



LIVING ENVIRONMENT STRATEGY 2017-2022



CITY OF
Port Adelaide Enfield

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A City which cares for its natural environment and heritage

Our living environment strategy

Our city is emerging as a unique urban environment and nature based tourism destination, with its close connections between residential living, a prosperous commercial and industrial sector, and a natural environment that is of enormous value to both the life of the local community and the State’s economy.



It is an area where a resident or visitor can explore a busy working international port, immediately adjacent to beautiful coastal habitats and landscapes of international conservation significance.

It is an area where Aboriginal history and living Kaurua culture (embedded in the local environment) can be experienced alongside the vibrant maritime and diverse cultural heritage and life of the area.

The City has also been a pioneer in the management and promotion of its heritage by protecting and conserving built heritage.

The coming decade will bring both extraordinary opportunities in new economic and innovative ventures to the region, as well as many significant challenges in protecting and enhancing our ecological assets and systems and our natural, cultural and built heritage at a time of more intensive development.


The emerging challenge of climate change will also be tackled actively by Council and our government partners, alongside our residential and business communities who have a key stake in ensuring that the area’s future is built on the essential foundation of a healthy natural and urban environment.

The future of the city’s urban environment and natural resources will be built on active partnerships, local research and understanding, citizen science and advocacy, and community-wide actions and collaborations.

Our Living Environment Strategy 2022 identifies the key challenges and unique opportunities that the city will experience in the next decade - and reflects both Council’s and the community’s aspirations and commitments for the future. The strategy identifies our shared strategic priorities for the next five years and a some foundation initiatives that will help drive action.

Thank you to all that have played a part in preparing this strategy and for all that will be part of its implementation.

Together we can achieve the City Plan 2030 environment goal of creating “A City which cares for it’s natural environment and heritage”.


Mayor Gary Johanson

I. Our context

Our natural and urban environment

Three worlds collide, and spark innovation and collaboration.

The city covers an area of 97 square kilometres and is located in the north-western suburbs of Adelaide, approximately eight kilometres from the Adelaide CBD - and is bounded in the west by the coastline of Gulf St Vincent, and in the east by the River Torrens and the foothills of the Mt Lofty Ranges.

The area is an extraordinary mix of intense industrial and commercial development (including 22,000 registered businesses), essential utilities, defence industries, and port infrastructure that supports the State's economic base – immediately alongside a diverse residential population of 130,000 people – and also alongside some of the most important and extensive ecological resources and natural assets in the nation.

This sometimes conflicting mix provides a huge management challenge ongoing, but also provides the opportunity for innovation and collaboration in finding means to ensure 'the best of three worlds' can be achieved.

The city has the third largest population of any local government area in South Australia. The city's population has been steadily growing during the last decade. Population and housing density in the residential areas of the Council is significantly increasing in those areas that have been designated as higher density areas via the state's planning policies,

and also due to very significant 'infill' development across the middle ring suburbs.

The highest population densities are found along the coast but also in the suburbs of Woodville Gardens, Mansfield Park and Ferryden Park that have recently undergone urban 'regeneration' projects, and the newly developed suburbs of Northgate, Oakden and New Port where medium and higher density housing has been developed.

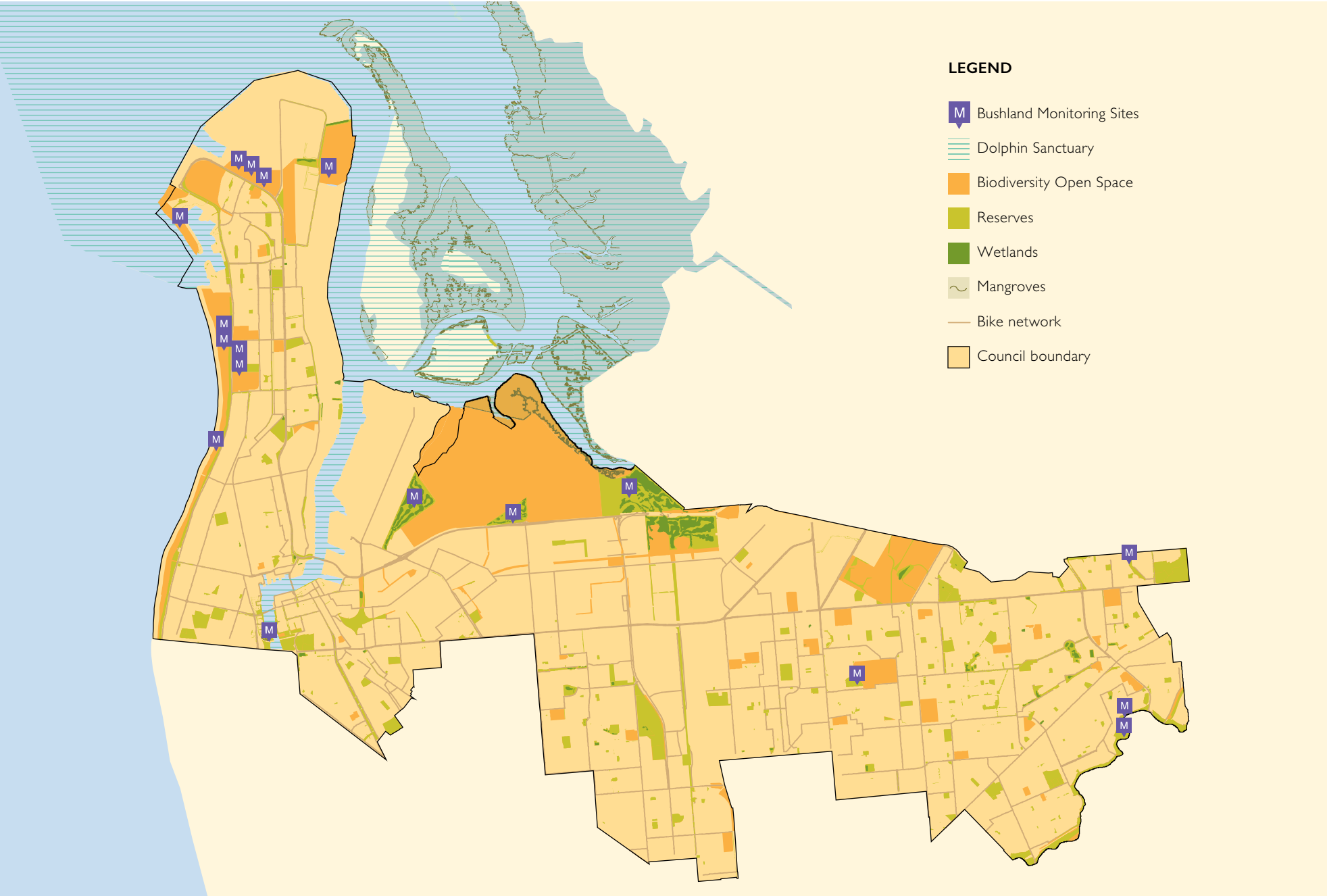
The city also includes unique natural environments - including the largest constructed tidal wetlands in the world at Barker Inlet ; State-listed nature reserves such as Mutton Cove, the Adelaide Dolphin Sanctuary and the Adelaide International Bird Sanctuary; a wide expanse of coastal beaches; extensive mangrove and samphire areas at Gillman and Mangrove Cove; some of the only remaining areas of original vegetation of the Adelaide Plains at Folland Park; and freshwater rivers and creeks including the River Torrens and Dry Creek.

All of these landscapes support significant biodiversity, habitats, and ecological resources.

A significant proportion of these resources are on private land, both residential and industrial, which raises the imperative to protect biodiversity through new development practises and offset programs.

The links to Aboriginal heritage and experiences are also unique to this area. The Kaurna culture is closely connected to the natural environment – and nature-based tourism mostly occurs on lands and waters that are the custodial responsibility of the traditional owners of the area, which creates opportunities to link nature-base tourism with 'cultural tourism'.

The preparation of the Adelaide International Bird Sanctuary Management Plan (being undertaken in 2017 with Council and community participation) will include a significant focus on Aboriginal heritage and tourism, including the creation of jobs for local Aboriginal guides, consultants, and service providers.



I. OUR CONTEXT

The key challenges for the next five years

The following key challenges have been identified through research and analysis and findings from community engagement undertaken as part of the development of this strategy.

This included consideration of the environmental priorities identified in the City of Port Adelaide's State of the Environment Report 2012 and feedback on the draft Environment Strategy.

The background information on this research and analysis is contained in the Background Information section of this strategy.

Copy of the SOE can be viewed here:
images.portadelaide.sa.gov.au/book/environment/State_of_the_Environment/2012/files/assets/basic-html/index.html#1



Identifying and progressing economic opportunities that support the environment, including 'Green Industries' and Nature-based tourism



Enabling and supporting greater community engagement and participation in environmental programs and advocacy.



Ensuring natural, cultural and built heritage is protected, respected and celebrated as part of the future development of the city and community.



Ensuring provision of open space and green infrastructure in a period of intensified and higher density urban development



Managing coastal development to ensure coastal ecosystem protection and enhancement



Building adaptation to the projected impacts of climate change, including increased coastal inundation and heatwaves

I. OUR CONTEXT

A strategic response to the challenges

The City Plan 2030 sets the overall vision for our city under five themes and a set of indicators.

Living Environment Strategy 2022 contributes to the overall vision and each of the themes and indicators, while focusing on the strategic priorities that respond to the identified environment and heritage challenges confronting our city.

The Living Environment Strategy 2022 includes:

Strategic outcomes: which the strategy aims to achieve

Strategic actions: which will be taken to achieve the outcomes

Foundation initiatives: that will help drive the implementation of the strategy

Indicators: that will be used to measure, monitor and report on progress in achieving the outcomes.

Role statements: that define Council's role in helping achieve the outcomes and deliver the actions and foundation initiatives, noting that delivery of the plan relies on partnership and collaboration.

Resourcing of the strategy is subject to the Council's annual budget process and success in securing partnership funding. A separate implementation plan provides more detail on the resourcing and management of the strategy's implementation over the next five years.

City Plan 2030 sets the twenty year vision and themes for the city's future



ECONOMY
A City of opportunity



COMMUNITY
A City that supports community wellbeing



ENVIRONMENT
A City which cares for its natural environment and heritage



PLACEMAKING
A City where people love to be



LEADERSHIP
A City confident in its leaders

Lead issue specific strategy



Supporting issue and/or place specific management plans/strategies:

- Biodiversity Management Plan
- Waste Management Strategy
- Water and Energy Efficiency Management Plan
- Open Space Plan
- Adapt West Climate Change Adaptation Plan



A shared responsibility

Many groups have an important role to play in ensuring that the desired environmental improvements and protection in the city can be achieved - primarily Residents, Businesses, and Governments. All of these roles and 'powers' need to be aligned to ensure we can work together to deliver the Living Environment Strategy 2022.

Council's roles:

- Service provider
(including regulator, funder, part funder and agent)
- Owner/custodian
- Advocate
- Initiator/facilitator
- Information provider/promoter.

More detailed descriptions for each role are contained in the Background Information section of this strategy.

2. Our strategy

The strategic outcomes

1 Environment and economy

STRATEGIC OUTCOME

The region's unique natural resources and urban environment are to be recognised as a key element and high value asset in the city's economic future.



2 Environment and community

STRATEGIC OUTCOME

The community is a valued partner and stakeholder in environmental planning and programs – via mutual education, participation, and partnership.



3 Environment, infrastructure and urban form

STRATEGIC OUTCOME

The provision and design of urban form and infrastructure, the public domain, and green spaces, will support and enhance environmental outcomes.

The development and management of the urban environment will support the community's health, wellbeing, and sense of place.



4 Environment and heritage

STRATEGIC OUTCOME

The city's natural, built and cultural heritage and landscapes are protected, respected and celebrated as part of the city's identity.



5 Environment and ecosystems

STRATEGIC OUTCOME

The natural environment and ecological assets of the region will be protected, enhanced, and promoted by Council and the city's residential and business communities.



6 Environment and climate change

STRATEGIC OUTCOME

The region's economy, community, and environment will be resilient and adaptive to the impacts of climate change and will have reduced greenhouse gas emissions.



2.1 Environment and economy

STRATEGIC OUTCOME

The region’s unique natural resources and urban environment are to be recognised as a key element and high value asset in the city’s economic future.



STRATEGIC ACTIONS	PARTNERS AND STAKEHOLDERS
Support the State's 'Green Industries' policies and partnerships in Council's Economic Development planning and program delivery	Green Industries SA (State), Adelaide Business Hub, Northern Economic Region partners, Western Economic Region partner, Business community and networks / associations
Ensure consideration of local economic and employment generation in Council's environment - related services and procurement (e.g. waste management, construction, or assets planning)	Business networks / associations
Establish a program to promote sustainable environmental practices with businesses – to achieve regulatory benefits, and to promote the opportunities in marketing good environmental practices.	Green Industries SA (State), Adelaide Business Hub, Northern and Western, Businesses and networks, EPA
Work directly with DEWNR and Adelaide's International Bird Sanctuary and Dolphin Sanctuary leaders, to establish regional tourism infrastructure and business attraction in the Sanctuaries	Partner regional Councils ,Tourism SA, DEWNR (AIBS) Tourism businesses in the Council area, Adelaide Dolphin Sanctuary, AMLR NRM
Work with major developers to promote innovative land division designs or installations in new developments that improve energy security through energy conservation, local renewable energy generation and/or water security through water conservation and water sensitive urban design	Development sector; SA Power Networks, State agencies – DPTI, DPC (Low Carbon Economy), DSD (Energy Division), Renewal SA, EPA
Investigate the Building Upgrade Financial Mechanism as an opportunity to facilitate commercial, industrial and heritage property owner's access to low interest loans to refurbish existing buildings	DEWNR, DPC (Low Carbon Unit), property owners
Work with the State Govt (DEWNR) on their project to identify and develop opportunities to attract national investment in coastal and other carbon-sequestration opportunities in the region (offsets)	State Govt - DPC (Low Carbon Economy) SARDI, PIRSA, Renewal SA DEWNR (Coast Protection, Board and NRM Board, Climate Change Division), EPA, Community advocacy and 'citizen science' groups.
Investigate on a collaborative (regional) basis, and with the State Govt, the opportunities to attract renewable energy developments or alternative energy generation and supply schemes that would benefit the community and businesses – including waste-to-energy developments and opportunities to support community renewable energy generation	Business networks and associations (waste) Adelaide Business Hub, State Govt - Green Industries SA, DPC (Low Carbon Economy), EPA, SARDI, PIRSA, Renewal SA DEWNR (Coast Protection, Board and NRM Board, Climate Change Division), community energy groups



Foundation Initiatives

NATURE BASED TOURISM

This initiative aims to promote the range of unique nature based tourism opportunities that the natural and cultural landscapes of the city and surrounding environments present. Council will work in partnership with neighbouring councils, state government, tourism operators and the local community to develop a coordinated approach to the branding and marketing of our natural assets and the visitor experiences they offer. This will include the promotion of: local tourism businesses; cultural and environmental research and educational opportunities; and the wide range of land and water based recreational activities.

The project will include the promotion of the cultural and ecological importance of these natural assets to ensure the cultural and natural heritage is valued and protected.

COUNCIL'S ROLES: *Facilitator, information provider, part funder*

PARTNERS: *DEWNR, Adelaide Dolphin Sanctuary, Adelaide International Bird Sanctuary leaders, South Australian Tourism Commission, tourism operators, neighbouring councils, tertiary sector, Kaurna community.*

INDICATOR: *Employment and trainees in the Nature-based Tourism sector in the city, and related Kuarna 'Cultural Tourism' (numbers)*

GREEN INDUSTRIES

This initiative aims to support the establishment and growth of 'green industries' in the city. Council will work with relevant state government agencies, including Green Industries SA's (Industry Program) and the Department of State Development to identify what can be done to better support industry to optimise their water, energy and waste resource efficiency and to attract new green industry investment in the city.

The project will deliver on the relevant priority outcomes and activities that have been prioritised in the City of Port Adelaide Enfield's Economic Development Strategy 2020, Public Health and Community Well Being Plan 2020 and the draft Waste Management Plan (under development). This includes considering what can be done in partnership with industry to improve their overall environmental performance and reduce pollution and local 'nuisance' impacts.

COUNCIL'S ROLES: *Facilitator, information provider, regulator, part funder*

INDICATOR: *To be developed as part of the initiative.*

PARTNERS: *Local industry and businesses, Green Industry SA, Environment Protection Authority, Department of State Development*

2.2 Environment and community

STRATEGIC OUTCOME

The community is a valued partner and stakeholder in environmental planning and programs – via mutual education, participation, and partnership.



STRATEGIC ACTIONS	PARTNERS AND STAKEHOLDERS
Work with Universities, TAFEs and RTOs to support and facilitate a range of training opportunities within the region, including environmental management skills and services	Training providers, Educational institutions, Community groups and networks, AMLR NRM, DEWNR
Work with universities to attract research projects and programs that focus on priority environmental issues and opportunities in the region	Educational and research institutions, AMLR NRM, DEWNR
Engage with the community and schools to facilitate community or coastal gardens and related local 'on ground' projects	Community groups and networks, Schools, AMLR NRM, DEWNR
Engage with local schools to develop and implement programs and projects regarding actively understanding and enhancing the local environment, and its positive links to health and wellbeing	Schools, Community groups and networks, AMLR NRM
Provide support to community networks in relation to publicity, promotion, and communications on environmental issues, activities, and events – using a range of tech and media platforms	Development sector, SA Power Networks, State agencies – Planning and Energy, AMLR NRM, DEWNR
Work with the State Govt (DEWNR) on their project to identify and develop opportunities to attract national investment in coastal and other carbon-sequestration opportunities in the region (offsets)	Community groups and networks, Business networks and associations, Technology networks and user groups, AMLR NRM, DEWNR, EPA



Foundation Initiatives

ENVIRONMENT COMMUNITY PROGRAM

This program aims to improve the condition of our city's natural environment through community education and action. Council will continue to work with local community groups and partners to co-design and collaborate on the development and delivery of a range of activities that focus on urban biodiversity, citizen science, sustainable lifestyles, behaviour change and community well being outcomes. This includes achieving the target set in the City of Port Adelaide Enfield's Biodiversity Management Plan of increasing participation in community natural resource management by 50% from current levels.

As part of this program Council is forging new partnerships with the Adelaide and Mount Lofty Ranges NRM Board and local schools and communities to deliver a range NRM Education, Urban Sustainability, Living Smart and Citizen Science workshops and programs in the city, which accommodate the needs of the city's cultural and linguistically diverse communities.

COUNCIL'S ROLES: *Part funder, owner custodian, information provider and facilitator.*

PARTNERS: *DEWNR, AMLR NRM (Urban Sustainability and NRM Education programs), EPA, Renewal SA, Friends of Dry Creek & Taperoo Dunes & Biodiversity Park, local schools and community groups.*

INDICATOR: *Community participation in natural environment protection and enhancement projects (numbers of residents and businesses).*



2.3 Environment, infrastructure and urban form

STRATEGIC OUTCOME

The provision and design of urban form and infrastructure, the public domain, and green spaces, will support and enhance environmental outcomes.

The development and management of the urban environment will support the community’s health, wellbeing, and sense of place..

Foundation Initiatives

GREENING OUR CITY PROGRAM

This project aims to improve the greening of our city’s public realm (including streetscapes, reserves, parks, trails, waterways and coastline) and to educate private landowners on the environmental, social and economic benefits of trees and vegetation in our urban landscapes. The project will involve the setting of a new ‘canopy or green cover’ target to ensure a coordinated and strategic approach to ‘greening’ our city’s urban landscape. The project will help improve the integration of Council’s tree and vegetation planting programs in the design of our streetscapes, roads, stormwater infrastructure.

An evidence-based approach will be taken to set the target and prioritise opportunities for greening. This will include the use of data collection and mapping tools such as I Tree and drawing on findings from the Adapt West Urban Heat Mapping Project. The project will deliver on relevant greening and water sensitive urban design priorities identified in the Adapt West Climate Change Adaptation Plan and relevant stormwater management plans and master plans for the city.

COUNCILS ROLES: *Owner custodian, funder/part funder, regulator and information provider.*

PARTNERS: *DEWNR and Adelaide Mount Lofty Ranges Natural Resource Management Board, Environment Protection Authority (Rain Garden 500 program), Water Sensitive SA, local environment and conservation groups, private landowners and developers.*

INDICATOR: *Tree and vegetation cover in the city (I tree extent).*



STRATEGIC ACTIONS	PARTNERS AND STAKEHOLDERS
Advocate to ensure that development of higher density residential areas, and areas adjacent to industrial or commercial activities, include methods to actively minimise the risk of increased noise and air quality impacts and there are adequate separation distances between sensitive land uses and industrial uses	EPA, Dept Planning, Transport and Infrastructure
Continue to monitor and advocate to the State Govt in relation to ensuring strategic land use planning and infrastructure policy that minimises negative impacts of industry and major transport routes on residents and businesses.	EPA, Residents networks, forums, and advocacy groups, Businesses and networks, Dept Planning, Transport and Infrastructure
Implement the actions and recommendations of Council's Energy and Water Efficiency Management Plan, to ensure maximum environmental and cost benefits in relation to the procurement, consumption, and conservation of natural resources in Council's own operations	Regional partner Councils, Local Govt Association, Energy and water private sectors, and suppliers Research institutions
Facilitate and support the Environment Protection Authority’s pollution management and monitoring projects in the area, including the noise monitoring program on the Lefevre Peninsula	EPA
Identify land where potentially contaminated land and developers activity occurred in the past to ensure appropriate remediation and assessment	EPA, Renewal SA, Department of Health
Prepare Council’s Transport, Assets and Mobility Plan in collaboration with State Govt and the community – including strategic planning for public transport, cycling and pedestrian use, electric cars, design policies to make higher density precincts pedestrian-focused, major transport and logistics infrastructure development, and improved freight transport planning across the city	Dept Planning, Transport and Infrastructure, Community - active and passive transport users, Disability and accessibility networks and advocates, Business networks and associations (freight and transport users), Development sector
Include practical consideration of 'Green Infrastructure' options in all new Council owned developments, infrastructure projects, open space planning, and asset builds - including Water Sensitive Urban Design practices (WSUD)	Dept Planning Transport and Infrastructure, Water Sensitive SA
Work with the State Government and developers to ensure the design, location and construction of all new major infrastructure includes the protection of the natural assets of the region as a key consideration (e.g. Northern Connector, and Gillman)	Dept Planning Transport and Infrastructure, Renewal SA, Dept State Development sector
Based on the significant research, advocate to the State Govt to design and develop appropriate tidal inundation protection at required sites along the Port Adelaide River , Barker Inlet (Gillman) and Inner Harbour	Renewal SA, Dept Transport (DPTI) Dept State Development.
Develop a program for community and business education regarding the risks and proactive management of noise, water or air quality impacts, via the program to deliver the Local Nuisance and Litter Control Act 2016	Dept Planning, Transport and Infrastructure, Residential and business community, EPA.
Scope and Implement the i-Tree program to map and assess tree and vegetation cover in the Council area – with view to further use of the program to inform streetscape and open space planning and with the State's 30 Year Plan target for tree canopy cover	Dept Planning, Transport and Infrastructure, DEWNR, AMLR NRM.
Implement the design and monitoring requirements of Council's Biodiversity Management Plan, in relation to maximizing biodiversity outcomes in Council's open spaces and streetscapes	Community groups and environment volunteers, DEWNR, AMLR NRM

2.4 Environment and heritage

STRATEGIC OUTCOME

The city’s natural, built and cultural heritage and landscapes are protected, respected and celebrated as part of the city’s identity.

STRATEGIC ACTIONS	PARTNERS AND STAKEHOLDERS
Advocate for protection and promotion of the city’s built and cultural heritage at a time of intensive new development in the Port Centre and across key historic sites in the city	Community (heritage interest groups and networks), Dept Planning, Transport and Infrastructure Tourism sector
Continue to fund the local heritage advisory service and local heritage incentive scheme	DEWNR (Heritage Branch), property owners
Work with History SA and other partners to promote the City’s built and maritime heritage and to identify opportunities for the adaptive reuse and re purposing of heritage buildings	History SA, DEWNR (Heritage Branch), Renewal SA, property owners, community groups, local museums
Identify opportunities to promote heritage (built and maritime) and cultural tourism experiences in the development of the City’s tourism industry	Tourism SA, DEWNR, Renewal SA, local museums, aboriginal communities, property owners and developers, tourism operators, community groups
Investigate opportunities to further document the city’s natural heritage to determine cultural and historic significance and to capture local knowledge and stories	DEWNR, AMLR NRM, aboriginal communities, community groups, Aboriginal Advisory Panel
Investigate opportunities for the State’s Building Upgrade Finance scheme to fund heritage building energy and water efficiency improvements	DEWNR, Department of Premier and Cabinet, property owners, financial Institutions



Foundation Initiatives

LIVING LANDSCAPES

This initiative will identify opportunities to promote the value and living history of the city’s built, maritime and cultural heritage and to provide opportunities for residents and visitors to ‘experience’ and interpret this heritage. The project also aims to strengthen cross-cultural understanding of Kaurna’s cultural heritage as it relates to the city’s natural landscape.

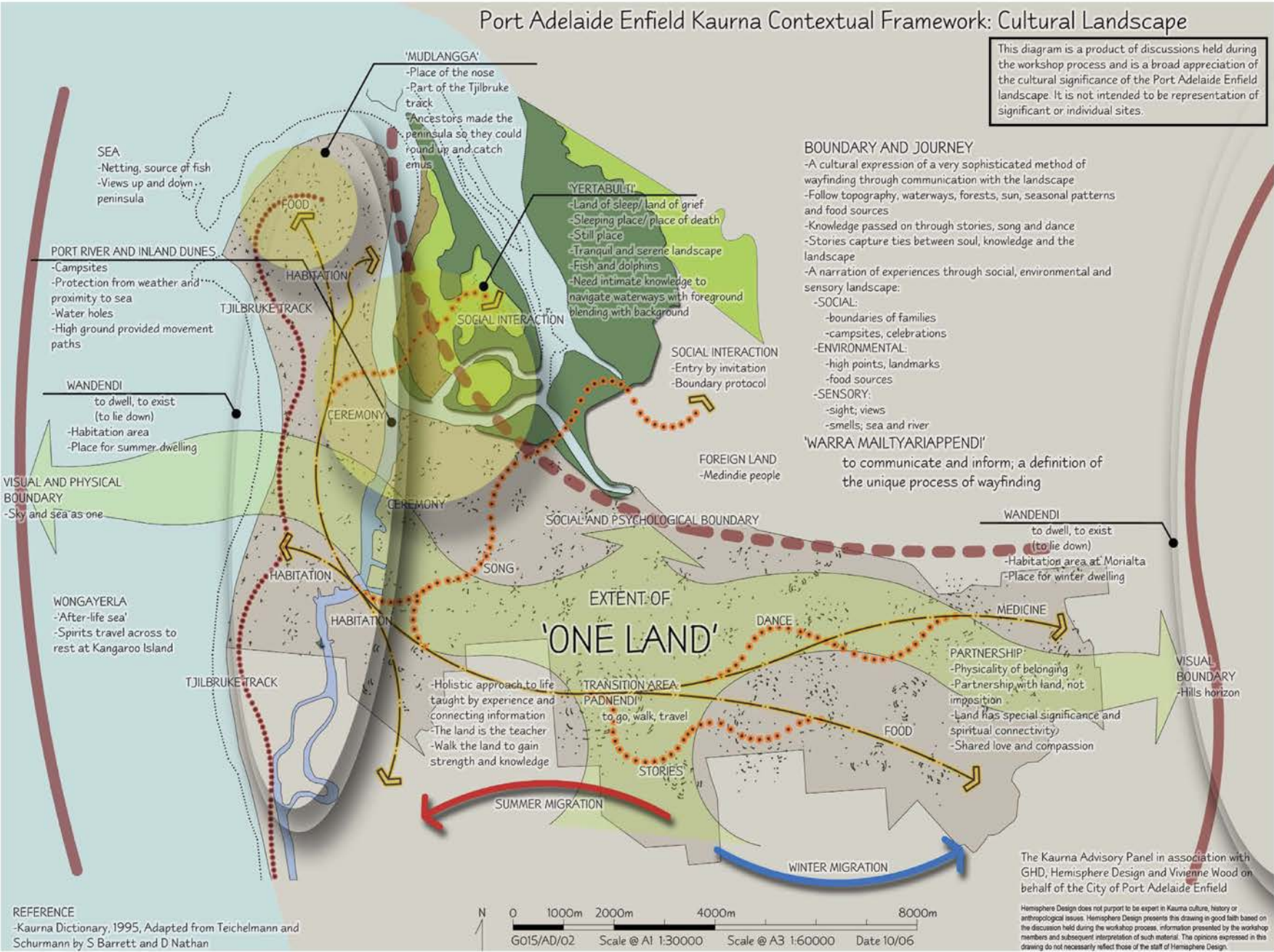
Council will work in partnership with the heritage and history groups, the Kaurna community and the state government to capture and celebrate the communities’ memories, cultural stories and histories and their connections to place and the river and land (ie cultural landscapes).

The project will deliver on relevant priorities identified in the City of Port Adelaide Enfield’s Tourism Plan and Placemaking Strategy (under development) and the Adelaide International Bird Sanctuary’s and Adelaide Dolphin Sanctuary’s Management Plans and will be informed by advice from the Aboriginal Advisory Panel.

COUNCIL’S ROLE: *Facilitator, information provider.*

PARTNERS: *DEWNR (Heritage Branch), History SA, Kaurna community, local community groups including the Port of Adelaide Natural Heritage Trust Branch.*

INDICATORS: *To be developed as part of the initiative.*



Source:
Kaurna Cultural
Heritage Survey
2007: City of Port
Adelaide Enfield

2.5 Environment and ecosystems

STRATEGIC OUTCOME

The natural environment and ecological assets of the region will be protected, enhanced, and promoted by Council and the city's residential and business communities



STRATEGIC ACTIONS	PARTNERS AND STAKEHOLDERS
Implement the Council's Biodiversity Management Plan 2016-2020 strategy actions to: <ul style="list-style-type: none">• monitor, map, and analyse biodiversity conditions to inform decision making• manage Council's public open spaces to maintain, restore, and enhance biodiversity value• develop partnerships to respond to changes in land use development and climate change	Community (residential and business), AMLR NRM Board, DEWNR
Collaborate with other metropolitan coastal councils to prepare an Integrated Coastal Management Plan for the city's coastal assets (natural and built), which builds upon the existing coastal plans that are prepared for coastal reserves	AMLR NRM Board, DEWNR - Coast Protection, Board, councils, Community (residential and business), coastal groups and associations
Support research into 'Blue Carbon' and carbon offset opportunities in coastal areas – collaborate with research institutions and the NRM Board	Commonwealth Govt, State agencies (DEWNR, PIRSA, NRM Board), Community interest groups, Low-carbon businesses
Collaborate with the NRM Board and the Coast Protection Board in relation to the Living Shorelines program and Living Beaches Strategy	NRM Board, Coast Protection Board (DEWNR), Community interest groups
Review the City of Port Adelaide Enfield's State of the Environment Report 2012	AMLR NRM Board, DEWNR, community groups
Investigate methods to value the city's natural assets and ecosystem services and their environmental, social, cultural and economic benefits	AMLR NRM, DEWNR, councils, research bodies
Ensure water conservation and water quality considerations are factored into all stormwater management planning and capital works in the city	EPA, AMLR NRM Board, DEWNR, Renewal SA, DPTI, Stormwater Management Authority, developers



4874
TREES &
SHRUBS

were planted by Council across the city's streets and reserves in 2015 (including 1780 native species of tree)

Foundation Initiatives

BIODIVERSITY MANAGEMENT PLAN

The City of Port Adelaide Enfield's Biodiversity Management Plan is Council's key strategy to assess, monitor, and manage the most critical features of the city's natural ecosystems.

COUNCIL'S ROLE: See the plan

PARTNERS: See the plan.

TO VIEW THE PLAN VISIT:

www.portenf.sa.gov.au/webdata/resources/files/PlanBiodiversityManagement2016-2020.pdf

INDICATORS: The Biodiversity Management Plan contains the following targets:

Target 1

Bushland Condition Monitoring (BCM)

- Biodiversity ecosystem ratings for terrestrial, riparian and coastal sites are maintained or improved from current 2015 levels

Target 2

Improvement in conservation prospects for native flora and fauna (coastal, terrestrial and aquatic) from current levels.

Target 3

Increase participation in community natural resources management activities by 50% from current levels



2.6 Environment and climate change

STRATEGIC OUTCOME

The region's economy, community, and environment will be resilient and adaptive to the impacts of climate change and will have reduced greenhouse gas emissions.



STRATEGIC ACTIONS

Continue to collaborate with partner councils and the state government in the Adapt West program, including:

- creating a dedicated regional coordinator position
- identifying priority local and regional actions to implement the Adapt West Adaptation Plan
- renewing the Sector Agreement and Steering Committee with the state government, partner councils and other sectors
- engaging resident and business stakeholders in the program's implementation
- securing funding as required

Implement the findings from the Adapt West Urban Heat Mapping Project (2017)

Advocate for state and federal government investment in coastal planning, protection and monitoring measures and flood mitigation in the Port River and surrounding catchments

Implement the City of Port Adelaide Enfield's Water and Energy Efficiency Management Plan 2016 - 2020 priorities to:

- implement innovative programs and projects to improve energy efficiency for council's assets, sport and street lighting
- promote renewable energy and water efficiency to the community
- implement innovative programs and projects that improve water efficiency for council's assets
- achieve the following targets:
 - reduction in corporate greenhouse gas emissions of 25% or 1002 tonnes of GHG emissions from 08-09 baseline emissions by 2019-20
 - reduction in corporate energy consumption of 20% or 2429 GJ from 08-09 baseline emission levels by 2019-20
 - reduction in corporate consumption of oil-based fuels of 10% or 69,423 litres from 08/09 baseline fuel levels by 2019/20

PARTNERS AND STAKEHOLDERS

Regional partner Councils, DEWNR/AMLRNRM, State agencies
Residential and business community / groups and associations

As above plus developers, property owners, research institutions

DPTI, Renewal SA, DEWNR (Coastal Protection), AMLRNRM Board

Property owners, community groups, residents, business, energy and water retailers and utilities, Water Sensitive SA

Building a Resilient Western Adelaide Region

The Western Adelaide Region experiences regular flooding, storms, coastal erosion and heatwaves. Climate change will increase the frequency and intensity of these extreme events. Through implementing the adaptation priorities identified by the Region we will build our resilience and be better prepared and able to respond and recover from these extreme events.



Foundation Initiatives

ADAPT WEST IN ACTION

The City of Port Adelaide Enfield, the City of Charles Sturt, and the City of West Torrens and state government are partners in the Adapt West program. This program has assessed the risks that climate change presents for our region and identified the key adaptation pathways that need to be followed to adapt to existing and projected changes in our climate.

The Adapt West in Action Project will continue this partnership and focus on the implementation of the plan's adaptation priorities through to 2022. This project will also be informed by the findings from the Adapt West Urban Heat Mapping Project (2017) and coastal and flood modeling, that has been undertaken. Funding has been secured from the partner councils and the AMLR NRM Board to resource a regional coordinator for the program in 2017 - 2018.

COUNCIL'S ROLES: *Facilitator, part funder, information provider and owner/custodian*

PARTNERS: *City of West Torrens, City of Charles Sturt, DEWNR/AMLR NRM,*

INDICATOR (S): *Extent of the City at risk of urban heat impacts (% and number of priority locations).*

COPY OF THE PLAN CAN BE VIEWED AT:
www.portenf.sa.gov.au/webdata/resources/files/Info_AdaptWestRegionalAdaptationPlan.pdf

The following steps were undertaken to prepare the Living Environment Strategy:

- Research into the condition of the region's natural and built environment, via investigation of the available scientific evidence and data
- Identification of the emerging critical issues and priorities to be addressed, as identified by the scientific research or the community's lived experience
- The development of a set of Draft Activities, designed to address the identified issues and opportunities
- Consultation with the government agencies and organisations, and other Councils, who will all play a key role in delivering the Strategy's aims and activities
- Incorporating community input, expertise, and aspirations from ongoing engagement with environment groups, forums, and businesses
- Identification of shared roles and functions in regard to emerging issues
- Consultation with Elected Members and the community regarding the Draft Strategy and Activities, and to identify any perceived gaps
- Preparation of the final Strategy, for implementation and delivery over the 5 year timeframe.
- Review and assessment of the current and emerging policy and legislative context within which the Strategy will be working

LIVING
ENVIRONMENT
STRATEGY
2022

Background
Information

3. Roles in delivering the strategy

Role of Council

Council can play a range of valuable roles in environmental planning and management including as:

- a service provider; Council may provide programs, projects, services, physical and social infrastructure, development activities, and facilities
- a regulator; providing regulatory services and administering legislation on an authorised basis, including urban planning and environmental pollution control
- a funding provider; by funding programs and activities provided by other community or environmental agencies and community groups
- a funding channel, to win Commonwealth or State funds to target to local priorities and projects via funding submissions
- an information source providing community and other service providers information relating to the area and changes that may impact on the environment or the population
- a facilitator in bringing a range of stakeholders together to address a shared priority
- a partner in working with other Councils, service and infrastructure providers, agencies, community groups and individuals
- a promoter; acknowledging and highlighting the many and varied positive aspects of our population and environment, and in encouraging the community and others to build on those strengths
- an influencer; as a level of government with the opportunity to have considerable 'buy-in' to the development of State or regional programs via a range of Boards, Committees, the LGA, and other governance groupings
- an advocate on behalf of community for the provision, maintenance and development of services and infrastructure to meet identified priorities
- an employer within the region, combined with a large volunteer program
- a purchaser; using Council's significant procurement capacity to pro-actively support local and sustainable employment and business development opportunities



3. ROLES IN DELIVERING THE STRATEGY

Role of residents and businesses

The residential community and our business sector play a leading role in a range of areas that contribute to a healthy environment, including:

Residents

- reducing household waste (including food) and litter
- increasing vegetation and tree cover on private land across the City
- reducing water use in households
- providing neighbourhood habitats for birds, pollinators, and other important local species
- reducing energy and fuel consumption through efficient use of electricity and fuel
- supporting public transport use
- supporting local community gardens, school environment projects, or street planting activities
- as investors in local renewable energy generation and assets (e.g. roof top solar)

- in raising community awareness about the importance of the natural environment through community-driven education projects, the arts, or community events
- supporting local businesses who have a sustainable focus or 'green' credentials
- participating in programs and on-ground projects to improve, protect, or manage environmental assets in their local area
- debating, advocating, and organising community support for a greater focus on local issues relating to both the urban and natural environments
- in the arts and environmental tourism sector
- in 'citizen science' and participatory democratic processes

Businesses

- reducing commercial and construction waste, and litter
- reducing the impacts of pollution from business, construction, and transport activities
- as owners and managers of rail and road logistics infrastructure and assets
- as developers and builders of industrial, commercial, and residential land
- increasing vegetation and tree cover on commercial land across the City
- reducing water use in business activities
- reducing energy and fuel consumption through efficient use of electricity and fuels
- as investors in local renewable energy generation and infrastructure
- as a major owner of key coastal and other economic assets
- in raising business awareness about the importance of the natural environment through best practice commercial practices and business partnerships
- supporting community environment-focused projects and events
- supporting local businesses and contractors who have a sustainable focus or 'green' credentials
- participating in programs and on-ground projects to improve, protect, or manage environmental assets in their local area
- debating, advocating, and organising business support and partnerships for improved environmental policies or legislation, and for a greater focus on local issues relating to both the urban and natural environments
- in the arts and tourism business sectors, and supporting cultural events

Role of the State and Commonwealth Governments

The State Government and its agencies (such DEWNR), also play a critical role in the Port Adelaide Enfield area, as:

- a major land owner in the Council area (including as an owner and manager of some of the area's coastline and ecological habitats
- the lead player in preparing and applying environmental policy and legislation in the state
- the regulator of major industries and hazardous facilities
- the planner and manager of freight road, rail, and transport networks
- the driver and manager of urban planning policy and legislation, including land division and urban density policies and design guidelines, provision of open space in urban areas, and protection of heritage
- the provider of core funding to environmental management agencies and programs

- the manager of water planning (surface and groundwater) across the State
- a lead player in regional approaches to climate change adaptation planning and co-ordination
- a lead player in biodiversity planning and management
- a lead player in the scientific research and monitoring of the environment , including threats and pressures (e.g. SA State of Environment Report)

The Commonwealth Government also has a role in making national environmental regulations and standards, and providing core funding for a range of environmental and infrastructure programs and projects.

This includes a role in accessing development against national environment legislation as controlled activities under the Environment and Biodiversity Corporation Act 1999.



4. Legislative background

Local Government undertakes a wide range of functions on behalf of its community.

Many activities are defined by legislation or guided by policies, standards, and programs of the other levels of government. Council's environmental management roles and responsibilities must consider, and align with, a raft of statutory requirements including those listed below.

Commonwealth Legislation

- Environment Protection and Biodiversity Conservation Act 1999
- National Environment Protection Measures (NEPMs)
- National Standards and Codes of Practice
- National Greenhouse and Energy Reporting Act 2007

South Australian (State) Legislation

- Local Government Act 1999 (includes Stormwater Management Plans)
- Environment Protection Act 1993
- Environment Protection Policies (Air, Noise, Waste to Resources, Water)
- Local Nuisance and Litter Control Act 2016
- Green Industries Act 2004
- Natural Resources Management Act 2004
- Planning, Development and Infrastructure Act 2016
- Harbors and Navigation Act 1993
- Water Resources Act 1997
- Native Vegetation Act 1991
- Heritage Places Act 1993
- Climate Change and Greenhouse Emissions Reduction Act 2007
- Adelaide Dolphin Sanctuary Act 2005
- Coast Protection Act 1972
- National Environment Protection Council (SA) Act 1995
- SA Public Health Act 2011
- Water Industry Act 2012
- Linear Parks Act 2006
- North Haven Development Act 1972
- Recreational Greenways Act 2000
- National Parks and Wildlife Act 1972
- Emergency Management Act 2004
- Building Efficiency Upgrade Act 2015

Council

- By laws – created under the Local Government Act 1999



5. Strategic Outcomes background

5.1 Environment and the economy

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OUTCOME

The region’s unique natural resources and urban environment is to be recognised as a key element and high value asset in the city’s economic future.

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The Port Adelaide Enfield Council area is unique in its combination of hugely valuable and valued ecological systems and natural areas, alongside highly urbanised and major industrial precincts.

It is a unique opportunity to identify the opportunities that both Council and the community have in ensuring a sustainable environment can be maintained in the face of challenges posed by urban development and the ongoing impacts of habitat loss and climate change.

An example of the economic importance of the natural resources of the area was demonstrated in a project undertaken by Flinders University in 2016, which brought together significant economic studies of the area, and reported that ...

“Researchers have put an economic value of about \$3 billion per year on the natural resources of the Port River and

Barker Inlet region on Adelaide's northern outskirts. 'It is around \$3 billion a year in terms of the total value of 17 different ecosystem services, ranging from storm protection to water supply, to recreational and commercial fishing and sequestering carbon through helping with climate change' [Professor Costanza] said ... ' [We are] considering how we manage those things going forward and how that might be improved or degraded, depending on the kinds of decisions that are made.' " (ABC News 10 Feb 2016) www.abc.net.au/news/2016-02-10/port-river-barker-inlet-economic-value/7153064

A significant challenge in the next decade will be the development of areas adjacent to the vulnerable mangrove, samphire, and related coastal systems of the Barker Inlet and Port River estuary, at Gillman and Dry Creek. The release of land for residential development in the former saltfields area,

along with industrial development at Gillman, must be undertaken with careful consideration of the future sustainability of the coastal systems. Poorly managed or located development potentially threatens the natural assets themselves, and also the significant commerce and employment that is currently generated via those natural resources.

As Council's Public Health and Community Wellbeing Plan 2020 notes, it is critical to the economy of the Council area, and its sustainable employment, that the local economy diversify beyond traditional heavy manufacturing and related logistics, and into a wider range of economic opportunities and high value sectors - including environment-focused goods and services. This transition will benefit both community wellbeing, and the environment itself.



The economic value of natural systems

EXAMPLE 1 - The mangrove stands at Gillman are the natural home of a significant mosquito population, whose water-based larvae are the primary food source for young fish species, including whiting. The fish 'grow out' in the small creeks and inlets of the area, and move to the waters of Gulf St Vincent, where they become part of the southern commercial fishing industry's stocks. The Barker Inlet area is a recognised 'fish nursery' because of the presence of the larval food source, and the SA fishing industry relies on and benefits from the presence of the estuarine mangrove and samphire areas to support the ongoing sustainability of the State's multi-million dollar fishing industry. Any development of this area needs to protect the natural ecology of the area which service significant commercial activities and economic resources in the area.

EXAMPLE 2 - Mangrove forests and samphire are the most effective types of vegetation on the planet in absorbing carbon dioxide from the atmosphere – more effective than rainforests. The retention and expansion of local mangrove systems is a commercial opportunity for the landowner, as part of the international offset program that 'credits' the mangrove coverage under the national carbon-reduction regulatory framework. The SA Dept of Environment, Water, and Natural Resources is exploring the potential for future carbon credits in the region of the mangroves and salt fields. This may lead to significant commercial opportunity in the region.

EXAMPLE 3 - The dolphin Sanctuary and dolphin based tourism is of significant value to the local economy. Over 100,000 visitors per annum currently undertake boat tours of the Port River, with dolphins being a key natural attraction. Dolphin watching also supports growing commercial kayak tourism businesses. Nature based tourism in the Adelaide Dolphin Sanctuary is estimated to be worth \$1.5M in ticket sales alone. (DEWNR, 2017).

5.1 ENVIRONMENT AND THE ECONOMY

‘Green Industries SA’

In 2015, the State Government established ‘Green Industries SA’, which aims to build on the achievements of Zero Waste SA in the areas of waste management, resource efficiency and recycling - with an emphasis on encouraging innovation and economic growth through development of the Green Economy.

‘ South Australia is facing economic challenges which require new responses built on economic diversity, and which capitalise on opportunities in the newly expanding markets in our region .The waste management and resource recovery industry is a significant sector of South Australia’s economy. The sector has an annual turnover of about \$1 billion,

contributes \$500 million to Gross State Product, and directly and indirectly employs about 4,800 people. Nationally, the waste sector is worth an estimated \$14.2 billion per year ’ (From Green Industries SA Consultation Paper 2015)

Council is preparing a Waste Management Strategy, which will identify the opportunities to support the waste management and recycling industries in the area, and improving resource recovery and waste-to-energy technology developments. Port Adelaide Enfield has a dedicated Land Use Zone for waste management activities, and via its Economic Development Strategy 2020 Council can play a role in facilitating regional business networks, identifying market opportunities, and supporting

international partnerships in ‘green economy’ and ‘cleaner production’ services, which is an area of significant growth and interest in China and India in particular. This will also require liaison with other Green Industry partners and agencies at regional and State level, particularly the Environment Protection Authority, Dept Planning, Transport and Infrastructure, and Dept of State Development, along with key industries and associations in the region.

The State Govt via its Green Industries SA program is also preparing a Waste Infrastructure Strategy, which is an opportunity for Council to contribute strategically to the growth of waste management businesses in the area.

The City of Port Adelaide Enfield’s Draft

Waste Management Strategy 2017 -2022 vision is to ‘create a city with affordable and innovative waste management that protects the environment, contributes to the local economy and is valued by the local community’. The strategy sets a target to increase our diversion of waste from landfill toward 65% by 2022 (was 50% in 2016).

Council will continue to advocate for a greater policy and regulatory emphasis on reducing the generation of household and business waste (prevention) via the requirement for a much stronger regulatory framework around reducing packaging and improving product stewardship, which can only be addressed at State and Commonwealth level.

SA’s Low Carbon Future Program and Low Carbon Investment Plan for South Australia

In its economic development role, and in liaison with the State Govt and the development industry, Council can encourage large and small scale renewable energy developments in the region, and locally – to maximise grid efficiency, and generate both renewable energy and employment and skills growth.

This includes opportunities to support the establishment of community owned renewable energy initiatives.

The State Government has set a renewable energy target of 50% renewable energy generation by 2025 and in the Low Carbon Investment Plan a target to achieve \$10 billion in low carbon generation by 2025.

More recently in the wake of critical failures in the national electricity market that led to a state wide blackout in mid 2016, the State Government has decided to take the lead in ensuring a secure energy supply for the state, that includes a high proportion of dispatchable renewable energy.

The measures include:

- a government owned and operated new \$360 million, 250-megawatt gas-fired power plant
- Australia’s largest battery built by the private sector, and funded from a \$150 million renewable technology fund

- SA’s energy minister will have the power to order a generator to be switched on if more supply is needed (a power held by the AEMO).

The City of Port Adelaide Enfield has a number of the state’s energy supply and waste industry assets and infrastructure, including power and waste to energy plants on Torrens Islands and the Le Fevre Peninsualr.

This presents an opportunity to work with local industry and State Government on energy demand and supply initiatives that benefit the local communities, economy and environment.

Nature-Based Tourism

The State’s Tourism strategy includes an action plan for the activation of South Australia’s nature-based tourism sector, which outlines the State Government’s vision and actions to make South Australia a world leader in nature-based tourism, while supporting the ongoing conservation of our State’s natural and cultural heritage.

The strategy and plan also outline the State Government’s commitment to work with tourism stakeholders and to encourage investment into the industry. The strategy and action plan aim to inject \$350 million a year into the state economy and create 1,000 new jobs by 2020.

The Actions include developing:

- Standout walking journeys across the landscape
- Unrivaled native wildlife experiences close to Adelaide
- Immersive marine wildlife experiences without equal
- Cutting edge sensory experiences that leave a lasting impression.

All of these are available opportunities in the Port Adelaide Enfield area.

The City of Port Adelaide Enfield’s Living Environment Strategy 2022 and Draft Tourism Strategy and Action Plan 2022 include nature based tourism as a strategic priority. There are benefits to the environment via the public and businesses appreciating the value of protecting and improving our unique natural heritage and assets in the area. Partnering with local Kaurna people will be a key element of the program – and will include investigating the development of appropriate accommodation and tourism support, walking trails, and educational/ interactive experiences.

Exploring the islands and marine environment of Barker Inlet (including Torrens Island Conservation Park) presents an opportunity to create a unique nature and cultural tourism hub in the area, to link to the Dolphin Sanctuary and the new Adelaide International Bird Sanctuary. An action in this Strategy is to explore those opportunities, in collaboration with scientific experts, the community, and businesses.

The City of Port Adelaide Enfield is the home to an extraordinary range and quality of natural environments, including many land and sea scapes unique to this part of the world. The City includes formally recognised State nature reserves such as Mutton Cove, many species of significant flora and fauna protected under Commonwealth legislation, many species of migratory birds protected by international treaties and agreements, formal natural Sanctuaries including the Adelaide Dolphin Sanctuary and the newly established Adelaide International Bird Sanctuary (AIBS). These resources are a valuable platform for nature-based and associated tourism businesses.

The links to Aboriginal heritage and experiences are also unique to this area. The Kaurna culture is closely connected to the natural environment – and nature-based tourism mostly occurs on lands and waters that are the custodial responsibility of the traditional owners of the area, which creates opportunities to link nature-base tourism with ‘cultural tourism’.

The preparation of the Adelaide International Bird Sanctuary Management Plan (being undertaken in 2017 with Council and community participation) will include a significant focus on Aboriginal heritage and tourism, including the creation of jobs for local Aboriginal guides, consultants, and service providers.

5.1 ENVIRONMENT AND THE ECONOMY

EXAMPLE 1 - OzAsia Moon Lantern to welcome the Shorebirds – international collaboration and relationship building

A giant lantern depicting a migratory shorebird made its inaugural debut in the OzAsia Festival's Moon Lantern Parade in 2016. The Shorebird lantern was carried by a team of forty-four community volunteers plus BirdLife Australia, and Natural Resources Adelaide and Mt Lofty representatives.

The Lantern celebrates the imminent return of over twenty thousand migratory shorebirds to the shores around northern Adelaide and Gulf St Vincent. It features a shorebird called the Red Knot, which has been nick-named the 'Moonbird' because, within their lifetime these birds, during their migration between the northern and southern hemispheres, fly the distance from earth to the moon and back.

The northern Adelaide coastal wetlands and its shorebirds are the focus of a Adelaide and Mt Lofty Ranges NRM and BirdLife Australia's Samphire Coast Icon Project which is undertaking a range of awareness activities, research and on-ground action to help conserve the shorebirds and their habitats, and support the establishment of the Adelaide International Bird Sanctuary.

EXAMPLE 2 - Local Port Adelaide collective Vitalstatistix, in partnership with the SA Maritime Museum, is presenting a program of photographic and art exhibitions, performance pieces, public forums and debates on the theme of climate change, under the banner 'Climate Century' - working towards the Tipping Point Conference in 2018. The five-year project invites contemporary artists to work with local communities, scientists, and environmentalists to respond to the question 'How will we commemorate and memorialise the climate century?'



5.2 Environment and community

OUTCOME

The community is a valued partner and stakeholder in environmental planning and programs – via mutual education, participation, and partnership.

Port Adelaide Enfield has a very active and well informed community, with a sustained and passionate interest in the environment and its role in supporting our society and economy.

There is a significant opportunity for Council to expand its role in supporting and partnering with the local residential, school, and business communities to undertake programs and projects of particular local relevance – for both environmental and community benefit.

A key aspect of this approach is engaging the cultural and linguistically diverse communities that reside in the city, including the growing number of new arrivals.

Community groups and individuals have generated many active projects and initiatives in the area, including award winning schools programs working with nature ; revegetation programs in coastal dunes or

in neglected vacant areas (including Mutton Cove and Biodiversity Park); establishing community gardens and street planting projects; conducting awareness raising on local environmental issues and problems; advocating via networks, submissions, and Forums for improved environmental performance of local industries; establishing local social media and websites to connect with other community members and promote events and projects in the area; participating in annual Backyard Bird and frog counts; working through the arts and culture to promote and raise awareness about the environmental values of the area; writing and exchanging stories at libraries and events; establishing local produce food markets to raise awareness about sustainable living; and volunteering to train in energy efficiency or recycling at community centres and clubs.

Council will play a supportive role over the coming decade in facilitating, co-funding, collaborating, and partnering with the community to drive the substantial opportunities to support groups and individuals in experiencing and protecting our local environment - and also for Council to learn from the well informed and passionate members of our community about the local environment and their inter-generational connection to the area. This includes continuing to support the Port Environment Forum as an important community led and knowledge sharing forum.



5.3 Environment, infrastructure, and urban form

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OUTCOME

The development and management of the urban environment will support the community’s health, wellbeing, and sense of place.

The provision and design of urban form and infrastructure, the public domain, and green spaces, will support and enhance environmental outcomes.

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Traffic and transport

A significant feature of the Port Adelaide Enfield area is industry and its associated transport and logistics infrastructure.

The transport network within the City is comprised of a comprehensive network of arterial and main roads connecting Port Adelaide with the Adelaide CBD, and inter-regional northern and southern networks to the rest of the State. The Council area includes several major roads which are managed by the SA Department of Planning, Transport and Infrastructure (DPTI).

In 2015 Council, in collaboration with the City of Charles Sturt, prepared the “Northwest Corridor Light Rail” proposal as a basis for discussions with the State and Commonwealth governments to create a new light rail system along the Port Road from the CBD.

This ongoing advocacy from Council and the community for increased public transport capacity will reduce the impacts of vehicle congestion and associated health and wellbeing impacts in the Council area. As residential densities increase significantly over the next decade, the need for alternative transport options is critical to ensuring the new urban development forms can be supportive of the people living and working in the area.

Ensuring an adequate and well-distributed public transport network is a particularly important resource in areas of low socio-economic status, so as to ensure equitable access to services, employment opportunities, and social connections.

The Council area also has major freight road and rail networks, the use of which has increased significantly in recent years, and is projected to increase further in the next decade so as to link mining and other activities in the State with the export facilities at Outer Harbour.

The State Government’s Infrastructure Discussion Paper (2010) estimated a significant increase in freight rail movements along the Lefevre Peninsula in the coming decade, with resulting increased pressure on the living conditions of residents living adjacent to these freight corridors. Noise impacts in particular have been reported by residents.

Significant economic development is occurring in Gillman, Wingfield, and on the Lefevre Peninsula, with an accompanying increase in commercial and heavy vehicle traffic. Upgrades to major northern and southern rail and road connectors are occurring in order to link the commodities and logistics systems in regional areas of the State to the key export port of Adelaide at Outer Harbor.

Council has actively advocated for the State Government to invest in alternative port infrastructure in regional South Australia to service the mining industry in particular; to mitigate the transport burden on the Lefevre Peninsula.

New residential and infill development across Port Adelaide Enfield also continues to be significant, and places further pressure on the transport network. New residential land divisions over the last decade include Windsor Gardens, Gilles Plains, Northgate, Walkley Heights, Westwood (Mansfield Park, Ferryden Park), Osborne, and the Port Waterfront.

In 2016, the SA Environment Protection Authority (EPA) established a noise monitoring program on the Lefevre Peninsula to measure noise from the freight rail line and some other key sites that are known noise pollution sources. The monitoring results are available to the community via a public website.

Other middle-ring suburbs and areas which are experiencing increased noise and air quality burdens due to the increased use of main road corridors as the population grows, include Gilles Plains and surrounding suburbs along the North East Road, and the suburbs adjacent to Churchill and South Roads.



5.3 ENVIRONMENT, INFRASTRUCTURE, AND URBAN FORM

Transport and air quality

Emissions from motor vehicles are the largest single source of air pollution in the City (ref. National Pollutant Inventory).

Notwithstanding the State Government’s investments in public transport, the motor vehicle is likely to remain the dominating choice for commuter transport in the foreseeable future. The projected increased volumes of heavy transport and freight vehicles on the area’s roads due to the transport of commodities to and from the Port of Adelaide at Outer Harbour will result in further increased transport-related air emissions along the current and proposed freight transport routes.

Air pollution from road traffic consists of a range of health-affecting contaminants including fine particle matter; carbon monoxide, sulphur dioxide, nitrogen oxides, ozone and benzene. The use of motor vehicles generates more air pollution than any other single human activity. It is associated with many mild health effects - but can also contribute significantly to asthma and other more severe respiratory illnesses.

Premature mortality from respiratory and cardiovascular related illnesses is also indicated by the research literature

in populations living adjacent to major transport routes. Children are particularly vulnerable to traffic pollution exposure.

Of particular concern from a health perspective is air pollution from diesel (heavy vehicles), which includes particulates and fine particle pollution (PM 2.5), and benzene and toluene which are known carcinogens. Diesel trucks contribute to the vast majority of fine particle pollution which, due to its size is capable of being inhaled deep within the lungs.

The location of childcare centres and schools in particular requires consideration. In 2016, the EPA have prepared new Evaluation Distance Guidelines to allow an increased level of assessment in the development of ‘sensitive uses’, including residential dwellings and schools. Council will investigate the appropriate and effective application of the Guidelines, to minimise risk of air and noise emissions to vulnerable community members.

The State Government has introduced a new air quality policy – Environment Protection (Air Quality) 2016 to allow for the testing of air quality objectives for particular areas and a risk based approach to managing activities.

Ambient air quality

The quality of ambient air throughout the region has been an ongoing concern for decades.

While there has been a significant improvement in general air quality in the Adelaide airshed, issues remain in the PAE area, including:

- the performance of industry, and effective control by planning and regulatory authorities to manage issues associated with the ongoing expansion of industrial development in the City and likely increase in cumulative pollutant emissions.
- the need to manage significant industrial-residential interface, including on the Lefevre Peninsula, Wingfield, and Kilburn.
- sensitive land uses, including residential and child care centres/schools, located on or adjacent to arterial roads with significant heavy vehicle traffic.
- the need for air emissions modelling to become a part of urban development assessment processes, particularly for transport networks and potentially odorous or air polluting industries.

Walking and cycling

The community and Council recognise the health and environmental benefits of cycling and walking as a means of transportation and recreation.

The Council is committed to providing an environment conducive to these activities, and developed the Port Adelaide Enfield Local Area Bicycle Plan 2015-2020, which plans for the cycling infrastructure requirements and opportunities over the next decade to encourage safe cycling as a desirable alternative to motor vehicle travel.

A range of bike paths are available in the Council area, including the Coastal Path, the Inner Harbour Loop Path, the Outer Harbor Greenway, and the River Torrens Linear Park route.

Higher density neighbourhoods also creates the opportunity (and need) for improved walkability and pedestrian-friendly public areas to be a core and central element and aim in Council’s open space designs and place-making for new or re-designed public precincts.

The planning of walk and bike paths will seek to avoid prolonged proximity to major transport corridors to reduce exposure to pollutants.



5.3 ENVIRONMENT, INFRASTRUCTURE, AND URBAN FORM

Residential and industrial interface

The City of Port Adelaide Enfield has significant industrial-residential interface issues in areas including Lefevre Peninsula, Birkenhead, Wingfield and Kilburn.

One example is the co-location of significant industrial and residential areas in the Kilburn North area. Within a 2km radius of the Kilburn North area (at the intersection of Grand Junction and Churchill Roads) there are 40 EPA licenced sites. This is an example of a historic co-location of industry and housing which in present day terms would be considered inappropriate due to insufficient 'buffering' between land uses.

In 2016 the State Government have identified the Kilburn / Blair Athol area as an opportunity to improve the amenity of the area through a major 'renewal' project, focused on the replacement of State-owned public housing. Council is working with the State Government and the community to maximise the future amenity and liveability of the area.

The State Government has introduced new regulations to attempt to mitigate the acknowledged impacts that higher density residential development can create, particularly where the new residences are built near high use activity centres, main roads and rail networks - the

Development (Control of External Sound) Variation Regulations 2013. The new regulations allow for "Noise and Air Emissions Overlays" (maps) which have the effect of requiring new houses in those areas to require additional noise mitigation measures such as increased insulation or fixed and double glazed windows.

The purpose of the new regulations are to facilitate the location of higher density residential development around mixed-use activity centres, and rail, bus and tram corridors and stations.

In 2016 the State Government has introduced a revised 30 Year Plan for Greater Adelaide, which will guide urban planning into the future. It includes some targets for higher densities, and tree canopy cover.

Significant regulatory changes have also been made via the State Government's introduction of the new Planning, Infrastructure and Development Act 2016, which will further challenge Council's and the community's capacity to ensure improvements to the urban environment in relation to noise and air quality.

A proposed State Govt. 'Planning and Design Code' will provide more detailed guidance for the development of future neighbourhoods in due course, but significant issues are emerging regarding

the liveability of some high density areas where appropriate design and service elements have not been sufficiently considered to ensure environmental and wellbeing standards can be met into the future. Council and the community will continue to play a strong advocacy role in regard to the preparation of the new Codes, and the ongoing move to the new urban form and living environments that will result from the State Government's new planning policies.

The most valuable action in relation to improving air quality (and noise) is to manage the location of new development, particularly in relation to avoiding the problems generated by industrial/transport/residential interface, and improving the performance of existing industries and freight systems.

Another significant issue, particularly in relation to increasing pressure on noise control, is the move to higher density housing and 'mixed use' precincts. While there are some environmental benefits to higher density urban form, there are significant challenges ahead in managing noise impacts to acceptable levels. Council will be on the frontline of that work in the future, given that the legislation to manage environmental pollution issues (other than for EPA licenced industries) has now been transferred to Council per

the Local Nuisance and Litter Control Act 2016. This has created a significant new role and function for Local Government in managing noise, air quality, and water pollution issues in particular.

Groundwater quality

Due to increasingly dry conditions and water supply constraints in the metropolitan area, the domestic and commercial demand for local groundwater has increased.

The extraction of groundwater is regulated under the Natural Resources Management Act 2004. When areas are 'prescribed', the access to water can only be via water allocation licences.

Currently for Port Adelaide Enfield, groundwater in the Wingfield and Dry Creek area is prescribed within the Northern Adelaide Plains Prescribed Wells Area. The remainder of the Council area, within the Central Adelaide Plains Area, is under a notice of intent from the State Government to declare the prescription of water resources. The Natural Resource Management (NRM) Boards manage the process, Groundwater availability is generally controlled by the physical characteristics of the host aquifer and the rate of recharge or replenishment. Large-scale groundwater extraction can result in

significant detrimental impacts, including lowering of water tables, salt-water intrusion, land subsidence and lowered base flow in streams, resulting in ecological damage.

Pollution can also affect groundwater quality - examples include septic tank effluent, soil contamination infiltrating into the water table, and wastes being deposited in bores and wells.

There are currently 495 drill holes known to be in operation in the Council area. Of the total, 390 holes are registered domestic bores or wells extracting groundwater for domestic purposes such as turf and garden irrigation. This does not include bores or wells installed prior to 1960 or unregistered bores - the total domestic number of bores is therefore likely to be significantly greater than this number.

A potential effect of coastal sea level rise and higher tides is the associated rise in coastal groundwater levels. These effects may include the mobilisation of gases and exposure of sulphidic soils in coastal areas. This effect has been observed on the Lefevre Peninsula, where a research report has noted that the uncharacteristically high tides in recent seasons have resulted in the up-swelling of sulphidic groundwater and vapours along the Port River.

Surface water quality and water conservation

The safety of water supply can be affected by a range of environmental issues including algal blooms, contamination from air pollutants, or cross-contamination with sewerage or wastewater infrastructure leakages.

Adelaide has a high use of rainwater tanks for both drinking and garden use. Council's Environmental Health Officers provide information to the community regarding the safe use and maintenance of rainwater tanks, and also regarding the regulated use of 'greywater' systems - that is, the re-use of laundry or kitchen water for garden use or for toilet flushing.

Some newer land divisions in the Council area are now supplied via reticulation with recycled stormwater for non-potable (non-drinking) use - e.g. Lightsview. This supports Adelaide's water conservation aims, and is required to comply with the safety standards to ensure appropriate quality and use of the water.

Council has a very significant program of management planning, construction works, and ongoing maintenance and renewal of its stormwater infrastructure via the preparation of Stormwater Management Plans - which now include water sensitive urban design (WSUD) elements, as well as

the traditional hard infrastructure. Council's stormwater management planning includes an emphasis on implementing water conservation, water quality improvements, and environmental benefits - as well as the primary aim of flood management.

Soil quality

The remediation (clean-up) of past soil contamination has occurred at many sites around the City of Port Adelaide Enfield, and will continue to be an important focus of environmental improvement projects for many years to come due to the legacy of past land management practices when the issues of soil contamination were not well understood or regulated.

There is, therefore, significant potential in the City for redevelopment of historic 'brownfield' sites, which are degraded and vacant, or underused industrial areas that are able to be remediated and redeveloped for more valuable uses. Vigilant planning control in these cases is imperative to ensure safe 'brownfield' redevelopment occurs.

Sewage infrastructure

The current lack of mains sewerage and associated trade waste disposal options (via SA Water) in a large section of the City's most industrial precincts at Wingfield, Gillman and sections of Port Adelaide poses a risk of further soil and water contamination.

Without the option of disposing of trade waste to the sewer, industries have to maintain liquid waste holding areas on site, and organise removal of the industrial wastes via liquid waste road transport.

The presence of large numbers of old and new septic tanks, particularly near waterways, also poses a risk to groundwater and soil quality. There is evidence to suggest that the installation of old septic tanks (some without Council approval) and poor maintenance of these systems is risking leakage and contamination of surrounding soil, ground water, and water bodies.



5.3 ENVIRONMENT, INFRASTRUCTURE, AND URBAN FORM

Renewable energy, and water conservation

An essential resource for the functioning of all urban activities and infrastructure is the supply of cost-effective energy.

The push for the development and use of alternative sources of energy has been a vital aspect of environmental policy and technological innovation for several decades, driven by the need to reduce the emission of greenhouse gases into the atmosphere from the burning of coal or gas to generate power; and due to the air pollution impacts of fossil fuel combustion. Council has been at the forefront in the local government sector in reducing its own consumption of both fossil fuel-based energy, and water – both of which are major resources for Council's ongoing provision of essential services. Council has also supported a range of community projects and initiatives to transition to using a greater proportion of renewable energy in their homes and businesses, and also to reduce energy use through more efficient practices or technologies.

Council prepares an Energy and Water Efficiency Management Plan every 5 years, to monitor and manage its use of energy and water; and has put in place a wide range of projects and programs to expand its use of renewable energy (particularly solar) and reduce its use of fossil fuels and water in its operations.

Open space and streetscapes

Access to natural or green environments, including vegetated areas such as parks, have a wide range of physical and mental health benefits.

Research shows that public open space is more important to people living in higher density housing particularly, because it substitutes for the private space available to residents of low-density housing.

Impacts to be considered in design and development of higher density areas include:

- loss of private open space (backyards), which means a greater need for Councils to provide and manage high quality public open space for recreation and amenity
- loss of backyard greening and household food production
- loss of streetscape greening due to narrower roadways and lack of footpath space
- potential for increased noise impacts and 'nuisance' complaints
- potential for loss of energy efficiency in design of homes, putting greater cost burden on households
- potential for the design of very small dwellings to compensate for lack of space by reducing windows and access to light and natural ventilation in internal rooms

The loss of private open space also puts a greater demand on public streetscapes to play a greening and cooling role previously provided by backyard trees and gardens. This loss of green space is also a concern in terms of reducing future resilience to the effects of climate change, particularly the increased temperatures and heatwave conditions which are predicted (Ref. CSIRO State of the Climate Report 2016).

Council plays a significant role in managing and maintaining public open spaces and public squares etc, but is limited in its powers to ensure quantity and location of space - this is determined by legislation and government policy, and by the land development marketplace. Council's Open Space Plan provides evidence and policy relating to Council's approach to the issue.

In 2016, Council participated in a pilot project to explore the potential application of the I-Tree software and system to assist in driving a more strategic approach to streetscape design and tree planting programs and priorities. The need for streets to provide a greater level of 'green infrastructure' in the urban environment is made more problematic by densification policies. Council will continue to investigate opportunities to gain maximum community and environmental benefit from greening activities in the public realm.

Council has also collaborated with the Cities of West Torrens and Charles Sturt to undertake an Urban Heat Island Mapping project in early 2017. The findings from this research will allow a greater understanding of where cooling actions are required, via greening strategies or improved building and urban design.

This project will also assist in mitigating the effects of climate change, and improving health outcomes in extreme weather events and heatwaves.

The State Government's 30 Year Plan for Metropolitan Adelaide, includes a target to increase urban green cover by 20% by 2045 (from a baseline of 27.8% in 2017). This target has been set under the goal 'A Green Liveable City' and is focused on ensuring that urban infill areas maintain appropriate levels of urban greenery. The target will support the Council's tree and vegetation planting programs and biodiversity management, including the increasing emphasis on building an evidence base by mapping the extent and condition of vegetation across the City.

5.4 Environment and heritage

OUTCOME

The city’s built and cultural heritage and landscapes are protected, respected and celebrated as part of the city’s identity.

Cultural heritage

The links to Aboriginal heritage and experiences are also unique to this area. The Kaurna culture is closely connected to the natural environment – and nature-based tourism mostly occurs on lands and waters that are the custodial responsibility of the traditional owners of the area, which creates opportunities to link nature-base tourism with ‘cultural tourism’.

The preparation of the Adelaide International Bird Sanctuary Management Plan (being undertaken in 2017 with Council and community participation) will include a significant focus on Aboriginal heritage and tourism, including the creation of jobs for local Aboriginal guides, consultants, and service providers.

Council recognises the importance of preserving our cultural heritage – recognising the past, acting in the present and building a better future. Aboriginal people have lived on this land for 60,000 years. Their heritage includes stories, people, memories, events and traditions as well as landscapes and places that are of significance to our local community.

There are many ways to explore Aboriginal culture and community within the Port Adelaide Enfield area.

In 2007 Council commissioned a Kaurna Cultural Heritage Survey which provided representatives of the local Kaurna descendants the opportunity to paint their own historical picture of the Port Adelaide

Enfield region based on their memories, cultural stories/histories and their spiritual connections to family and country.

www.portenfield.sa.gov.au/webdata/resources/files/Document_KaurnaCulturalHeritageSurvey.pdf

Built and maritime heritage

The City of Port Adelaide Enfield has a significant place within the metropolitan area, having over 400 heritage places and four Historic Conservation Areas. Many of these places and areas have been identified by heritage assessments and surveys, with several places currently protected by their inclusion within the Port Adelaide State Heritage Area.

Council has been a pioneer in the management and promotion of its heritage assets by aiming to protect and conserve its built heritage. The Heritage Incentive Program was implemented in 2001 and aims to assist and support the viability of new developments associated with the conservation of Local Heritage Places and Contributory Items.

Heritage conservation is defined as all necessary works required to maintain a place of local heritage significance or to retain that part of the fabric which contributes to its cultural significance (generally visible exteriors and defined in the Development Plan).

The City of Port Adelaide Enfield Heritage Incentive Scheme seeks to encourage owners of Local Heritage Places and

Contributory Items by providing an opportunity to meet with the Heritage Advisor and submit for a Heritage Grant. Depending on the demand for assistance and funds available for the respective financial year, a maximum of 50% of the value of the completed work, not to exceed \$3,000 in any one financial year may be approved.

The area’s tourism and cultural economies are also driven by the unique history and built heritage of the area. Recent changes to the State’s planning legislation (2016) will reduce Council’s influence and authority in relation to the direct protection of heritage places and spaces. However, Council as an owner of heritage properties has been proactive in supporting the revitalisation of these buildings and stimulating new business ventures and the local economy as part of placemaking. A recent example of this was Council’s purchase of the old post office building on St Vincent Street in Port Adelaide, which has since been opened as a new contemporary arts hub by the curators of Fontanelle galleries.

Council will continue to play a strong advocacy role to ensure appropriate protection and promotion of the City’s unique heritage, in partnership with the community and businesses.

Heritage is an item of increasing relevance and priority, given the proposed intensification of industrial and transport development in the coastal areas, including the development of Gillman.

The retention of the historic Fort Largs infrastructure is a very valuable outcome of the development of that area (2016) – however the Port Adelaide Centre Heritage Precinct (Nationally listed) is under pressure to take advantage of new development opportunities, requiring a high level of consideration of the heritage elements and opportunities available at this unique time in the Port’s development.

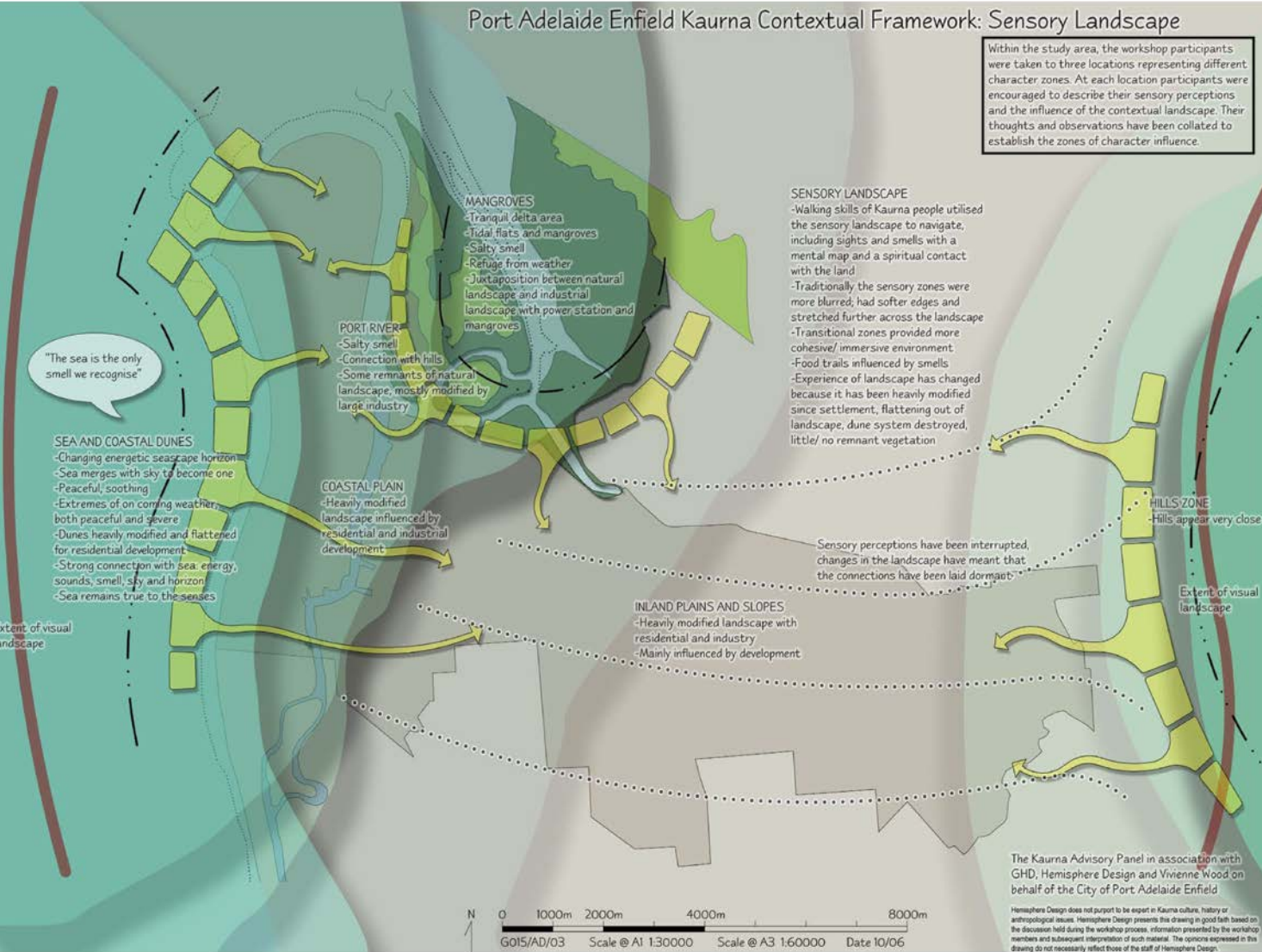
Port Adelaide is also the location of one of the state’s most significant archaeological treasures – the largest and most diverse ships’ graveyard in Australia accessible to non-divers. Spread over five sites, in quiet backwaters of the Port River, are the remains of over forty sailing, steam, motor and service vessels which ended their working lives in Port Adelaide.

www.portenfield.sa.gov.au/webdata/resources/files/ships_graveyards_brochure.pdf

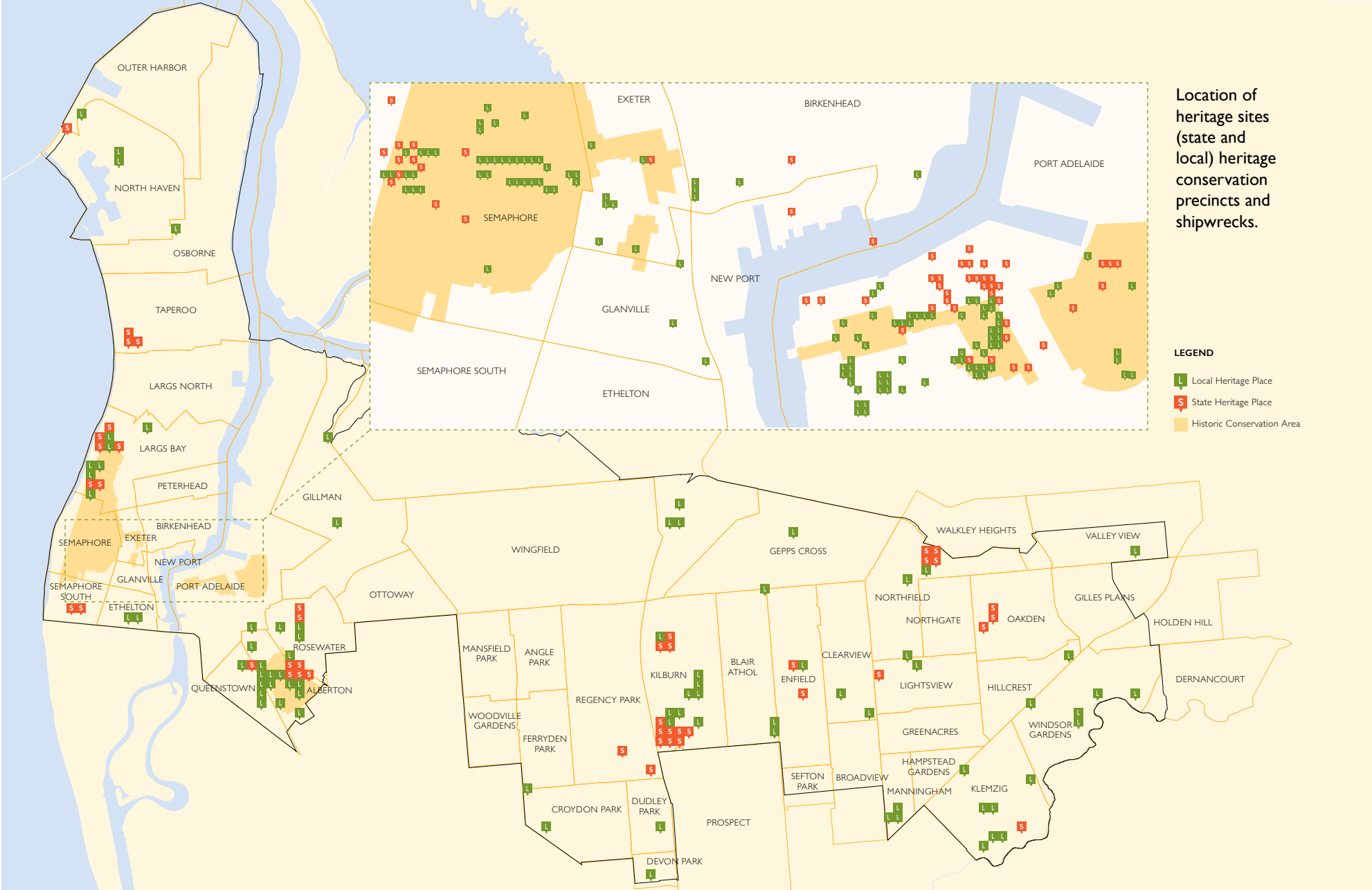
The area’s maritime history and heritage was also the subject of the State Government’s Historic Ships and Boats Strategy published in 2017. The strategy identified options for the berthing or locating historic ships and vessels within the inner harbour of Port Adelaide, including preferred locations for a maritime precinct (s). The ships included are the One and All, Falie, Yelta, Nelcebee, City of Adelaide Clipper Ship, Archie Badenoch and Fearless.

ourport.com.au/content/uploads/2017/04/Port-Adelaide-Historic-Ships-and-Boats-Strategy-Report-2017.pdf

Source: Kaurna Cultural Heritage Survey 2007. City of Port Adelaide Enfield



5.4 ENVIRONMENT AND HERITAGE



5.5 Environment and ecosystems

OUTCOME

The natural environment and ecological assets of the region will be protected, enhanced, and promoted by Council, and the City’s residential and business communities.

Biodiversity management

In 2016 Council, in collaboration with key State agencies and the community, has prepared a comprehensive Biodiversity Management Plan 2016-2020 which is Council’s key strategy to assess, monitor, and manage the most critical features of Council’s natural ecosystems.

The purpose of the Biodiversity Management Plan 2016 - 2020 is to address the locally significant biodiversity challenges faced by the City, and to provide a management platform for the maintenance, restoration and enhancement of biodiversity at the local, and in some cases regional scale. The Plan focuses on indigenous vegetation and native animal protection, reserve and street tree enhancement, and specific ecosystem and habitat restoration, where Council can play a role.

The Plan includes actions for Council to collaborate with educational organisations, Local, State and Federal Government agencies, and community groups, to deliver projects that address issues identified through community consultation and scientific research.

The Plan is designed to provide a variety of “best practice” biodiversity conservation management directions, including community programs and support to work together toward improving the status of ecological resources within the Council area.

Coastal management

The increasing need to manage the impacts of more intense development and population numbers along the coast and Port River, along with the implications of climate change conditions in coastal areas, means that coastal management has become a high priority.

The Living Environment Strategy 2022 includes a priority action to develop an integrated and consolidated Council Coastal Management Plan and monitoring program, to identify the key issues, assess environmental and community exposure to risk, and establish clear governance and management arrangements between the relevant State agencies and Council. The Plan will also consolidate Council’s current site-specific beach management plans, which are focused on maintenance, and will propose incorporating the coast into Council’s Community Lands Management planning processes under the Local Government Act 1999.

The Metropolitan Adelaide and Northern Coastal Action Plan 2009 also provided local conservation priorities for councils, state agencies and the AMLR region.

Council will also continue to advocate for the implementation of key tidal protection infrastructure in the Port River and Inner Harbour, which is to be developed over the next 10 years.

Council has led significant research for over a decade to identify the current and future hazards to the community around the coast from sea flooding – Council has no authority or role in addressing this issue in relation to infrastructure provision, but is continuing to advocate to the State Government to address the issues identified, as part of the development of the new Port River Harbourside precincts in particular.

There are several emerging issues and opportunities for Council to investigate in relation to protecting and enhancing the value of the inshore coastal areas. For example, the local community (with NRM Board support) are actively researching the option of establishing shellfish platforms to assist coastal management and sea level rise, as part of an overall ‘Living Shorelines’ approach.

Council should also investigate any opportunities to liaise and work with key stakeholders regarding emerging ‘Blue Carbon’ options – including the expansion of mangrove and vegetation buffers along coastal areas to protect the coast as well as increase carbon sequestration, which may also have ‘carbon credit’ (commercial) value into the future.

5.6 Environment and climate change

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OUTCOME

The region’s economy, community, and environment will be resilient and adaptive to the impacts of climate change and will have reduced greenhouse gas emissions.

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Council has been in the forefront of mitigating its carbon footprint via the implementation of its Energy and Water Efficiency Management Plans for over a decade, which have resulted in significant carbon emissions reductions from Council’s own operations, and reduced consumption of energy, water, and fossil fuels. Council will continue to investigate all opportunities to achieve its emission reduction goals, via implementation of the Plan – including:

- the installation of significant water and energy efficiency technologies in buildings, and improvements in practices (including irrigation)
- the use of renewable energy options such as solar panels on Council buildings
- ensuring Council’s procurement practices and choices support local renewable energy investments and developments, and
- the investigation of electric vehicle charging facilities in public car parks.

A recent significant development has been the move by SAPN (previously ETSA) to review its street lighting products and services to be more energy efficient. Given that a large proportion of Local Government energy use is in powering streetlights, this has been the focus of Council advocacy for many years.

Given the minimal progress over the last thirty years in Australia and globally in reducing green-house gas emissions, all levels of government and large sections of the business community are now putting a range of planning and strategic actions in place to identify the predicted impacts of climate change on a local and regional basis, and assisting communities and economies to cope with the predicted impacts.

The State Government has produced its Prospering in a Changing Climate – A Climate Change Adaptation Framework for South Australia (SA Govt), and the SA State Strategy includes - “Target: 62. Climate change adaptation: Develop regional climate change adaptation plans in all State Government regions by 2016”

Port Adelaide Enfield Council, in collaboration with the Councils of West Torrens and Charles Sturt, have prepared the Western Adelaide Region Climate Change Adaptation Plan (AdaptWest).

The Plan has been prepared in consultation with a wide group of State agencies, community groups, scientists, and professionals from all areas of the economy, environment, and community in the region. The Plan has been based on an ‘Integrated Vulnerability Assessment’ of the region, and will provide a set of ‘pathways’ by which the region can

prioritise more urgent actions and also begin to plan for longer term issues, including increased extreme weather events, heatwaves, coastal storm surges and erosion, sea level rise and tidal inundation.

This planning is particularly important for the many vulnerable communities in the western region, who may not have the personal resources to cope well with changing climatic conditions or the increased frequency of emergency events, including sea water flooding.

Council will prepare a Port Adelaide Enfield-specific Adaptation plan in, to implement the actions that Council can take with regard to its own operations, or in planning and delivering its services to the community and businesses, at a local level. The Plan will link directly to the preparation of Council’s Community Emergency Management in regard to preparing for increased flooding and other events - particularly relevant to areas on the Lefevre Peninsula already very vulnerable to seawater inundation at high tides. Co-ordination with the State Government to clearly define roles and responsibilities with regard to infrastructure protection, will be a first step in ensuring the best and most cost-effective approach to protecting vulnerable communities, and critical assets.





CITY OF
Port Adelaide Enfield