coastal councils, the state government and other industry representatives (e.g., Universities) occurs through this network. To meet the growing demand for regional support in coastal responses, a major review of the MSCC has been undertaken and a new delivery model has been developed. This model will be brought to Council for further consideration in 2022.
Waste and Recycling	• **Southern Materials Recovery Facility (SMRF)** opened in July 2021 to process materials collected in the yellow kerbside bins across Marion, Holdfast Bay, and Onkaparinga Council areas.	• **Food Waste Recycling Program:** o Kitchen caddy distribution completed to 39,902 households in 2021.

Environmental Theme	External Influences and Observations	City of Marion Response / Action

	• **Single-use plastics bans** have been introduced in South Australia.
	  ○ In March 2021 single-use plastic straws, cutlery and stirrers were prohibited from being sold, supplied, and distributed in SA.
	  ○ In March 2022, expanded polystyrene cups, bowls, plates, and clamshell containers were prohibited from sale, supply, or distribution in South Australia.
	  ○ **Oxo-degradable plastic** products are also prohibited from production, manufacture, supply, and sale in the state.
	• **Beverage container litter** currently represents only 2.8% of litter items in South Australia because of the Container Deposit Scheme (CDS). It is proposed that the CDS is expanded to include wine bottles.
		○ Commissioned kerbside audit report near completion and will inform the project evaluation report which will be presented to General Council meeting on 9 August 2022.
		○ Replacement rolls of bags for kitchen caddies available now for collection from council offices, libraries and neighbourhood centres.
		• **Community Education:** Investigation of opportunities to educate the community through site visits and tours. Recycling presentations continue to be delivered in the community.
		• **Compostable dog poo bags** are now used in dispensers across the council area.
		• **Council events:**
		○ Proactively working with organisers and **caterers** for Council-run events to ensure single-use plastics are not being used.
		○ Continue and expand the use of **volunteer bin buddies** at major Council-run events to assist in guiding attendees in the appropriate use of waste and recycling systems.
		• **Valuing Marion's Waste:** Council's internal waste management systems are currently being reviewed following an independent waste assessment documenting waste management systems across all council facilities and identifying improvements for resource recovery.

Environmental Engagement	• **Nature connection.** Increasing community interest in nature connection, including nature play, nature bathing (Shinrin Yuku), medically prescribed time in nature. COVID lockdowns over the past two years have been linked to people seeking great connection with nature • **Health and nature.** Links between health and engagement with nature are becoming increasingly well recognised. Formalised programs exist where GPs can professionally prescribe time in nature.	• An update on many of the environmental / climate change engagement initiatives being delivered was provided at the General Council meeting on 28 June 2022 (GC220628R12.1). • **Community Gardens:** ○ We continue to support the four community gardens at Glandore, Oaklands Park, Marino and Trott Park. ○ The Cove Community Garden Group and Greenfingers Community Garden Group are both in the process of preparing the community garden applications.
Regional Planning & Partnerships	• **Regional Environmental Planning** continues to be a major opportunity to deliver strategic environmental projects efficiently across council borders and reduces duplication by individual councils. South Australian councils demonstrate excellent capacity to establish these partnerships including hosting of regional officers and provision of regional services.	• **Resilient South** is a regional climate partnership between the Cities of Holdfast Bay, Marion, Mitcham and Onkaparinga and the South Australian State Government. Key priorities being delivered through this partnership are listed in the 'Climate Change' theme above.

Environmental Theme	External Influences and Observations	City of Marion Response / Action
	○ Regional Climate Partnerships ○ Regional Waste Subsidiaries ○ Stormwater Catchment Planning ○ Coastal Adaptation Planning ○ Regional Environmental Education Programs	• **Southern Region Waste Resource Authority (SRWRA)** is a regional subsidiary of the Cities of Marion, Onkaparinga and Holdfast Bay located at Seaford. • **Metropolitan Seaside Councils Committee** (MSCC) is a regional network of councils supporting each other in coastal management. A major review of the MSCC is underway to better fund this network and support delivery of regional coastal outcomes. • **Stormwater planning** with adjoining Council including City of Mitcham and City of Holdfast Bay. More detail is included in the 'Water Management' theme above. • **Green Adelaide Education** City of Marion hosts a part-time Green Adelaide Education Officer who provides nature education services to schools and the community across southern Adelaide.
Environmental Monitoring and Reporting	• **SA State of the Environment Report** is currently being updated with the final report expected to be released by the Environment Protection Agency in 2023. This report sets key environmental indicators and condition monitoring across South Australia. • **United Nations Sustainable Development Goals (SDGs)** are being used as a framework to influence local reporting of global development priorities with *Goal 11 Sustainable Cities* being an area recognized as a key opportunity for influence by local government.	• **Environment Report Card:** to be developed at the beginning of each calendar year to provide a public-facing update on key environmental initiatives being delivered by Council. Editions to date include: ○ 2020 Report Card ○ 2021 Report Card

ASC220802 – Attachment 2: Carbon Neutral Plan Implementation Update

On track Not on track

<table>
<tr><th>Initiative</th><th>Indicative Year of Delivery</th><th>Status</th><th>Commentary</th></tr>
<tr><td colspan="4">1. Tracking Carbon Emissions</td></tr>
<tr><td>1.1 Carbon inventory and annual reporting</td><td>2020/21 → ongoing</td><td>COMMENCED</td><td>
The 2015/16 baseline carbon footprint for City of Marion's corporate operations is 5,701[1] tonnes of carbon dioxide equivalent (tCO_2e).

An inventory of Scope 1 (e.g., vehicle fuels) and Scope 2 (e.g., electricity purchased from the grid) carbon emissions for 2021/22 has been developed. Some Scope 3 emissions are included (e.g., emissions from mains water pumping) and a sector-wide discussion is occurring to develop some consistency across Councils regarding what is included in Scope 3.

A Corporate KPI has been established to provide assurance that Council is meeting agreed carbon emissions reduction targets. Carbon emissions will be included in Q4 Corporate KPI report each year.

Target annual emissions for 2021/22 in the Carbon Neutral Plan are 3,800[2] tCO_2e
<table>
<tr><td>Core target</td><td>Actual annual emissions less than the Plan's annual target emissions (3,800 tCO_2e)</td><td>Actual annual emissions are 3,382 tCO_2e which is 418 tCO_2e less than the Plan's annual target emissions</td></tr>
<tr><td>Stretch target</td><td>Actual annual emissions 5% less than the Plan's annual target emissions (3,610 tCO_2e)</td><td>Actual annual emissions are 11% less than the Plan's annual target emissions</td></tr>
<tr><td>Measure</td><td>Carbon emissions footprint, measured against Council's endorsed Carbon Neutral Plan</td><td>2021/22 corporate emissions = 3,382[3] tCO_2e.
This represents a 40.7% reduction on 2015/16 base year emissions of 5,701 tCO_2e.</td></tr>
<tr><td colspan="3">Notes:
1. Revised base year data includes stationary fuel that hadn't been previously available, and more accurate water pumping data. Baseline previously reported as 5,617 tCO_2e.
2. Target annual emissions based on Fig. 3 of endorsed Carbon Neutral Plan.
3. 4th Qtr electricity, gas & water data for 2021/22 is estimated based on data from previous 3 years.</td></tr>
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Initiative	Indicative Year of Delivery	Status	Commentary
2. Reducing Carbon Emissions			
2.1.1 Trial ESD Guidelines on Council projects	2020/21	**COMPLETE**	Completed in 2020/21.
2.1.2 Embed updated ESD Guidelines	2021/22 → ongoing	**COMMENCED**	The 'ESD Guidelines for New Buildings and Refurbishments' and 'Sustainable Building Maintenance Guidelines' documents were endorsed by ELT in September 2021 along with an Implementation Plan to guide how they will be embedded across the organisation. Several activities to support this have been progressed this year including: • Embedding in key documents such as the 'Buildings and Structures Asset Management Plan', the 'Procurement and Contractor Management Policy, and the 'Facilities Design Specification'. • Measurement of emissions benefits, benchmarking against the performance of Council partners, and reporting on savings. A key project outcome has been approval to replace some of the gas water boilers at the Marion Outdoor Pool with electric water heaters. A review of solar capacity at the site is also underway to identify the feasibility of increasing the size of the existing 17.1kW rooftop solar system to meet some of the increase demand.
2.1.3 Implement a sustainable behaviour change program	2021/22 → ongoing	**COMMENCED**	The ESD Implementation Plan included an action for targeted training and capacity building for property and project staff, vendor panels, and building users (including tenants of leased facilities) to be delivered during 2022/23 in partnership with the Cities of Charles Sturt and Port Adelaide Enfield.
2.2.1 Develop Fleet Transition Plan	2021/22 – 2022/23	**COMMENCED**	Research and investigations to better understand current and future requirements has commenced including: • Engagement of technical consultants, Gething Pty Ltd, to assist in the development of the fleet transition pathways and business cases. • Infrastructure needs analysis at City Services, Administration Building, and Southern Depot by WGA. This analysis includes a review of SAPN transmission infrastructure and onsite switchboards, distribution boards and cabling. Significant investment will be required to support a transition to EV. ASC discussion and input on 2 Aug 2022.
2.2.2 Install EV charging stations at Council sites for fleet vehicle recharging	2023/24 → ongoing	**COMMENCED**	The Fleet Manager has commenced infrastructure needs analyses at key operational sites across Marion, Charles Sturt and Port Adelaide Enfield with the view to bulk procurement and installation of EV charging infrastructure across the three councils to support transition to electric vehicles. This includes assessing the need for transformer and switchboard upgrades and identification of suitable locations at key operational sites (e.g., City Services) for installation of EV chargers.
2.2.3 Implement Fleet Transition Plan	2023/24 → ongoing	**NOT STARTED**	

Initiative	Indicative Year of Delivery	Status	Commentary
2.3.1 Implement the Public Lighting Action Plan	2020/21 – 2025/26	**COMMENCED**	Public Lighting Action plan achievements: Actions commenced: 1.2 Identify, prioritise and address areas of non-compliance 5.1 - Ensure that all new lighting infrastructure includes the ability to function as part of a smart lighting network (ongoing) 5.2 - Actively trial smart lighting technology in both metered and unmetered lighting schemes (ongoing)
3. Switch to Renewable Electricity			
3.1 100% renewable electricity contract	2022/23	**COMMENCED**	LGA Procurement (LGAP), acting as an Agent for 58 South Australian Councils (including the City of Marion) and 6 Local Government Subsidiaries, has sought Expressions of Interest from suitably qualified Electricity Retailers for options for the supply of 100% Accredited Renewable Electricity, for large, small, and unmetered sites to participating Councils. This process is still underway and will inform the procurement process to be finalised prior to 31 December 2022 when current electricity supply contracts end. NOTE: Wholesale prices for electricity have gone up considerably this year and LGAP is exploring all options to reduce the impact of current pricing. 100% accredited renewable energy might not be possible at a reasonable price in 2023.
3.2 Large-scale Solar	2020/21 – 2025/26	**NOT STARTED**	Exploration of opportunities to partner with others such as SRWRA to expand existing and/or construct new solar arrays has not been a key focus during 2022 as the focus has been on the Fleet Transition Plan.
4. *Offsetting Carbon Emissions*			
4.1 Research carbon offset projects	2020/21 – 2027/28	**COMMENCED**	A feasibility assessment of a possible carbon sequestration project on public land in the Field River Valley was completed during 2021, with outcomes discussed at the 9 November 2021 Elected Member Forum. A report considered at the General Council on 22 February 2022 (GC220222R11.2) provided an update on the status of the carbon offset / sequestration project and provide some possible next steps for the City of Marion. A decision was made to not proceed with the Field River Carbon Sequestration Project based on the analysis undertaken and to continue to seek alternative carbon sequestration opportunities.
4.2 Implement final offset program	2028/29 – 2029/30	**NOT STARTED**	
5. *Supporting Activities*			
5.1 Communicate and promote carbon neutral activities	2020/21 → ongoing	**COMMENCED**	Information on some of Marion's carbon emissions reduction initiatives was included in the 'Environment Report Card 21'.

Initiative	Indicative Year of Delivery	Status	Commentary
			Carbon emissions and progress towards endorsed carbon neutral by 2030 target is included in Q4 Corporate KPI report each year (from 2021/22).
5.2 Partner with and provide stewardship with the community by providing education and incentives	2020/21 → ongoing	**COMMENCED**	Kitchen Caddy Rollout 1kg of food waste will generate around 1.9kg CO^2e in landfill. During August and September 2021, around 40,000 kitchen caddies were delivered to households in Marion with support from a GISA grant. It is estimated that approx. 3,420 tonnes CO^2e will be reduced from 1,800 tonnes of food waste that will be diverted from landfill during the first 12 months. A more detailed update on the program, including a recent kerbside audit, will be provided to the General Council meeting on 9 August 2022. Community education and information sessions are delivered to Marion residents throughout the year and information on practical steps that can be taken to reduce environmental impacts and build resilience is distributed to the 1,065 subscribers (June 2022) to the monthly Green Thymes e-newsletter. This work is also supported by social media posts and articles in City Limits. Recent examples of Green Thymes articles are listed below. • July 2022 edition: FREE guide to Greener homes and built environments, Getting savvy with your electricity bills. • May 2022 edition: Understanding your Electricity Bill, top tips to save money on your energy bills this winter. • April 2022 edition: Verge Incentive Fund to support cooler and greener streets and neighbourhoods. • January 2022 edition: Keeping your home cool this summer, Irrigation 101. Business Engagement The City of Marion supported the Future Energy Week from 15 – 21 November 2021 at the Tonsley Innovation District. The event targeted local businesses and showcased the best and brightest in energy and connected organisations with current and emerging innovators that are all contributing to the much-needed clean energy transition. The Resilient South Regional Climate Partnership held a business breakfast event that included high profile speakers including local business owners and politicians. Planning is underway for a shorter and more focussed event in 2022.
5.3 Make major Council events carbon neutral	2021/22 → ongoing	**COMMENCED**	Some initial exploratory discussions between the Environmental Sustainability and Events teams have occurred. The opening of the Mitchell Park Sports and Community Centre event was organised to support reduced carbon emissions including requirements for compostable food and drink

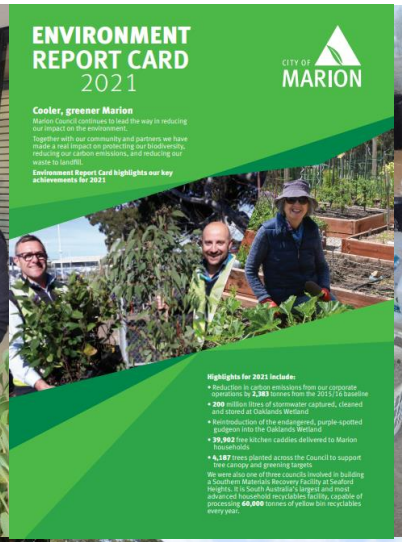
Initiative	Indicative Year of Delivery	Status	Commentary
			containers, and volunteer 'bin buddies' to help event attendees choose the right bin. Learning and feedback from this event will be used to help shape future events.
5.4 Develop and implement a Sustainable Procurement Policy	2024/25 → ongoing	**NOT STARTED**	
5.5 Achieve Climate Active Certification (optional)	2029/30	**NOT STARTED**	

Environmental Sustainability Update

Asset and Sustainability Committee
2 August 2022

marion.sa.gov.au

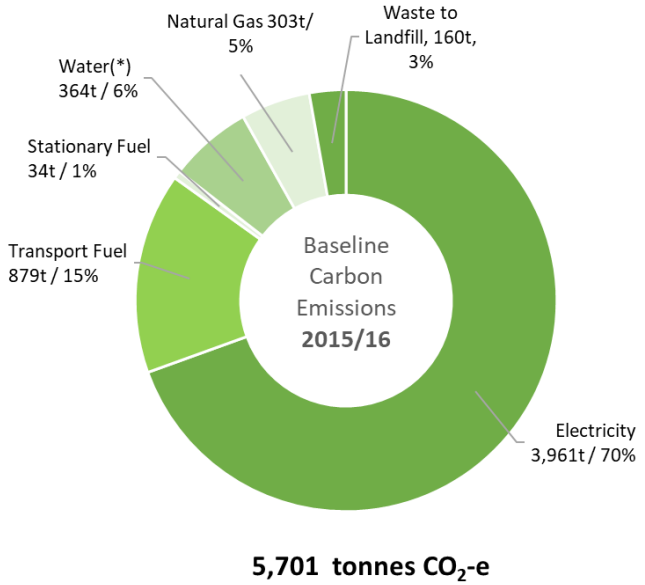
Some 2022 Highlights

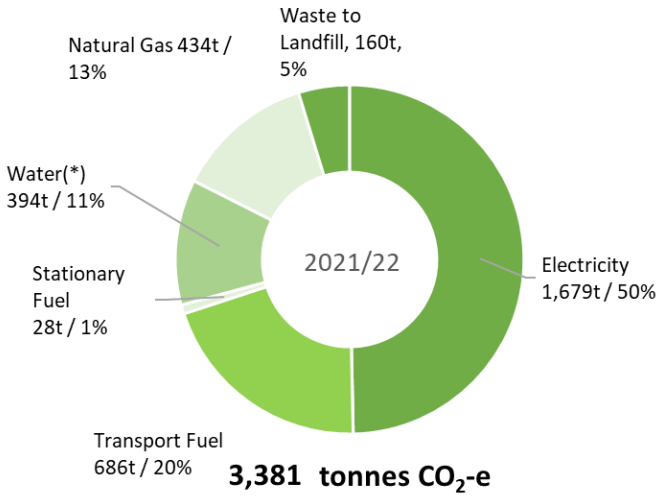


Some 2022 Highlights

Carbon Neutral Plan

Progress towards carbon neutral by 2030 goal

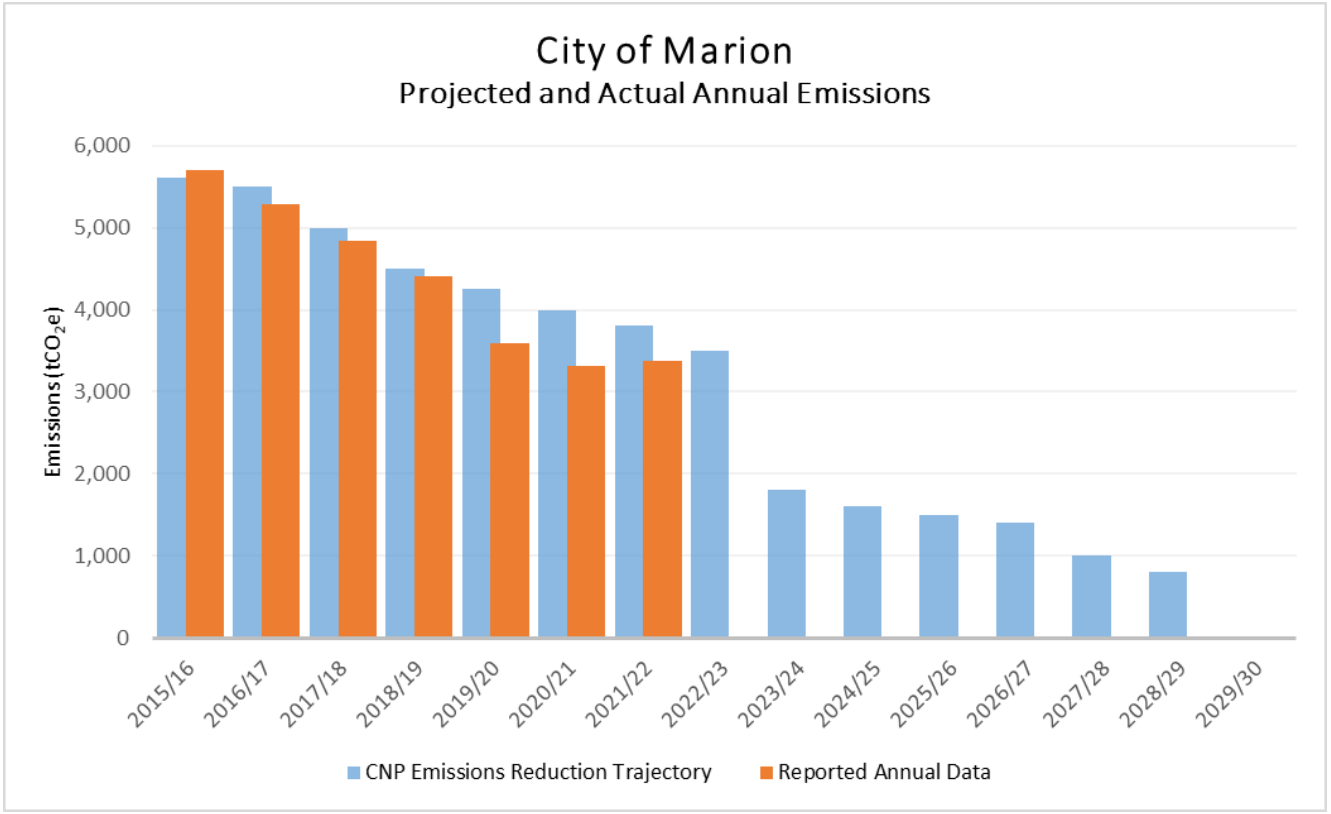




- Since 2015/16 carbon emissions have been reduced **by 41% (2,320 tCO_2e)**
- Most of the emissions-reduction was achieved through reduced electricity consumption **(58%, 2,282 tCO_2e)** and, to a lesser extent, vehicle fuels **(22%, 193 tCO_2e)**

Carbon Neutral Plan

Progress towards carbon neutral by 2030 goal



9 Workshop / Presentation Items

10 Other Business

11 Meeting Closure

The meeting shall conclude on or before 9.30pm unless there is a specific motion adopted at the meeting to continue beyond that time.