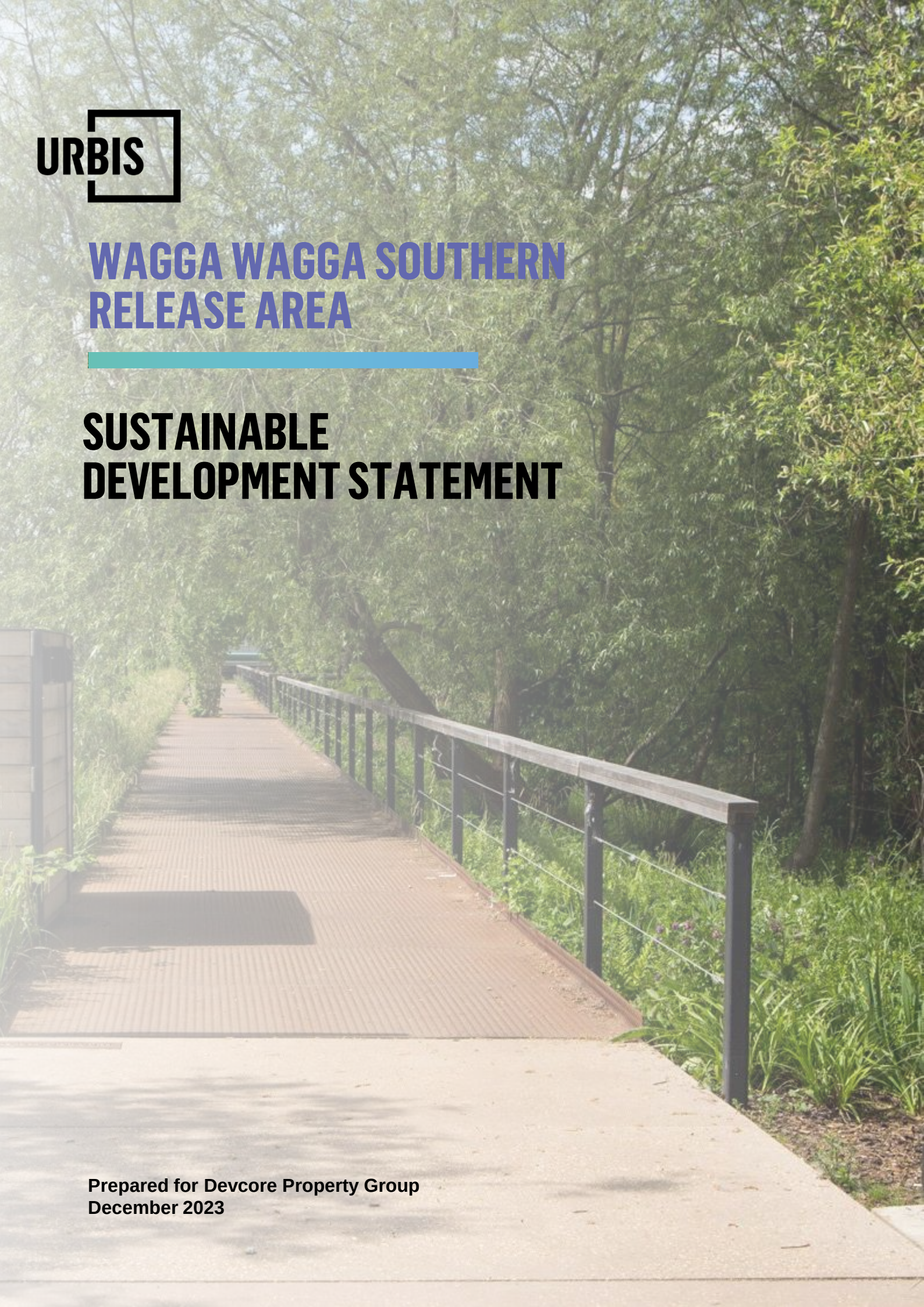

URBIS

WAGGA WAGGA SOUTHERN RELEASE AREA

SUSTAINABLE DEVELOPMENT STATEMENT

Prepared for Devcore Property Group
December 2023

CONTENTS

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Urbis acknowledges the important contribution that Aboriginal and Torres Strait Islander people make in creating a strong and vibrant Australian society.

We acknowledge, in each of our offices, the Traditional Owners on whose land we stand.

1. INTRODUCTION

Urbis has been engaged by the Proponent to prepare this Sustainable Development Statement for the development of approximately c.2,900 residential lots across both the c.2200 lot Rowan Village (for Devcore Property Group (DPG)) and c.700 lot Sunnyside (Sunnyside Ventures) projects. It is based on work undertaken to date by both proponents and consultant teams.

Whilst both projects have previously prepared separate reporting to include in individual Planning Proposal submissions this report supports the two combined projects and how they sit within the context of the wider Wagga Wagga Southern Growth Area (SGA).

The objectives of this report are to:

- Understand the climate risk and hazards applicable to the Wagga Wagga SGA that are to be considered throughout the precinct planning process.
- Identify the potential range of existing strategic and policy considerations for achieving sustainable and resilient outcomes.
- Present a range of opportunities for sustainable and resilient outcomes and principles for consideration as part of precinct planning process and future development guidelines during the progression of the rezoning of the site.
- Set the foundation for further refinement and incorporation of sustainable and resilient development outcomes as the rezoning process progresses to further detailed design and preparation of site-specific planning controls.

1.1 SUSTAINABLE AND RESILIENT DEVELOPMENT

The latest report delivered to the United Nations by the International Panel on Climate Change (IPCC) paints a challenging picture of what will happen to the world if global temperatures rise above 1.5 degrees Celsius (2.7 degrees Fahrenheit), a threshold that scientists now believe could happen by 2040. With increasing temperatures and likely increase in the frequency of extreme weather events attributed to climate change, there is an increasing risk of unwanted impacts including poor health and lifestyle outcomes and damage to properties and urban infrastructure.

The 2030 Agenda for Sustainable Development, adopted by all United Nations Member in 2015 provides a framework for action, built upon 17 Sustainable Development Goals (SDGs). The SDGs identify that making cities sustainable means meeting the environmental, social and economic needs of the present without compromising the ability of future generations to meet their own needs. The design of the built environment significantly contributes to environmental impacts that contribute to climate change and how a community and place are resilient to shocks and stressors, including increasing temperatures and significant weather events. Greenfield development provides the opportunity to apply the latest principles and processes to prepare for the future, including:

- Net zero – to avoid climate emergency, new emissions of greenhouse gas emissions must be as low as possible to achieve a true zero carbon footprint.
- Natural resources and waste – the implementation of circular economy practices can provide significant reductions in the development carbon footprint by reusing and recycling materials and minimising waste to landfill.
- Resilience – integrating solutions into development outcomes that increase capacity to be adaptable and resilient to extreme events, urban heat and air quality.
- Energy – increasing building thermal efficiency to reduce energy consumption is a simple solution to minimising emissions. Improved building materials, insulation and more efficient appliances, along with renewable energy sources should be prioritised.
- Positive legacy – set a high standard for contribution to the community and flow-on effects related to social inclusion, cultural identity and connection to the broader community.

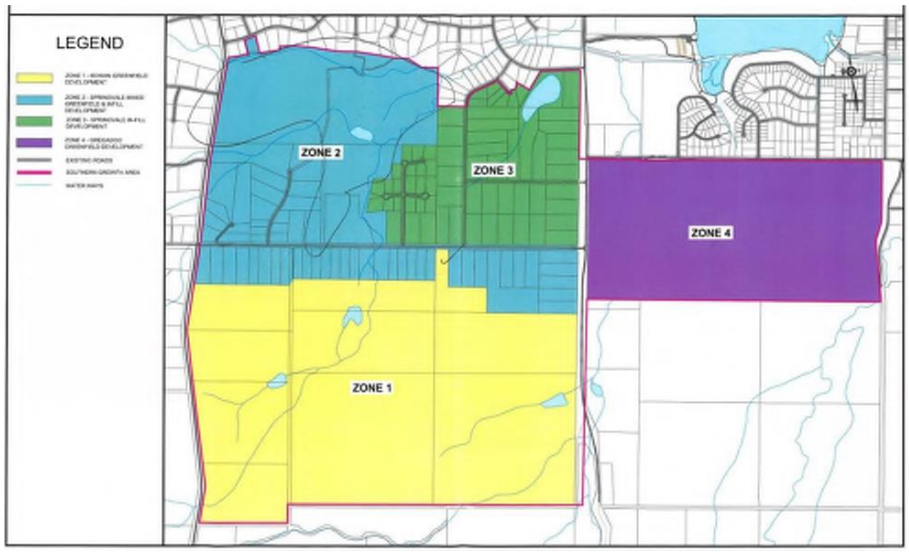
2. THE SITE

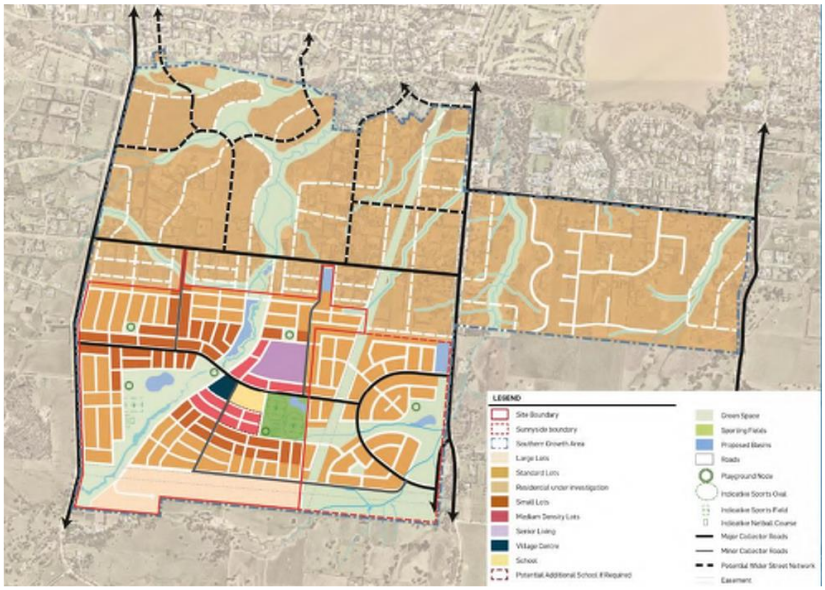
2.1 WAGGA WAGGA SOUTHERN GROWTH AREA

The Rowan Village and Sunnyside sites form part of a regional growth strategy known as the Wagga Wagga Southern Growth Area (SGA). Both sites combine to makeup Zone 1 in the SGA and it is anticipated that this will be the first rezoning and ultimately development activity to be undertaken in the proposed growth area.

Zones 2 and 3, known as Springvale, will be predominantly infill development and occur in a more fragmented development delivery model due to the large number of landholders within the mapped zone areas. Zone 4, known as the Gregadoo development parcel has multiple Development Applications already lodged over the area including the already developed The Grange Retirement Village and the DA proposal over Tallowood Crescent for 120 lots.

Noting that the four zones within the SGA are at different milestones and scale of development, it is envisioned that development within each zone will collaborate with key stakeholders to identify how the sustainable development principles identified within this report can be incorporated as best fit, so that the SGA can align with the strategic planning directions identified by the NSW Government and Wagga Wagga City Council.





2.2 PHYSICAL CONDITIONS

Climate

The Wagga Wagga Aeronautical Meteorological Observer (AMO) is located approximately 11 kilometres north-east of the Site. Data has been collected by the Bureau of Meteorology at the weather station and is referenced below to indicate climatic conditions for the Site.

Temperature averages and extremes

January is the warmest month on average at the Wagga Wagga AMO (mean maximum temperature of 31.9°C), and July is the coldest month (mean maximum temperature of 12.8°C). In comparison, Sydney – Observatory Hill in the Eastern City has an average mean maximum temperature of 26°C in January, representing an average 6°C cooler than the regional City.

At Wagga Wagga AMO, the highest temperature ever recorded at the site was 46.1°C on 4 January 2020, compared to the highest temperature ever recorded of 45.8°C at Observatory Hill, on 18 January 2013. Seasonally, mean maximum temperatures reach 30.8°C in summer with a decile 9 of 36.8°C.

Annually, an average of 20.2 days are recorded at Wagga Wagga AMO where the temperature exceeds 35°C. In comparison, an average of only 3.2 days over 35°C were recorded at the Sydney – Observatory Hill weather station. http://www.bom.gov.au/climate/averages/tables/cw_066062_All.shtml

Wind Speeds

Mean wind speeds at Wagga Wagga AMO can vary throughout the year, ranging from approximately 6.5 to 17.7 km/hr. The strongest wind gust ever recorded at the site was 139 km/hr on 11 November 1968, from a south-westerly direction

The predominant wind direction in all seasons is south-westerly.

Humidity

Relative humidity is defined as the amount of moisture in the air expressed as a percentage of the amount of moisture present if the air was saturated at that temperature.

Humidity at Wagga Wagga AMO is higher at 9.00am than 3.00pm.

July is the most humid month on average with a mean 9.00am relative humidity of 88% which lowers to 65% by 3.00pm.

In summer, an average humidity of approximately 54% is reached at 9.00am which reduces down to 31% at 3.00pm.

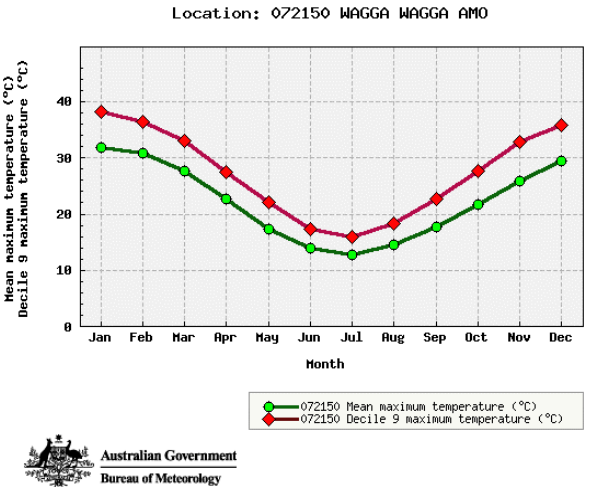


Figure 4 Wagga Wagga AMO Maximum Temperature

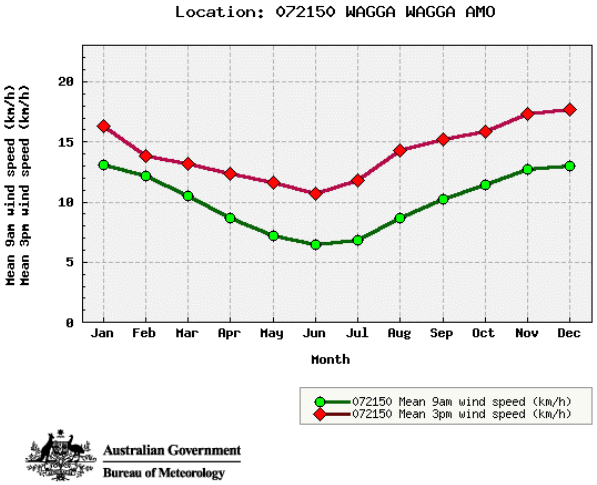


Figure 5 Wagga Wagga AMO Wind Speeds

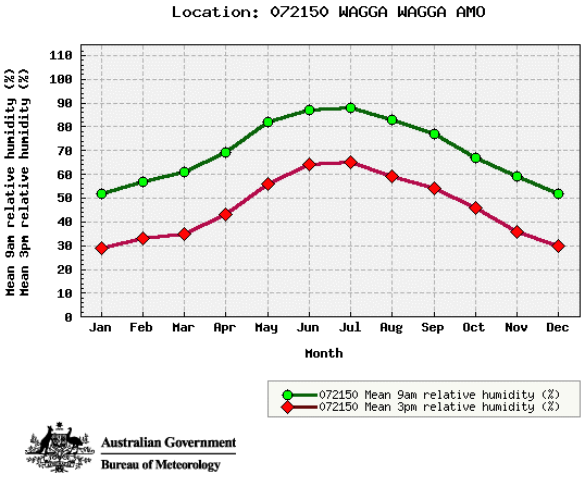


Figure 6 Camden AMO Relative Humidity

2.2 SUSTAINABLE DEVELOPMENT HAZARD FACTORS

Sustainable Development hazard factors may usually be determined by the level of environmental hazards present in the area, and the vulnerability of the population, including level of exposure. The following identifies the potential hazard factors that are relevant to the Wagga Wagga area and should be considered during the master planning of the Wagga Wagga Southern Growth Area.

	LEVEL	
RIVER FLOODING 	HIGH	The hazard level for river flooding is considered high, with potentially damaging and life-threatening river floods expected to occur at a probability of 20% in the next 10 years. Although the most affected properties at risk would be most commonly located directly around the Murrumbidgee River, smaller creeks within the catchment area may also be affected.
URBAN FLOODING 	MEDIUM	The hazard level for urban flooding is considered medium, with potentially damaging and life-threatening river floods expected to occur at least once in the next 10 years. With rainfall predicted to increase during summer and autumn by around 12%, urban flooding may occur in urban systems if their drainage is not adapted to scale with the new conditions.
BUSHFIRE 	HIGH	The hazard level for bushfires is considered high, with a probability of 50% chance every year of experiencing weather that could support a significant bushfire in any given year.
EXTREME HEAT 	MEDIUM - HIGH	The hazard level for extreme heat is considered medium – high. By 2030 the region is projected to experience an average of 8 more days above 35°C and continue to rise to 23 days per year by 2070, meaning there may be at least one period of prolonged exposure to extreme heat per year, resulting in heat stress and vulnerability to bushfire.
WATER SCARCITY 	VERY LOW	The hazard level for water scarcity is classified as very low, with a probability of droughts occurring much less than once every year. However, climate projections in for the area indicate a medium confidence in an increase in drought tendency, which may increase the level of hazard in the next decades.
NET ZERO 	-	Net zero design principles for urban areas can reduce greenhouse gas emissions and contribute to NSW achieving net zero emissions, slowing the effects of climate change.
EMERGENCY RESPONSE 	-	The capacity for the community to prepare and respond to extreme events is embedded in design to reduce potential hazard risk to the community. Evacuation measures, emergency shelter and resilient infrastructure to maintain communication, safety warnings and emergency activity when required.
COMMUNITY RESILIENCE 	-	Sustainable development enables communities long term productivity and prosperity through connectivity and diversity, liveability through comfort, vibrant and safe places, and long term resilience by being able to respond effectively to adverse events in a quick and efficient manner because buildings and public domain are built to last.

3. STRATEGIC CONTEXT (NSW)

The following policies related to sustainable development are considered for the Wagga Wagga Southern Growth Area.

NSW Net zero Plan – Stage 1	NSW Net Zero Plan – Stage 1: 2020-2030 (Plan) sets out objectives to reduce the State's emissions and how these will be achieved for the current decade, as well as the decades to follow until achieving Net Zero emissions by 2050. The Plan's approach also outlines strategies for balancing economic growth and creating jobs while achieving its Net Zero objectives. Priority 2 of the Net Zero Plan is to empower consumers and businesses to make sustainable choices. Primary contributors to this priority are transport choices and buildings. To do this, the NSW Government is driving the uptake of sustainable building materials and energy efficient technologies and/or reducing energy demand. Additionally, the Climate Change (Net Zero Future) Bill 2023 is expected to commence in early 2024. This future Act will enshrine in the legislation the emissions objectives already set out in the NSW Net Zero Plan.
NSW Climate Change Adaptation Strategy	Climate change impacts in NSW will escalate into the future due to past and future emissions. For NSW, this means the state will become generally hotter and drier over some regions with more extreme weather events. For this matter, the NSW Government has adopted its Climate Change Strategy, which sets out priorities and objectives for assessing climate change risk and developing adaptation and mitigation measures. Priority 3 of the NSW Climate Change Strategy is to develop and deliver adaptation action plans, which will cover the entirety of NSW, set short, medium, and long-term goals aligned with the metrics and projections developed by the NSW Government, and contribute to the sustainable development of the communities.
Riverina Murray Regional Plan 2041	The Riverina Murray Regional Plan 2041 (the Regional Plan) is divided into three Parts (Environment, Communities and places and Economy) each with different objectives to ensure the region develops strongly and responsibly in the next 20 years following set-out actions and collaboration activities with involved stakeholders in the region. Key objectives considered include: • Objectives 1, 2, and 3 of Part 1 – Environment of the Regional Plan, which seek to protect biodiversity, manage development impacts within riverine environments, and increase natural hazard resilience, respectively. • Objectives 5, 6, 9, and 11 of Part 2 – Communities and places, which aim to ensure housing supply, support housing in regional cities, and plan for resilient places and infrastructure that respect the local character, respectively. • Objectives 17 and 18 of Part 3 – Economy, which plan strategically for health and education precincts and integrate transport and land use planning.
Greener Places Design Guide	In November 2017, the GANSW released the Draft Greener Places Design Guide, the NSW Government's policy for green infrastructure in NSW. The guide presents a collection of priorities to guide design and planning in the delivery of green infrastructure in NSW. The draft Guide seeks to respond to Health; Climate resilience; Rapidly growing population; Changing lifestyle and demographics; Infrastructure and urban renewal; and Biodiversity loss. The draft Guide provides recommendations for planning new development in greenfield sites to maximise opportunities for well-located and accessible parks and public open spaces that provide for a diverse range of recreational activities. The desired outcome for greenfield areas is to base public open space around natural systems, which support connectivity, active transport and a diversity of settings which enhance the local character. Additionally, such practice offers opportunities for improved water-sensitive urban design and habitat conservation, ultimately creating a stronger blue and green grid.

4. STRATEGIC CONTEXT (WAGGA WAGGA)

The following policies related to sustainable development are considered for the Wagga Wagga Southern Growth Area.

Wagga Wagga LSPS	The Wagga Wagga Local Strategic Planning Statement (LSPS) was adopted by the Wagga Wagga City Council in 2020 to identify the vision for land use planning over the next 20 years and set the implementation plan to achieve its objectives under themes of Environment; Growing Economy; and Community Place and Identity. Relevant objectives considered include: • Protect and enhance natural areas • Increase resilience to natural hazards and land constraints • Manage growth sustainably • Growth is supported by sustainable infrastructure • Our city promotes a healthy lifestyle • Strong and resilient rural and village communities
Wagga Wagga City Council Urban Cooling Strategy	The Wagga Wagga City Council Urban Cooling Strategy has been prepared to indicate the steps that Council could undertake to increase community health, well-being and resilience through planning more sustainable future developments. The Urban Cooling Strategy sets ambitious targets to reduce land surface temperatures in existing urban areas, including 40% tree canopy coverage in urban areas in line with the NSW Department of Planning and Environments targets.
Wagga Wagga City Council Spatial Plan	Wagga Wagga City Council recently adopted their new 'Sustainability Policy' on the 4th of April 2023. The Policy outlines the values and sustainability principles to be applied in all governance decision making processes and operations. Whilst the policy is intended to apply to Council's business operations, it provides important insights into Council's appetite for sustainable development which is responsive to Urban Heat. The relevant implementation measures which this Urban Heat report intends to respond to are as follows: • 3.3.1 Incorporation of environmentally, socially and economically sustainable design that improves quality of life for current and future generations and maintains and improves the health of the natural environment • 3.3.2 Increase the use of sustainable materials, methods and equipment in development approvals • 3.3.3 Increasing sustainable and safe transport options including shared pathways and public transport

5. POTENTIAL SUSTAINABLE DEVELOPMENT MEASURES

The following potential measures may be incorporated into the Wagga Wagga Southern Growth Area to facilitate sustainable development. The following has been recommended in response to the identified hazard factors for the Wagga Wagga area.

FACTOR: FLOODING
MEASURE: WATER CYCLE MANAGEMENT

Appropriate water cycle management and incorporation of water sensitive design measures can mitigate risk of flooding, as well as providing a range of other benefits. Measures to achieve this can include:

- Retain and embellish riparian corridors as the natural stormwater management system to mitigate flooding.
- Naturalisation and revegetation of riparian corridors to include wetland areas, rain gardens and basins with permanent water in the landscape to significantly enhance water quality and evapotranspiration can work to reduce heat.
- Water retained on site can be used to minimise downstream flood impacts and also be used to irrigate landscaped areas and reduce reliance on water resources.
- The protection and regeneration of riparian corridors often align with Designing with Country principles and Design principles that can enhance community amenity and liveability.
- Stormwater infrastructure and inter-allotment drainage are designed and scaled to minimise local flooding of urban areas.

FACTOR: BUSHFIRE
MEASURE: BUSHFIRE PLAN

Bushfire risk in the Southern Growth Area may stem from grassland fires on surrounding unmanaged lands. Measures to be incorporated into the master plan to mitigate this risk should be informed by a qualified Bushfire specialist, and may include:

- Asset Protection Zones located on the periphery of the master plan and along any vegetated areas that may be identified as bushfire prone.
- Emergency Response Plans that may recommend evacuation and/or refuge options.
- Implementation of relevant measures within the NSW RFS *Planning for Bush Fire Protection*.

5. POTENTIAL SUSTAINABLE DEVELOPMENT MEASURES

FACTOR: EXTREME HEAT
MEASURE: LANDSCAPE AND BUILT FORM DESIGN

A series of options that can be implemented into the landscape and built form design and future development guidelines to mitigate extreme heat. Development guidelines can be prepared with regard to:

- The *Wagga Wagga City Council Urban Cooling Strategy* and potentially supported by the *WSROC Urban Heat Planning Toolkit* and the *Cool Suburbs Tool*. The Cool Suburbs Tool (CST) is a voluntary, industry-based performance (ratings) tool prepared by WSROC in 2022 for place-based heat resilience. The CST has been designed for use by both developers and government, with the goal of supporting improved heat-mitigation outcomes. The CST is intended to inform and guide planning and development decisions by providing a synthesis of urban heat science in an easy-to-use platform.
- Retain existing mature and significant trees where possible to provide shade and biodiversity early in the delivery of the new community.
- Implementation of urban greening and street trees to achieve greater tree canopy in the public domain. Promote early planting of medium and large size trees to compensate for loss of existing significant trees.
- Provide regular pockets of nature and revegetation of riparian corridors to increase evapotranspiration and shading of adjacent surfaces.
- Lot areas and dimensions sized to enable the retention and establishment of trees.
- Increasing the areas of pervious land within the masterplan increases the opportunity for tree planting and reduces surface run-off, in turn increasing groundwater absorption.
- Grass is prioritised over paving in areas of open space that are not under tree canopy.
- Where hardstanding areas are required, utilise alternative materials where possible that can reduce surface run-off and have more cooling surfaces.
- Smart technology can be integrated into water cycle management systems to enable monitoring of the environment, increase operational efficiency and enable early warnings of infrastructure issues that may result from significant weather events or other shocks and stressors.

5. POTENTIAL SUSTAINABLE DEVELOPMENT MEASURES

FACTOR: NET ZERO
MEASURE: LANDSCAPE AND BUILT FORM DESIGN

A series of options that can be implemented into the landscape and built form design and future development guidelines to address net zero and decarbonisation. Development guidelines can be prepared with regard to:

- Encourage building and open-space design which takes advantage of prevailing winds, natural ventilation, and solar access.
- Encourage the integration of renewable energy generation and storage within new buildings.
- Encourage active and public transport use through well designed public domain that provides shelter during winter and summer.
- Encourage EV vehicle usage through introducing EV charging on and off-street.
- Minimum requirement for 25% of off-street on-site parking supply is for shared, pooled, or common use parking.
- Encourage biophyllic design that facilitates retention of biodiversity, increased planting and green infrastructure.
- Introduce controls relating to building design and materials that reduce intensive resource requirements and integrate circular economy design and material selection.
- Integration of smart infrastructure to enhance the efficient management of the public domain, particularly for local centres, high streets, and open spaces.

FACTOR: COMMUNITY RESILIENCE
MEASURE: RESILIENT INFRASTRUCTURE AND RESPONSE PLAN

Future development guidelines and detailed master planning can be prepared to address community resilience, including:

- A Community Resilience Plan to prepare for extreme events, provide community contacts and emergency management measures.
- Design of resilient infrastructure (including being strategically located away from flooding and bushfire prone land) so that evacuation routes, digital infrastructure and community functionality can be maintained during extreme events.
- Consideration of digital infrastructure (including mobile digital infrastructure) is available for residents when they move in.