

INFRASTRUCTURE DIRECTORATE

APPENDICES

Items: 12.3.1 - 12.3.3

ORDINARY COUNCIL MEETING

To Be Held

Wednesday, 30th of June 2021 Commencing at 5.00pm

Αt

Shire of Dardanup
ADMINISTRATION CENTRE EATON
1 Council Drive - EATON



BUSH FIRE RISK ASSESSMENT OF TREES IN SHIRE STREET SCAPES, PARKS AND RESERVES

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1. Introduction

This report has been prepared for the Shire's Executive Management Team (EMT) to provide a Bushfire Risk Assessment (BRA) Report detailing the implications of planting trees in streets, parks and reserves and the recommendations to ensure identified risks are minimised.

The State Emergency Management Glossary defines emergency risk management as "a systematic process which contributes to the wellbeing of communities and the environment. The process considers the likely effects of hazardous events and the controls by which they can be minimised" (State Emergency Management Committee, 2018, p. 12).

Aim

The aim of this report is to provide a Bushfire Risk Assessment with a focus on planting flora in Streets, Parks and Reserves within the Shire of Dardanup using the National Emergency Risk Management Guidelines (NERAG) and the Australian Standard (AS) ISO 31000:2018 Risk Management Guidelines.

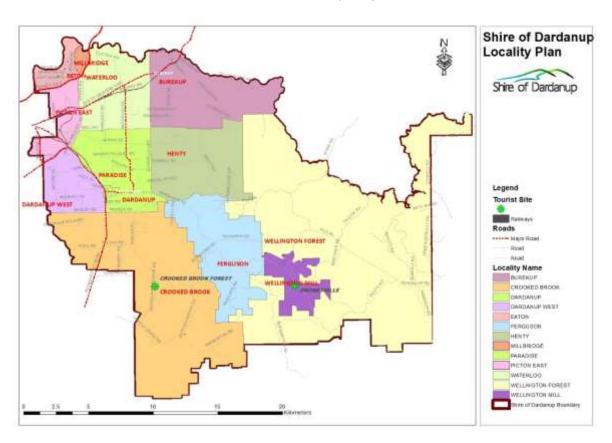
Objectives

This Emergency Risk Management project provides a Bushfire Risk Assessment Report including;

- Identify the scope of the ERM project including the authority, context, risk evaluation criteria, related documents and planning group involved.
- Establish and explain the purpose of the ERM project and its background.
- Explain the risk management process to be undertaken by the ERM project.
- Explain the hazard description being 'Bushfire' using relevant characteristics including history, the extent, and types and timeframes.
- Explain the risk analysis process and the parameters used to describe the likelihood and consequence of the risk statements.
- Identify the controls and effects of the hazard in relevance to the identified risks.
- Display the results of the risk analysis on the identified risks in terms of likelihood and consequence using the described method.
- Explain the risk evaluation and prioritisation methods used to establish the rank of identified
- Explain the risk treatment process and identify relevant options in association with the recognized risks.
- Explain the evaluation technique used to identify the preferred risk treatment options.
- Explain the preferred risk treatment options through relevant conclusions and recommendations for each.

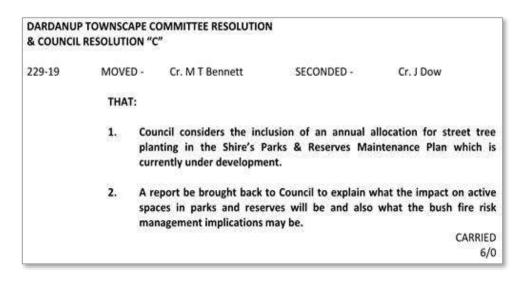
Scope

The BRA Report applies to the Shire of Dardanup, located 185 km south of Perth in Western Australia, covering 518km2, with a population of approximately 13,000. The project is confined to the geographical area of the Shire of Dardanup municipal boundaries as per Local Government Act 1995 with a focus on Street Trees, Parks/ Public Open Space and Bushland Reserves.



Authority

The BRA report has been prepared for the Shire's Executive Management Team (EMT) as requested by the Dardanup Townscape Committee Resolution and Council Resolution 229-19.



Related Documents

The BRA Report is just one element of Bunbury's Emergency Management strategies, relates to other documentation, and guided by recognized processes and guidelines including;

- Dardanup Local Emergency Management Arrangements
- Dardanup Bushfire Risk Management Plan
- AS/NZS ISO 31000:2018 Principles and Guidelines on Risk Management
- National Emergency Risk Assessment Guidelines (NERAG)
- Emergency Management Act 2005

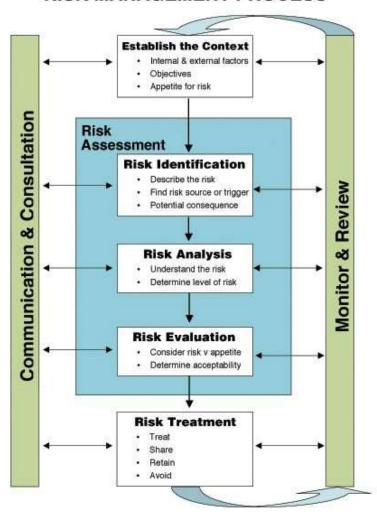
Planning Group Composition

Name	Position	Organisation
Melissa Howard	Emergency Management Officer	SoD
Ben Anderson	Bushfire Risk Planning Officer	DFES/ SoD
Erin Hutchins	Coordinator Rangers & Emergency Management	SoD
Jackie Nichol	Environmental Officer	SoD
Nigel Lyon	Supervisor of Parks & Reserves	SoD
Kal Falcone	Acting Manager of Operations	SoD

2. Risk Management Process

The risk management process used in the BRA Report is illustrated below. The AS/NZS ISO 31000:2018, defines risk assessment 'as the overall process of risk identification, risk analysis and risk evaluation'.

RISK MANAGEMENT PROCESS



Risk Evaluation Criteria

The BRA Report will use Qualitative Risk Analysis (QRA) tables and matrixes from the National Emergency Risk Assessment Guidelines (NERAG) to complete the risk analysis.

NERAG provides standardised criteria will be used to analyse and evaluate identified risks and will include the following;

- Consequence level definitions (to consider the types of impact that may occur).
- Likelihood level definitions (to consider the likelihood of the consequence).
- **Risk level** categories (to determine whether the risk is such that further treatment measures are required).
- Confidence definitions (to consider factors impacting on the confidence in the risk study).
- **Evaluation** categories (to determine acceptability or tolerability of risks).

3. Hazard Description: Bushfire

The basic factors that determine whether a bushfire will occur include the presence of fuel, oxygen and an ignition source. Bushfires can originate from both human activity and natural causes with lightning the predominant natural source, accounting for about half of all ignitions in Australia. Fires of human origin currently account for the remainder and are classified as accidental or deliberate.



Unfortunately, deliberate and accidentally lit fires are more prevalent near populated areas and have a disproportionately higher risk of infrastructure impact. Arsonists place people and property at serious and unnecessary risk, particularly when igniting fires on extreme fire weather days.

Bushfire Severity/Intensity

Intensity and speed are dependent on;

Fuel load – Greater fuel load can cause a more intense fire.

Fuel moisture – Dry fuel burns faster.

Temperature – High ambient temperature increases the likelihood of ignition.

Relative humidity – Dry air encourages a more intense fire.

Wind speed – Increase in wind speed equals an increase in fire speed as well as the ability to carry embers.

Slope angle – fires accelerate uphill.

Bushfire Frequency/ History/ Likelihood

- Fire Danger Rating (FDR) shows the chances of a fire starting, its rate of spread, its intensity, and its difficulty of suppression, according to various combinations of air temperature, relative humidity, wind speed and both the long and short-term drought effects.
- The FDR in Western Australia, as seen in Figure 13, has six danger ratings, low-moderate, high, very high, severe, extreme and catastrophic and is used to indicate the threat of bushfire.

History of significant fires in the south of Western Australia:

• 19	50 Wellington Mill	•	2015 Boddington (Lower Hotham)
• 200	06 Murray Valley (Waroona)	•	2015 Northcliffe
• 200	07 Dwellingup – Pinjarra	•	2015 Esperance
• 200	09 Bridgetown	•	2016 Harvey/Waroona/Yarloop
• 20:	14 Margaret River	•	2018 Lewana

Bushfire Timeframes

The Shire of Dardanup is located in the south of Western Australia, with the fire season occurring in summer between November and April when conditions are the most favourable.

4. Bushfire Risk Assessment

The AS/NZS ISO 31000:2018, defines risk assessment 'as the overall process of risk identification, risk analysis and risk evaluation'.

Risk Identification

The BRA Report is assessing the natural hazard of Bushfire.

Bushfire is a term used to describe a fire that burns natural vegetation. Bushfires are an intrinsic part of Australia's environment. Natural ecosystems have evolved with fire, and both historic and recent fires have shaped the landscape, along with its biological diversity. Many of Australia's native plants are fire prone and very combustible, while numerous species depend on fire to regenerate. Indigenous Australians have long used fire as a land management tool and it continues to be used to clear land for agricultural purposes and to protect properties from intense, uncontrolled fires.

Street Trees

Street Trees can be defined as trees lining municipal streets, usually planted on the verge being the area between the road way and private property boundary lines.

Parks/ Public Open Space

Parks and Public Open Spaces refers to land that has been reserved for the purpose of formal and informal sport and recreation, preservation of natural environments, provision of green space for relaxation and social interaction. Such areas include gardens and open parklands, community gardens, corridor links, amenity spaces, community use facilities, civic commons or squares.

Bushland Reserves

Bushland reserves can be an area of land that is protected and managed in order to preserve a particular type of habitat and its flora and fauna, which are often rare and endangered or are areas that have not been suitable for domestic development in the p0ast and been left underdeveloped and now remain as remanet vegetation.

Risk Statements

Each risk statement intends to outline the source of risk, the element at risk and the consequence of the interaction.

#	Risk Statement
1	There is a risk that a bushfire will cause serious injury or death to residents that, in turn, will cause disability or loss of life.
2	There is a risk that a bushfire will result in the devastation of flora and fauna that, in turn, will cause impairment.
3	There is a risk that a bushfire will result in damage to private buildings and contents that, in turn, will cause financial losses to residents.
4	There is a risk that a bushfire will result in damage to tourist locations , such as wineries and historic places of interest that, in turn, will cause financial losses
5	There is a risk that a bushfire will cause commercial and industrial property damage that may result in closure of business (20%) for periods of 24 hours or more
6	There is risk that bushfire will result in damage to infrastructure that, in turn, will cause communication and power failures.
7	There is a risk that bushfire will cause evacuation and relocation of residents and public from areas at risk for periods 12 hours or greater

Risk Analysis

This section conducts a risk analysis on the identified risks of a bushfire event. The intention is to allocate each risk statement a rating in accordance with the agreed risk criteria. The risk criterion is centred on two parameters being consequence and likelihood.

Each risk statement is allocated a consequence level and successively a likelihood rating is calculated for each of these consequence levels. By combining the likelihood and consequence ratings, the risk ratings can be determined

The agreed method used to determine the likelihood and consequence of the risk statements is a technique known as Qualitative Risk Analysis (QRA). The qualitative method uses simple mechanisms such as tables and matrixes to use people's experience to provide a rating of risks.

Control Analysis

The next step before the generated risk statements are rated is to consider the controls already in place. The controls in place are to manage the causes of bushfire by either reducing the likelihood of occurrence or reducing the impact.

There is a risk that a bushfire will cause;

- Serious injury or death
- Devastation of flora and fauna
- Damage to private buildings and contents
- Damage to tourist locations
- Commercial and industrial property damage
- Damage to infrastructure
- Evacuation and relocation

#	Area of Risk	Bushfire Controls
1	Street Scapes	 Maintain health of tree Street sweeping (leaves other debris left on street) Equal spacing between trees to ensure canopy separation. Use of native trees to Australia (list) Western Power assessments and 60 day orders
2	Parks and Public Open Space	 Prescribed burning Maintain health of tree Land use planning Trees planted isolated pockets or islands within park. Mowing/ slashing of grass areas in and around bushland pockets. Irrigation
3	Bushland Reserves	 Prescribed burning Fire restrictions and Total Fire Bans Fire Access tracks and Fire Breaks Litter removal Environment Surveys Weed reduction (spraying & mechanical works) Arson prevention



STREET SCAPE TREES

Risk Statement		Consequence Level	Likelihood Level	Confidence Level	Risk Level
There is a risk that a will cause serious in death to residents t will cause disability life.	jury or hat, in turn,	Insignificant	Unlikely	Highest	LOW
There is a risk that a will result in the dev flora and fauna that will cause impairme	vastation of t, in turn,	Insignificant	Rare	Highest	LOW
There is a risk that a will result in damage buildings and conte turn, will cause final to residents.	e to private nts that, in	Moderate	Unlikely	Highest	MODERATE
There is a risk that a will result in damage locations, such as whistoric places of int in turn, will cause fin losses	e to tourist rineries and rerest that,	Major	Rare	Highest	MODERATE
There is a risk that a will cause commerc industrial property that may result in cl business (20%) for phours or more	ial and damage osure of	Moderate	Unlikely	Highest	MODERATE
There is risk that bu result in damage to infrastructure that, cause communication power failures.	in turn, will	Major	Rare	Highest	MODERATE
There is a risk that be cause evacuation ar relocation of reside public from areas at periods 12 hours or	nd nts and risk for	Insignificant	Unlikely	Highest	LOW



PARKS AND PUBLIC OPEN SPACE

Risk Statement	Consequence Level	Likelihood Level	Confidence Level	Risk Level
There is a risk that a bushfire will cause serious injury or death to residents that, in turn, will cause disability or loss of life.	Minor	Unlikely	Highest	MODERATE
There is a risk that a bushfire will result in the devastation of flora and fauna that, in turn, will cause impairment.	Minor	Rare	Highest	LOW
There is a risk that a bushfire will result in damage to private buildings and contents that, in turn, will cause financial losses to residents.	Major	Possible	Highest	HIGH
There is a risk that a bushfire will result in damage to tourist locations, such as wineries and historic places of interest that, in turn, will cause financial losses	Moderate	Rare	Highest	MODERATE
There is a risk that a bushfire will cause commercial and industrial property damage that may result in closure of business (20%) for periods of 24 hours or more	Moderate	Possible	Highest	MODERATE
There is risk that bushfire will result in damage to infrastructure that, in turn, will cause communication and power failures.	Minor	Rare	Highest	LOW
There is a risk that bushfire will cause evacuation and relocation of residents and public from areas at risk for periods 12 hours or greater	Minor	Unlikely	Highest	MODERATE



BUSHLAND RESERVES

Risk Statement	Consequence Level	Likelihood Level	Confidence Level	Risk Level
There is a risk that a bushfire will cause serious injury or death to residents that, in turn, will cause disability or loss of life.	Catastrophic	Possible	Highest	CRITICAL
There is a risk that a bushfire will result in the devastation of flora and fauna that, in turn, will cause impairment.	Major	Possible	Highest	HIGH
There is a risk that a bushfire will result in damage to private buildings and contents that, in turn, will cause financial losses to residents.	Catastrophic	Possible	Highest	CRITICAL
There is a risk that a bushfire will result in damage to tourist locations, such as wineries and historic places of interest that, in turn, will cause financial losses	Moderate	Unlikely	Highest	MODERATE
There is a risk that a bushfire will cause commercial and industrial property damage that may result in closure of business (20%) for periods of 24 hours or more	Major	Possible	Highest	HIGH
There is risk that bushfire will result in damage to infrastructure that, in turn, will cause communication and power failures.	Major	Possible	Highest	HIGH
There is a risk that bushfire will cause evacuation and relocation of residents and public from areas at risk for periods 12 hours or greater	Major	Possible	Highest	HIGH

Risk Evaluation

The aim of the risk evaluation process is to assign a priority to each risk, based on the risk level and confidence level. Each evaluated risk is assigned one of the below three categories;

Category 1: Risk requiring treatment (with confidence to determine treatment objectives).

Category 2: Risk requires further analysis (which may require a further workshop)

Category 3: Risks (currently) requiring ongoing monitoring and maintenance of existing controls.

Risk Statement	Street Trees	Parks	Bushland
There is a risk that a bushfire will cause serious injury or death to	LOW	MODERATE	CRITICAL
residents that, in turn, will cause disability or loss of life.	3	3	1
There is a risk that a bushfire will result in the devastation of flora and fauna that, in turn, will cause impairment.	LOW	LOW	HIGH 1
There is a risk that a bushfire will result in damage to private	MODERATE	HIGH	CRITICAL
buildings and contents that, in turn, will cause financial losses to residents.	3	1	1
There is a risk that a bushfire will result in damage to tourist	MODERATE	MODERATE	MODERATE
locations , such as wineries and historic places of interest that, in turn, will cause financial losses.	3	3	3
There is a risk that a bushfire will cause commercial and industrial property damage that may result	MODERATE	MODERATE	HIGH
in closure of business (20%) for periods of 24 hours or more	3	3	1
There is risk that bushfire will result in damage to	MODERATE	LOW	HIGH
infrastructure that, in turn, will cause communication and power failures.	3	3	1
There is a risk that bushfire will cause evacuation and relocation	LOW	MODERATE	HIGH
of residents and public from areas at risk for periods 12 hours or greater	3	3	1

Risk Treatment Recommendations

The risk assessment provides the following recommendations

- Risks rated Low and Moderate will continue to be monitored and existing controls maintained.
- Risks rated High to Critical could be considered for further analysis or current controls
 reviewed to ensure the best option with the greatest impact in reducing the risks is being
 implemented.
- Additional consideration include;
 - Species of trees (e.g. fire retardant)
 - o Separation of surface and elevated fuels through mechanical means.
 - Canopy separation through pruning.
 - Planting and maintenance program.

5. Conclusion

Shire staff recognise the significance of trees within the Shire and considers all aspects of appropriate planting of trees to maximise the benefits in both the natural and built environment.

The control analysis of the risk assessment identified controls in place to manage trees within streetscapes, parks and bushland reserves that significant reduce the risk of bushfires.

With proper mitigation strategies in place such as consideration of plant species, canopy separation and a planting and maintenance regime, the introduction of new trees is acceptable within streetscapes and parks.

On the contrary, the risk of planting additional trees within bushland reserves has been identified as high to critical. Therefore, it is not recommended that additional tree planting is carried out in bushland reserves where community assets can be impacted.

The risks identified are currently being reduced through the Bushfire Risk Planning process and treatments are funded through the Mitigation Activity Fund (overseen by DFES).

The risk assessment and its recommendations will assist with the development of relevant environmental policies, planning and procedural decisions around tree planting in the future.



COUNCIL POLICY NO:-

CPXX - VEGETATION MANAGEMENT TO MITIGATE BUSHFIRE RISK IN URBAN NATURE SPACES

GOVERNANCE INFORMATION					
Procedure Link:	NA	Administrative Policy Link:	NA		

	ADMINISTRATION INFORMATION						
History:		OCM	30/06/2021	Syn	nopsis:	Policy created	
Version:				Syn	nopsis:		
Version:							

1. RESPONSIBLE DIRECTORATE

Infrastructure

2. PURPOSE OR OBJECTIVE

To mitigate bushfire risk in Shire managed Urban Nature Spaces in proximity to residential dwellings, Shire assets and other infrastructure.

The Classification Framework for Public Open Space (Department of Sport and recreation, 2012) defines Nature Spaces as follows:

<u>Purpose</u>

Nature spaces provide a setting where people can enjoy nearby nature and protect local biodiversity and natural area values.

Description

Nature spaces provide opportunity for low-impact recreational activities, such as walking, cycling, picnicking, playing, watching or exploring natural features. Nature spaces may include bushland, coastal areas, wetlands and riparian habitats, and geological and natural features. Sites are managed to enable recreational access while protecting local ecological and biodiversity values.

This policy provides guidance in managing vegetation in urban Nature Spaces that pose CRITICAL and HIGH bushfire risks, as identified in "DRAFT Bush Fire Risk Assessment of Trees in Shire Streetscapes, Parks and Reserves, (2020)".

3. POLICY

When managing Nature Spaces, the Shire commits to ongoing mitigation of bushfire risk to adjoining residential dwellings, Shire owned assets and other infrastructure.

The Shire will do this by:

- Adhering to State Planning Policy 3.7 'Planning in Bushfire Prone Areas';
- Managing bushfire risk on Shire managed Nature Spaces;
- Ensuring acquisition of Nature Spaces, including land development proposals, include bushfire risk mitigation measures;
- Continuous improvement in the Shires Operations functions to mitigate fire risk in Nature Spaces; and
- Ongoing advocacy for other land owning agencies to implement bushfire risk mitigation measures.

3.1 Adherence to SPP 3.7 – Planning in Bushfire Prone Areas

State Planning Policy 3.7 – Planning in Bushfire Prone Areas aims to 'implement effective risk-based land use planning and development to preserve life and reduce the impact of bushfire of property and infrastructure'. The Shire commits to adhere to the objectives of the SPP, being:

- 3.1.1 Avoid any increase in the threat of bushfire to people, property and infrastructure. The preservation of life and the management of bushfire impact are paramount;
- 3.1.2 Reduce vulnerability to bushfire through the identification and consideration of bushfire risks in decision-making at all stages of the planning and development process;
- 3.1.3 Ensure that higher order strategic planning documents, strategic planning proposals, subdivision and development applications take into account bushfire protection requirements and include specific bushfire protection measures; and
- 3.1.4 Achieve an appropriate balance between bushfire risk management measures and biodiversity conservation values, environmental protection and biodiversity management and landscape amenity, with consideration of the potential impacts of climate change.

3.2 Managing Bushfire Risk on Shire managed Nature Spaces

The Shire will mitigate bushfire risk in its Nature Spaces whilst protecting landscape amenity, environmental protection and biodiversity conservation values.

Using the precautionary principle, the Shire commits to managing each Nature Space to optimise its recognised use. This will be achieved by:

- 3.2.1 Consultation with adjoining land owners, residents and users of Nature Spaces;
- 3.2.2 Development of Nature Space Management Plans;
- 3.2.3 Ensuring each Nature Space has a fire break in accordance with Bushfire Prevention Orders;
- 3.2.4 Balanced fuel reduction programs, recognising the importance of fallen vegetation and litter for habitat and soil nutrition;
- 3.2.6 Prioritise periodic bushfire risk assessments of Nature Spaces; and
- 3.2.7 Revegetation planting programs that consider the Nature Space:
 - Size;
 - Topography;
 - Location;
 - Spatial offsets to dwellings and infrastructure;
 - Appropriate species selection; and
 - Maintaining emergency service vehicle accessibility.

3.3 <u>Acquisition of new Nature Spaces</u>

The Shire acknowledges that it will, from time to time, acquire new Nature Spaces by:

- Statutory conditions of land development, including subdivision;
- Transference of responsibilities of existing lands through Management Orders; and
- Otherwise gifted lands.

Prior to the acquisition of lands, the Shire requires the transferer of the land to provide bushfire risk mitigation measures, including:

- 3.3.1 Undertake a Bushfire Risk assessment;
- 3.3.2 Preparation of a Bushfire Management Plan;
- 3.3.3 Document a proposal to mitigate bushfire risk, including emergency service arrangements, accessibility and fuel load management;
- 3.3.4 Document land management and Nature Space maintenance arrangements; and
- 3.3.5 Stakeholder consultation on the proposed acquisition of Nature Space.

3.4 <u>Continuous Improvement in Shire Operations</u>

The Shire manages over 12 Nature Spaces in urban settings. The Shire commits to ongoing improvement in its capacity to mitigate bushfire risk in its Nature Spaces whilst protecting landscape amenity, environmental protection and biodiversity conservation values.

This will be achieved by:

- 3.4.1 Appropriate staff training to build corporate knowledge and capacity;
- 3.4.2 Ongoing consultation with adjoining land owners, residents and users of Nature Spaces;
- 3.4.3 Routine removal of non-endemic, bushfire risk species, including weeds;
- 3.4.4 Routine pruning of tree limbs overhanging fences and other infrastructure;
- 3.4.5 Routine fuel load reduction, recognising the importance of fallen vegetation and litter for habitat and soil nutrition;
- 3.4.6 Well considered revegetation of endemic species that enhance the landscape, environmental values and biodiversity of Nature Spaces, in accordance with the objectives of this policy;
- 3.4.6 Routine inspections of Nature Spaces to ensure compliance with Bush Fire Orders and SPP 3.7;
- 3.4.7 Integration of these practices with other Shire Policies, including Environment, Tree Management, Roadside Vegetation and others; and
- 3.4.8 Periodic review of this policy and management practices.

3.5 Advocacy for Land Owning Agencies to Mitigate Fire Risk

The Shire recognises that fire mitigation management of bushfire risk areas requires collaboration and cooperation with other land owners. The Shire advocates for all land owners to meet their bushfire risk mitigation obligations and encourages this through:

- 3.5.1 Issue Bushfire Prevention Orders to all private land owners;
- 3.5.2 Encourage State Government land managers, including Main Roads WA, Public Transport Authority, Western Australian Planning Commission, and others, to manage their lands to mitigate bushfire risk;
- 3.5.3 Encourage public works undertaken by the State Government to include bushfire risk mitigation strategies in its project planning; and
- 3.5.4 Ensure the Shire sets a high standard in Nature Space bushfire risk mitigation as example for others to follow.

4. REFERENCED DOCUMENTS

- 4.1 Classification Framework for Public Open Space (Department of Sport and recreation, 2012);
- 4.2 DRAFT Bush Fire Risk Assessment of Trees in Shire Streetscapes, Parks and Reserves, (Shire of Dardanup 2020); and
- 4.3 State Planning Policy 3.7 'Planning in Bushfire Prone Areas' (Department of Planning, Lands and Heritage, 2020).

RISK ASSESSMENT TOOL

Adoption of Policy - Vegetation Management to Mitigate Bushfire Risk in Urban Nature Spaces

RISK THEME PROFILE:

OVERALL RISK EVENT:

7 - Environment Management

14 - Safety and Security Practices

RISK ASSESSMEN

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CONSECUENCE		PRIOR TO TREATMEN	REATMENT OR	IT OR CONTROL	NA IS NOTED A SIG	AFTER TRE	AFTER TREATEMENT OR CONTROL	ONTROL
CATEGORY	RISK EVENT	CONSEQUENCE	ГІКЕГІНООБ	INHERENT RISK RATING	(Treatment or controls proposed)	CONSEQUENCE	ПКЕЦІНООБ	RESIDUAL RISK RATING
НЕАГТН	Bushfire risk in urban nature spaces affecting people, property,	Major (4)	Likely (4)	High (12 - 19)	Risk is managed by improved management practices and improved planting regimes.	Moderate (3)	Likely (4)	High (12 - 19)
	ıcture aı				The risk is reduced, but cannot be completely eliminated.			
ENVIRONMENT	Bushfire risk in urban nature spaces impacts on the quality of the nature spaces flora and fauna	Moderate (3)	Likely (4)	High (12 - 19)	Risk is managed by improved management practices and improved planting regimes.	Moderate (3)	Possible (3)	Moderate (5
	through bushfire impacts, fuel reduction programs.				The risk is reduced, but cannot be completely eliminated.			(11)



The Shire of Dardanup acknowledges the Noongar people as the traditional owners of the land upon which the Shire is situated. In doing this, we recognise and respect their continuing culture and contribution they make to the life of this region and pay our respects to their elders, past, present and emerging.

Document Control

Version	Date	Description	Comment
1.1	January 2020	First Draft	Draft initial plan
1.2	May 2020	Draft Version 2	Separate Strategies and remove "State of the Environment " from report
1.3	July 2020	Draft Version 3	Change Strategy to Management Plan
1.4	December 2020	Draft Version 4	Update timeframes for implementation
1.5	May 2021	Preliminary to Final	Modify presentation structure and emphasise implementation focus
1.6	June 2021	Final for presentation to Council	EMT review

Prepared:	Environment Officer, Ms Jackie	Nichol
Reviewed:	Manager Operations, Mr Jason	Gick
Project Sponsor:	Director Infrastructure, Mr Luke	e Botica
7	HIS PLAN IS APPROVED FOR USE	:
Name	Signature	Date

1. Executive Summary

The Shire of Dardanup recognises the importance of the natural environment. This Environmental Management Plan (EMP) takes into consideration the strategic planning and decision making necessary to align with other strategies, plans, programs and policies affecting the natural spaces of the Shire.

Management of the 'environment' is a global issue that is complex, extensive and ongoing. To ensure the Shires environmental management efforts are effective, this EMP provides a managed scope of planning and implementation activities that contribute to local and global environmental objectives.

Four key themes have been identified to optimize the Shires capacity to effective deliverables. These are:

- Community;
- · Greening the Shire:
- Water Resources; and
- Biodiversity.

An informed and engaged *community* supports planning efforts and is empowered to contribute to implementation efforts. The *community* can also play a significant role in enhancing, protecting and managing nature spaces and *water resources*.

Greening the Shire is an important policy position that underpins management of natural 'green' spaces that contribute to wellbeing, health and enjoyment of residents. Making nature spaces and environmental corridors more attractive and more sustainable optimises the green spaces that benefit residents, businesses and visitors.

The Shire is blessed with a number of significant natural water resources that enhance the natural value of the district. These include rivers, creeks, streams and natural wetlands. Development of artificial water resources is also acknowledged, as these improve community amenity, contribute to greening the Shire and biodiversity.

The South West of WA is globally recognised as a *biodiversity hotspot*. The Shire of Dardanup both contributes to the value of this hotspot, and benefits from its locality in this region. Recognising and celebrating the extent and health of the *biodiversity* of the district, allows it to be better appreciated by the *community*.

The Shire seeks to contribute to a better environmental future through strategic planning, informed decision making and active implementation. The recommendations of this Environmental Management Plan are summarised in an Implementation Table, which provide 'actionable deliverables' for a two year timeframe.

The ongoing nature of environmental management planning requires ongoing review and adjustment to reflect changes in legislation, community aspirations, strategic priorities and resource availability. Future review of this EMP will ensure it corresponds with corporate strategy, plan and policy objectives.

2. Strategic Framework

The Shire of Dardanup recognises the importance of the natural environment, and takes it into consideration in strategic planning and decision making. This Environmental Management Plan (EMP) aligns with, and integrates into, other strategies, plans, programs and policies to recognise, manage, maintain and conserve the natural spaces of the Shire.

The *Strategic Community Plan (2020 – 2030),* identifies the Environment as one of five Strategic Objectives:

Objective 2: Maintaining a balanced respect for our natural assets and built environment, retaining our lifestyle value, community spirit and identity.

The desired Strategic Community Plan outcomes for the Environment include:

Outcome 2.1 Enhanced, protected and responsibly managed natural environment and public open spaces.

Strategy 2.1.1 Protect and preserve open spaces, natural vegetation and bushland; and

Strategy 2.1.2 Preserve and protect the ecological value of watercourses.

In response to these Strategies, The *Corporate Business Plan (2020/21 - 2023/24)*, establishes a number of business activity Actions, including:

Action 2.1.1.1 Environmental Management Plan: Develop, Implement and Review an Environmental Management Strategy.

This Action is prioritised 'High', to be delivered in 2020/21.

Environmental management planning is guided by Policy *CP120 – ENVIRONMENT* (September 2020), which includes the following key objectives:

- To maintain, protect and enhance the natural environment within the Shire of Dardanup;
- To ensure that policies, strategies and management plans are prepared and implemented for natural reserves, endemic flora and fauna and natural landscape areas in the care, control and management of the Shire;
- Promote community engagement of the environment and encourage responsible environmental behaviour and participation in the management of the environment; and
- Create and foster partnerships that will advance the Shire's environmental objectives.

The Objectives of the Strategic Community Plan (2020 – 2030), the Actions of the Corporate Business Plan and the guidance of the Environment Policy form the structure and content of this EMP.





3. Environmental Management Planning

Management of the 'environment' is a global issue that is complex, extensive and ongoing. To ensure the Shires environmental management efforts are effective, it is necessary to define the scope of planning and implementation activities that contribute to sought after strategic objectives.

The objectives and outcomes identified in the Strategic Framework allow themes to be established for this EMP, with a focus on planning and implementation on Shire owned Nature Spaces. The key themes are:

- Community;
- Greening the Shire;
- Water Resources; and
- Biodiversity.

The deliverables in this EMP have been established based on the following principles:

- The Precautionary Principle ('First and foremost, do no harm');
- Natural Resource Management (NRM) is a long term commitment;

- Focus on Shire managed Nature Spaces or future acquired nature Spaces;
- Legislative requirements;
- Engagement with the community and stakeholders;
- Conservation of biological diversity and ecological integrity;
- Mitigation of risk to community and environmental spaces;
- Intergenerational equity;
- Waste avoidance and minimisation;
- Maintaining momentum to ensure project follow through; and
- Resource capacity and capability.

The ongoing nature of environmental management planning requires ongoing review and adjustment to reflect changes in legislation, community aspirations, strategic priorities and resource availability. This EMP will need to be reviewed periodically, consistent with corporate strategy, plan and policy review timetables.

4. Key Themes

The Key Themes of this EMP focus on achievable planning and implementation deliverables. The Key Themes have been identified from the Strategic Framework, being:

- · Community;
- Greening the Shire;

- · Water Resources; and
- · Biodiversity.

4.1 Community

Background

An informed and engaged community supports planning efforts and is empowered to contribute to implementation efforts. This Key Theme recognises that community values the natural environment and aspires to enhance, protect and manage it responsibly, now and into the future.

An informed and engaged community can also play a significant role in enhancing, protecting and managing nature spaces and water resources. Individuals, groups and communities can contribute by:

- Learning and teaching others about the environmental management task;
- Taking actions on private land or in their neighborhood that contribute to the environmental enhancement;
- Monitoring and reporting environmental non-compliances, such as pollution and damage;
- Joining or forming community action groups that have an interest in the environment;
- Enjoying nature spaces for personal, family or group benefit such as relaxation, exercise or social gatherings; and
- Contributing to development of strategy, planning, policy or delivery of programs through informed discussion and engagement with decision makers including Councillors, Shire staff and regulators.

Objectives

Encourage community to value, protect and conserve natural spaces.

Connect community to the Shires biodiversity rich natural spaces in positive ways.

Foster positive human / environment connections for future generations.

Provide resources, education and training to support peoples' interest in the natural environment.

<u>Implementation</u>

Community theme actions are listed for delivery in the Implementation Table.

4.2 Greening the Shire

Background

The Shire recognises the importance of natural 'green' spaces that contribute to the wellbeing, health and enjoyment of residents. The Shire will endeavor to make its nature spaces and environmental corridors more attractive, more pleasant and more sustainable through good planning and implementation programs.

Greening the Shire requires strategic land use planning, balanced development, proactive planting programs and reduction in impacts on existing nature spaces and environmental corridors.

<u>Objectives</u>

Protect existing natural spaces, environmental systems and ecological processes across the Shire.

Develop strategic land use planning frameworks that protect water resources, promote biodiversity and connect communities to natural spaces.

Implement re-vegetation planting that enriches natural spaces, strengthens environmental corridors and improves amenity of open spaces.

Maintain natural spaces and environmental corridors to agreed standards.

Implementation

Greening the Shire theme actions are listed for delivery in the Implementation Table.

4.3 Water Resources

Background

The Shire is blessed with a number of significant natural water resources that enhance the natural value of the district. These include three significant rivers, numerous creeks and streams, natural wetlands, sumps and lakes. These water bodies are typically affected by seasonal rise and fall of groundwater, winter rains and seasonal storms.

The Water Resources theme also recognises artificial water bodies made through development, as these improve community amenity, contribute to greening the shire and biodiversity through micro ecologies and habitat for migrating species.

Although significantly influencing the water resource, the management of groundwater is NOT included in this EMP, as it is highly complex and regulated through the Department of Water and Environmental Regulation (DWER).

<u>Objectives</u>

Monitor high profile water resource areas for management intervention.

Reduce development impacts on natural water resources.

Protect existing water resources and their surrounding environments.

Implement water quality management systems.

Implementation

Water Resources theme actions are listed for delivery in the Implementation Table.

4.4 Biodiversity

Background

Biodiversity is defined as the number, types and distribution of flora and fauna in a particular habitat, or simply put, "the richness of life". The South West of WA is globally recognised as a biodiversity hotspot, and the Shire of Dardanup both contributes to the value of this hotspot and benefits from its locality in this region.

The Biodiversity theme focusses on recognising and celebrating the extent and health of endemic flora and fauna, protecting it and enhancing it over time. The biodiversity of the district is inherently integrated with the Greening the Shire theme and the Water Resources theme. The value of the Shires biodiversity is then able to be better appreciated by the community

Objectives

Measure the extent, health and distribution of biodiversity in nature spaces.

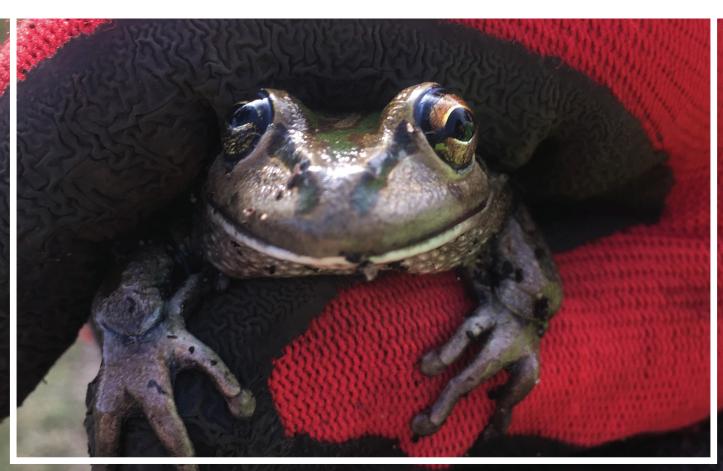
Promote the community and ecological value of biodiverse ecosystems in the district.

Protect existing nature spaces and water resources as biodiverse habitat.

Enhance habitat capacity and health in nature spaces.

Implementation

Biodiversity theme actions are listed for delivery in the Implementation Table.





5. Implementation

Recognising the importance of the natural environment takes into consideration strategic planning, decision making and actions on the ground. The recommendations of this Environmental Management Plan (EMP) are summarised in the following Implementation Table, which aligns with, and integrates into, other strategies, plans, programs and policies.

Actions listed as 'ongoing' are based on the principle of continuous business improvement and annual or periodic activities that require a deliberate effort to achieve a desired outcome. Actions listed with a dedicated timeline are project type activities that have a specific desirable conclusion.

6. Implementation Table

TO					(Ap _l	pend		RD:	12.	.3.2A
TSOD XOMMAN	7		In-house	In-house	In-house	In-house	In-house Project costs	In-house	In-house	
WHO?			Environment Officer Community Services	Environment Officer Operations Community Services	Environment Officer, Media & Communications	Infrastructure	Environment Officer Community Services	Environment Officer	Environment Officer	
WHENZ			Ongoing	Ongoing	Ongoing	Ongoing	Ongoing	2022	2022	
NOLLOW		KEY THEME: COMMUNITY	Incorporate Natural Space management into community engagement programs, projects and activities, to promote nature spaces, recreation and nature play activities for healthy communities.	Continue to support community engagement networks and communities such as Catchments groups, friends groups and Citizen Science programs.	Build staff and community environmental management awareness and knowledge using newsletters, information pamphlets, internet updates, social media and workshops.	Engage with federal, State and non-government agencies to develop and maintain strong working relationships that support the objectives of this EMP.	Engage with Aboriginal Custodians to support ongoing management of Natural Spaces and Water resources.	Undertake community safety risk assessments for Nature Spaces to ensure they are safe to use and access.	Review Natural Area Management Plans (2019) for Natural Spaces.	
E E	- - -	KEY T	C1	2	8	C4	C3	9)	7	

						(A	ppend	dix ORD: 12.3.2A)
APPROX. COST		In-house	In-house	In-house WALGA	In-house	In-house	In-house	
WHO?		Planning Services	Environment Officer Media & Communications	Environment Officer Infrastructure	Environment Officer Business Solutions	Design & Development Operations	Environment Officer Planning Services Parks & Environment	
WHEN?		Ongoing	Ongoing	Ongoing	Annually	Annually	2022	
ACTION	KEY THEME: GREENING THE SHIRE	Review the planning framework for opportunities to support retention of endemic native vegetation.	Encourage ratepayers and the public to protect and retain endemic vegetation on private property and to plant local species for endangered fauna.	Provide staff training to protect, manage and enhance roadside vegetation management, including clearing permit applications, and vegetation planting.	Align annual native planting programs to "Green Corridor" opportunities, and record these on Intramaps	Review forward Capital Works Programs to pre-empt measures to offset clearing impacts.	Develop a "Greening the Shire Action Plan" that integrates operational activities, land development opportunities and annual planting programs.	
ITEM	KEY TI	G 1	G 2	63	64	G5	95	

TEM	ACTION	WHEN?	WHO?	APPROX. COST
KEY T	KEY THEME: WATER RESOURCES			
LW	Improve species selection, planting arrangements and maintenance of riparian vegetation adjacent to environmental water resources.	Ongoing	Parks & Environment	In-house
W2	Provide support to the Leschenault Catchment Council to improve catchment water quality.	Ongoing	Environment Officer Parks & Environment	In-house Project costs
W3	Maintain existing WSUD structures, including Gross Pollutant Trap's, retention systems and Collie River non-return valves.	Ongoing	Operations	Annual maintenance budget
W4	Revegetate along the riparian zone of the Collie River to improve water quality, reduce erosion and runoff.	Ongoing	Parks & Environment Environment Officer	Annual planting program
W5	Liaise with landowners, DWER, LCC and community groups to manage surface water movement cross the catchment.	Ongoing	Operations	In-house
9M	Prepare a "Water Wise" policy to guide Council Operations, with respect to Public Open Spaces.	2021	Environment Officer Operations	In-House
W7	Prepare an Inventory of Water Resources of above ground water bodies, including rivers, streams and creeks, lakes, sumps, marshes and exposed winter water bodies.	2021	Environment Officer	In-house
W8	Develop Project Scope Criteria to guide the inclusion of Water Sensitive Urban Design (WSUD) in Capital Works and Operations.	2022	Environment Officer Design & Development Operations	In-house
6M	Incorporate Water Sensitive Urban Design (WSUD) principles in future Drainage Asset Management Plans (DAMP's).	2023	Assets & Infrastructure	In-house
W10	Prepare an Erosion Management Plan for the Lower Collie River.	2023	Environment Officer Planning Services Design & Development Consultants	\$15k-20k

COST						(A	pper	ndix ORD: 12.3.2 <i>A</i>
APPROX. COST		In-house	In-house	In-house	In-house	In-house	In-house	
WHO?		Environment Officer	Parks & Environment	Parks & Environment	Planning Services, Assets & Infrastructure Parks & Environment	Environment Officer Planning Services	Environment Officer	
WHEN?		2022	Ongoing	Ongoing	Ongoing	New	Ongoing	
ACTION	KEY THEME: BIODIVERSITY	Identify and document the Shires Biodiversity 'Hotspots'.	Maintain cockatoo boxes, possum boxes, bat boxes and other artificial infrastructure used to assist native fauna.	Train staff on contemporary biodiversity protection practices using science based methodology.	Encourage the inclusion of low maintenance, biodiverse landscaping in land development proposals.	Develop an Environmental Management checklist for Nature Spaces, Water Resources and land development proposals that includes provision for biodiversity protection and enhancement.	Liaise with Federal, State and non-government agencies to identify biodiversity enhancement opportunities through projects, funding programs or development proposals.	
ITEM	KEY TH	B1	B2	B3	B4	B5	B6	



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RISK ASSESSMENT TOOL

Adoption of Environmental Management Plan 2021 **OVERALL RISK EVENT:**

RISK THEME PROFILE:

7 - Environment Management 6 - Engagement Practices

Choose an item. **RISK ASSESSMENT CONTEXT:**

CONSECUENCE		PRIOR TO TREATMENT OR (IMENT OR CON	CONTROL	PICK ACTION DI AN		AFTER TREATEMENT OR CONTROL	IENT OR CONTR	OL
CATEGORY	RISK EVENT	CONSEQUENCE	ПКЕЦНООБ	INHERENT RISK RATING	(Treatment or controls proposed)	proposed)	CONSEQUENCE	ПКЕЦНООБ	RESIDUAL RISK RATING
	Risk of NOT adopting an		Almost		Adopt	Environmental			Moderate (5
REPUTATIONAL environmental	environmental	Moderate (3)	Certain (5)	High (12 - 19)	200		Minor (2)	Possible (3)	11)
	management plan		Cel (all.)		Management Flan				(++-
	Risk of environmental								
ENVIDONMENT	decline by NOT adopting	Moderate (2)	(1) (1)	High (12 - 10)	Adopt an	Environmental	(C) 100iM	Possible (2)	Moderate (5
FINALING	an environmental		LINCIY (4)	(CT - 7T) B	Management Plan		NIIIOI (2)	rossinie (5)	- 11)
	management plan								

A LAKES PARK PENINSU

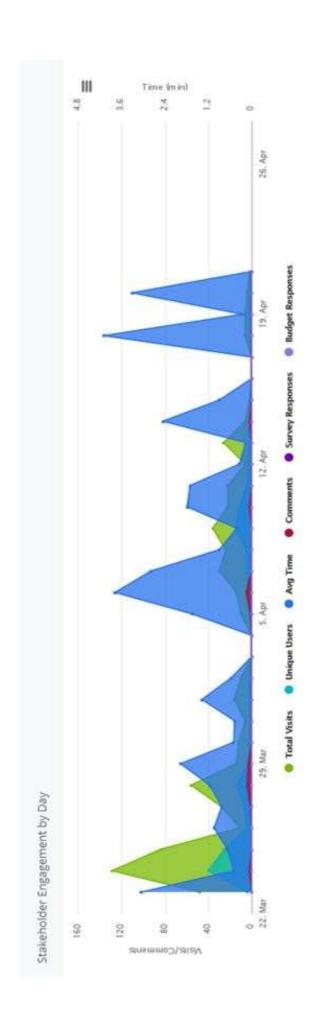


Peninsula Lakes Park Draft Master Plan – outcomes of Community Engagement April 2021 and Plan Review

The draft Peninsula Lakes Park Master Plan was developed in 2020/21 with input from the Eaton Advisory Group. It was endorsed by Council for public advertising at the Ordinary Council Meeting held on 24 February 2021, for the purposes of seeking community feedback.

A printed copy of the plan was also located in the Eaton Shire Office. No email or written submissions were received, with comments only provided through the Shire's website, in social media posts and by public notices located in public areas including several A3 sized laminated versions placed within the park. The draft Plan was advertised for comment through the Shire's tool 'Connect', via the Social Pinpoint online engagement platform, and promoted through the 'Connect' online engagement.

The community engagement was open for comments for just over one month, from 23 March to 27 April, 2021. The results were collated and assessed, with details supplied below. 630 total visits were made to the page during the engagement period by 162 unique users. Each user spent an average of 1.25 minutes on this engagement.



20 comments were received by 11 unique stakeholders, which are shown in the table below. Note that any information which might identify a respondent has been removed to protect participants' privacy. All participants who provided a postcode have been identified as coming from Eaton/Millbridge.

The draft plan was subsequently reviewed, with Officer Comments provided below. Recommendations for amendments to the Plan are noted in the 'Plan 'Review' section at the end of this report, and will also be noted in the Report to Council when the Plan is presented for endorsement.

Submissions Table and Officer Comments

Comment no.	Submitter Comment	Officer Comment
Comments on playground:	зуground:	
1.	Re: Proposed improvement 11: 'Additional smaller play features for younger children.' Is there any chance of moving this stage 3 part into stage 2? There are lots and lots of young family's around this area at the moment, by the time stage 3 comes in they children will be too big to use it?	Recommend that if funds left over from Stage 2 works (comprising of a birds nest swing, seat near playground and shade sails) to bring forward installation of some additional equipment for smaller children. Subject to sufficient funds being available. Possible inclusions — sand digger and nature play features as per playground concept plan; small slide if space permits (a popular community suggestion.)
2.	Re: Proposed improvement 11: 'Additional smaller play features for younger children' It would be good to have this sooner rather than later. There is nothing at this playground for small children to play on, not even a slide. The current playground attracts far older children including high school kids which is very intimidating for younger kids / families.	See above comment (re: response to comment no. 1)
÷.	Re: Proposed improvement 1: 'New birds nest style swing' Will there be just the one swing? Multiple swings like the park at the Eaton shopping centre would be ideal	There is probably not room in the playground for another swing set as these require a much larger fall zone area; only one swing is proposed as this is a neighbourhood scale / community park which is quite different to the one at Glen Huon Reserve (opposite Eaton Fair.)

Comment no.	Submitter Comment	Officer Comment
.4	Re: Proposed improvement 2: 'New playground shade sails (indicative design shown only)' Can they be fixed long term shade sails? Almost like a big patio roof? Will last a lot longer than shadecloth sails and once it's up there's no maintenance required? Also give family's options to use during winter while it's raining. Would protect the equipment from getting too hot in summer and potentially burning kids bums.	Procurement for installation of shade sails in 2020/21 has already commenced, for sails comprising of standard shadecloth material.
Comments on ot	Comments on other youth-focused recreational facilities:	
بر.	A Basketball hoop somewhere would be awesome if there is room.	A basketball half court was included in a previous draft master plan that was presented to the Eaton Advisory Group. The group did not support inclusion of a half court in this park due to proximity to neighbours and limited available space for active recreational facilities. A basketball hoop is recommended for consideration in the new public open space in the new Parkridge subdivision, which will be approximately 500m from Peninsula Lakes Park. (Subject to detailed design and feasibility.)
9	Half-court basketball hoop would be a great addiction (sic) if there was space available. Shire is in need of some courts that could get children active outside of Eaton Rec hours and around their social night sports	See above comment (re: response to comment no. 5)
7.	A bicycle pump track - example photo attached.	(Note – could not see photo – LDO) A pump track is not recommended for this location due to limited available open space within the perimeter path. This could potentially be considered instead in forward planning for the new open space west of the new Parkridge subdivision (subject to master planning) or another
		location in Eaton/Millbridge.
ω΄	A bike track/skate park like the Capel park. They also have a little water play section. It's a great park with lots to do for all ages.	See above comment (re: response to comment no. 5)

Comment no.	Submitter Comment	Officer Comment
		A skate park is not deemed suitable for a neighbourhood level / community park. The perimeter path could be considered as a suitable local scale 'skating' opportunity.
9.	We'd love to see some monkey bars, the goal posts back and a flying fox.	Goal posts are currently being procured for installation as part of Stage 2 works in 2020/21.
		A flying fox is included at the Eaton Foreshore – this type of feature is deemed suitable for a District/Regional level facility but not for a neighbourhood / community level facility.
		Monkey bars could be considered for planning for the new Parkridge playground which will be located 500m away from Peninsula Lakes Park.
10.	Re: Proposed improvement 4: 'New kick-around goals - in same location as previous goals' Found that a lot of balls were ending up in the birds' environment because the ground is sloping towards the water, maybe not a good idea to have that.	Goal posts are currently being procured for installation as part of Stage 2 works in 2020/21. This was committed to in previous discussions with the then-Eaton Townscape Committee including directive from the Shire President. A low retaining wall is proposed, to help create a more level area for the kick-around space (backfill with soil.)
Comments on pr	Comments on proposed parking / traffic:	
11.	Re: Proposed improvement 23: 'New on-street parking' I don't think parking on the road is necessary. Can't people just continue to park on the grass? That street is just too busy for parking	For discussion with relevant staff from Infrastructure Directorate. Note that high kerbing makes it difficult for people to park vehicles up on the verge and as the park becomes more developed with facilities (shelter, picnic tables etc) it may become more popular for people to visit, and the verge could be negatively impacted by informal parking.
12.	Re: Proposed improvement 23: 'New on-street parking' Peninsula lakes drive is busy and is only getting busier as it is the entry point. With parking and the bus this section of the	See above comment (re: response to comment no. 11) Note that Ryeland Avenue (the other side of the park) is too far from the playground and proposed picnic shelter site to be considered as an

Comment no.	Submitter Comment	Officer Comment
	street will become chaotic – please move the parking to the other side of the park where it will be less intrusive	inclusive and accessible facility and is not recommended as a location for new parking.
		The proposal for constructed parking could be considered as 'possible future' works rather than Stage 3 works, given that more consideration may be needed with respect to the feasibility for this item and due to its higher relative cost. Alternative interim solutions could be considered (subject to feasibility) e.g. a section of more easily mountable kerbing, to allow for informal parking on the verge close to the playground. Perimeter park bollards could help to limit the ingression of vehicles into the internal park areas.
Comments on ar	Comments on ancillary amenities:	
13.	Could you please put a shelter at the bus stop? There is no protection from the weather.	This could be considered as a future improvement, subject to bus stop patronage. This would involve cooperation with the local Public Transport Authority. A bus bay could be considered in conjunction with on street parking bays, to improve traffic safety, particularly as Peninsula Lakes Drive is likely to become busier as the new Parkridge subdivision to the north opens up. Note that if a shelter was to be installed it would trigger the need for the boarding area to be upgraded to comply with Disability Standards, including specialised paving treatments.
14.	Re: Proposed improvement 23: 'New on-street parking' Could you please put a bus shelter at the bus stop. There is no protection from the weather.	See above comment (re: response to comment no. 13)
15.	Re: Proposed improvement 6: 'New picnic / weather shelter with tables – accessible' A BBQ and water fountain would be welcome	A BBQ is not proposed as it is deemed to not be suitable for a neighbourhood level / community park, as it is best located in association

Comment no.	Submitter Comment	Officer Comment
		with public toilets, which are not proposed for Peninsula Lakes Park. A water fountain can be considered as part of Stage 3 works.
16.	Solar bollards around track for night time walkers and runners	To discuss with relevant staff from the Infrastructure Directorate. This is a significant cost item and one which is more likely to be included in District/Regional level open space areas. Could be included as a possible future improvement. As with all projects this is subject to funding.
17.	Re: Proposed improvement 13: 'New seat for sunset views' When you put the seat in, can you put a shelter in as well and a bin would be great as well! Also could you put shelters over the other seats in the park as well , who wants to sit in the heat of the sun and possible get caught in the rain	This was previously considered in developing the draft plan but removed due to the relatively high cost of installing a shelter at each seat making this less feasible; instead, it was decided to provide one larger picnic / weather shelter close to the playground. Trees could be planted near each seat where required, in the best location to provide future shade to that seat.
18.	How about putting the rubbish bin back here? Please?	This query was referred to the Shire's Operations team. The rubbish levels in the bin were assessed and deemed to not warrant the provision of a second bin in the park. The master plan identifies the playground / future picnic shelter area as the primary location for a bin (presumably this request is for a bin in another location of the park, as there was previously one installed closer to Holstein Drive.)
Comments on la	Comments on landscape planting / reticulation:	
19.	Re: Proposed improvement 15: 'Additional park tree planting for shade, cooling and improved appearance.' Yay to more planting and reticulation. The park is quite bare at the moment in comparison to others in the area e.g. Sindhi close park	Recommend to retain on master plan.
20.	I live at 22 Holstein Dr we bought the block here for the lake view by the time you put all the trees and bushes in we will not be able to see the lake anymore. We have lost most of the	The proposal for additional park planting received 4 'likes' on the plan and no 'dislikes'. There appears to be overall community support for

Comment no.	Comment no. Submitter Comment	Officer Comment
	view with the last trees that were planted. If I wanted to live in the bush I would have bought a bush block in Millbridge.	additional planting. As planting can be considered to be for the greater good for the community, in providing shade (helping to reduce the urban heat island effect in the neighbourhood) and improved aesthetics, it is recommended to retain this item on the master plan. Ensure selective planting locations to include 'gaps' to maintain selective views and passive surveillance into the park. Trees to be selected that can be pruned up, to help achieve this objective.
		•

Social Pinpoint 'Likes' and 'Dislikes'

Voting outcomes with 'Likes' being votes in favour of a particular proposed improvements and 'Dislikes' being votes against it.

Proposals have been ranked in order of popularity on the basis of 'net likes' with the highest number of 'net likes' shown first.

The following scoring system has been developed to help indicate the relative priority of the proposed improvements.

Net score of less than 0 (Ie. The number of dislikes were greater than the number of likes) Overall opposition:

Net score of 0 (Ie. The number of dislikes cancel out the number of likes) No to minimal support:

Lower level of support: Net score of 1-2

Medium level of support: Net score of 3-4

High level of support: Net score of 5-6

Very high level of support: Net score of 7+

'Likes' 'vel of support: // weather shelter with tables - accessible // weather shelter with tables - accessible // support: /	'Dislikes'	total 'Likes'	
C 9 5			
5			
9 5	0	7	Included in plans for Stage 3 – noted as highest priority
9			
5	1	5	Being installed in 2020/21 – noted as high priority
around area and landscaping around picnic shelter and	0	5	Need to identify most feasible water source and confirm
			with Parks – noted as high priority
playground			
Medium level of support:			
New birds nest style swing	1	4	Was installed in 2020/21 financial year
Additional park tree planting for shade, cooling and 4	0	4	Noted – locations to be selected in detailed design for Stage
improved appearance			3, and environmental planting by Environmental Officer
New link paths from parking to existing pathway	1	4	Recommend to go ahead only if parking is constructed
New grass mounds for play and landscape interest	0	4	Noted – consider in Stage 3 landscape works design
Proposed local native landscaping as environmental buffer 4	0	4	Noted – locations for park planting to be selected in detailed
			design for Stage 3, and environmental planting locations by
			Environmental Officer
New seating near playground	0	3	One seat to be installed in 2020/21, additional seating in
			Stage 3
New landscaping / nature play space	0	3	Noted, recommend retaining in overall design
New rubber soft-fall paths to select playground areas	T	3	Minimal area recommended due to cost and maintenance,
			recommend to include in Stage 3 works if budget permits
New seat for sunset views	0	3	Noted – include in Stage 3
New bollards around park perimeter	0	3	Noted – include in Stage 3
Lower level of support:			
New drink fountain	0	2	Noted – include in Stage 3 (subject to potable water supply)
New kick-around goals - in same location as previous goals 2	1	1	Will be installed in 2020/21 to replace previous set
Supplementary environmental planting in selected 1	0	П	Retain in plan; part of environmental planting program
locations around lake perimeter.			
New link paths to shelter	0	1	Retain on plan, for Stage 3 landscape upgrade

	NO. 01	NO. 01	Net' no. of	'Net' no. ot Otticer Comments
	'Likes'	'Dislikes'	total 'Likes'	
New low wall to help create level area for number 10, with 1		0	1	Retain on plan; install wall as soon as funds are available, to
planting to lake side to create a more natural look edge				create a more level kick-around area (as goals will be installed by mid 2021)
Proposed perimeter street trees		0	1	Noted – include in Stage 3
New artworks in select locations e.g. cabinets		0	1	Advise Community Development of support for art
New bike racks 1		0	1	Noted – include in Stage 3
No to minimal support:				
Proposed informal active open space 1		1	0	As space already exist, no change to plan required
New trees to frame informal active space 0		0	0	No votes either way, recommend to retain for Stg 3
New on-street parking 2		3	-1	To discuss – recommend that parking still be considered for
				longer term, ideally incorporating a bus pull-in bay to reduce
				traffic impacts of the bus stopping along Peninsula Lakes
				Drive - particularly as through traffic here may increase with
				development of the Parkridge subdivision to the north (with
				access from Peninsula Lakes Drive)

For comparison purposes, a previous community engagement in January 2019 on the playground concept plans yielded the below summary outcomes:

Request / comment	No. of times	Updated Officer Comments April 2021
	this was	Note that all proposed inclusions are subject to feasibility including funding
	asked for	
Request to take smaller children into consideration	5	Recommend that if funds remaining from Stage 2 works that Stage 3 proposal
		for additional play equipment for young children be brought forward – e.g.
		small slide, sand digger, nature play features
Request to take children with disabilities into consideration	2	Stage 3 – rubber softfall proposed, to link play features
Request for slide	2	See first comment in table (above)
Request to include a 'normal' swing set in addition to the	1	There is no room in the playground for another swing set as these require a
birds nest swing		much larger softfall area; only one swing is proposed as this is a
		neighbourhood / community level park.
Request for seating	1	Included in plans for Stages 2 and 3

Request for picnic tables	1	Included in plans for Stage 3
Request for shade (for picnic tables)	1	Included in plans for Stage 3 – highest priority
Request for accessible softfall	1	Included in plans for Stage 3 (limited areas recommended, due to cost of
		installation and ongoing maintenance)
Request for fence (around playground)	1	Total of two comments regarding location of playground near lake. A fence is
		not recommended – parent or guardian supervision is always expected in a
		children's playground and fencing can cause people to let their guard down
		and for incidents to then occur. Note that Eaton Foreshore playground is next
		to a river and is not fenced.
Concern over location near lake	1	See above comment. Supervision of young children by a responsible person
		known to them is assumed.
Comment – like the 'natural' feel rope design	1	Rope play feature installed as part of Stage 1 works
Comment – concern over any proposal to add parking	1	Parking provision being considered in a review of draft Master Plan.
		Recommended as 'possible future' improvement (may not be sufficient funds
		in Stage 3 and other improvements ranked higher and are likely to be
		prioritised instead.)
Comment – suggestion (from DBCA) for a vegetated buffer	1	Included in longer term plans, Stage 3 or beyond. Subject to confirmation of
between playground and lake, to help reduce lake pollution		water supply and reticulation.

Plan Review

The Draft plan was subsequently reviewed by Shire Staff.

The following community suggestions made are not deemed to be suitable for inclusion in a revision of the master plan:

- Basketball hoop (recommend inclusion in new park in Parkridge, 500m north of Peninsula Lakes Park) opposition through Eaton Advisory Group
- Flying fox better suited to a District / Regional facility; one exists in Eaton already, at Colin Spragg playground on Eaton Foreshore
- Skate Park and pump track not recommended for a neighbourhood / community level park
- Monkey bars no room in playground; consider for new Parkridge park (see above)
- BBQ not recommended for a neighbourhood / community level park, as these are best located in conjunction with public toilets, which are not proposed for Peninsula Lakes Park as they are beyond the levels of service for this type of park

Shelters over all individual seats along the perimeter path – due to relatively high cost making this suggestion unaffordable

The following community suggestions are deemed worth considering for inclusion in park improvements, subject to feasibility:

- Additional play equipment for younger children as soon as possible (high community priority)
- Possible future shelter at the bus stop on Peninsula Lakes Drive for shade / weather protection
- For consideration lighting along perimeter path, to allow for after-hours use (note as a higher cost item, is subject to consideration / funding) For consideration – lighting along perimeter μαιι, ω κικότιος.
 Wayfinding signage – to direct people to nearest public toilets.

All proposed improvements are subject to feasibility including funding.

RISK ASSESSMENT TOOL

Peninsula Lakes Park Masterplan – endorse Final Plan **OVERALL RISK EVENT:**

RISK THEME PROFILE:

1 - Asset Sustainability Practices6 - Engagement Practices

Project RISK ASSESSMENT CONTEXT:

		PRIOR TO TREATMENT		OR CONTROL		AFTER TRE	AFTER TREATEMENT OR CONTROL	ONTROL
CATEGORY	RISK EVENT	CONSEQUENCE	ПКЕЦНООБ	INHERENT RISK RATING	(Treatment or controls proposed)	CONSEQUENCE	ПКЕЦНООД	RESIDUAL RISK RATING
НЕАLTН	No risk event identified for this category.	Not Required - No Risk Identified	W/A	N/A	Not required.	Not required.	Not required.	Not required.
FINANCIAL	No risk event identified for this category.	Not Required - No Risk Identified	W/A	N/A	Not required.	Not required.	Not required.	Not required.
SERVICE INTERRUPTION	No risk event identified for this category.	Not Required - No Risk Identified	N/A	N/A	Not required.	Not required.	Not required.	Not required.
LEGAL AND COMPLIANCE	No risk event identified for this category.	Not Required - No Risk Identified	N/A	N/A	Not required.	Not required.	Not required.	Not required.
REPUTATIONAL	Delivering the project in line with Community expectations.	Minor (2)	Possible (3)	Moderate (5 - 11)	Negative perception of the Shire if projects are not programmed to meet Community needs.	Minor (2)	Unlikely (2)	Low (1 - 4)
ENVIRONMENT	No risk event identified for this category.	Not Required - No Risk Identified	N/A	N/A	Not required.	Not required.	Not required.	Not required.

A LAKES PARK PENINSUL

DESIGN OBJECTIVES

- To preserve and enhance the park's unique icentity and character surrounding a lake with fringing natural character
 To improve access and inclusion opportunities for physical activity, for people of all ages and abilities
 To encourage social connectivity by improving the community gathering spaces, including with shade
 To improve the appearance of the public oper space and provide amenities to enhance the comfort and experience
- of the community To activate public spaces to improve safety and security for the community To protect and enhance the nctural environment, including strengthening habitat for local native flora and fauna and to enhance people's mental wellbeing





HOLSTEIN DR

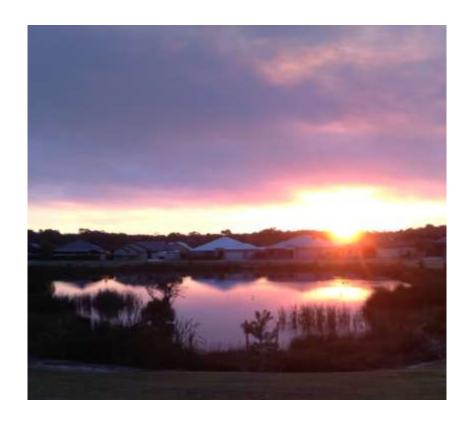
(Appendix ORD: 12.3.3D)

Shire of Dardanup

Not to scale



PENINSULA LAKES PARK MASTER PLAN PLAN REPORT



FEBRUARY 2021
Amended June 2021

Shire of Dardanup

ADMINISTRATION CENTRE EATON

1 Council Drive - EATON

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1. ABOUT PENINSULA LAKES PARK

Peninsula Lakes Park is a 2.5ha Shire Reserve bounded by Peninsula Lakes Drive, Glen Huon Boulevard, Ryeland Avenue and Holstein Crescent in Parkridge Estates, Eaton. Its defining feature is a picturesque 9,400m2 lake in its centre which offers pleasant sunset views and opportunities for bird watching as this is a recognised bird breeding site. The surrounding landscape character is suburban but within the park itself a sense of openness and exposure is prevalent. In the hot summer there may be little sense of refuge while walking as very little shade is available. Water views help to engender a sense of calm.

Visual water access is good, with views to the water from most areas within the park except for the narrow section of land on the southern side of the park behind the clumps of Melaleuca trees. Most of the perimeter of the lake (water body/wetland) is physically difficult to access due to dense clumping of riparian vegetation species, however there are some existing access points including in the south western corner near the existing lakeside trees.

The lake is ringed by a circuit path which is utilised by the community for exercise and for transit. There are two existing park benches along the circuit path, with one bench installed early in 2021 having been manufactured by the Bunbury Regional Prison to meet a community member request and in light of a limited budget. There are also existing wheelie bins on stands and a number of aged 'do not feed the birds' signs on timber posts. The park is well connected to the existing path network and is on an existing public transport route, with two bus stops located on the northern and southern edges of the park. There are several utility boxes located around the perimeter of the reserve, with a major structure (including low limestone wall) located near the roundabout at the park's north western corner. This one has had a feature bird art mural applied recently.

There is good passive surveillance from residential properties across the road from the reserve on all sides, as well as from vehicles including local area buses which service the two bus stops. Users of the pedestrian and cyclist network also contribute to the passive surveillance of the park.

Nearby parks and reserves accessible via the existing path network include Leicester Ramble and associated wetlands, the Charolais Mews linear bush reserve, Watson Reserve, Gromark Park, Sindhi Park and the Millbridge open space network – such as Millar's Creek corridor, Hunter Park, Castlereagh Park and Cadell Park (note that Cleveland Bay Reserve, while nearby, is not owned by the Shire.) Future nearby open space will be created in the new residential Parkridge and Millbridge subdivisions to the north of Peninsula Lakes Park.

The playground is located on the widest space in the linear strip of open space on the inside of the footpath (lake side) along Peninsula Lakes Drive, closer to the Glen Huon Boulevard end. It overlooks a picturesque shallow lake, frequented by birds and turtles. Environmental themes of birds, water and sky were used as a basis for the proposed playground design.

The ABS Census 2016 statistics for 'East of Eaton' (including Parkridge) cited the largest population group of children and youths as belonging to the then 5-9 year old age bracket. This group would now be aged 9-13 and Stage 1 of the playground was targeted towards this demographic in the first instance to create a local neighbourhood play space focusing on 'adventure play' opportunities. This

was intended to activate the relatively sparse apron of open space adjacent the picturesque lake. Following community engagement and a design review some adjustments were made to the design within the context of a restricted budget, and some equipment more suitable to much younger children and for children with disabilities was subsequently incorporated.

The largest 'open space' area near Holstein Drive is proposed for retention as informal active open space, with multi-sports kick-around goals recommended for re-installation in this location. A set of goals were temporarily installed in this location previously and were well received; they were only removed as they had been 'borrowed' from another sports ground where they were required again. The proposal to reinstate kick-around goals was supported by the Eaton Townscape Committee in 2019 and staff were directed to include these in the landscape improvements.

The park is not currently irrigated and is often green throughout most of the year due to wicking from a high water table, however consideration is being given to possible selective irrigation of areas such as the proposed formal kick-around space and an area of turf and any other additional landscaping around the playground and proposed picnic shelter.

On 11th January 2019, the Department of Biodiversity, Conservation and Attractions (DBCA) provided feedback to the Shire on the new playground proposal, citing that they had no objections to the proposal. In this they provided the following recommendation for future landscape improvements in the park: 'It is suggested that consideration be given to planting a vegetated buffer between the proposed playground and the lake, to protect the lake from potential wind-blown litter and pollutants. Parks and Wildlife Service's preference is for landscape planting to consist of local endemic species.'

The Park is a known site for breeding waterbirds who need vegetation as protection from feral animals such as foxes. The vegetation provides more cover for such species to breed in more relative safety. The vegetation in the fringing wetland allows for improved water filtering, and helps to prevent flooding.

From a human 'environment' perspective, the park is fairly inhospitable for parts of the year – being either very hot in the peak of summer with limited shade cover, or cold and rainy with no cover. The community who use the space would greatly benefit from an environment with more vegetation, including trees and attractive shrubs plus additional shade such as through the installation of a picnic / shade and weather shelter. Shade sails to the playground are also proposed.

While the Shire does have a groundwater licence for the site, there is currently no bore or connection and so no confirmed water provision for reticulation in the park – we should ideally not depend on scheme water for reticulation of public open spaces.

As climate change continues to alter our built environment, trees are required to assist with reducing the heat island effect, which is needed to cool urban areas and protect residents against exposure and heat stroke. Providing trees for shade along the paths would also provide greater comfort for path users, and so encourage exercise and improve community physical and mental health and help to build community connectedness and resilience.

The park is classed as a 'Community Park Level 2' in the Shire's Draft Open Space Level Of Service (LOS) framework which means that it has been classed as *Developed urban open space used for a range of informal recreational activities, particularly children's play and family based activities* and classed as

'a larger park that people will often travel several kilometres to use. A good range and number of quality assets provided, and maintained at a high standard.' The park is intended to serve the community as neighbourhood open space.



Peninsula Lakes Park aerial view, November 2020

2. CURRENT USE OF THE PARK

It has been observed that the community uses the park for a mixture of informal active and passive recreation, including the following:

Informal active recreation

- Walking, bike riding, riding on motorised gophers, scootering or skating along the path including pushing prams;
- Playing ball games and informal ball kick-around activities including in the wider open space area and in the linear open space areas;
- Playing in the playground;
- Exercise activities in the grassed open space areas.

Passive recreation:

- Sitting and enjoying the sunset over the lake, or daytime lake views;
- Waiting for the bus (two stops);
- Passing through (shortcut);
- Watching children in the playground.

3. REDEVELOPMENT OPPORTUNITIES/VISIONS

The proposed improvements focus around six core design objectives, which were included in the draft Master Plan that was advertised for community comment. These have been retained on the Master Plan and are as follows:

PENINSULA LAKES PARK MASTER PLAN – DESIGN OBJECTIVES

- 1. To preserve and enhance the park's unique identity and character surrounding a lake with fringing natural character
- 2. To improve access and inclusion opportunities for physical activity, for people of all ages and abilities
- 3. To encourage social connectivity by improving the community gathering spaces, including with shade
- 4. To improve the appearance of the public open space and provide amenities to enhance the comfort and experience of the community
- 5. To activate public spaces to improve safety and security for the community
- 6. To protect and enhance the natural environment, including strengthening habitat for local native flora and fauna and to enhance people's mental wellbeing.

These are intended to guide the development of the park towards being a welcoming, safe, attractive, inclusive and accessible community space for people to come together to enjoy passive and active recreational opportunities, to promote community wellbeing while also enhancing the natural environment including that of the existing lake and downstream waterways.

Opportunities for proposed improvements have been included in the Master Plan, which was amended following a community comment period. These are outlined below. It is recommended that priorities for staged landscape improvements be confirmed closer to the time of the works with the Eaton Advisory Group. As at June 2021, the proposed improvements are as follows, with items scoring higher in the community engagement appearing further to the top of the list and offering an indication of priority for implementation (subject to review closer to the time of implementation):

Stage 2 (commencing 2020/21)

- 1. New birds nest style swing (installed 2021)
- 2. New playground shade sails indicative design shown (high priority)
- 3. New seating near playground
- 4. New kick-around goals in same location as previous goals
- 5. Additional play features for young children (high priority; timing subject to budget)
- 6. Supplementary environmental planting in selected locations around lake perimeter

Stage 3 / possible future works (subject to feasibility and funding)

- 7. New picnic / weather shelter with tables accessible (highest priority)
- 8. New link paths to shelter
- 9. Proposed irrigation of select park areas such as kick-around area and landscaping around picnic shelter and playground (high priority)
- 10. Additional park tree planting for shade, cooling and improved appearance
- 11. New grass mounds for play and landscape interest
- 12. Proposed local native landscaping as environmental buffer
- 13. New landscaping / nature play space

- 14. New rubber softfall paths to select playground areas
- 15. New seat for sunset views
- 16. New bollards around park perimeter
- 17. New drinking water fountain
- 18. New low wall to help create more level area for kick-around area, with planting to lake side to create a more natural look edge
- 19. Proposed perimeter street trees
- 20. New artworks in select locations e.g. cabinets
- 21. New bike racks
- 22. Proposed informal active open space
- 23. New trees to frame informal active space
- 24. Possible future on street parking (subject to detailed design)
- 25. New link paths from any future parking facilities to existing pathway
- 26. Possible future path lighting
- 27. Possible future bus shelter (subject to bus stop patronage / feasibility)
- 28. New park signage including wayfinding information to direct park users to nearest public toilets and BBQ's

Note: Stage 1 (new playground) has been completed All items shown are indicative and subject to detailed design

4. BUDGET IMPLICATIONS

Proposed staged landscape improvements from the Master Plan will be implemented with funds already allocated in the Shire's Parks and Reserves Asset Management Plan (PRAMP). As at June 2021, there is an allocation of \$61,200 in the current budget for implementation of Stage 2 landscape works. This is for the supply of shade sails, a bench seat and a swing set at the playground. It is recommended that if there are any funds remaining from the installation of these works, that additional play equipment for younger children – with target ages under 5 – be purchased for installation as soon as practicable. This was identified as a higher priority item in the community engagement, so it is recommended that this be implemented sooner than the scheduled timeframe for Stage 3 works.

The current 10-year plan for Parks and Reserves indicates a planned budget allocation of \$78,030 for 2028/29 for future landscape expansion and upgrade works at Peninsula Lakes Park. It is recommended that the allocation of these funds to cover proposed improvements shown on the Master Plan as Stage 3 works consider the order in which the items have been listed on the Plan, as those towards the top of the list have been identified through engagement as being of higher priority to the community.

It should be noted that all proposed improvements are subject to feasibility, including budget funding, and to detailed design.

There is potential for future funding for additional works that are not currently able to be afforded in the Shire's ten year plans, such as from future developer contributions (cash in lieu of open space), grant funding or future Shire budget allocations.