



# **City of Wanneroo Bushfire Risk Management Plan**

**2025 - 2027**

Office of Bushfire Risk Management Bushfire Risk  
Management (BRM Plan) endorsed 5 June 2025  
Local Government Council BRM Plan approval 29 May 2025

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## Document control

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## Document endorsements

This Bushfire Risk Management Plan has been endorsed by the Office of Bushfire Risk Management as consistent with the standards detailed in the *Guidelines for Preparing a Bushfire Risk Management Plan 2024*.

The approval of the Bushfire Risk Management Plan by City of Wanneroo Council signifies support of the plan's implementation and commitment to working with risk owners to manage bushfire risk. Approval does not signify acceptance of responsibility for risk, treatments or outcomes on land that is not managed by the City of Wanneroo.

Local Government	Representative	Signature	Date
City of Wanneroo	Chief Executive Officer		29.05.25

## Publication information

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Information captured through the Bushfire Risk Management System (BRMS) includes data that is considered sensitive, such as the location of culturally and environmentally significant sites, land ownership details and risk information. The Chief Executive Officer is to be consulted prior to public release of any data relating to the City of Wanneroo Bushfire Risk Management Plan.

### Privacy and Release of Information

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# Chapter 1 Introduction

## 1.1. Background

This Bushfire Risk Management (BRM) Plan provides contextual information to inform a structured approach to identifying, assessing, prioritising, monitoring and treating bushfire risk. The BRM Plan has been prepared by the City of Wanneroo, encompasses all land within the City of Wanneroo and has been written on behalf of all stakeholders within that area. The BRM Plan is informed by consultation and communication with land and asset managers that has occurred throughout its development to ensure an informed and collaborative approach to managing bushfire risk.

The BRM plan has been prepared with due consideration of the requirements stated in the *Guidelines for Preparing a Bushfire Risk Management Plan* (the Guidelines) published by the Office of Bushfire Risk Management (OBRM) including the principles described in *ISO 31000:2018 Risk Management*.

## 1.2. Objective of the Bushfire Risk Management Planning Program

The BRM planning program supports local governments to reduce the threat posed by bushfire. The City of Wanneroo BRM Plan will contribute to achieving the objective of the BRM program by:

- Guiding and coordinating a cross-tenure, multi-stakeholder approach to BRM planning.
- Facilitating the effective use of the financial and physical resources available for BRM activities.
- Supporting integration between risk owners, strategic objectives and tactical outcomes.
- Integrate bushfire risk management into the business processes of local government, landowners and other agencies.
- Ensure there is integration between landowners and bushfire risk management activities.
- Documenting processes used to monitor and review the implementation of treatments to ensure risk is managed to an acceptable level.

## 1.3. Legislation, Policy and Standards

Legislation, policy and standards that were applied in the development of this BRM Plan can be found in the *Bushfire Risk Management Planning Handbook – Appendix 1 – Summary of Related Legislation, Policy and Guidelines*.

## 1.4. Other Related Documents

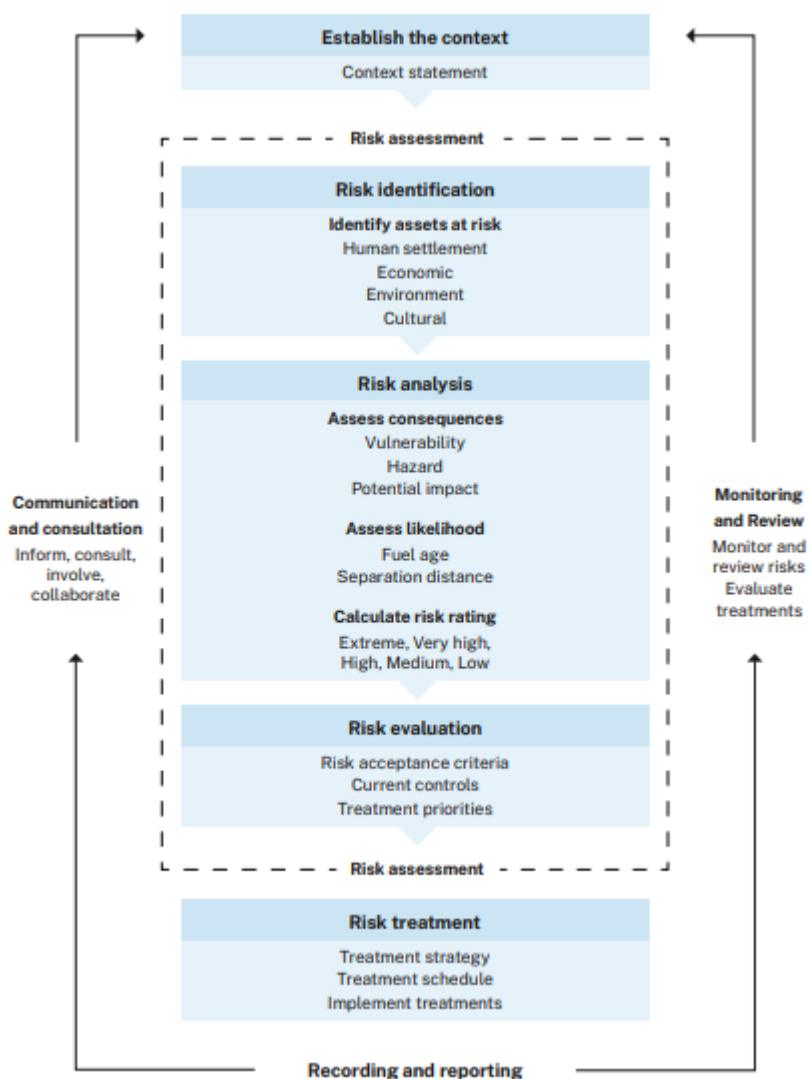
- National Statement of Capability for Fire and Emergency Services (AFAC 2023)
- Bushfire Risk Management Planning Handbook (DFES)
- Bushfire Risk Management System (BRMS) User Guide (DFES)
- City of Wanneroo Local Emergency Management Arrangements (LEMA) 2023
- City of Wanneroo Local Biodiversity Plan – 2018/19 - 2023/24
- City of Wanneroo Local Environmental Strategy 2019
- City of Wanneroo Environmental Management Plan Guidelines May 2018
- City Tree Policy 2024
- Coastal Hazard Risk Management Adaption Plan 2018

- Coastal Management Plan 2021
- Foreshore Management Plan Guidelines 2021
- Yellagonga Integrated Catchment Management Plan 2021-2026
- Weed Management Guidelines 2025

## Chapter 2 The risk management process

The BRM planning process is a cycle of understanding the context and assessing and treating risks. Each of these steps is informed by communication and consultation and supported by monitoring and review. The three products produced during the BRM planning process are the BRM Plan, Asset Risk Register and Treatment Schedule.

Further details on the guiding principles and process for the development of this plan can be found in Chapter 2 of the Guidelines – link to Guidelines - [Publications](#)



### 2.1. Roles and Responsibilities

The roles and responsibilities of the key stakeholders involved in the development of the BRM Plan are outlined in Table 1.

Table 1: Roles and responsibilities in the Bushfire Risk Management (BRM) planning process

Stakeholder*	Roles and responsibilities
<b>Local government</b>	<ul style="list-style-type: none"> <li>• Custodian of the BRM Plan.</li> <li>• Coordinate the development and ongoing review of the BRM Plan.</li> <li>• Undertake bushfire risk assessment of local government area.</li> <li>• Submit the draft BRM Plan to OBRM for review and endorsement.</li> <li>• BRM Plan endorsed by Council.</li> <li>• Develop and implement a Treatment Schedule for local government owned and managed land.</li> <li>• Encourage risk owners to treat identified risks.</li> <li>• Identify Aboriginal Cultural Heritage and Historic Heritage.</li> <li>• Communicate the plan to the community</li> </ul>
<b>DFES</b>	<ul style="list-style-type: none"> <li>• Contribute to the development and implementation of the BRM Plan.</li> <li>• Support local government by providing expert knowledge and advice in relation to the identification, prevention and treatment of bushfire risk.</li> <li>• Facilitate involvement of state and federal government agencies in the BRM planning process.</li> <li>• Undertake treatments on unmanaged reserves and unallocated Crown land within gazetted town sites.</li> <li>• By agreement, implement treatment strategies for other land managers.</li> <li>• Endorse BRM Plans as consist with the Guidelines, BRM Program and dynamic risk environment.</li> <li>• Administer the Mitigation Activity Fund Grants Program.</li> </ul>
<b>Department of Biodiversity, Conservation and Attractions (DBCA)</b>	<ul style="list-style-type: none"> <li>• Contribute to the development of the BRM Plan.</li> <li>• Implement their treatment program on DBCA managed land.</li> <li>• Provide advice on environmental assets and appropriate treatment strategies for their protection.</li> </ul>
<b>Department of Planning, Lands and Heritage</b>	<ul style="list-style-type: none"> <li>• Identify managed assets.</li> <li>• Provide advice on management of Aboriginal Cultural Heritage.</li> </ul>
<b>Other State and Commonwealth Government agencies and public utilities</b>	<ul style="list-style-type: none"> <li>• Identify managed assets.</li> <li>• Provide advice on current risk treatment programs.</li> <li>• Contribute to the development of BRM Plans.</li> <li>• Undertake treatments on lands they manage.</li> </ul>

Stakeholder*	Roles and responsibilities
<b>Corporations and private landowners</b>	<ul style="list-style-type: none"> <li>Identify managed assets.</li> <li>Provide advice on current risk treatment programs.</li> <li>Undertake treatments on lands they manage.</li> </ul>

## 2.2. Stakeholder Engagement

Engagement with stakeholders during the development, implementation and review of the BRM Plan ensures planning is based on comprehensive information and considers the values and objectives of the entire community.

The following table identifies key stakeholders in the BRM planning process. These are stakeholders that are identified as having a significant role or interest in the planning process or are likely to be significantly impacted by the outcomes.

*Table 2: Key stakeholders identified in the BRM planning process for the City of Wanneroo*

Stakeholder	Role or interest	Level of impact of outcomes	Level of engagement
City of Wanneroo	Facilitation of BRM Plan, Land / Treatment Managers	High	Consult, involve and inform
Department of Fire and Emergency Services (DFES)	Assist the City with implementation and communication of BRM Plan	High	Consult, collaborate, involve and inform
DFES – Office of Bushfire Risk Management – Rural Fire Division	Significant role in plan development, review and endorsement	Medium	Inform, consult and collaborate
Department of Biodiversity, and Attractions (Parks and Wildlife) (DBCA)	Significant role in treatment development, implementation and review  Asset identification, Land / Treatment Managers	High	Consult, involve and inform
Forest Products Commission	Asset identification, Land / Treatment Managers	Medium	Consult, involve and inform



Service Providers	Asset identification, Land / Treatment Managers	Medium	Consult and inform
Private Landowners	Asset owners Land/Treatment Managers	Medium	Consult, inform and empower
Business Owners	Land/Treatment Managers  Impact of bushfire on business	Low	Consult, inform and empower
Interest Groups	Awareness of BRM Plan, Consultation  Asset Identification	Low	Consult, inform and empower
Bushfire Advisory Committee (BFAC) and Local Emergency Management Committee (LEMC)	Role in plan development and review	High	Inform, consult, involve, collaborate and empower
Department of Planning Lands and Heritage (DPLH)	Asset owner Land/Treatment Manager	High	Consult, collaborate, involve and inform
Water Corporation	Asset owner Land/Treatment Manager	High	Consult, involve and inform
Western Power	Critical Infrastructure Owner	High	Consult, involve and inform
Main Roads WA	Critical Infrastructure Owner	High	Consult, involve and inform
Telstra	Critical Infrastructure Owner	High	Consult, involve and inform

## Chapter 3 Establishing the context

The City of Wanneroo acknowledges its responsibility in all areas of Prevention, Preparedness, Response and Recovery (PPRR). This Bushfire Risk Management Plan (BRM Plan) outlines strategic level planning through a tenure blind approach within the City of Wanneroo. It will further bolster coordination within and between agencies and organisations in the City of Wanneroo. Relations between policy planning, operational delivery and the monitoring and evaluation of mitigation works in the City will also be strengthened.

This BRM Plan will also assist in identifying and integrating best practice into the planning and delivery of bushfire mitigation programs within the City of Wanneroo. The objective of the City's mitigation program is to ensure that life and property within the community is given the best possible protection from high intensity and devastating bushfires.

The City's Community Safety and Emergency Management Team, inclusive of the Volunteer Bush Fire Brigades, work vigorously to ensure the safety of our community whilst sustaining environmental, ecological and sociological impacts. This BRM Plan has been built on the City's values of remaining customer focused while delivering service excellence, maintaining accountability and accepting responsibility meeting commitments to a high standard, along with high levels of collaboration across departments. In accordance with these requirements, defined risk treatments and actions are incorporated as prevention strategies. This BRM Plan has been developed to meet the requirements of State Hazard Plan – Fire, to provide integrated hazard reduction programs for fuel removal and/or modification by manual, mechanical and prescribed burning methods.

This document and accompanying maps together form part of the overall Bushfire Risk Management Plan for the City of Wanneroo.

### **Strategic and Corporate Framework**

The City's Corporate Business Plan 2024/25 – 2027/28 has seven strategic goals that were developed with the community. These strategic goals represent a clear future direction for the City of Wanneroo over the lifetime of the Strategic Community Plan 2021 – 2031.

The City's seven strategic goals are:



**Goal 1:** An inclusive and accessible City with places and spaces that embrace all



**Goal 2:** A City with rich cultural histories, where people can visit and enjoy unique experiences



**Goal 3:** A vibrant, innovative City with local opportunities for work, business and investment



**Goal 4:** A sustainable City that balances the relationship between urban growth and the environment



**Goal 5:** A well-planned, safe and resilient City that is easy to travel around and provides a connection between people and places



**Goal 6:** A future-focused City that advocates, engages and partners to progress the priorities of the community



**Goal 7:** A well-governed and managed City that makes informed decisions, provides strong community leadership and valued customer-focused services.

Goal 5 aligns with the Bushfire Risk Management Plan in that the service intent is to minimise potential risks and impacts on the community from natural disasters such as bushfires and weather events, through prevention, preparedness, response and recovery.

The Strategic Community Plan 2021 -2031 provides the City of Wanneroo and others, with a clear understanding of what matters most to the community within Wanneroo and guides the way in which the City plans for the future and delivery of services. Community aspirations expressed through the Strategic Community Plan consultation process have informed the seven goals and priorities to guide the way in which the City plans for the future and delivers services.

The Bushfire Risk Management Plan has been established to develop strategies to effectively plan for and mitigate the potential adverse effects of bushfire within the City of Wanneroo. Responsibility for the BRM Plan process sits with the City of Wanneroo Chief Executive Officer (CEO), however; the management and implementation of the Plan is the responsibility of the Director Community and Place and the Community Safety and Emergency Management Service Unit, including the City's Chief Bush Fire Control Officer (CBFCO), who also holds the position of Community Emergency Services Manager (CESM) appointed by the Department of Fire and Emergency Services (DFES). The CBFCO/CESM supports the implementation and identification of bushfire risk areas and assists in recommending appropriate treatment options. The City's Fire Mitigation Officer is responsible for the oversight of the Mitigation Activity Fund (MAF) treatments program.

The effective implementation of this plan is reliant on the engagement and involvement of multiple stakeholders. The City's responsibility is to facilitate the management of minimising bushfire risk to the community, and which is supported by the provision of this plan.

The City is working in collaboration with partners to improve safety, particularly in the more isolated communities, and planning for and managing fire and other risks is an important priority for the community. This BRM Plan will ensure these outcomes are achieved and monitored through integrating the City of Wanneroo specific documents as outlined in Section 1.4 – Other Related Documents.

The City recognises the importance of leadership and coordination in emergency management and has an established Local Emergency Management Committee (LEMC) with multi-agency membership. This Committee provides an important forum to enable consultation on emergency matters including the BRM Plan.

The LEMC and District Emergency Management Committee (DEMC) have endorsed the Local Emergency Management Arrangements (LEMA) for the City of Wanneroo. Part of the development of the LEMA includes the development of a local emergency management risk register schedule outlining identified risks within the City, including risk levels and treatment options.

The City has an active Bush Fire Advisory Committee (BFAC) with membership holding considerable bushfire firefighting skills and experience. This knowledge is beneficial in the ongoing development and review of the plan.

Risk management is a critical component of the emergency risk management process, building a sound understanding of the hazards and risks likely to impact the community which enables the LEMC representatives to work together to implement treatments. This process helps to build the capacity and resilience of the community and organisations which enable them to better prepare for, respond to and recover from a major emergency incident. The process and mandate for the City to undertake risk management is detailed in State Emergency Management Policy Section 3.2 – Emergency Risk Management Planning.

The City's Emergency Risk Register is a standalone document which supports the LEMA and includes identified risks associated with the hazards assessed and their risk level. Risks which were rated as having an extreme or high-risk level and achieved a treatment of Priority 1 or 2 (requires treatment) include identified treatment strategies. Bushfire hazard has been identified

as a high-risk to the City and the implementation of treatment strategies are the responsibility of the Hazard Management Agency (HMA), Support Agencies and the City.

The City's LEMA identifies the following critical infrastructure within its jurisdiction:

- Major Roads
- Railway
- Telecommunication Towers
- Water Tower
- Water Bores
- Sewerage Plant
- Power Station
- Gas Pipelines
- Wanneroo Super Clinic/Medical Centres
- Service Stations
- Jetties (Mindarie, Two Rocks)
- Bridges/Overpasses
- Volunteer Bush Fire Brigade Fire Stations (4)
- SES Unit (1)
- Community Centres (Identified Evacuation Centres)
- City of Wanneroo Administration Centre (Primary - Local Emergency Recovery Coordination Centre)
- Ashby Operations Centre (Secondary - Local Emergency Recovery Coordination Centre)

These assets may not be directly impacted by bushfire, however, are critical for the City's ability to support response and recovery efforts in the event of a large-scale bushfire incident.

### Land Use and Tenure

The City of Wanneroo is located 25km from the Perth CBD and covers a land mass of 685.8 square kilometres. The City of Wanneroo is bounded by Beach Road and the City of Stirling to the South, Alexander Drive and the City of Swan to the East, Wanneroo Road and Lake Joondalup to the Southwest, the Indian Ocean to the West and the Shire of Gingin to the North.

The City has several facilities and communities at risk from bushfires. The Carramar semi-rural area is highly vulnerable due to its dense tree cover and limited access to water, with only two hydrants available. In Two Rocks, the Phil Renkin Community Centre and Child Care Centre located on Carfax Place are surrounded by extensive bushland, increasing their exposure.

In addition, the list below identifies critical infrastructure located within designated high bushfire prone areas:

*Table 3: Critical Infrastructure*

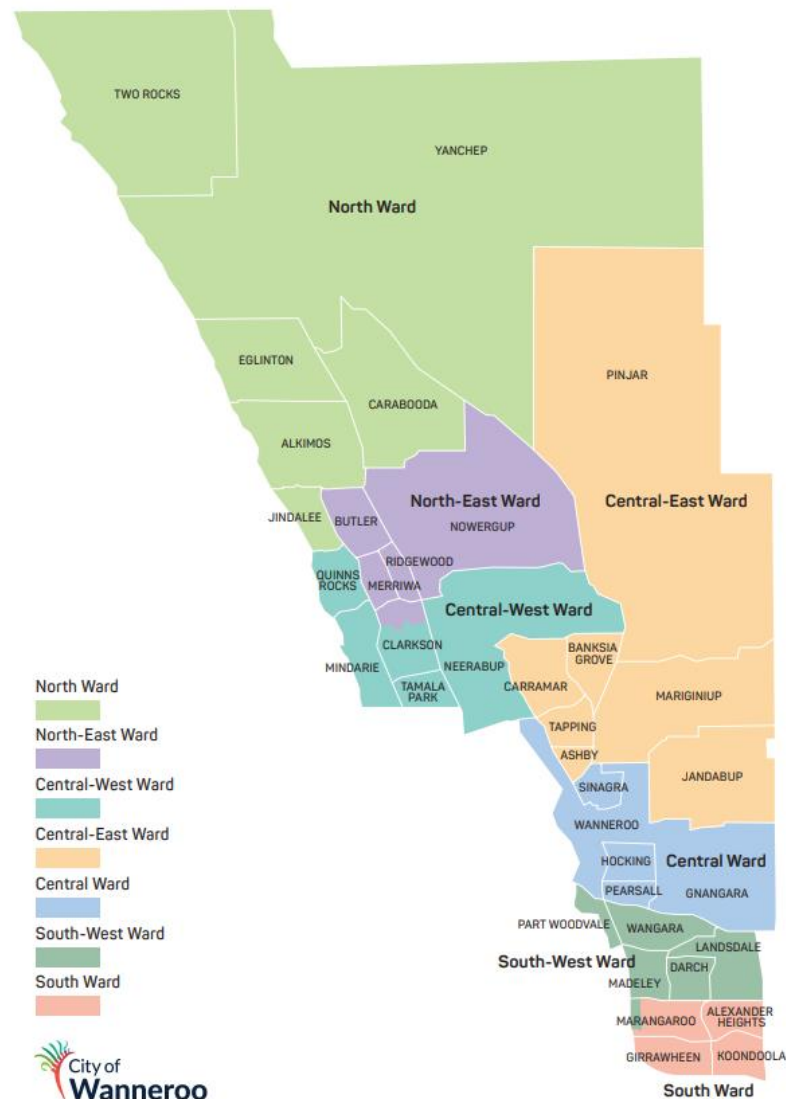
Water Supply	Location	Coordinates
Water Treatment Plant & Desalination Plant	11 Brindabella Parkway, Alkimos	-31.613811, 115.675935
Water Treatment Plant	401L Connolly Drive, Tamala Park	-31.707976, 115.743624
Water Treatment Plant	167 Townsend Road, Jandabup	-31.722379, 115.855187
Water Reservoir	87 Koondoola Avenue Koondoola	-31.838947, 115.867064
Water Supply Tank	104 Belgrade Road, Wanneroo	-31.750899, 115.822725
Water Supply Tank	4551 Mitchell Freeway, Yanchep	-31.556399, 115.643776

Water Supply Tank	999 Mercury Avenue (Breakwater Drive), Two Rocks	-31.479828, 115.602780
Water Supply Tank	46 Greenlees Way, Carabooda	-31.611462, 115.735151
Water Supply Tank	68 Quinns Road, Mindarie	-31.676699, 115.703876
<b>Communications</b>	<b>Location</b>	<b>Coordinates</b>
Telstra Exchange Site	999 Mercury Avenue (Breakwater Drive), Two Rocks	-31.480086, 115.602832
Telstra Exchange Site	72 Quinns Road, Mindarie	-31.676569, 115.704327
Telstra Exchange Site	310 Karaborup Road, Carabooda	-31.605670, 115.721952
Telstra Exchange Site	5607 Perry Road, Pinjar	-31.695174, 115.856680
Communication Tower	870 Perry Road, Pinjar	-31.603650, 115.813676
Communication Tower	424 Badgerup Road, Gnangara	-31.765341, 115.846108
Communication Tower	1799 Marmion Avenue, Tamala Park	-31.706860, 115.725358
Communication Tower	169 Pipidinny Road, Eglinton	-31.582399, 115.680555
Communications Tower	2186 Wanneroo Road, Nowergup	-31.659985, 115.740162
Communications Tower	20 High Road, Wanneroo	-31.756204, 115.815826
Communications Tower	916 Wanneroo Road, Wanneroo	-31.755220, 115.806460
Communications Tower	190 Flynn Drive, Neerabup	-31.685042, 115.797393
Communications Tower	350 Neaves Road, Mariginiup	-31.696386, 115.852049
Communications Tower	440 Wattle Avenue, Neerabup	-31.662988, 115.790931
Communications Tower	294 Pinjar Road, Mariginiup	-31.717576, 115.805794
Communications Tower	11 Brindabella Parkway, Alkimos	-31.615925, 115.683309 -31.616468, 115.674730
Communications Tower	9 Pacific Promenade, Alkimos	-31.602237, 115.681772
Communications Tower	414 Karaborup Road, Carabooda	-31.602157, 115.710124
Communications Tower	401 Yanchep Beach Road, Yanchep	-31.555830, 115.673262
<b>Power</b>	<b>Location</b>	<b>Coordinates</b>
Power Station	45 Trandos Road, Neerabup	-31.670979, 115.802809
Power Station	1330 Perry Road, Pinjar	-31.557776, 115.817977
Transformer Sub-Station	50 Ziatas Road, Pinjar	-31.679148, 115.823400

The City of Wanneroo is split into seven Wards:

	South Ward	Alexander Heights, Girrawheen, Koondoola and Marangaroo
	South-West Ward	Darch, Landsdale, Madeley, north-west Marangaroo, Wangara and east Woodvale
	Central Ward	Gnangara, Hocking, Pearsall, Sinagra and Wanneroo
	Central-East Ward	Ashby, Banksia Grove, Carramar, Jandabup, Mariginiup, Pinjar and Tapping
	Central-West Ward	South Clarkson, Mindarie, Neerabup, Quinns Rocks and Tamala Park
	North-East Ward	Butler, north Clarkson, Merriwa, Nowergup and Ridgewood
	North Ward	Alkimos, Carabooda, Eglinton, Jindalee, Two Rocks and Yanchep

*City of Wanneroo Ward Map 2024*



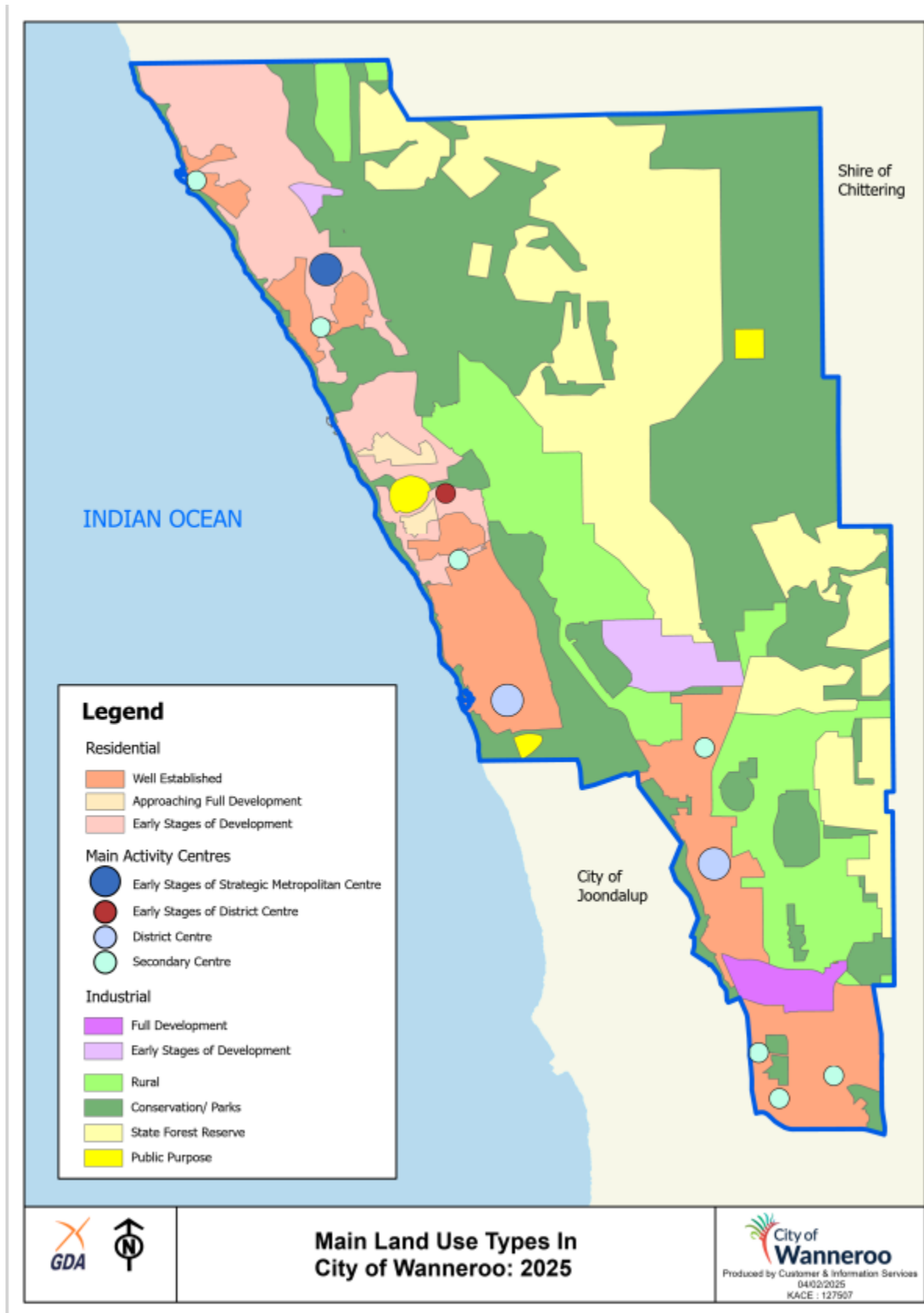
The City of Wanneroo engages with private landowners to educate them on their responsibilities relating to fire management specifically in bushfire prone areas deemed as having extreme and very high risk. The other major land tenure falls within the Department of Biodiversity Conservation and Attractions (DBCA) and the Department of Planning Lands and Heritage (DPLH). These state government agencies liaise with City of Wanneroo Fire Services and with Community Safety and Emergency Management Team on a regular basis.

*Table 4: Summary of land management responsibilities within the City of Wanneroo*

Land Manager / Organisation	Area Percentage	Hectares
Local Government – City of Wanneroo	5.63%	3850.28
Local Government Other (includes Mindarie Regional Council - 7 Local Governments – Tamala Park)	0.41%	178.79
Department Of Biodiversity, Conservation and Attractions	47.17	32171.23
Department Of Fire and Emergency Services	3.28	2243.16
Department of Planning, Lands and Heritage	3.76	2572.20
Main Roads Western Australia	1.39%	951.34
Freehold (Private Ownership)	26.93%	18429.33
Western Australian Land Authority	1.82%	1249.11
Western Australian Planning Commission	7.41%	5073.48
Other State Government	2.62%	1906.11

Source: *City of Wanneroo and OBRM*

Map illustrates the Land Use Types within the City of Wanneroo:





## Community Demographics and Values

In the 2021 Census, there were 209,111 people residing within the City of Wanneroo. The breakdown is as follows:

Male	49.2%
Female	50.8%
Aboriginal and/or Torres Strait Islander people	1.9%
Median age of people in Wanneroo	35 years
Children 0 – 14 years	22.05%
Adults 65 years and over	12.05%
People born in Australia	55.12%
Common overseas birth countries	England – 12.48% New Zealand – 3.43% South Africa – 3.25% India – 2.03% Vietnam – 1.76% Note: 8.21% did not state country of birth
Only English-Speaking people at home	74.74%
Other languages spoken at home	Vietnamese – 2.58% Afrikaans – 1.52% Gujarati – 1.35% Arabic – 1.03% Mandarin – 0.82%

The population statistics in the table below, demonstrates the breakdown of age groups within the City of Wanneroo. The high level of very young and elderly residents presents additional challenges with respect to response and recovery efforts during a bushfire incident.

Table 5: Census Data – Population Statistics – Breakdown of Aged Groups within the City of Wanneroo

Suburb	0-4 years	5-9 years	10-14 years	15-19 years	20-24 years	25-29 years	30-34 years	35-39 years	40-44 years	45-49 years	50-54 years	55-59 years	60-64 years	65-69 years	70-74 years	75-79 years	80-84 years	85 years +	TOTAL
Alexander Heights	457	501	508	494	542	466	483	524	472	484	542	566	607	402	301	200	116	100	7,765
Alkimos	1,019	966	736	569	611	965	1,071	995	743	670	567	413	293	233	182	102	44	35	10,214
Ashby	199	203	168	118	167	166	202	214	170	196	165	124	142	128	131	143	123	93	2,852
Banksia Grove	1,118	1,154	855	751	706	1,020	1,240	1,168	846	663	574	424	331	214	154	69	36	19	11,342
Butler	996	1,077	1,123	1,069	1,020	917	994	1,060	929	1,070	926	655	476	403	357	217	120	72	13,481
Carabooda	12	27	36	29	23	24	29	21	31	39	31	45	31	31	23	10	0	8	450
Carramar	398	543	608	586	470	321	393	507	520	620	614	521	350	279	214	116	68	40	7,168
Clarkson	1,068	1,025	886	795	974	1,186	1,277	1,203	968	860	915	809	659	483	357	222	139	71	13,897
Darch	392	572	670	702	536	322	385	535	621	671	596	418	270	196	191	124	93	54	7,348
Eglinton	459	342	247	177	252	417	455	372	199	210	169	122	99	91	50	33	14	0	3,708
Girrawheen	591	575	581	538	646	678	682	683	601	598	512	491	424	435	369	242	158	98	8,902
Gnangara	40	47	67	87	92	36	37	51	51	64	84	125	123	116	131	103	58	32	1,344
Hocking	515	586	521	492	392	449	545	641	587	506	433	343	219	276	180	119	57	30	6,891
Jandabup	5	11	17	23	21	9	12	13	16	22	16	25	23	32	24	20	4	0	293
Jindalee	276	258	271	330	272	246	281	315	275	356	356	289	213	129	100	47	16	7	4,037
Koondoola	256	280	278	271	337	267	240	266	251	250	225	219	179	181	184	127	70	47	3,928
Landsdale	1,324	1,377	1,165	1,020	973	929	1,331	1,516	1,217	1,016	996	860	604	418	299	146	125	75	15,391
Madeley	442	479	528	400	365	328	430	541	547	600	435	307	291	270	282	198	167	198	6,808
Marangaroo	609	670	631	650	682	633	707	735	619	659	694	664	677	555	479	323	238	258	10,483
Mariginiup	36	51	61	63	53	37	43	45	54	43	64	70	75	75	52	34	8	5	869
Merriwa	319	382	389	342	324	314	344	361	327	314	317	258	212	215	241	240	281	401	5,581
Mindarie	277	405	566	675	584	314	242	349	424	693	797	757	504	341	313	270	183	167	7,861
Neerabup *																			112
Nowergup	3	12	14	10	16	11	8	8	9	18	18	21	18	10	12	3	5	0	196
Pearsall	349	320	255	231	263	333	432	373	314	299	246	228	177	152	133	66	42	19	4,232
Pinjar *																			74
Quinns Rocks	471	575	709	710	631	490	517	510	592	725	776	688	492	331	291	171	94	85	8,858
Ridgewood	271	325	357	349	295	321	304	315	308	291	319	246	184	153	167	178	169	68	4,620
Sinagra	305	276	245	157	207	270	315	292	231	182	160	134	109	85	71	33	23	5	3,100
Tamala Park *																			0
Tapping	620	809	909	706	582	488	573	823	797	744	741	493	360	289	254	188	122	75	9,573
Two Rocks	253	316	312	204	174	186	251	240	239	249	321	251	268	184	172	99	73	35	3,827
Wangara *																			43
Wanneroo	699	756	760	623	665	692	803	845	776	699	737	747	745	697	706	480	321	368	12,119
Woodvale **																			812
Yanchep	892	979	887	675	507	685	708	851	706	700	715	612	508	451	402	318	185	151	10,932
	14,671	15,899	15,360	13,846	13,382	13,520	15,334	16,372	14,440	14,511	14,061	11,925	9,663	7,855	6,822	4,641	3,152	2,616	209,111

\* No Census population data available; \*\* Woodvale estimated (shared suburb with City of Joondalup)

The population estimate for the City of Wanneroo as of the 30 June 2023 is 229,438. Since the previous year, the population has grown by 3.70%. The population growth in Greater Perth was 3.65%.

The City of Wanneroo has approved subdivisions across the majority of Wanneroo, with no development in some areas. Future development within the City of Wanneroo will require the BRM Plan to be reviewed and updated as required.

The City of Wanneroo has both urban and rural communities which present different challenges relating to bushfire management and education. The rapid growth on the urban fringe has resulted in an increase of residents residing in high bushfire risk / bushfire prone areas who may have limited understanding and experience with bushfires. There is a varying level of understanding and preparedness in the rural areas.

The City's Community Safety and Emergency Management Team takes measures to engage with the community by holding annual community preparedness events with local emergency volunteers and agency representatives involved in the LEMC. The City along with these agencies

provide educational information, in different formats, including websites and social media platforms. The City continues to direct residents to the Emergency WA website as this is where people can find the true source of emergency information. Translated publications and resources are also available on the DFES website. Residents are encouraged to access the new Emergency Management App so that they can receive notifications relevant to them.

## **Cultural Heritage**

Registered Aboriginal Cultural Heritage sites and Protected Areas are shown in the [Aboriginal Cultural Heritage Inquiry System \(ACHIS\)](#). This system will be consulted and appropriate approvals obtained when planning bushfire mitigation activities.

The City collaborates closely with the Department of Planning, Lands and Heritage and Aboriginal Knowledge Holders to protect Aboriginal Cultural Heritage sites. A prescribed burn at Kinsale Park was conducted with deep respect for its significance as a registered Aboriginal site. This burn was carefully guided by respected the Wanneroo District Aboriginal Knowledge Holders to ensure that fire mitigation strategies were implemented in alignment with cultural values and traditions. This collaborative approach has been invaluable, reinforcing the importance of meaningful engagement with Aboriginal and Torres Strait Islander communities. Working together allows us to protect culturally significant sites while still carrying out essential fire mitigation activities. Moving forward, the City will continue to uphold best practices by ensuring that bushfire mitigation efforts on identified Aboriginal Cultural Heritage sites include consultation, agreed-upon fire mitigation strategies, and on-site attendance by Knowledge Holders to oversee the work.

The City of Wanneroo has researched and identified places of Aboriginal Cultural Heritage sites throughout the City of Wanneroo. The sites identified in **Appendix A** have been assessed as meeting the requirements of Part II, Section 5 of the *Aboriginal Heritage Act 1972*:

## **Economic Activities and Industry**

The City of Wanneroo is home to 15,677<sup>1</sup> businesses from a wide range of industries. Those industries identified as most vulnerable to bushfire in the City of Wanneroo include the agriculture and horticulture industries, tourism and visitor economy along with businesses located in the City's two major industrial hubs; Wangara Industrial Area and Neerabup Industrial Area due to their proximity to high risk bushfire zones, the critical nature of transport connections to both operations and supply chains and the large volumes of employees that access these employment hubs on a daily basis.

Economic activities that may increase bushfire risk include the use of machinery, both agricultural and industrial machinery. This risk is mitigated through education and through total fire bans on days when fires are most likely to threaten lives and property. Businesses and industries may be given an exemption for activities not prescribed in the Regulations, as long as conditions are met to ensure the activity does not start a fire.

## **Agriculture & Horticulture**

The City has two main agricultural areas; East Wanneroo which is predominantly small-scale market gardens and North Wanneroo a mix of vegetables, fruits, turf, cut flowers and nurseries.

Urbanisation is having a large impact on this industry sector in the City of Wanneroo. The East Wanneroo District Structure Plan indicates that this traditionally horticultural area will be home to around 150,000 residents<sup>2</sup> once completed whilst industry in North Wanneroo is facing a unique mix of climate change, a 10% reduction to agricultural water licenses in the area alongside the

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<sup>1</sup> [Businesses by industry | Wanneroo | economy.id](#)

<sup>2</sup> [East Wanneroo District Structure Plan](#)

recent state government approval of the Carabooda Urban Precinct which proposes to accommodate 25,000 residents<sup>3</sup>.

This industry is particularly vulnerable to bushfire as demonstrated by the Mariginiup Bushfires.

Short term disruptions/impacts included:

- Access to water and other utilities both during the bushfire and immediately post
- Immediate loss of crops
- Loss or damage to infrastructure e.g. irrigation infrastructure, fencing and sheds
- Access to the property
- Security
- Clean-up of waste, debris, ash etc. health hazards such as asbestos
- Contamination from retardants used by aerial firefighters – contaminated water and/or infrastructure must be flushed clean

Medium-longer term impacts included:

- Eligibility and effectiveness of assistance made available to primary producers through the state governments disaster recovery funding
- Cash flow
- Investment back into the industry post recovery
- Loss of economic activity, local businesses and employment

## **Tourism and the Visitor Economy**

The City is home to a wide variety of tourism attractions much of which is nature based including Yanchep National Park which welcomed a record 400,000 visitors in the 2023-2024 financial year<sup>4</sup>.

Tourism increases the complexity of communication in the event of a bushfire, particularly in areas such as Yanchep and Neerabup National Parks, where bush walking and camping are popular activities. Popular walking trails include the Yaberoo Budjara Heritage Trail, 10<sup>th</sup> Lighthouse Heritage Trail, the Ghost House Walk Trail, and the Yellagonga Regional Park shared pathway. Mobile phone coverage can be limited in these areas increasing the risk to these visitors who may also not be familiar with the area. The peak season for these activities is during the low bushfire risk period from October through to May however visitors utilise these parks and undertake these activities all year round. The Department of Biodiversity Conservation and Attractions may mitigate risk to visitors on days when fires are most likely to threaten lives and property by closing high risk walk trails and preventing visitors from undertaking high risk activities.

The peak season coincides with the start of the bushfire mitigation works that include the use of prescribed burning.

The 2019 Yanchep bush fire had a significant impact on the City's top visitor attraction, Yanchep National Park, with the Park evacuated and closed during the emergency period. This fire had a short-medium term impact on visitation to the Park and negatively impacted the businesses located within the Park. The Advocacy and Economic Development team worked with both DBCA and business owners to help address perceptions around the safety of visiting the Park and promotional and marketing activities to encourage new and return visitation including launching the City's annual park pass promotion which reduces the cost of an annual park pass to the cost of a single visit for local residents.

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<sup>3</sup> [20 Nov 2024 - Western Australian Planning Commission - Minutes](#)

<sup>4</sup> [Yanchep National Park koala-ified to offer family fun this summer! | Western Australian Government](#)

The City has a thriving tourism sector with private tourism businesses operating across the City with a small number of these located within rural areas such as Yanchep Lavender Farm and WASP Paintball and Laser. As part of the planning approval process any business located in a bushfire prone area is required to complete a Bushfire Attack Level (BAL) assessment and take steps to prevent and prepare for bushfire events.

Although not necessarily legally sanctioned, many of the bushland areas are regularly used by recreational four-wheel drivers and trail bike riders. A portion of the Gnangara and Pinjar Pine Plantations are allocated to trail bike users and maintained by the Department of Biodiversity Conservation and Attractions (DBCA).

The Wanneroo Raceway, also known as Carco Raceway, is a major visitor attraction located in a semi-rural/industrial area at 440 Wattle Avenue, Neerabup. The WA Sporting Car Club leases the Wanneroo Raceway site from the City of Wanneroo. The raceway hosts numerous events throughout the year including the Festival of Speed and the Supercars which draw large crowds of people from both intrastate and interstate. Many of the events run over several days which results in some visitors camping in the State Forest adjacent to the raceway. Campers may undertake high risk activities such as lighting campfires and cooking. Additionally, these events involve flammable materials onsite in large quantities as well as high value mobile structures including race cars and motorbikes. People may put themselves at risk in the event of a bush fire to save such items. The City acknowledges the bush fire risk in this area and has included strategies to undertake bushfire mitigation treatments to reduce fuel loads in Wattle Park to manage these risks. The WA Sporting Car Club Inc. has developed an Emergency Response Plan which includes a variety of emergencies and response procedures, including fire and explosion.

## **Industrial Areas**

Transport connections and freight routes are critical for the businesses located in the City's major industrial areas. Large volumes of traffic utilise the main access points to enable logistics, supply chains both up and down stream. These industrial areas are major employment hubs resulting in large volumes of traffic flowing in and out of these areas on a daily basis.

Due to the critical nature of transport connections for the businesses located in these industrial areas the closure of major transport routes during a bushfire would have negative impacts on any business operating in or accessing transport infrastructure within the City.

Closure of major transport routes during a bushfire would likely result in short term disruptions including:

- Significant impact on logistics – receiving deliveries of supplies/inputs, making deliveries
- General access to properties – owners, employees, customers and logistics
- Possible disruptions to utilities
- Disruptions/detours for businesses from outside the City that rely on access to the City's transport infrastructure (passing through)

## **Residential Construction – Greenfield Development**

The City of Wanneroo is one of the fastest growing local governments in Australia with the population forecasted to grow from 243,013 in 2025 to 437,016 in 2046<sup>5</sup>. This growth is largely

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<sup>5</sup> [Home | City of Wanneroo | Population forecast](#)

being accommodated through greenfield development much of which is coastal bushland or rural properties. As a result, construction is the largest industry in the City of Wanneroo<sup>6</sup>.

The City has been engaged in identifying established sub-division developments affected by previous planning decisions which are no longer in line with modern bushfire risk management principles. All established and planned residential sub-divisions are provided with two-way access and egress routes to reduce the bushfire risk.

The City of Wanneroo has undertaken considerable work to reduce the impacts of bushfire on the community. This has included significant planning, including the establishment of two-way access and egress routes, firebreak notice compliance and enforcement, public education, community engagement, bushfire risk management planning and fuel reduction work.

## **Topography and Landscape Features**

The City of Wanneroo has many landscape features including a chain of linear wetlands, a chain of circular wetlands and subterranean wetlands. The wetlands add complexity in fire suppression due to acid sulphate soils (ASS) that occur naturally but are harmless when left in a waterlogged, undisturbed environment. However, when exposed to air through drainage or excavation the iron sulphides in the soils react with oxygen and water to produce iron compounds and sulphuric acid. This acid can release other substances including heavy metals from the soil and into the surrounding environment and waterways. Activities like tracking fires and installing fire breaks poses the potential to disturb ASS which can cause serious environmental harm. The lakes see biomass fuels and thick fuels like tree branches or logs and organic soils like the duff layer or peat causing smouldering combustion.

Smouldering combustion is the slow, low temperature, flameless burning of porous fuels. Peat soils are made by the natural accumulation of partially decayed biomass and are the largest reserves of terrestrial organic carbon. Because of this vast accumulation of fuel, once ignited, smouldering peat fires burn for very long periods of time (months, years) despite extensive rains, weather changes or firefighting attempts. Indeed, smouldering is the dominant combustion phenomena in mega-fires of peat lakes, and which are almost impossible to extinguish. The only method of extinguishing the fire is to re-establish the natural water levels of the area. There have been multiple fires in the City of Wanneroo in peat lakes that have burnt for long periods of time. These fires add complications to environmental impacts, health effects to the public and nearby residents, costs and consequences of leaving the fire to burn, social and environmental cost factors which can vary from lost productivity of the fire and emergency services and ongoing response requests from residents.

Peat fires pose additional risk to the community and to responders. During the Mariginiup Bushfire in 2023, peat fires started around Jandabup Lake and Mariginiup Lake. The community was advised to be aware of the risk of peat fires around these areas and to avoid walking on blackened or charred ground. The extinguishment method used was initially using water tankers followed by the installation of bores, utilising a sprinkler system to flood the area over many months.

The City, in conjunction with the Department of Fire and Emergency Services (DFES) and the Department of Biodiversity, Conservation and Attractions (DBCA) identified a total of 1,107 properties within the City as containing peat (organic and acid sulphate) soil. Administration has engaged with property owners to advise of the statutory requirements to install firebreaks. A guide on Bushfire Risks in Ground Soils (organic and acid sulfate soils) was provided to the landowners.

Karst is a type of landscape where the dissolving of the bedrock has created sinkholes, sinking streams, caves, springs, and other characteristic features. Karst features are a key

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<sup>6</sup> [Businesses by industry | Wanneroo | economy.id](#)

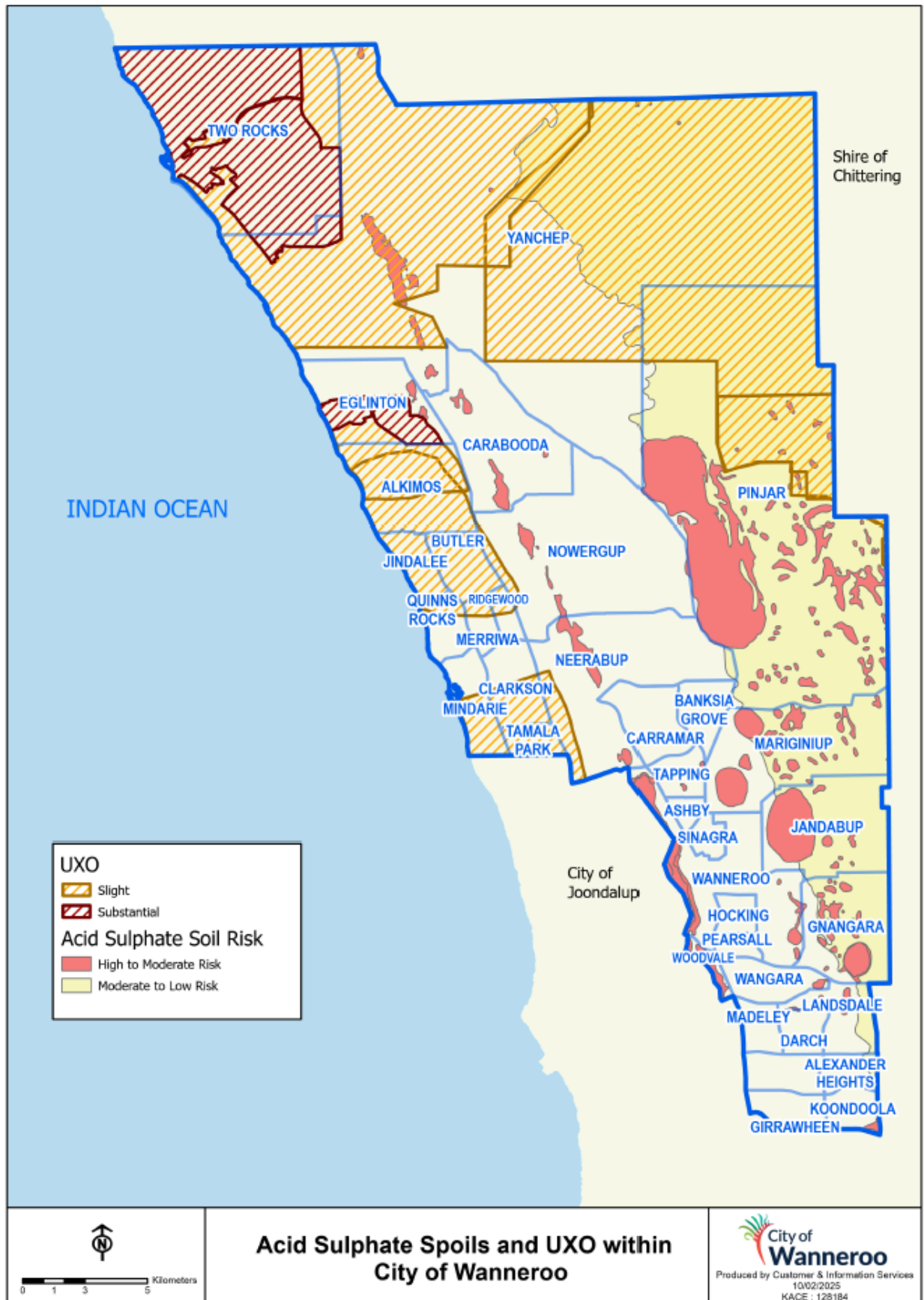
environmental characteristic in the City due to the distribution of Tamala limestone. Weathering of Tamala results in a number of landform features, and the City's main karstic feature is the caves from the north of Wanneroo as far south as Neerabup. These caves provide extensive slopes increasing rates of spread of wildfire as well as inaccessible terrain in wildfire situations making suppression dangerous for frontline firefighting crews. Hazards include unstable grounds, large holes, sharp rocks, line of sight and communication connection issues due to the limestone outcrop.

The City of Wanneroo manages 32 kilometres of coastline with residential areas among dunes in areas of Alkimos, Eglinton, Jindalee, Two Rocks and Yanchep. The coastal areas in the City have very few access tracks, making fire suppression very difficult. Due to the ongoing unpermitted use of off-road vehicles in the City of Wanneroo and the ongoing developments in the north ward, any access tracks typically get blocked by fences, sand, rubble, rocks and excavations. Coastal fuels see very high rates of spread and fire intensity in the summer months. Mitigation works become difficult in coastal areas due to negative environmental and sociological impacts.

During World War II and until the mid-1960s, the Defense Force conducted live-fire exercises in the northern ward of the City. Several sites along the coastline within the City of Wanneroo, including Quinns Rocks, Alkimos, Eglinton, Yanchep, and Two Rocks, are considered potentially affected by unexploded ordnance (UXO). Fire suppression and bushfire mitigation efforts in these areas require careful mapping and the implementation of safety measures. A map outlining the surveyed or cleared UXO boundaries has been provided to the City and is also available on the Department of Defense website under ([Home : Where is UXO? : Department of Defence](#)).

The map below illustrates the extent of the acid sulphate soils along with their relative associated risk levels. If disturbed and left unmanaged, they can present potential risks to groundwater and even human health. The map also shows areas where slight and substantial UXO are located within the City of Wanneroo.







## **Groundwater**

An important groundwater resource in the City is the Gnangara Mound and is one of the main sources of public and private water supply in the metropolitan region. It is protected by various legislation, including State Planning Policy (SPP) under the Town Planning and Development Act, and Environmental Protection Policy (EPP) under the Environmental Protection Act. This good quality groundwater is generally unconfined, fresh and easily accessible, usually at depths of up to 50 metres below the land surface (Water and Rivers Commission, 2004). The fundamental groundwater issues facing the City include:

- Groundwater levels and groundwater availability to a range of users and economic activities (e.g. horticulture, market gardening)
- Current over-allocation of groundwater
- Ongoing protection of groundwater quality and protection from contamination
- Optimising beneficial recharge of treated wastewater and surface-runoff to the groundwater body

Through the Water Conservation Plan, the City aims to reduce its impact on the water table as a result of extraction for the watering of parks. The Local Environmental Strategy (LES) looks to expand on the efficiency of groundwater protection through responses that focus on groundwater use, water sensitive urban design, and the City's 'water future', as a whole. The Strategy includes attention as to how to ensure most efficient use of water in its agricultural areas so that groundwater can be most effectively used, and to support the viability of the City's important agricultural food producing precincts.

## **Surface Water – Wetlands**

The City features a range of wetland ecosystems such as permanently inundated lakes, seasonally inundated swamps and seasonally waterlogged damp-lands. These wetlands provide important habitat for a diversity of fauna, including an extensive number of water bird species. There is also increasing recognition of the contribution wetlands make to urban and non-urban landscape quality, and to micro-climate modification during hot summers. The City's wetlands are divided into three management categories which denote their relative conservation values.

The City undertakes monitoring of some of its wetlands to ensure that they remain healthy. In addition, the City provides guidance on planning proposals that could have the potential to impact on wetlands through Local Planning Policy 4.1: Wetlands. The City looks to improve the quality of its wetlands through the implementation of the LES by pursuing innovative surface water improvement initiatives.

## **Coastline**

The City's coast stretches 32 kilometres from Tamala Park in the south, to Two Rocks in the north. The City's coastal foreshore is relatively undeveloped, especially when compared to the coastline further south. The City's ocean coastline is an extraordinary natural asset for the City and has been an important stimulus to the urban growth of the coastal corridor.

The City's coast also contains important regional conservation values and extensive ecological linkages, including varied landforms characterized by coastal limestone cliffs and coastal heathland vegetation. The coastline also features sand dune formations occurring as beach ridges and a variety of dune types. Virtually the entire coastal foreshore is contained in reserves for Parks and Recreation in the Metropolitan Region Scheme, and the District Planning Scheme Number 2 (DPS2), as well as a majority being designated 'Bush Forever' (Bush Forever is a whole-of-government policy for the conservation of regionally significant bushland on the Swan Coastal Plain portion of the Perth Metropolitan Region).

## Climate and Weather

High temperatures increase the likelihood of ignition and helps fires spread more rapidly by drying out vegetation. Low relative humidity when the air is dry, pulls moisture from the land, leaving vegetation more prone to burning. Strong winds supply oxygen to the fire, causing it to burn more intensely and spread faster. It can also carry embers to ahead of the main fire front, starting additional fires.

The City of Wanneroo is influenced by two predominant wind directions, hot dry easterly winds with hot air coming from the desert and a west coast trough sitting off the coast of Western Australia. The second predominant wind direction is a south westerly wind usually on the passage of a trough movement bringing strong gusty winds to the coastal areas within the City of Wanneroo creating conditions to fan a fast-moving bushfire within coastal heath vegetation. The southwest land division has experienced long periods of drought conditions, extended periods of low rainfall which has led to dry vegetation and acts as fuel for fires. During summer-like conditions, atmospheric instability can sometimes develop, intensifying fire behavior by fostering the growth of large, powerful fire columns and contributing to the formation of its own weather pattern.

Climate and weather significantly impact the exposure of important assets to bushfire hazards and can also limit mitigation activities in several ways and it is therefore important to understand integrating climate information into bushfire management and the planning process.

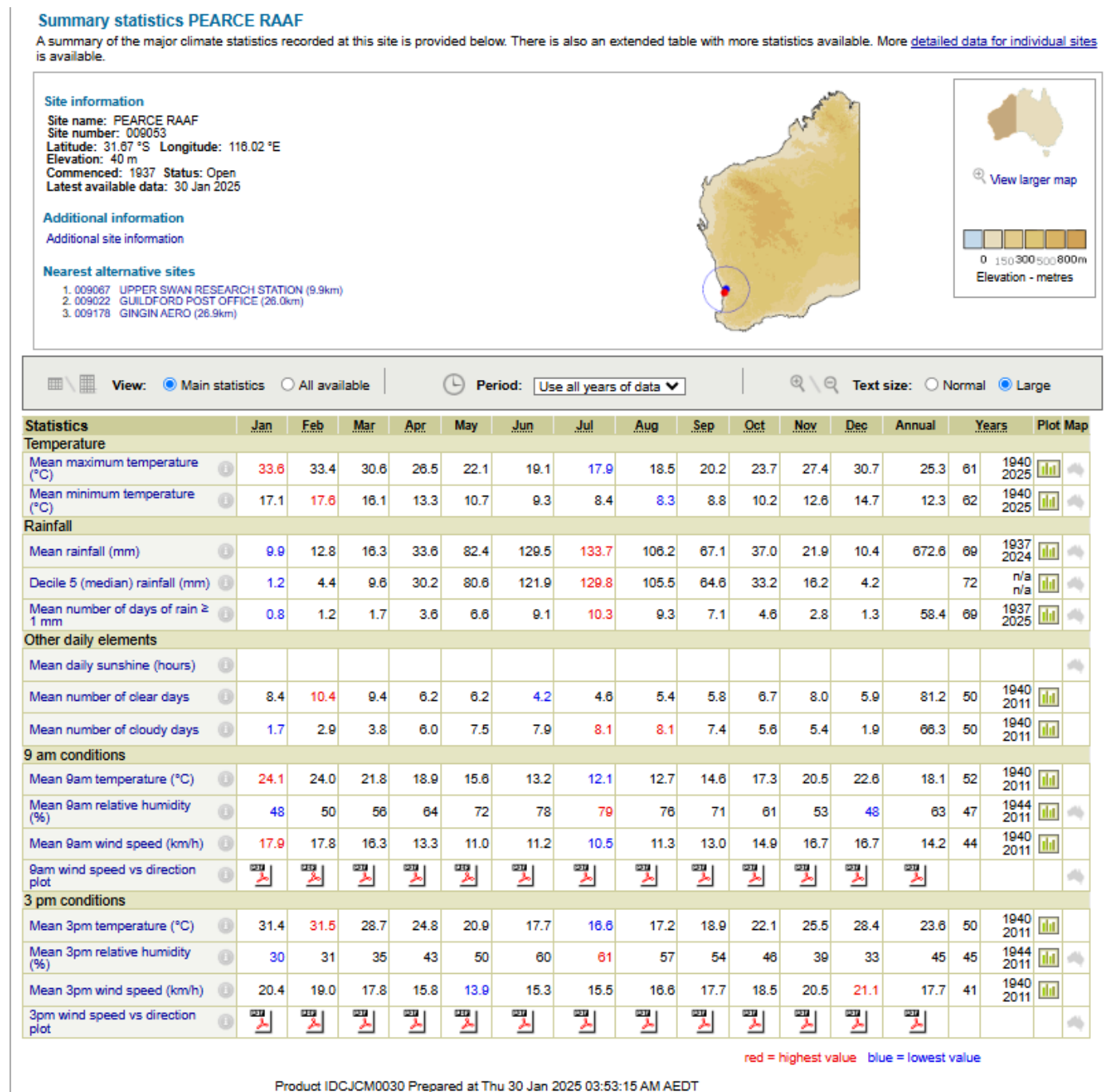
- Increased Exposure:
  - Higher Temperatures can lead to more frequent and intense heatwaves, increasing the likelihood of bushfires
  - Prolonged droughts dry out vegetation, making it more flammable and increasing the risk of bushfires
  - Irregular rainfall can lead to periods of heavy growth followed by dry spells, creating more fuel for fires
- Limiting Mitigation Activities:
  - Adverse weather conditions, such as high winds or extreme heat can make it unsafe to conduct planned burns or other fire mitigation activities
  - During severe weather events, resources may be diverted to immediate response efforts, limiting the ability to carry out long-term mitigation strategies
  - Heavy rainfall can make it difficult to access areas for fire prevention work, such as clearing vegetation or maintaining firebreaks
  - Sometimes, the local communities oppose certain mitigation activities, such as planned burns
  - Vegetation type and the number of years since the last burn, fuel age and fuel structure will limit mitigation activities

The City typically conducts planned burns during the cooler months, from late autumn to early spring (April to October).

The bushfire season within the City of Wanneroo generally runs from October to May, with the peak period occurring during the hot, dry summer months, typically from December to March. During this time, the risk of bushfires is at its highest due to the combination of high temperatures, low humidity, and dry vegetation.

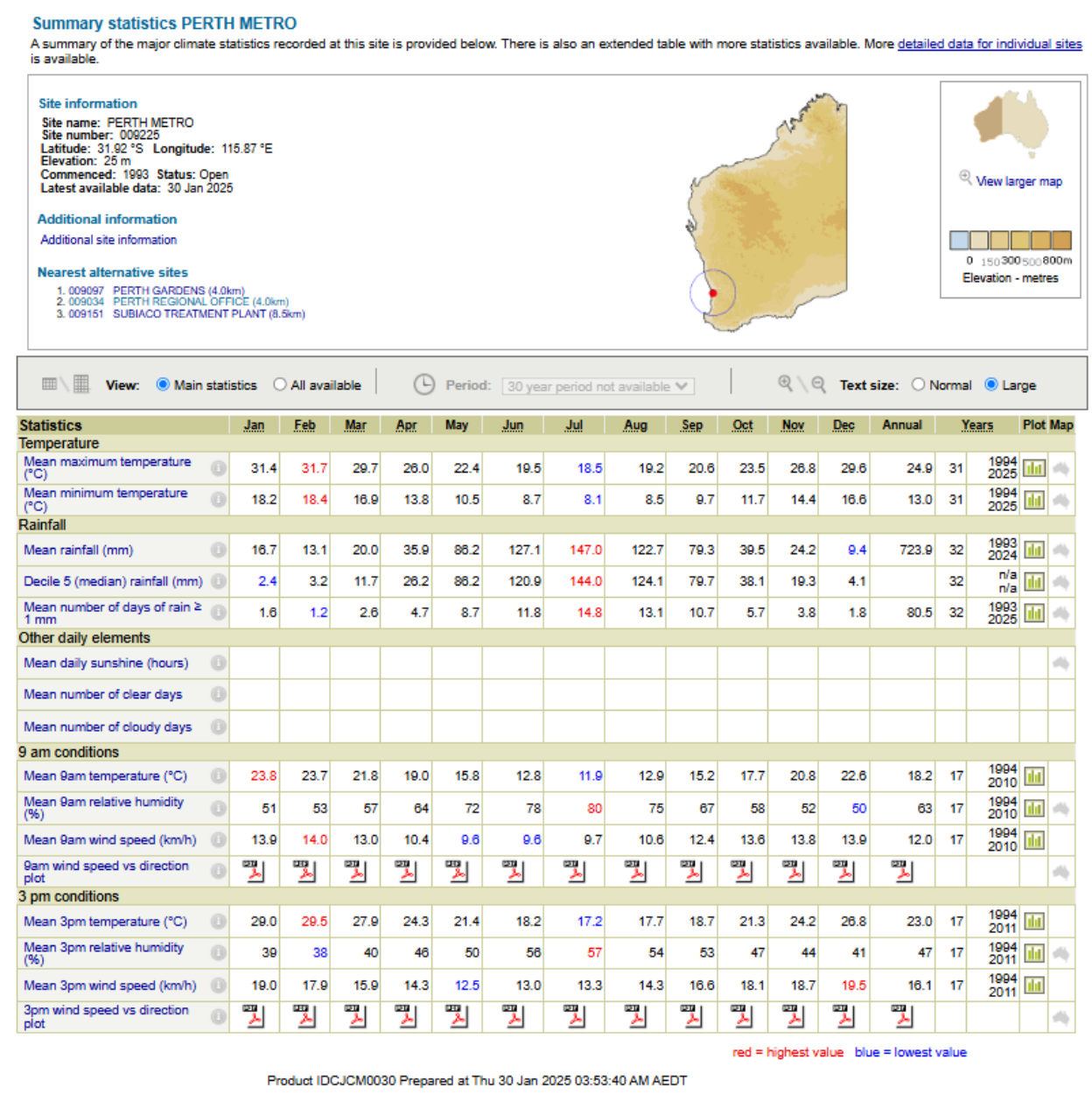
The following tables reflect the climatic conditions taken from the Bureau of Meteorology (BOM).

Table 6: Site Information – Pearce RAAF



## Climate statistics for Australian locations

Table 7: Site Information – Perth Metro



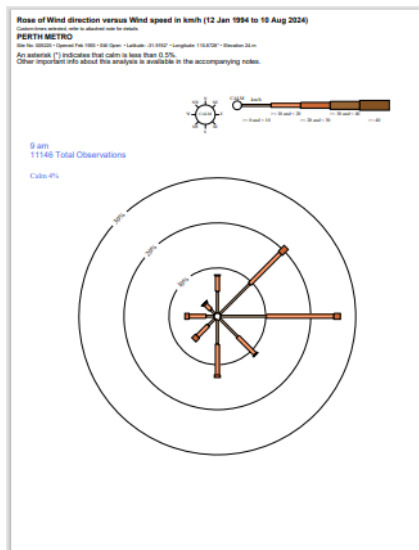
## Climate statistics for Australian locations

The mean (average) of a data set is found by adding all numbers in the data set and then dividing by the number of values in the set. The median is the middle value when a data set is ordered from least to greatest. For definitions see [About climate statistics](#).

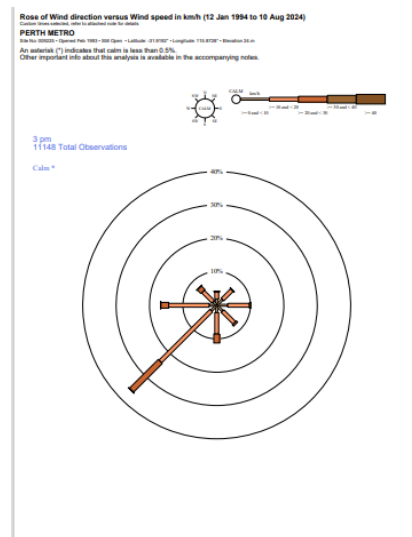
The below images represent the mean wind directions at 9:00am and 3:00pm for both Perth Metro and Pearce. These depictions clearly indicate that the predominant wind patterns are easterly in the morning tending to swing to south westerly in the late morning/early afternoon.

## Perth Metro Rose of Wind direction versus Wind speed in km/h

### 9am 11146 Total Observations

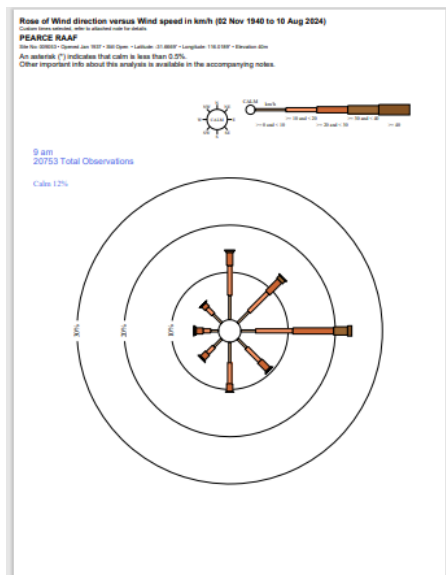


### 3pm 11148 Total Observations

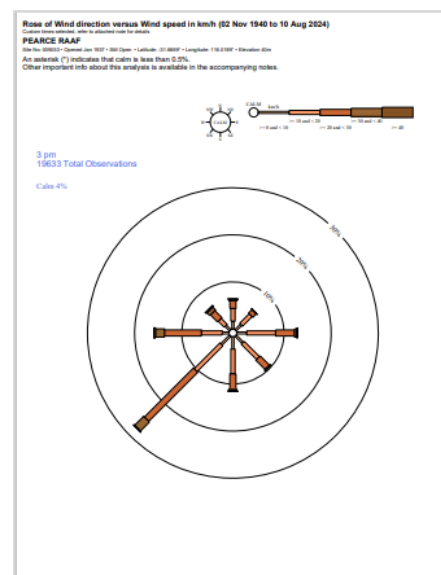


## Pearce RAAF Rose of Wind direction versus Wind speed in km/h

### 9am 20753 Total Observations



### 3pm 19633 Total Observations



The City has similar conditions to Pearce and Perth Airport, therefore based on research, it has been determined that Severe Fire Danger Ratings (FDR's) are reached on average approximately 2 to 3 times per year.

The bushfire season in Wanneroo is generally considered to be from November through to April. The City has restricted, unrestricted burning times and a prohibited burning period as follows:

<b>Restricted Burning Period</b>	1 April until 31 May annually (permits required)
<b>Unrestricted Burning Period</b>	1 June until 31 August annually
<b>Restricted Burning Period</b>	1 September until 30 November annually (permits required)
<b>Prohibited Burning Period</b>	1 December until 31 March annually

These dates can be varied based on seasonal climatic variables and weather conditions including periods where lack of winter rainfall may constitute drought conditions. Irregular summer storms emanating mostly from tropical cyclones in the north of the state may produce lightning and high winds in the outer metropolitan area. This increases the potential risk of wildfires and erratic fire behaviour. With a high population in the City and areas of vacant land around subdivisions a large contribution of wildfire comes from human error and arson attack. The City has seen 299 arson attacks (fires reported to WA Police) across the local government district between 2019 and 2024. The City's Community and Safety and Emergency Management Team can deploy covert cameras in affected areas as needed. Additionally, regular patrols are conducted during periods of arson attacks.

### **Vegetation and Fuel**

The City features a range of distinctive geomorphic landforms that run in a north south direction roughly parallel to the coastline, each displaying different topography and soil characteristics. These landforms contribute to distinct landscapes, varied native vegetation types and distinct "sense of place".

The City is located on the Swan Coastal Plain, which comprises fifteen vegetation complexes. Of these fifteen vegetation complexes, twelve are mapped within the City of Wanneroo (*map below*). The City of Wanneroo contains the only occurrences of the Pinjar Complex in the bioregion and Karrakatta Complex – North in the Perth metropolitan region. It also contains a significant portion of the Karrakatta Complex – Central and South, which is in steep decline across the Swan Coastal Plain.

The 32km of coastline running from the south of Mindarie to as far north as Two Rocks is home to the "Quindalup Complex". This coastal heath vegetation provides very high rates of spread and proves difficult in suppression activities from October through to April. The Quindalup Complex is very complicated regarding treatment methods due to environmental, ecological and sociological considerations and limitations.

The table below prescribes a priority level for each vegetation complex within the City of Wanneroo in accordance with the objectives for biodiversity conservation as set out in the Australian Strategy for Nature 2024 - 2030. The priority levels have been assigned based on the regional and local representation of the vegetation complex and it's the level of protection within the City of Wanneroo. Priorities range from Critical to Low.

Table 8: Vegetation Complex within the City of Wanneroo

Vegetation Complexes	Regional extent remaining (%)	Local extent remaining (%)	Local extent protected (%)	Priority
Bassendean Central and South	28.35	23.69	18.04	Critical
Bassendean Central and South Transition	98.43	98.37	98.36	Low
Bassendean North	72.40	51.43	49.47	Low
Bassendean North Transition	88.92	67.69	65.27	Low
Cottesloe Central and South	32.75	41.59	26.48	High
Cottesloe North	58.34	68.30	63.28	Low
Karrakatta Central and South	23.94	12.89	8.56	Critical
Karrakatta North	45.29	19.45	19.37	High
Karrakatta North – Transition	89.04	78.54	78.54	Low
Quindalup	61.01	63.09	15.95	Medium
Herdsmen	33.97	50.10	40.73	High
Pinjar	35.81	35.81	27.74	Critical

### Priority Categorisation Criteria

Category	Criteria
Critical	<ul style="list-style-type: none"> <li>• Less than 30% of original extent remaining regionally;</li> <li>• Less than 10% of original extent remaining locally;</li> <li>• Less than 10% Protected.</li> <li>• Endemic to the City of Wanneroo</li> </ul>
High	<ul style="list-style-type: none"> <li>• Greater than 30% of original extent remaining regionally;</li> <li>• Less than 30% of original extent remaining locally;</li> <li>• Less than 30% Protected.</li> </ul>
Medium	<ul style="list-style-type: none"> <li>• Greater than 30% of original extent remaining regionally;</li> <li>• Adequately represented locally;</li> <li>• Less than 30% Protected.</li> </ul>
Low	<ul style="list-style-type: none"> <li>• Adequately represented regionally;</li> <li>• Adequately represented locally;</li> <li>• Adequately Protected</li> </ul>

**Regional extent remaining = % of Pre-European extent remaining in the Swan Coastal Plain.**

**Local extent remaining = % of Pre-European extent remaining in the City of Wanneroo**

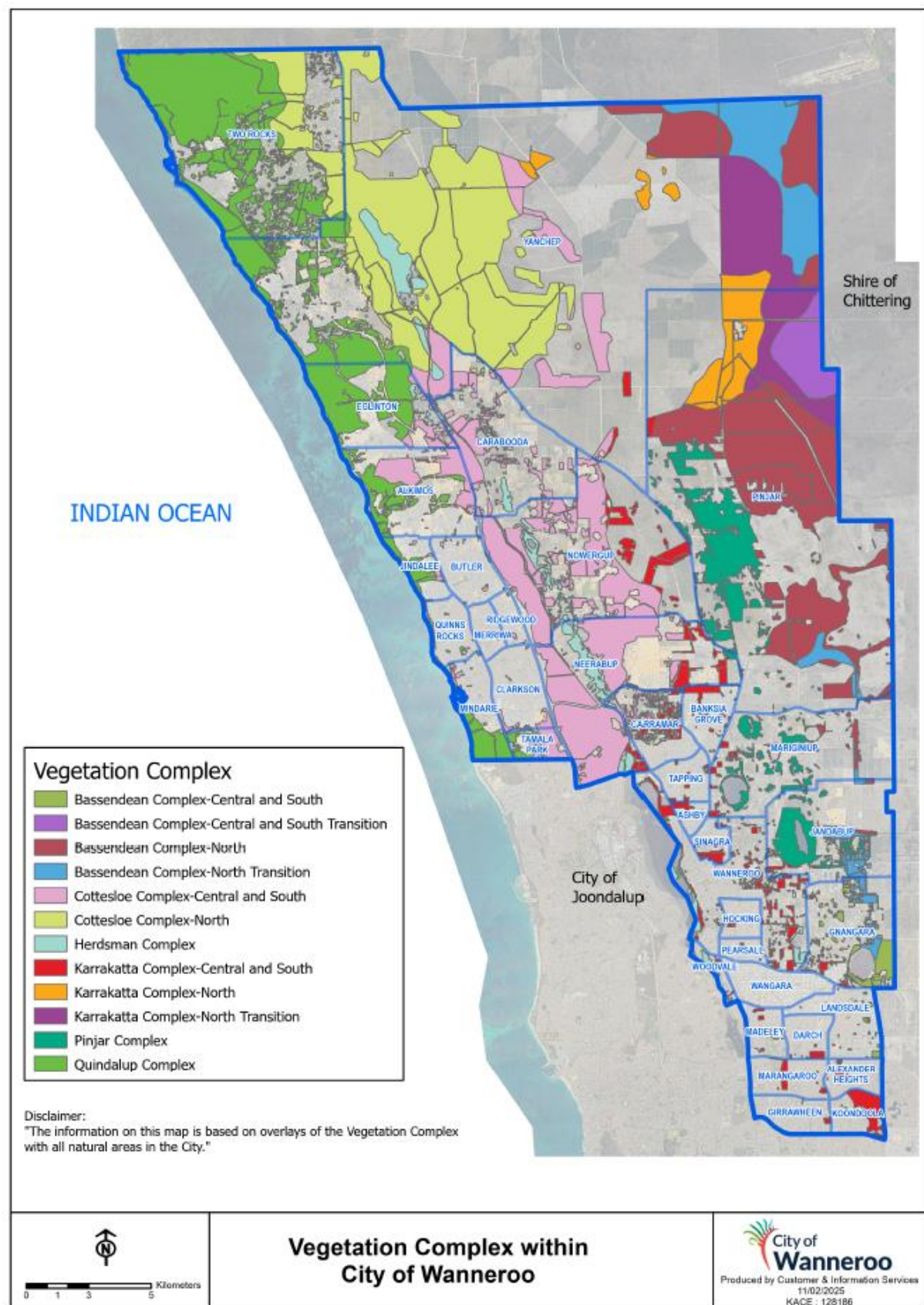
The area of native vegetation remaining in the City divided by the pre-European extent of each complex.

**Local extent protected = % of Pre-European extent protected in the City of Wanneroo**

The area formally protected in the City divided by the pre-European extent within the City. Formally protected refers to areas with formal conservation measures (note it is different from 'protected areas') it includes DBCA managed lands and areas managed for environmental conservation under DPS 2.



The map below illustrates the vegetation complexes within the City of Wanneroo.



## Important Species and Communities

The City has adopted a range of mitigation treatment options to ensure the species are protected whilst maintaining treatment of bushfire risks within the areas identified as having a very high and extreme risk rating.

Within the City's conservation reserves, Threatened Ecological Communities (TEC) exist and are included in *Table 9* below.

Threatened Ecological Community	Biodiversity, Conservation Act	Environmental Protection and Biodiversity Conservation Act
Aquatic Root Mat Community number 1 of Caves of the Swan Coastal Plain	Critically Endangered	Endangered
Sedgelands in Holocene dune swales of the southern Swan Coastal Plain	Critically Endangered	Endangered
<i>Melaleuca huegelii</i> – <i>M. systema</i> shrublands of limestone ridges	Critically Endangered	Critically Endangered
Banksia Woodlands on Swan Coastal Plain	Critically Endangered	Endangered
Tuart ( <i>Eucalyptus gomphocephala</i> ) Woodlands and Forests of the Swan Coastal Plain	Priority Ecological Community- Priority 3	Critically Endangered

There are various priority species of both flora and fauna that can be found including threatened species (Critically Endangered (CE), Endangered (EN) or Vulnerable (VU)).

Threatened Flora is included in *Table 10* below.

Scientific Name	Biodiversity Conservation Act Listing	Environmental Protection and Biodiversity Conservation Act Listings
<i>Caladenia huegelii</i>	CR	EN
<i>Marianthus paralius</i>	EN	EN
<i>Melaleuca</i> sp. Wanneroo (G.J. Keighery 16705)	EN	EN
<i>Eucalyptus argutifolia</i>	VU	VU
<i>Calectasia elegans</i>	CR	
<i>Baeckea</i> sp. Limestone (N. Gibson & M.N. Lyons 1425)	P1	
<i>Acacia benthamii</i>	P2	
<i>Fabronia hampeana</i>	P2	
<i>Adenanthos cygnorum</i> subsp. <i>chamaephyton</i>	P3	

<i>Conostylis bracteata</i>	P3	
<i>Cyathochaeta teretifolia</i>	P3	
<i>Hibbertia leptotheca</i>	P3	
<i>Lasiopetalum membranaceum</i>	P3	
<i>Stylidium maritimum</i>	P3	
<i>Conostylis pauciflora</i> subsp. <i>euryrhipis</i>	P4	
<i>Stylidium longitubum</i>	P4	
<i>Tripterococcus</i> sp. <i>Brachylobus</i> (A.S. George 14234)	P4	

Threatened Fauna Species include (but not limited to) Carnaby's Cockatoo (EN) and Priority Species include (but not limited to) Quenda and the Brush Wallaby.

The codes SCP01, SCP20a, SCP26a, SCP19, refer to specific TEC's identified within the City of Wanneroo. These codes are part of a classification system used to categorise and manage ecological communities at risk and require protection:

When planning the annual bushfire mitigation program, the City works closely with internal and external stakeholders to ensure areas containing Threatened and Priority Flora and Fauna are either excluded or managed using an approved alternative mitigation method.

Chemical treatments are used to manage invasive weed species, such as Perennial Veldt grass.

The list of threatened flora and fauna within the City of Wanneroo Reserves can be found in **Appendix B**.

Important species and communities are listed on the [Department of Biodiversity, Conservation and Attractions \(DBCA\) website](#). This website will be consulted with due diligence practiced to protect identified species and communities when planning and conducting appropriate bushfire mitigation activities.

The City needs to demonstrate that the consideration of Matters of National Significance has been undertaken.

## Historical Bushfire Occurrence

The City of Wanneroo has four active Bush Fire Brigades, these being Wanneroo Central, Quinns Rocks, Two Rocks and Wanneroo Fire Support, noting that Wanneroo Fire Support will be renamed North Coastal Bush Fire Brigade Wanneroo as of the 1 July 2025.

Between 1 October 2019 and 30 January 2025, the City of Wanneroo Bush Fire Brigades attended to call-outs as follows:

Bush Fire Brigade	Call-Outs
Wanneroo Central Bush Fire Brigade	674
Quinns Rocks Bush Fire Brigade	635
Two Rocks Bush Fire Brigade	423
Wanneroo Fire Support Bush Fire Brigade	413

Over the past five years, the Bush Fire Brigades experienced peak callouts from November through to April. The increased bushfire activity during these months has been influenced by high temperatures, low humidity and dry vegetation. In recent times, vehicle accidents have become a significant factor in triggering bushfires.

Primary fire ignitions within the City of Wanneroo are related to arson, stolen vehicles, vehicle accidents and accidental causes such as lost hazard reduction burns. Another significant ignition source is summer storms containing dry lightning cells which can start bushfires in the acid sulphate peat soils. Containment and ongoing extinguishment require crews and specialised equipment (installation of bores and sprinkler system) over lengthy periods of time to extinguish peat fires.

The City has engaged with property owners to advise of the statutory requirements to install firebreaks around the safest location if properties have been identified as potentially containing peat soil and to consider access to bore water accessibility. Information on Bushfire Risks in Ground Soils (organic and acid sulfate soils) was provided to the landowners.

The City's Bush Fire Brigades have been provided maps showing the potential areas where peat soil is located. DFES and DBCA

In 2011, the Koondoola fire highlighted the need to undertake a combination of strategies to provide effective outcomes such as controlled hazard reduction burning, mulching, weeding and spraying. The reserve had been well maintained with limestone tracks installed with a weed and spraying program undertaken in previous years, however still managed to burn through 62.66 hectares of the 135-hectare reserve. The combined fire-fighting cost to extinguish this fire was estimated at \$1.2 million.

In 2014, Celladon Park was subject to a deliberate arson attack with multiple ignition points, however due to a hazard reduction burn conducted in the previous year, this helped decrease fire intensity and fire-fighters were able to contain and control the fire quickly which also assisted in reducing the damage to the reserve.

The 2015, Bullsbrook/Wanneroo Fire, the highest risk areas of significant bushfire impacting on human habitations was in the areas of Two Rocks, Yanchep, Carabooda, Mariginiup, Nowergup and Neerabup.

In 2018, a peat fire ignited in Neerabup and was of a complex nature due to the amount of peat which proved to be very difficult to contain to the area. The area was very dry, resistant to water

and was two to three metres deep with the peat burning below the surface and could not be readily detected. Containment and ongoing extinguishment were supported by the City's Bush Fire Brigades, other local government brigades and the Department for Biodiversity, Conservation and Attractions (DBCA) who provided additional fire fighters and equipment.

In December 2019, the Yanchep Fire burned approximately 13,000 hectares of land, including vast areas of native vegetation home to threatened species. The fire posed a risk to about 25,000 residents in the northern parts of the City and the southern region of the Shire of Gingin. It resulted in the loss of one residential property, a petrol station, several structures within Yanchep National Park, and Western Power infrastructure. At its peak, around 400 firefighters battled the blaze.

In November 2023, a significant fire started on DBCA land and rapidly moved into the gazetted fire district. This fire was declared a Level 2 Incident where the suburbs of Banksia Grove, Mariginiup, Wanneroo and Tapping were extensively impacted with almost 2,000 hectares burnt; 18 homes were lost and another 30 were damaged. The fire was complex due to peat burning below the surface, which required constant water replenishment for a period of over six months. DFES and DBCA implemented an Organic and Acid Sulphate Action Plan to assist mitigate residual risk arising from the fire.

### Summary of Bushfire Ignitions

DFES records indicate the City's four Volunteer Bush Fire Brigades have been activated from 1 October 2018 to 30 January 2025 as follows:



Government of Western Australia  
Department of Fire & Emergency Services



All Bushfires  
LGA of WANNEROO (C)  
from 01/10/2018 to 30/01/2025

#### Bushfires Summary of Ignition

	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	Total
Total Number of Bushfires:	230	262	207	153	177	211	140	1,380
Animal	0	0	0	0	0	1	0	1
Burn off fires	10	19	12	6	9	11	4	71
Campfires/bonfires/outdoor cooking	3	4	5	0	2	4	1	19
Children misadventure	0	2	1	1	2	0	0	6
Cigarette	38	33	36	23	27	34	60	251
Electrical distribution (excl. power lines)	1	2	2	2	2	0	1	10
Equipment - Mechanical or electrical fault	2	0	1	4	2	2	0	11
Equipment - Operational deficiency	1	0	0	0	0	1	0	2
Fireworks/flares	1	0	4	1	0	0	0	6
Hot works (grinding, cutting, drilling etc.)	0	1	1	2	1	9	1	15
Human Error (Left on, knock over, unattended etc.)	1	1	1	3	0	0	3	9
Improper Fuelling/Cleaning/Storage/Use of material ignited	5	3	4	1	4	3	5	25
Other open flames or fire	3	4	3	6	3	6	5	30





**All Bushfires**  
LGA of WANNEROO (C)  
from 01/10/2018 to 30/01/2025

**Bushfires Summary of Ignition**

	2018/ 2019	2019/ 2020	2020/ 2021	2021/ 2022	2022/ 2023	2023/ 2024	2024/ 2025	Total
Power lines	2	3	2	1	4	8	2	22
Reignition of previous fire	19	18	6	11	13	19	6	92
Sleeping/Alcohol/Drugs/Physical-Mental impairment	5	2	2	5	0	0	0	14
Suspicious/Deliberate	124	145	102	72	82	88	33	646
Undetermined	5	5	3	4	4	2	3	26
Unreported	8	10	11	6	11	5	13	64
Vehicles (incl. Farming Equipment/Activities)	1	2	4	3	3	1	0	14
Weather Conditions - Lightning	1	4	2	1	2	2	0	12
Weather Conditions (High winds, natural combustion etc. Excludes Lightning)	0	4	5	1	6	15	3	34

**Current Bushfire Risk Management Controls**

Table 11: Current bushfire risk controls in the City of Wanneroo

Control	Action or activity description	Lead agency	Notes and comments
Risk Analysis	BRM Plan extreme risks priority for treatment	LG, DFES, DBCA	Treatments planned for all extreme risks and including in BRM Plan Treatment Schedule
	Maintain and refine BRM Plan	LG, DFES, PWS	As per State Hazard Plan - Fire, Section 2.1 Responsibility for Prevention and Mitigation
	City of Wanneroo Bush Reserves Risk Assessment	LG	Prescribed burning, mechanical work, including installation of firebreaks and upgrades, mulching, pruning
Bush Fire Act 1954 Section 33	Annual Fire Mitigation Notice published	LG	Published annually.
	Review of Firebreak Mitigation Notice annually	LG	Review to improve adequacy of control.

	Annual firebreak inspections	LG	Level of non-compliance to inform BRM Plan context and vulnerability assessments (human settlement assets).
	Review and update Prohibited Burn and Restricted Burn Times (seasonal conditions provide for variations)	LG FES Commissioner	Local Government may alter prohibited and restricted burning times, based on seasonal conditions.
<i>Emergency Management Act 2005</i>	Local Emergency Management Arrangements (LEMA)	LG LEMC Stakeholders	LEMA for emergency management in the district prepared and reviewed
Planning	Planning in bushfire prone areas - State Planning Policy 3.7	WAPC LG Landowners	Foundation for the implementation of effective, risk-based land use planning and development. The City aligns its planning policies and standards to SPP 3.7
	Bushfire Management Plan	LG Partners: Landowners	Implementation of effective, risk-based land use planning and development
Community Engagement	DFES Community Engagement Initiatives / programs, monthly themes	DFES LG	DFES monthly emergency management themes are promoted over City's social media platforms and at LEMC meetings
	Prepare Together Events / Forums	LG LEMC Agencies	Community emergency management events and forums held 2-3 times annually to raise awareness of local risks, how to prepare for those risks.
	Community Bushfire Ready Groups (Street Meets)	LG Bush Fire Brigades	Local residents to learn about planning and preparing for bushfires by working together. Communication phone tree used to disseminate information to the local residents in Emerald Valley, Carabooda

Reduction of Ignition Sources	Western Power Managing Bushfire Risk	Western Power	Every year before bushfire season, crews prepare the network, particularly in high and extreme bushfire risk zones to reduce the likelihood of a network-related spark that could cause a fire
Fuel Management	Fuel reduction of UCL / UMR	DFES LG	Engage Fire Mitigation Contractors and Bush Fire Brigades to undertake fuel reduction
	Parks and Wildlife Burn Program	DBCA	LG and PaW collaborate and arrange prescribed burn programs
	Mitigation of Main Roads verges & lands	Main Roads WA	MRWA work includes, slashing, spraying, mulching, pruning and other mechanical treatments
	Mitigation of UXO land under management of Australian Defense Force	Australian Defense Force (ADF) DFES LG	ADF maps reviewed and follow DFES procure prior to entering UXO area to undertake fuel reduction work or in relation to bushfire response
	City of Wanneroo annual works program	LG	Works include burning, slashing, spraying, mulching, pruning and other mechanical treatments
	City of Wanneroo Reserves Plan, including prescribed burning	LG	City of Wanneroo Emergency Management Team, Trees and Conservation Team and Contractors working schedule through sites
	Volunteer Bush Fire Brigades	LG	Engaged by private property owners to reduce fuels on their properties
	Fuel reduction, asset protection zones, hazard separation zone	Private Landowners	Fuel reduction undertaken by private property landowners to comply with the Fire Mitigation Notice.



## Fire Mitigation Notice

The Fire Mitigation Notice is reviewed annually to ensure it is kept up to date with contemporary bushfire management practices including measures provided by the Western Australian Planning Commission's Guidelines for Planning in Bushfire Prone Areas (and Appendices) and AS3959-2009 Construction of Buildings in Bushfire Prone Areas. The new State Planning Policy 3.7 became operational on 18 November 2024 and aims to balance bushfire risk mitigation with environmental conservation measures.

The current Fire Mitigation Notice includes installing a 3-metre-wide bare earth cleared fire break as close as possible to all external boundaries of the property. Firebreaks must be installed by 1 November each year and maintained until 30 April the following year. Where it is not possible to install the firebreak adjacent to the external boundary of the property due to naturally occurring obstacles, it is acceptable to install the firebreak around the obstacle. If a variation requires the firebreak to be greater than 5 metres away from the external boundary, a firebreak variation is required. A minimum vertical clearance of 4 metres must also be maintained along the fire breaks to ensure vehicles can drive along the firebreaks without being impeded by tree branches.

The installation of and maintenance of a 20-metre building protection zone surrounding all buildings, large haystacks and fuel storage areas is recommended. A building protection zone includes undertaking measures such as pruning all lower tree branches (under-pruning) to prevent fire entering the trees, ensuring 3-metre spacing between tree canopies to prevent treetop fires spreading between trees, keeping all grasses to a height of not more than 50 millimetres and storing all firewood piles more than 20-metres away from the buildings.

The City will not enforce existing homes to retrospectively adopt all State Planning Policy 3.7 measures. The implementation of State Planning Policy 3.7, Planning in Bushfire Prone Areas, through information provided within the Guidelines and Appendices for new constructions will help to ensure:

- Decision makers determine appropriate land use planning in relation to bushfire prone areas.
- Specification of requirements to be met at each stage of the planning process.
- Necessary bushfire protection measures are incorporated into development.

## Chapter 4 Asset identification and risk assessment

Assets at risk from bushfire in the City of Wanneroo are recorded in the *Asset Risk Register* in the BRMS. Assets are divided into four categories: human settlement, economic, climate, and cultural. Each asset has been assigned a bushfire risk rating between low and extreme based on the risk assessment methodology described in the Guidelines and Handbook.

### 4.1. Local Government Asset Risk Profile

A summary of the risks assessed in the City of Wanneroo is shown in Table 11. This table shows the proportion of assets at risk from bushfire in each risk category at the time the BRM Plan was endorsed. This table was correct at the time of publication but may become outdated as risks are treated or additional risks are identified and assessed. A report may be generated from the BRMS to provide the most current risk profile.

Table 12: Local Government Asset Risk Summary

Asset Category	Risk Rating				
		Low	Medium	High	Very High
	Human Settlement	4%	9%	18%	13%
	Economic	2%	5%	4%	5%
	Environmental	0%	0%	0%	0%
	Cultural	0%	0%	1%	1%

## Chapter 5 Risk evaluation

### 5.1. Risk Acceptance Criteria

The treatment priority for each asset within the City is automatically assigned by BRMS, based on the asset's identified risk rating. The below Table shows how the 'likelihood' and 'consequence' assessment criteria combine to define this risk rating and the subsequent treatment priority for an asset. Specifically, a risk rating of 1A is given a higher priority than 1B or 1C, and 2A is given a higher treatment priority than 2B or 2C and so on.

Consequence Likelihood	Minor	Moderate	Major	Catastrophic
Almost certain	3D (High)	2C (Very High)	1C (Extreme)	1A (Extreme)
Likely	4C (Medium)	3A (High)	2A (Very High)	1B (Extreme)
Possible	5A (Low)	4A (Medium)	3B (High)	2B (Very High)
Unlikely	5C (Low)	5B (Low)	4B (Medium)	3C (High)

Assets identified as 'Low' or 'Medium' risk were not considered to require specific treatment during the life of this BRM Plan. They will be managed by routine local government wide controls and monitored for any significant change in risk rating. In most circumstances the risk acceptability and treatment of assets identified as 'High', 'Very High' or 'Extreme' risk will be determined by the landowner, in collaboration with local government and fire agencies. However, as a general rule, the following courses of action have been adopted for each risk rating.

The acceptable level of risk for each asset category is shown in Table 12. A risk that is assessed as exceeding these limits will be considered for treatment.

Table 13: Risk acceptance criteria for bushfire risk in City of Wanneroo.

	Asset category			
	Human settlement	Economic	Environmental	Cultural
Acceptable risk level	Medium	Medium	Medium	Medium

Risks below the acceptable level do not require treatment during the life of this BRM Plan. They will be managed by routine bushfire risk controls and monitored to detect any increase in their risk rating.

City managed land that falls within the extreme or very high categories have been prioritised to have fuel management works via prescribed burning or manual fuel removal to be completed by

the City's Bush Fire Brigades, Prescribed Burning Contractor, and City Parks and Conservation Team.

In most circumstances, risk acceptability and treatment will be determined by the landowner in collaboration with local government and fire agencies. As a general rule, the following courses of action have been adopted for each risk rating.

Administration has engaged with property owners to advise of the statutory requirements to install firebreaks. A guide on Bushfire Risks in Ground Soils (organic and acid sulfate soils) was provided to the landowners. Information provided to property owners explains that bushfire risk and prevention is a shared responsibility by state, local governments, landowners and the broader community.

Risk Rating	Criteria for Acceptance of Risk	Course of Action
<b>Extreme</b> (Priorities 1A, 1B, 1C)	<p>Only acceptable with excellent controls. Urgent treatment action is required.</p> <p>Local Government wide controls are not enough to adequately manage the risk. Immediate attention required as a priority.</p>	<ul style="list-style-type: none"> <li>• Specific action(s) required in the first 2 years of BRM Plan where resourcing and funding permits</li> <li>• Priorities will be made for treatments that will have maximum benefit to multiple assets and critical infrastructure</li> <li>• Identification of partnerships with other agencies for strategic mitigation</li> <li>• Communication with stakeholders as per the Communications Plan</li> </ul>
<b>Very High</b> (Priorities 2A, 2B, 2C)	<p>Only acceptable with excellent controls. Urgent treatment action is required.</p> <p>Local Government Wide Controls are not enough to adequately manage the risk.</p>	<ul style="list-style-type: none"> <li>• Specific action(s) required in the first 2-3 years of BRM Plan where resourcing and funding permits</li> <li>• Priorities will be made for treatments that will have maximum benefit to multiple assets and critical infrastructure</li> <li>• Identification of partnerships with other agencies for strategic mitigation</li> <li>• Communication with stakeholders as per the Communications Plan</li> </ul>
<b>High</b>	Only acceptable with adequate controls.	<ul style="list-style-type: none"> <li>• Specific action(s) required in the first 3-4 years of BRM Plan</li> </ul>

<b>(Priorities 3A, 3B, 3C, 3D)</b>		<p>where resourcing and funding permits</p> <ul style="list-style-type: none"> <li>• Where assets fall adjacent to Extreme or Very High assets, treatments may be extended and included where there may be strategic benefit</li> <li>• Communication with stakeholders as per the Communications Plan</li> <li>• Risk assessment to be reviewed at least once within the life of the plan</li> </ul>
<b>Medium (Priorities 4A, 4B, 4C)</b>	<p>Acceptable with adequate controls. Treatment action is not required, but risk should be monitored.</p> <p>If there is a change in the landscape / environment these assets may need to be reassessed more frequently.</p>	<ul style="list-style-type: none"> <li>• Addressed through Local Government Wide Controls</li> <li>• Where assets fall adjacent to Extreme or Very High assets, treatments may be extended to include assets with this risk rating, where there may be strategic benefit</li> <li>• Communication with stakeholders as per the Communications Plan</li> <li>• Risk assessment to be reviewed at least once within the life of the plan</li> </ul>
<b>Low (Priorities 5A, 5B, 5C)</b>	<p>Acceptable with adequate controls. Treatment action is not required, but risk should be monitored.</p> <p>If there is a change in the landscape / environment these assets may need to be reassessed more frequently</p>	<ul style="list-style-type: none"> <li>• Addressed through Local Government Wide Controls</li> <li>• Specific action is not required</li> </ul>

*Criteria for Acceptance of Risk and Course of Action*

## Chapter 6 Risk treatment

The purpose of risk treatment is to reduce the potential impact of bushfire on the community, economy and environment. This is achieved by implementing treatments that modify the characteristics of the hazard, the community or the environment to make bushfires less likely or less harmful.

There are many strategies available to treat bushfire risk. The treatment strategy (or combination of treatment strategies) selected will depend on the level of risk and the type of asset being treated. Not all treatment strategies will be suitable in every circumstance.

### 6.1. Treatment Strategy

The Treatment Strategy describes the overall approach to managing bushfire risk in the medium to long term in the City of Wanneroo. The strategy is shaped by factors such as the distribution of risk in the landscape, the community's values and objectives, stakeholders' mitigation programs and constraints on treatment options. The Treatment Strategy helps guide the development of integrated annual treatment schedules.

Treatments are not linked to specific assets and are applied across all or part of the local government as part of normal business or due to legislative requirements. The following controls are currently in place across the City of Wanneroo:

- *Bush Fires Act 1954* Section 33 notices, including applicable fuel management requirements, firebreak standards and annual enforcement programs. The City also has a firebreak exemption process that allows for individual Section 33 notices to be applied tailored to fuel types, environmental sensitivities, terrain and access.
- Declaration and management of Prohibited Burn Times, Restricted Burn Times and Total Fire Bans for the local government area.
- Public education campaigns and the use of Parks and Wildlife Service (PaWS) and the Department of Fire and Emergency Services (DFES) state-wide programs, tailored to suit this local government's community needs.
- State-wide arson prevention programs developed in conjunction with Western Australian Police and DFES.
- State Planning Framework and Local Planning Schemes, implementation of appropriate land subdivision and building standards in line with DFES, Department of Planning and Building Commission policies and standards.
- Monitoring performance against the BRM Plan and reporting annually to OBRM, BFAC and LEMC.
- City of Wanneroo Prescribed Fire Ten Year Program. The City has a Fire Mitigation Officer who is responsible for assessing risks and treatment on City of Wanneroo managed lands. The City's Emergency Management Team collates, prioritises treatments, conducts an annual prescribed burning program, updates the BRMS and the City's GIS mapping.
- City of Wanneroo Fire and Burning Information Guide. This guide provides information on burning periods, building protection zones, treatment methods, fire bans, bushfire survival plans and firebreak information and examples. The guide is available in five different languages including Mandarin, Gujarat, Tagalog, Vietnamese and Afrikaans. These guides are available on the City of Wanneroo website, at the libraries and are distributed by the Rangers to assist provide bushfire mitigation education over enforcement.

- Fire Response Maps of high-risk areas include fuel loads and completed treatments, water points, communication plans, control points and contact numbers.
- Identify, construct and maintain firebreaks and access routes necessary for fire management purposes.

### **Asset Specific Treatment Strategies**

Asset specific treatments are implemented to protect an individual asset or group of assets, identified and assessed in the BRM Plan as being at risk from bushfire. There are six asset specific treatment strategies:

<b>Fuel Management</b>	Treatment reduces or modifies the bushfire fuel through manual, chemical and prescribed burning methods.
<b>Ignition Management</b>	Treatment aims to reduce potential human and infrastructure sources of ignition in the landscape.
<b>Preparedness</b>	Treatments aim to improve access and water supply arrangements to assist firefighting operations.
<b>Planning</b>	Treatments focus on developing plans to improve the ability of firefighters and the community to respond to bushfire.
<b>Community Engagement</b>	Treatments seek to build relationships, raise awareness and change the behaviour of people exposed to bushfire risk.
<b>Other</b>	Local government-wide controls, such as community education campaigns and planning policies, will be used to manage the risk. Asset-specific treatment is not required or not possible in these circumstances.

## **6.2. Treatment Schedule**

The Treatment Schedule is a list of bushfire risk treatments recorded in the BRMS. It is developed regarding the outcome of the risk assessment process and Treatment Strategy and in consultation with stakeholders.

A treatment schedule for the City of Wanneroo covering 2024 to 2027 (Mitigation Activity Fund Three Year Grant Program) has been entered to BRMS. This is a live document and will be regularly updated throughout the life of the BRM Plan.

Land managers are responsible for implementing agreed treatments on their own land. This includes costs associated with the treatment and obtaining the relevant approvals, permits or licences to undertake an activity. Where agreed, another agency may manage a treatment on behalf of a land manager.

## Chapter 7 Monitoring and review

Monitoring and review processes are in place to ensure that the BRM Plan remains current and considers the best available information.

### 7.1. Monitoring and Review

The City of Wanneroo will monitor the BRM Plan and BRMS data to identify any need for change. The Plan and BRMS data will be reviewed at least every two years to ensure they continue to reflect the local context, assets at risk, level of risk and treatment priorities.

Significant circumstances may warrant earlier reviews of the BRM Plan. These would include:

- Changes to the BRM Plan area, organisational responsibilities or legislation
- Changes to the bushfire risk profile of the area or
- Following a major bushfire event

### 7.2. Reporting

The City's CEO or their delegate will provide to OBRM the outcomes of the two-year review of the BRM Plan. This is required to maintain OBRM endorsement of the Plan.

The City will report its progress on the BRM Plan to both the Bush Fire Advisory Committee (BFAC) and the Local Emergency Management Committee (LEMC) for review and feedback. Both Committees have officers with considerable fire-fighting skills and experience.

The City will contribute information about their BRM Program to the annual OBRM *Fuel Management Activity Report*.



## Appendix A – Identified Places of Aboriginal Cultural Heritage Sites

Place ID	Name	Description	Comments	City Owned/Managed
17241	Whites' grotto	Camp, creation/dreaming narrative; Other: rock shelter Water source.		Yanchep National Park - DCBA
17450	Nowergup Lake	Mythological		State of WA
17451	Pipidinny Lake	Mythological		State of WA
17593	Significant Tree - Nyoongah Community, Next to Gnangara Aboriginal Cemetery	Modified Tree, Mythological, Natural Feature, Other: Message Stick	Immediately adjacent to Site 1017– possibly verge tree	State Government and 193A Sydney Rd (Equity Trustees Wealth Services Australia) Not City managed
17596	Limestone Reef	Mythological	Yanchep Lagoon	
17597	Emu Cave	Mythological, Natural Feature, Other: Cave	Waitj Reserve	City of Wanneroo
17599	Yanchep Beach	Artefacts / Scatter	Yanchep Foreshore general maintenance	City of Wanneroo
18801	Scarred Tree	Modified Tree	Tamala Park	Mindarie Regional Council
20772	Jindalee	Mythological, Natural Feature, Water Source	Area with developers	City of Wanneroo
21588	Kinsale	Mythological, Plant Resource	Kinsale Park, Mindarie	City of Wanneroo
21589	Rosslare Soak	Ceremonial, Mythological, Camp, Water Source	Mindarie foreshore immediately, north of Rosslare car park	City of Wanneroo
22507	Somerly Pinnacles	Mythological, Natural Feature	Palladio Park, Clarkson	City of Wanneroo
<b>Other Heritage Sites (identified but not assessed for consideration of significance as per Section of the <i>Aboriginal Heritage Act 1972</i>)</b>				
3163	Little Badgerup Swamp	Artefacts/Scatter	Opposite Little Badgerup Swamp	Private property
3366	Dunstan's Quarry.	Artefacts / Scatter, Camp	Nowergup	Lime Kilns Parks Pty Ltd;
3396	Lake Adams	Mythological, Hunting Place, Plant Resource, Water Source		City of Wanneroo
3574	Smoke bush Waterhole.	Artefacts / Scatter, Camp, Water Source	DBCA	DBCA

3693	Lake Neerabup	Named Place	Covers a large area – Neerabup suburb	various
16058	Shaw Road, Wanneroo	Modified Tree	Wanneroo Primary School and shops-verge	City of Wanneroo
16800	Gnangara Site 2 (GN#2)	Artifacts / Scatter, Camp	Wangara Industrial area	Private property
16801	Gnangara Site 3 (GN#3)	Skeletal material / Burial	Badgerup Reserve – general maintenance	City of Wanneroo
16802	Gnangara Site 5 (GN#5)	Modified Tree	Susan Park – Conservation – general maintenance	City of Wanneroo
16803	Gnangara Site 4 (GN#4)	Skeletal material / Burial	Susan Park – Conservation – general maintenance	City of Wanneroo
17497	Mindarie burial mound	Skeletal Material Burial		Tamala Park and Kinross - City of Joondalup
18802	Tamala Park Campsite	Mythological, Camp	Tamala Park	MRC
18803	Tamala Park Waterhole	Mythological	Tamala Park	MRC
20054	Wanneroo Primary School Scarred Tree #1	Modified Tree	On verge adjacent to Nandos	City of Wanneroo
20055	Wanneroo Primary School Scarred Tree #2	Modified Tree	On verge adjacent to Nandos	City of Wanneroo
20596	Butler - Fs01	Ceremonial, Natural Feature, Water Source, Other: Sorry Place / Gnamma Hole	Kahana Park – general maintenance. Adopt a Bush – Butler College	City of Wanneroo
20597	Butler - Fs02	Mythological	Thurleigh Park – not conservation	City of Wanneroo
20598	Butler - Fs03	Historical, Modified Tree, Camp, Plant Resource, Water Source	Oban Park - not conservation	City of Wanneroo
20600	Butler - Fs04	Other: Old Tuarts	Portion of east wall park (parks not conservation)	City of Wanneroo & private ownership

20765	Legacy number: SBJ01	Mythological, Natural Feature, Other: Limestone ridge	Alkimos	Private ownership
20766	Legacy number: SBJ05	Natural Feature, Limestone ridge	Manningtree Park – general maintenance	City of Wanneroo
20771	Legacy number: SBJ07	Natural Feature, Other: Limestone Outcrop		Private ownership – Houses/commercial development
20768	Legacy number: SBJ08	Mythological, Natural Feature, Other: Limestone Ridge		Private ownership/school
20769	Legacy number: SBJ09	Natural Feature, Tall Eucalyptus Trees	Includes Halesworth Park and area north to be developed.	Developers
20770	Legacy number: SBJ10	Natural Feature, Old eucalyptus tree	Doncaster Park (proposed) - developers	Developers
22160	Marrynginup	Artefacts / Scatter, Ceremonial, Historical, Midden / Scatter, Modified Tree, Camp, Hunting Place, Meeting Place, Named Place, Natural Feature, Plant Resource, Water Source, Other: Healing Pits		Private property
22350	Snake Swamp 2	Mythological, Camp, Hunting Place	Warradale Park (sports oval) - parks	City of Wanneroo
22366	Gnangara Lake	Native Reserve in 1887 Other: Isolated Find	Near site of Mission Farm	City of Joondalup
22407	Gnangara Marked Tree 1	Modified Tree	Susan Park – Conservation – general maintenance	City of Wanneroo
22408	Gnangara Marked Tree 2	Modified Tree	Susan Park – Conservation – general maintenance	City of Wanneroo
22409	Gnangara Marked Tree 3	Modified Tree	Susan Park – Conservation – general maintenance	City of Wanneroo
22410	Gnangara Marked Tree 4	Modified Tree	Susan Park – Conservation – general maintenance	City of Wanneroo

22411	Gnangara Marked Tree 5	Modified Tree	Susan Park – Conservation – general maintenance	City of Wanneroo
22671	Joondol Muryang	Ceremonial	Conti Reserve – general maintenance. Ashbey	City of Wanneroo
24404	Swamp			
24405	Christmas tree			
24408	Dunes			
24409	Dunes			
24673	Loch McNess Stone Cairn	Man-made structure	Yanchep National Park	DBCA
28616	Lake Mariginiup Scarred Tree	Modified Tree		State of WA
37478	Romeo Road Pinnacles	Mythological		WAPC

## Appendix B – Identified Threatened Flora and Fauna within City of Wanneroo Reserves

Reserve Name	Suburb	Threatened Flora	Threatened Fauna	Other Threatened Ecological Communities (TEC) Fire Sensitive Species
212 Mary Street	WANNEROO		Quenda	
Alvarez Park	TAPPING	Jacksonia sericea	Yellow Rumped Thornbills	
			Splended Fairy Wrens	
			Scarlet Robins	
Amstel Park	MADELEY		Yellow-throated Miner	
Anchorage Park	MINDARIE		Carnaby's Cockatoo	Banksia sessilis
			New Holland Honeyeaters	
Appleby Park	DARCH		White-cheeked Honeyeaters	Contains TEC 20a
			Varied Sittellas	
			Yellow Rumped Thornbills	
Ashbrook Park	PEARSALL		Quenda	
Ashley Park	TAPPING		Carnaby's Cockatoo	
Belgrade Park	WANNEROO	Jacksonia sericea	Quenda	
Benmuni Park	WANNEROO	Jacksonia sericea	Yellow Throated Miners	
			Quenda	
			Rainbow Bee Eaters	
Bernard Park	CARABOODA	Conospermum triplinervium	Yellow Rumped Thornbills	Contains TEC - Tuart Woodlands
		Pimelia calcicola	Quenda	

		Lechenaultia linarioides	Little Wattlebirds	
Bewick Park	YANCHEP		Carnaby's Cockatoo	
Boomerang Park	BANKSIA GROVE		Quenda	
Boyagin Park	SINAGRA	Lasiopetlum membranaceum		
Brazier Park	YANCHEP	Melaleuca cardiophylla		
Broadford Park	ALKIMOS		Quenda	
Burbanks Park	WANNEROO		Carnaby's Cockatoo	
Caporn Park	MARIGINIUP	Jacksonia sericae	Carnaby's Cockatoo	
		Lechenaultia linarioides	Yellow Rumped Thornbills	
		Petrophile serruriae subsp nova		
Carabooda Quarry	CARABOODA	Stylidium maritimum	Carnaby's Cockatoo	Contains TEC26a
		Lechenaultia linarioides	Splendid Fairy-wren	
		Petrophile serruriae subsp nova	Yellow Rumped Thornbills	
		Conospermum triplinervium	New Holland Honeyeaters	
		Diplolaena angustifolia	Quenda	
		Eucalyptus foecunda	Yellow Throated Miners	
		Petrophile serruriae	Little Wattlebirds	
Kiln Rd Reserve	NOWERGUP	Petrophile serruriae subsp nova	Carnaby's Cockatoo	
			New Holland Honeyeaters	
Cassilda Park	QUINNS ROCKS	Melaleuca cardiophylla		

		<i>Stylidium maritimum</i>		
Celadon Park	BANKSIA GROVE	<i>Jacksonia sericea</i>		
Chancellor Park	MARANGAROO		Carnaby's Cockatoo	
Chicquita Park	WANNEROO		Carnaby's Cockatoo, Quenda	
Cinnamon Park	TWO ROCKS		Carnaby's Cockatoo	
Conti Park	ASHBY	<i>Eucalyptus gomphocephala x decipens</i>		Contains TEC - Tuart Woodlands
Coogee Park	MARIGINIUP	<i>Boronia purdianan</i>		
Countryside Park	TWO ROCKS		Carnaby's Cockatoo	
Da Vinci Park	TAPPING		Carnaby's Cockatoo	
Damian Park	GNANGARA	<i>Pithocarpa pulchella</i>	Bronzewing Pigeon	
Delamare Park	BANKSIA GROVE		Carnaby's Cockatoo	
Discovery Park	BANKSIA GROVE		Carnaby's Cockatoo	
Doogarch Park	CARABOODA		Carnaby's Cockatoo	
Edgar Griffiths Park	WANNEROO	<i>Conospermum triplinervium</i>	Quenda	
		<i>Jacksonia sericea</i>		
		<i>Lasiopetlum membranaceum</i>		
Emerald Park	CARABOODA	<i>Pimelia calcicola</i>	Splendeid Fairy Wrens	
Estrel Park	WANNEROO	<i>Jacksonia sericea</i>		
Forrest Grove Park	TWO ROCKS	<i>Allocasuarina lehmanniana</i>	Carnaby's Cockatoo	
		<i>Melaleuca cadiphylla</i>		

		Petrophile serruriae subsp nova		
		Sarcozona bicarinata		
Golfview Park	GNANGARA	Jacksonia sericea		
Gumblossom Park	QUINNS ROCKS	Astroloma microcalyx	Carnabys Cockatoo	Contains TEC26a
		Hibbertia spicata subsp leptotheca		Banksia sessilis
		Petrophile serriuriae subsp nova		
		Lechenaultia linarioides		
		Sarcozona bicarinata		
Hepburn Park	LANDSDALE	Conospermum incurvum	White-cheeked Honeyeater	
		Verticordia nitens	Quenda	
Highview Park	ALEXANDER HEIGHTS			Contains TEC 20a
Honey Possum Park	BANKSIA GROVE		Carnaby's Cockatoo	
Honeymyrtle Park	BUTLER			Contains TEC26a
Huntington Park	LANDSDALE		Carnaby's Cockatoo	
Jambanis Park	WANNEROO	Jacksonia sericea	Carnaby's Cockatoo	
James Cook Park	QUINNS ROCKS		Carnaby's Cockatoo	
Kahana Park	BUTLER			Contains TEC26a
Kinsale Park	MINDARIE	Declared Rare Flora (species not to be released to public)	White-cheeked Honeyeaters	
		Hibbertia spicata subsp leptotheca	White-winged fairy-wrens	
		Lechenaultia linarioides		



		<i>Petrophile serririae</i> subsp nova		
Koondoola A Reserve	KOONDOOLA	<i>Jacksonia sericea</i>	Carnaby's Cockatoo	Contains TEC20a; Class A Reserve
		<i>Verticordia nitens</i>	Rainbow Bee Eaters	
		<i>Pithocarpa pulchella</i>	Western Brush Wallaby	
			Quenda	
			Western Thornbills	
Lake Badergup	WANNEROO		Splendid Fairy-wren	Contains part of an EPP wetland
			Yellow rumped thornbills	
			Quenda	
Lake Gnangara	GNANGARA	<i>Cyathochaeta teretifolia</i>	Carnaby's Cockatoo	
		<i>Jacksonia sericea</i>	Quenda	
		<i>Pithocarpa pulchella</i>	Splendid Fairy-wren	
			Western Thornbills	
Landsdale Park	DARCH	<i>Cyathochaeta equitans</i>	Quenda	Contains TEC20a
		<i>Verticordia nitens</i>	Western Brush Wallaby	
			Varied Sittellas	
			Carnaby's Cockatoo	
			Rainbow Bee Eaters	
Manningtree Park	BUTLER			Contains TEC26a - (potential) waiting to be assessed; <i>Banksia Sessilis</i>
Marangaroo A Reserve	MARANGAROO			Contains TEC 20a; Class A Reserve

Mary Park	WANNEROO	Jacksonia sericea	Carnaby's Cockatoo	
Mather Reserve	NEERABUP		Splendid Fairy-wrens	Offset site
			Western Brush Wallaby	
			Honey Possums	
McAllister Park	CLARKSON		Carnaby's Cockatoo	
Merchant Park	ALKIMOS		Carnaby's Cockatoo	
Middleton Park	ALEXANDER HEIGHTS			Contains TEC 20a
Mindarie Foreshore	MINDARIE	Conostylis pauciflora	White Winged Fairy wrens	
		Hibbertia spicata	Splendid Fairy Wrens	
		Stylidium maritimum	New Holland Honeyeaters	
			Quenda	
			Peacock Spiders	
Mindarie Park	QUINNS ROCKS	Astroloma microcalyx		
		Hibbertia spicata subsp leptotheca		
Montrose Park	GIRRAWHEEN		New Holland Honeyeaters	Contains TEC 20a
			Yellow Rumped Thornbills	
Nanovich Park	WANNEROO	Jacksonia sericea		
Paloma Park	MARANGAROO		New Holland Honeyeaters	Contains TEC20a
Peridot Park	BANKSIA GROVE			
Pinjar Park	NEERABUP	Boronia purdieana	Quenda	
		Stylidium crassocephalum		
Ridgewood Park	RIDGEWOOD		Carnaby's Cockatoo	

Rufus Park	MADELEY		Yellow-Throated Miner	
Skysail Park	ALKIMOS			Contains TEC26a - (potential) waiting to be assessed
Spring Park	TAPPING		Carnaby's Cockatoo	
Strybing Park	LANDSDALE		Carnaby's Cockatoo	
Susan Park	MADELEY	Jacksonia sericea		
Thaxter Park	LANDSDALE		Carnaby's Cockatoo	
Tranquil Park	CARRAMAR		Thornbills	
			Scarlet Robin	
			Yellow-throated Miner	
Viridian Park	NEERABUP	Conospermum incurvum	Splendid Fairy-wrens	
Waddington Park	KOONDOOLA		Carnaby's Cockatoo	
Waldburg Park	TAPPING		Yellow Rumped Thornbills	
Wattle Park	NEERABUP		Quenda	
Whitfield Park	TWO ROCKS	Melaleuca cardiphylla		
Windlass Park	ALKIMOS		Carnaby's Cockatoo	

## Appendix C - Communication Plan – Key Stakeholders

Stakeholder	Role or Interest	Level of Impact of Outcomes	Level of Engagement
Department of Fire and Emergency Services	Assist LG with implementation and communication of the BRM Plan	High	Consult, involve and inform
Office of Bushfire Risk Management	Significant role in plan development, implementation and review	High	Consult, inform and collaborate
Department of Biodiversity, Conservation and Attractions (Parks and Wildlife)	Significant role in treatment development, implementation and review. Asset identification, land managers	High	Consult, involve and inform
Department of Planning Lands and Heritage	Asset / Land Manager	High	Inform, consult, involve, collaborate and empower
Water Corporation	Asset / Land Manager	High	Consult, involve and inform
Main Roads Western Australia	Critical Infrastructure Owner	High	Consult, involve and inform
Western Power	Critical Infrastructure Owner	High	Consult, involve and inform
Bush Fire Advisory Committee	Role in plan development and review	High	Inform, consult, involve, collaborate and empower
Local Emergency Management Committee	Role to support emergency risk management processes, including any treatment strategies	Medium	Consult, involve and inform
Private Landowners	Asset and Land Manger	Medium	Consult, inform and empower
Business Owners	Land Managers – impacts of bushfire on business	Low	Consult, inform and empower
Other Service Providers	Asset identification, Land Managers	Medium	Consult and inform

