Cred

CONSULTING

Williamtown Special Activation Precinct

Social Infrastructure Needs Report

for Department of Planning and Environment

February 2022

FINAL

Cred Consulting acknowledges the Worimi people as the traditional owners of the land we call Williamtown and pay our respects to Elders past, present and future.

We recognise the strength, resilience and contributions of our Aboriginal and Torres Strait Islander peoples, and the eternal and spiritual connection they hold for their lands, waters, cultures and beliefs.

We are committed to building vibrant communities and creating purposeful outcomes that reflect our deep appreciation for the peoples and cultures that make us who we are and shape where we are going — together as one.

"A third place, separate from home or work, are anchors of community life, facilitating creative interactions between people."

- Ray Oldenberg

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Introduction

1. Background

This Social Infrastructure Needs Report is one of the technical studies informing the Williamtown Special Activation Precinct (SAP) Structure Plan being led by Hatch Roberts Day.

This report assesses the social infrastructure that currently services the Greater Newcastle area and the Port Stephens Council area and what might be needed in the future to support the expected employment growth within the Williamtown SAP and provide community benefit to the surrounding communities and Greater Newcastle area.

The purpose of the report is to:

- Provide an inventory of existing social infrastructure within and servicing the local and regional area, inclusive of community, cultural, and recreation facilities and open space
- Assess the current and future social infrastructure needs based on the established and approved benchmark indicators and estimated population growth (provided by Economic Analysis),
- Identify the social infrastructure and facilities required in the Williamtown SAP, based on the preferred structure plan and projected population, demographics, jobs creation and associated employee profile and regional economic growth.
- Consider opportunities to delivery innovative social infrastructure within the Williamtown SAP that contributes to the Greater Newcastle region, as well as the wellbeing outcomes for future workers and surrounding communities.

This Social Infrastructure Needs Report aligns with other packages being delivered - Aboriginal Heritage, Economic Analysis - which will integrate and coordinate findings and recommendations throughout the project.

About the Williamtown Special Activation Precinct

The Williamtown SAP area is approximately 300ha of land within the Port Stephens LGA (see Figure 1) adjoining the Newcastle Airport, RAAF Williamtown and includes the Defence and Aerospace Related Employment Zone (DAREZ) land intended for the development of Defence and aerospace industries.

The aim of the Williamtown SAP is to:

- Grow Williamtown's established strength as a national and international defence hub and support expansion and clustering of the emerging aerospace industry.
- Attract footloose defence, aerospace and advanced manufacturing businesses.
- Focus on employment and investment opportunities associated with its strategic location to the Williamtown Aerospace Precinct.
- Protect the natural environment and cultural values and encourage sustainable use of land for the benefit of the community.

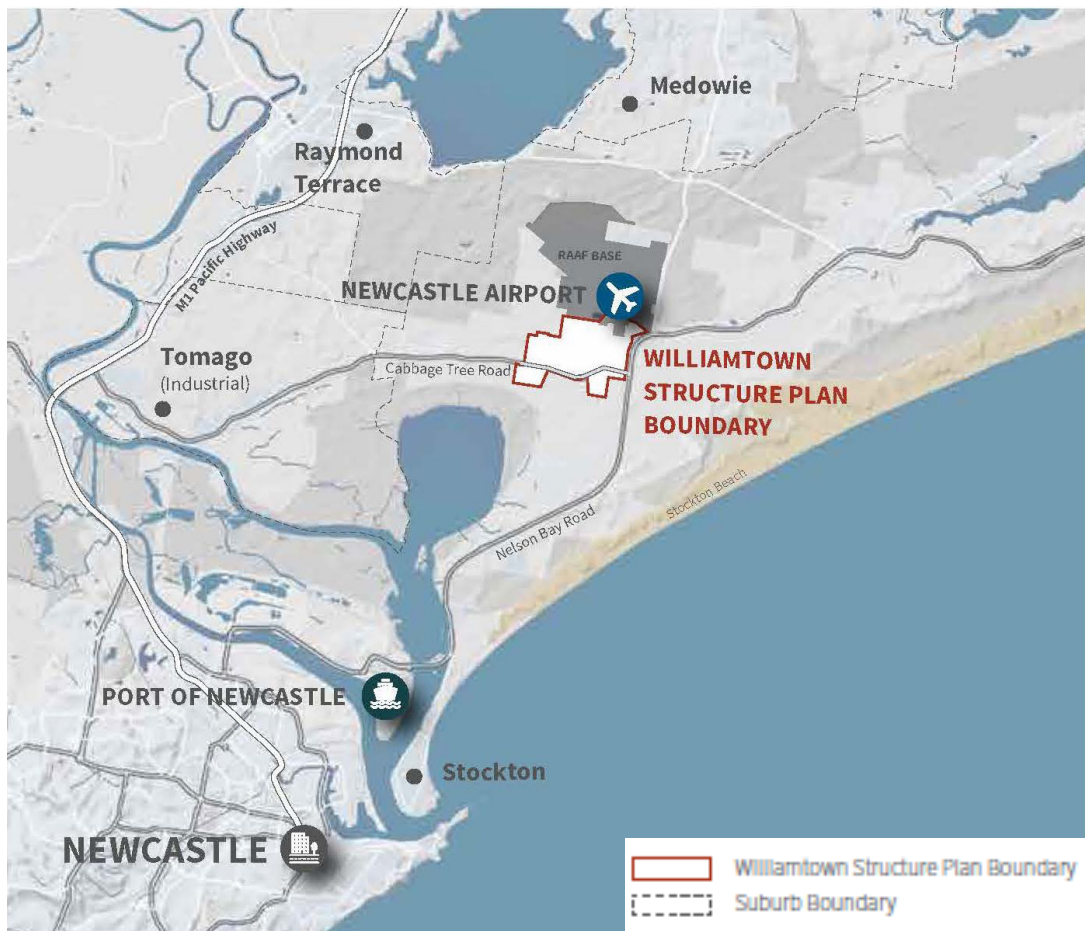Figure 2 shows the detailed Williamtown SAP Structure Plan as developed by Hatch Roberts Day.

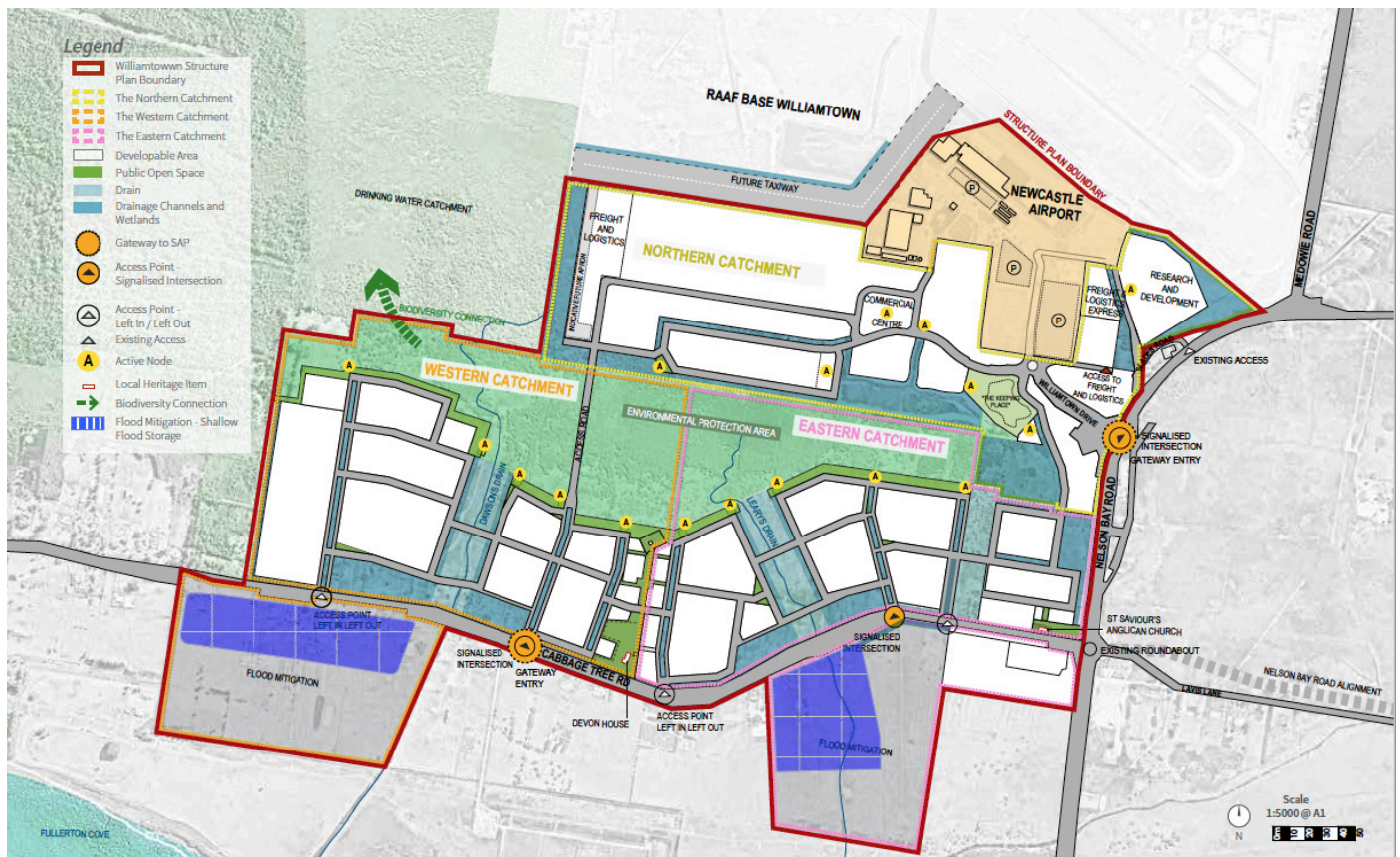*Figure 1 - Williamtown Special Activation Precinct location and spatial context*

Figure 2 - Williamtown Special Activation Precinct Structure Plan (source: Hatch Roberts Day)

2. Methodology

The methodology applied to determine the social infrastructure needs and opportunities for the Williamtown SAP is shown in Figure 2. Across all stages of the project, the following has been undertaken.

- Demographic analysis
- Strategic context
- Participation Trends
- Social infrastructure inventory and mapping of Regional and district level facilities servicing the Greater Newcastle area
- Development of an approved benchmarking approach specific for the Williamtown SAP (see Appendix 1)
- Review of best practice opportunities and innovative approaches for social infrastructure, type and delivery.
- Benchmarking against: population standards; proximity based standards; comparative and precedent areas; and best practice trends.
- Existing and future capacity and utilisation (depending on data availability)

- Based on structure plan options and projected population, demographics, jobs creation and regional economic growth, analysis of future social infrastructure needs
- Engagement with key government stakeholders and managers of other innovation precincts
- Identification of the future social infrastructure and facilities required in the Williamtown SAP and refinement of recommendations and integration into the final Structure Plan.

Figure 3 - Cred Consulting social infrastructure assessment methodology
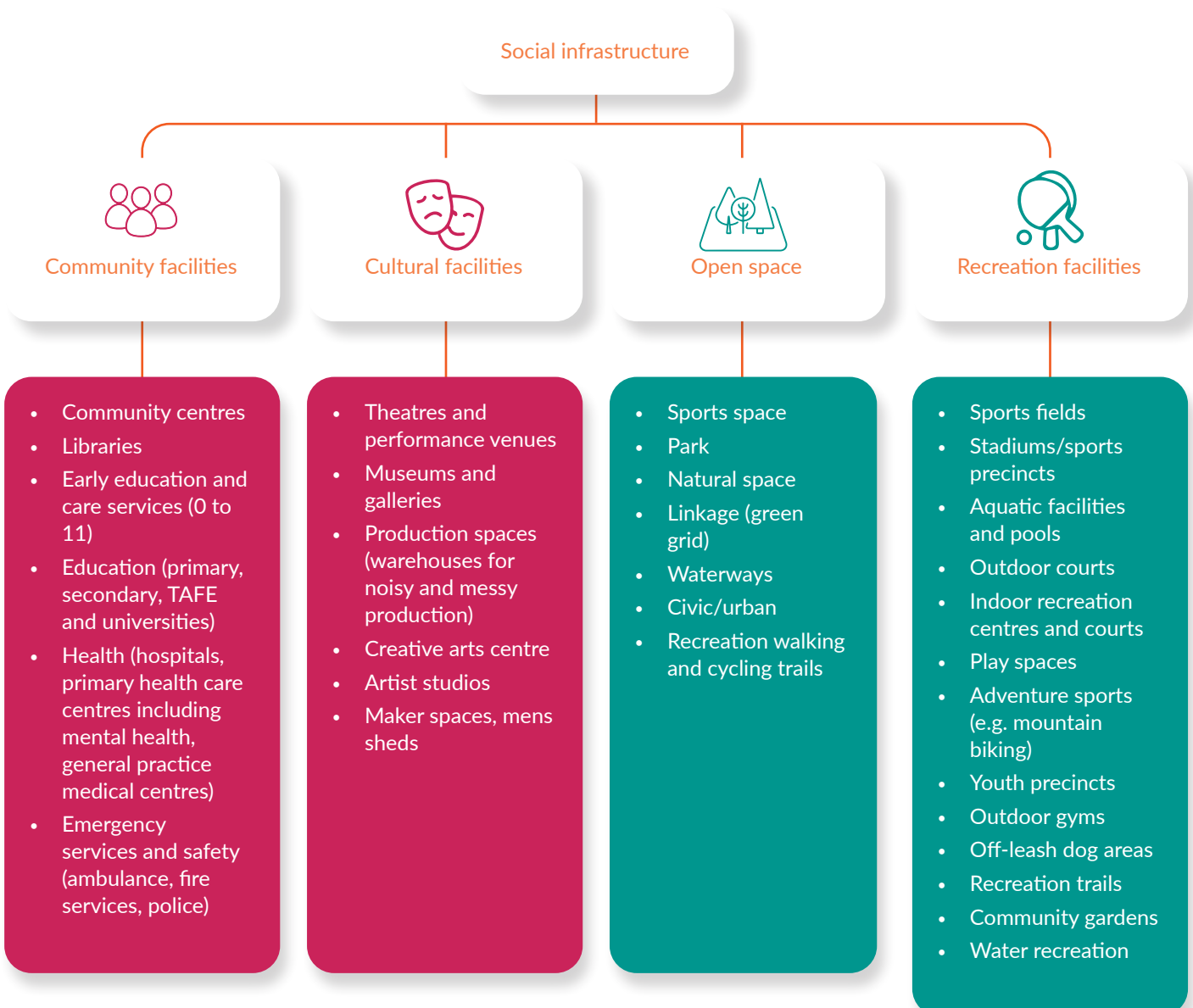

DEMOGRAPHICS

Current and forecast population. Unique social, cultural and place characteristics.

STRATEGIC CONTEXT

Understanding planning directions at the National, State, regional and local level that will influence social infrastructure needs for the study area

PARTICIPATION TRENDS

Understanding how communities have and are forecast to participate within social infrastructure.

SOCIAL INFRASTRUCTURE NEEDS ASSESSMENT PROCESS

COMMUNITY & STAKEHOLDER ENGAGEMENT

An analysis of any existing engagement with Hunter communities, and stakeholder interviews for this study.

AUDIT & ACCESS

Inventory and mapping of district and regional social infrastructure located within and servicing the Hunter Region

BENCHMARKING

Population based, proximity, and comparative, and best practice benchmarking.

BEST PRACTICE PRINCIPLES

Researching leading practice principles for future social infrastructure opportunities for the study area.

CAPACITY AND UTILISATION

Capacity and utilisation information for significant district/regional infrastructure where available.

3. Defining social infrastructure

Infrastructure Australia defines social infrastructure as:

"Social infrastructure is the facilities, spaces, services and networks that support the quality of life and wellbeing of our communities. It helps us to be happy, safe and healthy, to learn, and to enjoy life. The network of social infrastructure contributes to social identity, inclusion and cohesion and is used by all Australians at some point in their lives, often on a daily basis."

Successful social infrastructure relies on the availability of facilities and spaces for the services, programs and activities that are held there. It includes both the facilities or physical structure where social, cultural and recreational services, programs and activities are delivered or operate ('Hard Infrastructure') and the services and programs that are delivered ('Soft Infrastructure'). Both depend on each other and play a role in creating and sustaining community life, build our economy, and keep us connected and healthy.

This report defines social infrastructure as the assets or physical spaces where people can participate in social, recreational and cultural life. Definitions of social infrastructure often refer to the role is has in contributing to people's quality of life and providing the 'glue that binds communities together'. Social infrastructure is an umbrella term that includes community facilities, cultural facilities, open space and recreation facilities. An outline of what is considered to be 'social infrastructure' in this report is detailed below.

Social infrastructure

Community facilities

- Community centres
- Libraries
- Early education and care services (0 to 11)
- Education (primary, secondary, TAFE and universities)
- Health (hospitals, primary health care centres including mental health, general practice medical centres)
- Emergency services and safety (ambulance, fire services, police)

Cultural facilities

- Theatres and performance venues
- Museums and galleries
- Production spaces (warehouses for noisy and messy production)
- Creative arts centre
- Artist studios
- Maker spaces, mens sheds

Open space

- Sports space
- Park
- Natural space
- Linkage (green grid)
- Waterways
- Civic/urban
- Recreation walking and cycling trails

Recreation facilities

- Sports fields
- Stadiums/sports precincts
- Aquatic facilities and pools
- Outdoor courts
- Indoor recreation centres and courts
- Play spaces
- Adventure sports (e.g. mountain biking)
- Youth precincts
- Outdoor gyms
- Off-leash dog areas
- Recreation trails
- Community gardens
- Water recreation

4. Benchmarking approach methodology

It is important to note that benchmarking processes are not without limitation. Benchmarks take an historic approach to assumptions of future demand in calculating the quantum of community assets required.

The output of benchmarking is a numeric expression of demand, that enables the comparison of like for like infrastructure across time and geography. However, benchmarking does not take into account:

- New and innovative methods for infrastructure delivery or current leading practice which may not be aligned with current benchmark assumptions;

- The manner in which people engage with and generate demand for infrastructure due to their technological, accessibility, cultural and urban density contexts;

- The suitability of spaces and their ability to meet people's needs including the condition of assets and the range of users serviced;

- The ability of assets to be more efficiently utilised and satisfy a higher level of demand than benchmark outputs suggest;

- The practicality to deliver infrastructure, especially types with significant floor space or land area requirements particularly in places of high land value or with constrained land availability; and

- Across government organisations (both State and local) there are varying views as to the acceptable standard and level of infrastructure provision against which benchmarking is to be set.

There are further limitations for to benchmarking for arts and cultural assets including:

- Cultural facilities are not provided in standard types of models or formats. They may be provided in opportunistic ways, such as making use of older Council assets, or purpose built if serving a district/regional purpose.

- Public museums and galleries are difficult to benchmark as they are usually based off historical/state provision.

- No standards have been identified for some spaces, such as exhibition space, studio, workshop, rehearsal space, and incubator space for creative industries.

It is important that provision standards be interpreted as a guide only, and used in conjunction with other necessary assessment steps, such as undertaking an audit of the subject land area and surrounding communities, and detailed consultation with responsible agencies to confirm their likely provision strategy and service and facility delivery models.

Benchmarks (also commonly referred to as provision standards) are a commonly used tool in estimating the demand for various types of social infrastructure. There are three kinds of benchmarks used for social infrastructure planning.

Population based benchmarking

Population based benchmarks are used to give an indication of the number and size of items of social infrastructure that would ideally be provided if opportunity exists, feasibility is demonstrated, funding is available and the local context and site opportunities and limitations, as well as the broader provision close by, are taken into account.

The benchmarks have been determined from a variety of sources and reviewed by Port Stephens Council and DPE. (The detailed list of approved population benchmarks are provide in Appendix A1). Along with the future population projections, they help to indicate the regional, district and local needs and demand generated by the additional workers and residents from the Williamtown SAP.

The sources include state wide benchmarks, such as the State Library of New South Wales as well as local standards that have been established through other projects such as the Kings Hill URA Community and Recreation Study March 2020 (GHD) and Port Stephens Recreation Strategy 2018.

Given the aspirations for the Williamtown SAP, it's expected that the future population increase will be confined to workers rather than residents, and therfore the use of population based benchmarking is limited.

Proximity based benchmarking

Proximity based benchmarks are used to understand how easy it is for people to access social infrastructure by foot, bike, public transport or car. One of the Premier's Priorities aims to increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open, and public spaces by 10% by 2023.

Port Stephens Council has adopted proximity targets in its Recreation Strategy (2018). These proximity benchmarks considered the outcomes of the Australian Government's Department of Sustainability, Environment, Water, Population and Communities (DSEWPaC) proximity analysis of residences to greenspace in the Lower Hunter. For any open space recommendations, the adopted proximity benchmarks will be used.

Given the parameters of this project and feedback from initial engagement with Port Stephens Council and government agencies, the social infrastructure provided within the Williamtown SAP is expected to be destinational and cater for the regional or district catchment, rather than a local catchment. Council have expressed a desire for local and district social infrastructure to be located in existing centres which have transport accessibility and can be co-located with other uses.

Comparative/precedent benchmarking

Comparative benchmarking looks at similar high quality sites or precedents and benchmarks the types of social infrastructure that were delivered within them, for comparative purposes. These precedents provides examples of high quality, innovative social infrastructure that meets best practice trends and governance principles, that may set a benchmark for social infrastructure delivery within the future Williamstown SAP.

The comparative/precedent and best practise trends benchmarking is the approach has been use to assess the future social infrastructure needs and provision to primarily support workers within the Williamtown SAP, but also to provide benefit for the local Port Stephens communities and wider Greater Newcastle communties.

The comparative/precedent benchmark and best practice trends have also guided the development of the social infrastructure planning directions that have been applied to the assessment of future social infrastructure provision for the Williamtown SAP.

By utilising this approach in combination with the population and proximity benchmarking, the social infrastructure opportunities and benefits in supporting innovation and attracting the important global talent market to the area to take up the high value and high knowledge jobs that are expected within the Williamtown SAP can be maximised.

5. Benefits of social infrastructure

The availability of social infrastructure, both public and privately owned, enables the presence of social supports and essential community services that are necessary to help people thrive. It strengthens local and place identity and character and contributes to the vitality of urban centres and local identity[1].

The provision of social infrastructure is instrumental in supporting local businesses as it creates new job opportunities; provides spaces and services that promote lifelong learning, creative thinking and innovation.

By understanding the trends for the planning and delivery of social infrastructure and the benefits from a social, community and cultural, economic and environmental perspective we are able to identify the opportunities to integrate innovation and support the liveability and productivity outcomes for the Williamtown SAP.

Social wellbeing + community connection

Social infrastructure helps to bind people and neighbourhoods together to create social capital, social cohesion, and community wellbeing. There is significant research that indicates that social connection leads to happier people.[2]

Community facilities such as libraries, community centres, arts and cultural centres and other community facilities deliver significant social outcomes to individuals and groups and are the places where people can meet (formally and informally), participate in community programs, learn, and attend community events.

These uncertain times have made it even more important to build and maintain community cohesion. This includes supporting people to stay in employment, creating places where communities can come together safely and enjoy, enabling access to opportunity and addressing social disadvantage.

As evidenced by research, social connectedness increases as people are brought together through purposeful activities – acts of kindness, problem solving, singing/laughing/storytelling and through special interest groups[3]

Having high quality social infrastructure for education is an investment that ultimately generates a greater return later on through more people completing tertiary education and the creation of new jobs.

Access to learning opportunities throughout all ages in life is also imperative to a community's development. Lifelong learning opportunities will meet the demands of a modern workplace, improve productivity and help communities to reach their full potential. It has a key role in social mobility and overall wellbeing as the provision of education can be both formal and non-formal, indicating that any member of the community is able to join.

Social infrastructure such as public parks, sports and recreation centres encourage more of the public to be physically active and promote a lifestyle that will be extremely beneficial to mental health.

Participation in activities is also import for community connectedness and reducing the impacts of social isolation - whether its being part of a walking or yoga group through to being part of a sporting team - and help to create friendships and community togetherness while being physically active.

According to a recent (2018) Australian Loneliness Report, over 50% of Australians feel lonely at least one day per week. New studies have begun to measure the financial cost of social isolation and loneliness.

Studies have also shown that natural environments such as green spaces contribute to improved mental health, and increased physical activity reduces anxiety, depression and psychological stress across all ages, socio-economic groups and genders[4]. However, the quality, size and variety of green space is critically important to ensure that these benefits can be realised.

1 Infrastructure Australia, Social infrastructure in Australian Infrastructure Audit 2019, 2019

2 Greenberg, M. Does Being More Social Make Us Happier?, 2019

3 Nesbitt, H. COVID-19 highlights the value of social infrastructure – let's not forget, accessed on 20 October 2020, https://www.thefifthestate.com.au/columns/spinifex/covid-19-highlights-the-value-of-social-infrastructure-lets-not-forget/

4. Dadvand, P., et al., Green Spaces and General Health: Roles of mental health status, social support, and physical activity in Environmental International, 2016

Liveability + place identity

Liveable places are those that have great access to social infrastructure that enables life-long learning and creative expression; creates healthier communities; and bridges social and cultural networks and supports. They deliver higher rates of wellbeing and responding improved quality of life for workers and residents.

Social infrastructure also enables 'place making,' creating spaces for people to meet, connect and participate in meaningful activities. The co-location of varied community facilities and open and social spaces in one place can support social cohesion and appreciation of diversity through active mixing of people and groups, across the generational, cultural, income and education spectrum. In employment areas they have a key role as 'restorative spaces', ' gathering spaces' and 'break-out spaces'.

Social infrastructure also strengthens local and place identity and character. Local stories and culture can be ingrained in the building fabric and a distinctiveness and creativity in the public domain to assist in fostering community identity and ownership.

Productivity + economy

Social infrastructure provides spaces for co-working and collaboration, networking and entrepreneurship; and activates urban centres. Providing access to facilities such as libraries, arts spaces and multipurpose community spaces will encourage more locals and visitors to explore, gather and experience which in turn can generate positive economic outcomes such as being significant attractors for increasing visitation to retail offerings.

The 2019 Infrastructure Australia Audit revealed that Australian households spend $6.5 billion a year on arts related goods and services. Another study found that for every dollar spent on NSW public libraries the value back to the community is, on average, between $2.82 and $4.24.[5]

Investment in social infrastructure also has economic benefits with work hubs, subsidised office spaces, early education and care (childcare) and artists studios providing spaces to learn, engage in or access the workforce and activating local economies. This type of investment can provide a revenue stream and stable employment to support local economies.

A report by the Regional Australian Institute in 2016 showed that in the United Kingdom, a benefit-cost ratio of £10 to every £1 that was invested into social infrastructure showed that it reduced crime, health saving and better employment outcomes.

Providing affordable start up, research and development and prototyping spaces encouraging the growth of innovation and provide employment opportunities and support sector sustainability to increase access and create opportunities in new markets. This may provide local job opportunities and support the growth of the local economy.

Sustainability + resilience

Social infrastructure builds socially sustainable and resilient communities, whether a local neighbourhood, whole LGA or a working precinct. It encourages people to come together, share resources, access services, and meet each-other and, builds cohesion and capacity - the foundations of resilience.

Access to social infrastructure helps to build healthy, strong and empowered communities that have more resources and support to draw on when dealing with chronic stresses and stresses. Also community places, services and programs build social capital, connections and feelings of trust.

This has been highlighted during COVID–19, where social infrastructure such as health services, education facilities, volunteer organisations, cultural organisations, local community groups and community centres, together with social welfare organisations, have been critical in the response needed in local communities.

The provision of quality social infrastructure supports social networks which increases the feeling of welcome, belonging, and safety all which are an established measure of social capital, a key social indicator used internationally.

5. Andrew McDougall and Gillian Savage. Dollars, Sense and Public Libraries: The Landmark Study of the Socio-economic Value of Victorian Public Libraries. Melbourne: State Library of Victoria, 2011.

Making the case for social infrastructure

The United Nations makes the following case for public spaces and facilities to support equity across socio-economic, groups, gender, and age groups:

as the banner of urban civility

improves public health
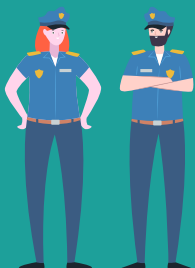
are tools for gender and age-friendly cities

enhance environmental sustainability

promote income, investment and wealth creation

are our urban meeting places

enhances urban safety

increases transportation efficiency

offer ideal opportunities to generate citizen involvement, promote equity and social inclusion

make for great cities

Figure 4 - United Nations case for social infrastructure

Best practice and emerging trends for delivery of social infrastructure

There are existing and emerging trends across all social infrastructure types that can drive successful outcomes and 'out of the box' thinking about what social infrastructure can be. The social infrastructure within the Williamtown SAP should provide positive community benefit for future workers and residents, support a thriving employment precinct and reflect the innovation outcomes that this precinct will be known for.

A networked and accessible approach

Increasingly, social infrastructure is being planned to operate as part of a network of public facilities, public open space, streets and services that work together to meet a broad range of community needs across a neighbourhood, catchment, or a region.

This integrated, strategic approach allows social infrastructure to provide a different but complementary range of offerings, in a compact pool of quality and multipurpose spaces, and avoid duplication. By considering social infrastructure as part of a network of spaces, services and programs can be accessed locally through outreach in flexibly designed spaces.

This idea of applying a networked approach when considering social infrastructure provision for the Williamtown SAP was discussed in initial engagement with Venues NSW, noting that the relationship between the catalyst areas, identified in the Greater Newcastle Metropolitan Plan is to leverage off each other and the wider benefits that they offer the region. Relevant to social infrastructure considerations is the planning for Hunter Park (Broadmeadow Sports and Entertainment Precinct).

Co-located, flexible and multi-functional

The term 'community hub' refers to the integration of social infrastructure in one location or building to provide better access to a wider range of services as well as a more cost effective way of delivering and operating these services. Integrating community infrastructure within community hubs helps to achieve key gathering points within a community with a variety of offerings.

This approach improves efficiency through encouraging compatible uses, supporting partnerships between different service providers and increasing the overall flexibility and activity of the given area.

The flexibility and adaptability of social infrastructure is crucial so as to remain sustainable and responsive in the future. It has not been seen viable to build separate community facilities that respond to specific demands in areas that have foreseeable urban growth. Multi-functional spaces have thus become increasingly important in changing places, further promoting sharing and co-location.

Outdoor rooms + digital spaces for collaboration and innovation

Gathering, learning, socialising, collaborating, and delivering programs outdoor is increasing in popularity. Recent events have also accelerated demand for these types of outdoor meeting and collaboration spaces with people working from home seeking social connection, and innovation precincts encouraging collaboration in informal environments.

This trend of delivering community spaces in parks and outdoor areas can be seen in recent examples of the Goods Line at UTS (outdoor study and collaboration spaces), Burwood Pavilion (outdoor stage/covered hard stand areas and hireable community room) and most recently Chill Out Hubs (open-air smart hubs) in Georges River, and at NeWspace in Newcastle CBD.

For high employment areas there is an increasing trend to deliver outdoor work and play environments that support workers to relax, connect and collaborate. Workers (e.g. Goods Line. To support innovation and collaboration these outdoor spaces need digital access and technology and workspaces.

Temporary, pop up and movable

Staged delivery of new development within the Precinct can prevent delivery of social infrastructure early. Pop-up infrastructure can actually be implemented through simple and low-cost measures, such as delineators, road marking or pictograms.

In areas experiencing change, including redevelopment sites and commercial areas, there are opportunities for pop up social infrastructure to be located as a temporary use of spaces planned for renewal and redevelopment. Community kiosks that are adaptable and movable are also an emerging trend that can be utilised particularly in growth areas, while permanent infrastructure is being delivered.

Raw, messy and noisy production spaces

This precinct both offer strategic opportunity to help secure new economic, tourism, cultural and educational opportunities as a result of the transformation and the co-location of spaces for research and development, production and innovation. 'Noisy' cultural and creative production spaces have sort space within traditional industrial areas to access low cost, large floorspaces as well as minimising the conflict with residential and commercial uses.

Local identity and sense of place

The broader agenda for the development of social infrastructure has been to establish a primary public space that produces a distinct sense of place and community identity. These public spaces have the capacity become the focal point of the community, and a central gathering place so as to improve the overall well-being of a local community.

It may be a large iconic building, or a smaller, more intimate place, yet either should present a reflection of local culture. The design of community buildings and welcoming places should also aim to enhance the physical attraction of a public place, aiming to be aesthetically appealing and fitting within a particular context.

Public art could also be incorporated into building design- a way to create distinctive and welcoming centres. Public art is an important avenue to explore when creating a sense of place and local identity, becoming an expressive tool to tell local stories and create places that are recognised and valued by the community.

Streets as shared spaces

The NSW's Streets ad Shared Space Program noted the essential role that streets play in connected communities and social infrastructure, and also delivering social infrastructure outcomes, as an important part of the public space ecosystem. The future streets of the study area can become public spaces that lend richness to the social, civic, and economic fabric of the community for workers and residents.

Active, green, walkable streets extend opportunities for recreation beyond the boundaries of parks, and improve connections to parks in areas with low provision. Through verge planting, traffic calming, wide footpaths, seating, shade, and places to stop can provide places for future workers and residents to recreate and come together.

Shared use 'making infrastructure work harder'

Sharing our urban areas for recreation is an emerging trend and where more innovative approaches to recreation provision are needed. Sharing the use of existing social infrastructure has significant potential to maximise the use and efficiency of a variety of spaces and buildings for community benefit. Sharing existing space decreases the need to build new facilities that replicate already existing infrastructure, making assets work harder.

Environmentally sustainable development

Social infrastructure offers opportunities for government to lead by example, demonstrate new sustainable materials and technologies and deliver leading practice projects with an educational role.

Environmentally sustainable social infrastructure typically has lower operating costs and is therefore more financially viable and sustainable to operate. It also can be implemented with facilities are located so as to promote walking, cycling, and public transport, which also has a positive impact on fostering healthy communities.

Local institutions including the The University of Newcastle are driving this change on their campuses with the goal to *"transform our digital and physical environments into spaces, places and platforms that inspire and attract and more to a green campus providing exemplar leadership in sustainable resource management"*. [1]

The Williamtown SAP could provide spaces that showcases innovation, experimentation and environmentally sustainable development. This could be achieved through future partnerships with University of Newcastle and other local businesses.

Revenue streams

Much social infrastructure – being public – operates on a not-for-profit basis with income generation approaches ranging from hiring spaces, to fund raising, to receiving grant funding. To enhance the cost- effectiveness and sustainability of community infrastructure, many facilities rely on rental income to fund operations but even then, there is usually a gap between income and expenses, including maintenance costs. Increasingly within community infrastructure, operations of assets like community facilities, rely on revenue methods that generate reliable and increased sources of income in order to improve financial viability and sustainability.

Public private partnerships

There are increasing challenges to providing and governing the quality and appropriate social infrastructure that is needed. This includes time lags between planning and delivery in growth areas, declining service coordination, increasing and competing government budget pressures, spatial inequalities, lack of innovative service models, and increasing community dissatisfaction.

Cross sector collaboration and partnerships between allow governments and the private sector to work together and share resources to plan for, deliver and manage major projects. This usually involves governments providing incentives for the private sector to deliver a public asset or service.

To be successful, these partnerships require shared vision, early commitment and comprehensive planning. Public Private Partnerships usually have the public interest at heart and can deliver increased value for money.

For the Williamtown SAP, education or R&D partnerships could be explored with University of Newcastle and Cisco to locate innovation, prototyping and collaboration space. There also may be social and cultural opportunities to partner with the Worimi LALC and Murrook Cultural Centre to expand local Aboriginal cultural learning and understanding.

1. *University of Newcastle (2020) Looking Ahead. Strategic Plan 2020-2025 (www.newcastle.edu.au/our-uni/strategic-plan)*

Figure 5 - Learning about the importance of the Stockton Dunes to the local Worimi people which is a significant site adjacent to the Williamtown SAP (source: portstephens.org.au)

Baseline analysis

This section provides a baseline analysis that informed the development of the structure plan for the Williamtown SAP. Its provides an overview of the relevant strategic policy context, desktop demographic analysis for the Greater Newcastle area, local Council areas and the Williamtown SAP, and the general community, cultural and recreation participation trends.

A desktop and site audit of regional community and social facilities as well as a more detailed audit of suburbs surrounding the Williamtown SAP within the Port Stephens LGA has also been undertaken to understand the current provision, location and potential gaps. The audit drew on information from the Greater Newcastle LGAs and in particular Port Stephens and Newcastle LGA information.

6. Strategic Drivers

This section provides an overview of the key strategic drivers - Policy, People and Participation. These provide an insight into what opportunities for future social and community infrastructure could be delivered as part of the Williamtown SAP Structure Plan to service the needs of the precinct as well as contributing to the wellbeing of the Greater Newcastle population.

Strategic Policy Analysis

United Nations 2030 Agenda for Sustainable Development

The United Nations 2030 Agenda for Sustainable Development is a framework of 17 Sustainable Development Goals (SDGs) with a total of 169 Targets spanning economic, environmental and social development.

They lay out a plan for all countries to engage actively in making our world better for its people, with no-one left behind. The United Nation's Sustainable Development Goals recognise that access to high-quality public space is critical to social, economic and environmental sustainability.

The UN Habitat's New Urban Agenda, is a document that provides guidance for achieving the Sustainable Development Goals. It includes a commitment to *"promoting safe, inclusive, accessible, green and quality public spaces, that are multi-functional areas for social interaction and inclusion, human health and well-being, economic exchange, cultural expression and dialogue among a wide diversity of people and cultures, and that are designed and managed to ensure human development and build peaceful, inclusive and participatory societies as well as to promote living together, connectivity and social inclusion"*[1]

1.United Nations (2017) New Urban Agenda - English (unhabitat.org/about-us/new-urban-agenda)

NSW Premier's Priorities, NSW Government

The Premier sets two priorities relating to open space and recreation:

- Greening Our City seeking to increase the tree canopy and green cover across Greater Sydney by one million trees by 2022.
- Greener Public Spaces aiming to increase the proportion of homes in urban areas within 10 minutes' walk of quality green, open, and public spaces by 10% by 2023.

Connecting with Country (Draft), NSW Government Architect (GANSW)

Connecting with Country is a draft framework for understanding the value of Aboriginal knowledge in the design and planning of places. Connecting with Country is informed largely by the experiences and knowledges of people who work on, and are from, Countries in and around the Sydney basin. As such, the principles and framework that follow reflect an emphasis on this part of NSW and we acknowledge that further work is required to determine the appropriateness of these principles and framework for the other Countries of NSW.

The ambition of Connecting with Country is that everyone who is involved in delivering government projects will adopt the following commitment that *"Through our projects, we commit to helping support the health and wellbeing of Country by valuing, respecting, and being guided by Aboriginal people, who know that if we care for Country – it will care for us".*

Better Placed, NSW Government Architect (GANSW)

'Better Placed' is a design led NSW Government policy intent upon guiding the delivery of world-class planning and design outcomes. The policy establishes 7 principles for the built environment,

1. Contextual, local and of its place.
2. Sustainable, efficient and durable.
3. Equitable, inclusive and diverse.
4. Enjoyable, safe and comfortable.
5. Functional, responsive and fit for purpose.
6. Value-creating and cost effective.
7. Distinctive, visually interesting and appealing

Draft Greener Places Design Guide, NSW Government Architect (GANSW)

The Draft Greener Places Design Guide framework provides information on how to design, plan, and implement green infrastructure in urban areas throughout NSW. The draft guide provides a consistent methodology to help State and local government, and industry create a network of green infrastructure.

Greener Places explains green infrastructure, why we need it, and the benefits of providing it. The major components that make up the green infrastructure network fall into three categories:

- Open space for recreation: green infrastructure for people
- Urban tree canopy: green infrastructure for climate adaptation and resilience
- Bushland and waterways: green infrastructure for habitat and ecological health.

The Greener Places Design Guide recommends a performance-based approach to assessing open space for recreation demand based on six core criteria that can help guide performance outcomes. All criteria are subject to local precinct considerations:

- Accessibility and connectivity
- Distribution
- Size and shape
- Quantity
- Quality
- Diversity.

Urban Design for Regional NSW, NSW Government Architect (GANSW)

Linked to the 'Better Placed' design guide, the Urban Design for Regional NSW guide acknowledges the rich variety in the character and identity of urban areas, underpinned by diverse landscapes, stories, and cultures that can be preserved and enhanced through urban design.

The guide establishes 7 urban design strategies for regional areas as being:

1. Engage with the history and culture of places;
2. Integrate with the natural environment and landscape;
3. Revitalise main streets and town centres
4. Prioritise connectivity, walkability and cycling opportunities;
5. Balance urban growth
6. Increase options for diverse, healthy living; and
7. Respond to climate conditions and their impacts.

The assessment of social infrastructure needs the recommendations have strongly considered and implemented the above strategies.

Women in Sport Strategy, NSW Office of Sport

The Women in Sport Strategy focus areas include participation; places and spaces; leveraging investment; and leadership. 'Places and spaces' acknowledges that facilities influence participation.

The Strategy encourages facility providers to apply a gender lens to the design of regionally significant facilities. Appropriate facilities are those that exhibit universal design principles, prioritise safety, have family friendly social spaces and are clean and easy to access.

Improving the quality of existing surfaces, lighting and amenities is identified as the minimal critical strategy to reduce immediate barriers for women and girls. Equitable allocation of playing spaces, training venues and other resources was also identified as a key need and has also been identified by Port Stephens Council as a key objective in their planning for recreation and sporting facilities.

NSW Cultural Infrastructure Plan 2025+, NSW Government

The *Cultural Infrastructure Plan 2025+* provides the strategic framework for how the NSW Government will invest in and support cultural infrastructure across the state until 2025 and beyond. The Plan articulates the strategic priorities for NSW to be a place where culture is recognised as an integral part of communities and a key element of creating great places for people to live, work, visit, play and do business including goals to ensure that:

- Everyone can access the infrastructure they need to make culture part of their everyday lives.
- There is an increased availability of affordable, fit-for-purpose and sustainable space to support growth of the cultural sector and creative industries.
- Cultural infrastructure delivery and funding is supported by partnerships across NSW Government, local councils, cultural organisations, philanthropists and business.

- Greater Sydney's three cities become a leading cultural capital in the Asia-Pacific and continue to grow the visitor economy, employment and growth.
- Creativity and access to culture thrives across NSW through a strategic and coordinated approach to cultural infrastructure planning.

State Infrastructure Strategy 2018 – 2038 Building the Momentum, Infrastructure NSW

The State Infrastructure Strategy 2018 (SIS) sets out the current state of NSW's infrastructure and the needs and priorities over the next 20 years. Infrastructure NSW's recommendations set geographic directions for infrastructure planning, investment and policy.

In the context of Regional NSW, the geographic strategy outlines:

- Regional NSW needs to be supported by good transport links to key markets by leveraging Inland
- Better digital connectivity is needed to enable regional business to compete and to improve basic services like health and education.

A key target under the Geographic Direction for Regional NSW directions is to strengthen growing regions to ensure education infrastructure and technology are comparable to that in Greater Sydney.

Hunter Regional Plan 2036, Department of Planning & Environment

The Hunter Regional Plan 2036 is a 20 year blueprint for the future of the Hunter region. The document provides an overarching framework to guide more detailed land use plans, development proposals and infrastructure funding decisions.

While a series of priority actions are included, medium and longer term actions are identified to coincide with population growth and economic change. The vision is to create a leading regional economy in Australia, with a vibrant metropolitan city at the heart. The Plan will deliver our vision through four goals:

- A leading regional economy in Australia
- A biodiversity-rich natural environment
- Thriving communities, and
- Greater housing choice and jobs.

The expansion of the University of Newcastle into the city centre is identified as a catalyst and along with John Hunter Hospital and research services at Callaghan is central to Newcastle becoming a national centre of excellence for heath and education.

Regional Development Australia's Smart Specialisation Strategy for the Hunter Region (2016) also identifies creative industries as one of the key growth areas as well as an expected expansion of health and education.

Greater Newcastle Metropolitan Plan, Department of Planning & Environment

The Plan provides a collaborative framework, which comprises strategies and actions that will drive sustainable growth across the five local government areas, including Port Stephens, that make up Greater Newcastle.

The Plan also helps to achieve the vision set in the Hunter Regional Plan 2036 - for the Hunter to be the leading regional economy in Australia with a vibrant new metropolitan city at its heart. The Plan aims to deliver four outcomes, with relevant strategies to this Study including:

- Create a workforce skilled and ready for the new economy
- Enhance environment, amenity and resilience for quality of life
  - 10. Create better buildings and great places
  - 11. Create more great public spaces where people come together
- Improve connections to jobs, services and recreation.

This Plan also identifies several Catalyst Areas, which are places of metropolitan significance that need a collaborative approach to the delivery of new job opportunities including health, defence and education industries, as well as provide for new homes and help to meet the expected demand for diverse housing options close to jobs and services.

The Williamtown catalyst area targets an additional 3,000 jobs, which by 2036 will increase the total jobs within the precinct to 8,300 (from 5,300 in 2016).

The desired role of the Willamtown Catalyst area is to be a global gateway providing domestic and international connectivity, and as an emerging defence and aerospace hub. The Metropolitan Plan does not envision any additional dwellings.

In addition to the Williamtown catalyst area, there are ten catalyst areas outlined in the Plan, of which the following are relevant to the future planning of social infrastructure needs within the precinct:

- The aim for **Broadmeadow** is to be a nationally significant sport and entertainment precinct. Central to this aspiration is the development of the Hunter Sports and Entertainment Precinct (Hunter Park) as an elite sports area and provide a variety of places for organised and casual sports and recreation with strong links to Broadmeadow Station.
- **Callaghan** has long been the home of the University of Newcastle's main campus and its future role as a research, innovation and tertiary education cluster is built around the university. There are opportunities to grow the education cluster as well as complementary

student uses (ie. housing and services) and employment floorspace such as the development of innovation hubs and start-up businesses in Jesmond, Waratah and Warabrook Centres.

Port Stephens Community Strategic Plan, Port Stephens Council

The vision for Port Stephens is "a great lifestyle in a treasured environment" and is guided by four focus areas:

- Our Community: a thriving and strong community respecting diversity and heritage
- Our Place: a liveable place supporting local economic growth
- Our Environment: is clean and green, protected and enhanced;
- Our Council: leads manages and delivers valued community services in a responsible way.

Actions relevant to this study include:

- C2.2: Support and promote local cultural activities
- C3.2 Support local community events that highlight and foster the creative, diverse nature of our community
- C3.3 Provide recreational and leisure facilities
- P2.2 Build Council's civil and community infrastructure to support the community
- P3.3 Support the amenity and identity of Port Stephens
- P3.4 Support emergency services and protect Council assets from bush fires and extreme weather events
- E3.3 Encourage community resilience to the impacts of climate change

Port Stephens 2020 to 2021 Community Advocacy Priorities, Port Stephens Council

The following are the key priorities relevant to this study as identified by Ports Stephens Council for their local area:

- Maximise the economic contribution of regionally significant infrastructure including Newcastle Airport, through implementation of the Greater Newcastle Metropolitan Plan.
- Seek funding support for high class, multi-functional sports complexes at Nelson Bay and Raymond Terrace that will cater for local, regional and national sporting organisations and events.
- $10 million for initial stages of Tomaree and Kings Park sports complexes. Whilst delivering high quality sporting infrastructure is a fundamental requirement of Port Stephens Council, this project has the potential to significantly enhance the region's visitor economy and drive demand from national sports event organisers, particularly in the off-peak tourism season.

Port Stephens Local Strategic Planning Statement (2020), Port Stephens Council

The Local Strategic Planning Statement (LSPS) outlines a vision for the Port Stephens LGA that it offers a variety of diverse centres and neighbourhoods that connect residents, visitors and workers with their community. It also for centres to be the heart of community life accessible by walking and cycling links as well as to schools, parks and sporting facilities.

The Plan acknowledges the importance of shared spaces to provide places to gather, celebrate and explore and that new places and communities are planned to be healthy, active and support sustainable lifestyles.

The achieve the vision, the following planning priorities and actions help to guide the social infrastructure needs and recommendations for the Williamtown SAP:

Planning Priority 3: Support tourism development and attract events with an action to investigate opportunities to facilitate land uses that can support the tourist and visitor economy, including enabling farm gate sales along the Nelson Bay Road corridor.

Planning Priority 6: Plan infrastructure to support communities. This priority recognises that as Port Stephens grows, communities will require access to quality public spaces, community or sporting facilities, and services such as medical care or child care.

Planning Priority 10: Create people friendly spaces in our local centres where people can come together. This priority aims to promote wellbeing and encourage active living. It identifies that:

- Healthy neighbourhoods include public spaces and green spaces where people can come together and feel connected to the natural environment.

- Liveable communities with access to shared space and adequate recreational areas foster strong social connections. Provide spaces where people can meet, play or explore and create opportunities to participate in events that bring people together.

- Improved access to open space, recreation areas and waterways is also an important aspect of wellbeing.

- An action identified in the LSPS that could also be implemented in the Williamtown SAP is the activation of public spaces, including events, public art, small business opportunities, markets and temporary uses.

Port Stephens Recreation Strategy (2018), Port Stephens Council

The vision for recreation in Port Stephens LGA is "*a sustainable network of recreation facilities that encourage participation, interaction and personal development in a safe and inclusive environment.*" This is underpinned by seven objectives that will be referenced to guide Council's planning and operations to achieve the vision:

- Objective 1: Provide recreational facilities that are appropriately scaled and responsive to community need.

- Objective 2: Improve the quality and diversity of existing recreation facilities to provide a range of leisure and recreation opportunities for residents and visitors.

- Objective 3: Create a network of centralised sporting precincts and facilities.

- Objective 4: Provide a recreation facility network that is inclusive and accessible.

- Objective 5: Implement environmentally sustainable approaches to alleviate the impacts of climate change on the recreation facility network.

- Objective 6: Provide recreation facilities that are safe, attractive and well utilised.

- Objective 7: Achieve well managed and maintained recreation facilities through a coordinated and planned approach.

Raymond Terrace and Heatherbrae Strategy 2015-2031, Port Stephens Council

Adopted in November 2015, the Strategy contains four goals, to achieve the future vision of Raymond Terrace and Heatherbrae as a strong major regional centre and a great place to live, work and play.

The role and position of Raymond Terrace within the centres hierarchy of the LGA is an important consideration for the Williamtown SAP social infrastructure needs assessment. It will be important that the facilities and activities recommended for the Precinct do not dilute the function and importance of Raymond Terrace.

The following goals, strategic directions and actions outlined in the strategy are relevant to the Williamtown SAP and will be considered in developing the social infrastructure recommendations:

Goal 1: A competitive economy with regional services, including transport, health, justice, government, commercial, retail, industrial and entertainment.

- Direction 1.3 Planning for regional soft infrastructure services to meet the needs of a growing community.

  - Action 12. Advocate for Raymond Terrace amongst major institutions, such as the University of Newcastle, about the availability of affordable land and key catalyst sites both in Council and in private ownership.

  - Action 13. Recognise the role in providing services to those smaller surrounding centres, such as Medowie, Dungog, Kings Hill and Salt Ash through providing a more detailed audit of community services.

Goal 3: A great place to live with quality public and private spaces that are accessible.

- Direction 3.1 Improving the quality of existing public open spaces and undeveloped sites.

- Direction 3.2 Allocation and integrating locations for future passive open space.

Goal 4: A resilient city with clear directions for improved social, environmental and economic outcomes

- Direction 4.4 Reinforcing the role of Raymond Terrace within the LGA commercial hierarchy as the prominent commercial centre to service the future needs of Kings Hill and Medowie.

Medowie Planning Strategy (2016), Port Stephens Council

Medowie was identified as a growth area in the Port Stephens Planning Strategy and the Hunter Regional Plan.

The Medowie Planning Strategy was adopted in December 2016. The vision is for *"a place of tall trees besides the waters of Grahamstown Dam with a rural residential character, with a plan to accommodate and coordinate future growth with quality community and recreation facilities, good transport infrastructure, and involves the community in its implementation"*

The implementation of the vision is guided by five key principles. These principles and actions are an important consideration and guide for the social infrastructure recommendations and future provision in the Williamtown SAP

The following principles and actions outlined in the strategy are relevant to the Williamtown SAP and will be considered in developing the social infrastructure recommendations:

Principle 1: Development is supported by infrastructure

- Residential release areas are targeted on the expansion of existing areas and main transport routes (Medowie Road and Ferodale Road) with good access to community facilities.

- Main aspects of infrastructure for accommodating future urban growth include: traffic and transport infrastructure (including for pedestrians and cyclists); flooding and drainage management measures; community and recreation facilities; provision of reticulated sewer and water; and access to the town centre.

Relevant actions include:

- Commence implementation of Ferodale Park Sports Complex Master Plan to enable greater public use and enjoyment of the site through the provision of new infrastructure and facilities, expand opportunities for sporting use as well as organised events and gatherings

- Investigate location and design of a new library facility to provide a local library facility to meet population growth

- Undertake a sports field usage review to monitor population growth in Medowie against the standard for the provision of sporting fields

Principle 2: The town centre is the focus for commercial and community activity

- New commercial development will be focused within the existing town centre and guided by the town centre master plan. The objective is to consolidate the town centre as the 'heart' for the social and economic life of the community. Infrastructure works include: roads (in a grid layout); a town square; new public toilets; and shared paths.

Fern Bay and North Stockton Strategy (2020)

The Fern Bay and North Stockton Strategy focuses on achieving 5 goals, with the following 3 relevant to the social infrastructure needs assessment:

- Environment: Protect the treasured and unique Stockton Bight for future generations and attract responsible heritage and nature-based tourism.

- Town Centre: Establish a conveniently located mixed-use town centre connected by technology, transport, housing and great public places.

- Open Space and Community Facilities: Improve access to useable open spaces and well-designed community facilities to support daily activity and healthy lifestyles.

Relevant outcomes identified in the plan that have been considering in the planning for social infrastructure for the Williamtown SAP include:

- Invite the community on a place making journey to activate public places and revitalise the centre. More community events and activities that celebrate Stockton's history, heritage and culture are to be carried out.

- Investigate the feasibility of a new modern library at the proposed mixed-use town centre.

- Provide new public open space with integrated public access to Stockton Beach and Worimi Conservation Lands.

- Investigate a new Sporting Precinct at Corroba Oval. Including, multipurpose courts, additional playing fields, parking, amenities building and undercover seating.

- Continue investigations to improve recreational and community facilities at Seaside Estate, including public toilets within the development.

Current Population

In order to plan for and deliver social infrastructure in our areas, we need to understand our community, how it is growing and changing, and what are our unique needs. By assessing current and future trends around how we live, we are better equipped to deliver services that will enhance social cohesion, inclusiveness and community harmony.

This section provides a desktop demographic analysis using population data sourced from the Department of Planning, and Environment and where available, sourced from individual Councils.

Greater Newcastle

The population of Greater Newcastle in 2016 was 569,900. This is expect to grow by approximately 90,300 people to 660,200 by 2041. The table below provides a breakdown of the current and forecast population growth for all the Greater Newcastle LGAs.

Table 1: Population projections for Greater Newcastle local government areas.

LGA	2016 Population	2041 Population	Change
Port Stephens	71,100	82,050	10,950
Maitland	79, 050	104,700	25,650
Newcastle	160,700	199,700	39,000
Lake Macquarie	202,350	232,700	30,350
Cessnock	56,700	80,050	23,350
TOTAL	569,900	660,200	90,300

source: NSW Government Projections Explorer

Port Stephens Council

Within the Port Stephens LGA the residential population growth from 2016 to 2041 is forecast to be 10,950 new residents. This is equivalent to an approximately 15% population increase in 25 years.

Compared with Regional NSW, Port Stephens LGA has an ageing population, with the highest proportion of people entering retirement (60-69) making up 14.5% of the whole of the Port Stephens LGA population. The area also has a significantly lower proportion of people working full-time (22.9% compared to 55.2%).

City of Newcastle

In 2016, the Usual Resident Population of the City of Newcastle was 155,411, an increase of 5% or 6,880 people from 2011. The City of Newcastle is a dense population at 8.32 persons per hectare (p/ha), a much higher number compared to Regional NSW and NSW (0.03 and 0.09 p/ha respectively).

The City of Newcastle shares a similar age structure to Regional NSW, however has a higher proportion of young workers aged 25 to 34 (15% compared to 11%), young people aged 18 to 24 (12% compared to 8%), and a lower proportion of empty nesters and retirees ages 60 to 69 (10% compared to 13%).

Maitland City Council

Within the Maitland LGA the residential population growth from 2016 to 2040 is forecast to be from 83,200 to 110,600, or 27,400 (33%) new residents over a 25 year period.

The median age for Maitland LGA would raise from 35 years to 38 by 2040. Additionally, household count would increase by 12,600 or 40%, from 31,700 in 2016 to 44,300 in 2040.

Cessnock City Council

Within the Cessnock LGA the residential population growth from 2016 to 2036 is forecast to be 11,000-21,000 new residents. This equates to an increase of around 19%.

Cessnock LGA has also identified a projection of a 10 year average population growth of 1.8%, a higher rate over the NSW average population growth of 1.3%. Additionally, housing count is projected to increase from 24,000 in 2016, to 30,350 - 35,000 in 2036, equal to a 6,350 to 11,000 (or a 26-46%) increase over 20 years.

Lake Macquarie City Council

The 2020 Estimated Residential Population (ERP) is 207,775. This represents an increase from the 2016 ERP of 202,332, or 5,443 persons. The 70-79 years cohort recorded the largest change in Lake Macquarie LGA, showing a 19.8% increase from 2011[1].

Lake Macquarie City Council's Local Strategic Planning Statement identified three growth scenarios. Scenario 1 represents current trends, Scenario 2 sees a greater recognition of the role of Lower Hunter region as a preferred place to live and work, and Scenario 3 foresees Lake Macquarie City within the reach of the expanding global city of Sydney.

The 2021 Housing Strategy is also planning for a range of possible growth scenarios including a higher growth scenario of up to 388,000 people.

Outlined in Lake Macquarie City Council's LSPS and reflected in both the Economic Strategy and 2021 Housing Strategy, Lake Macquarie has projected three population growth scenarios for the LGA:

Scenario 1: Reflects current economic population and demographic trends. In this scenario, the population is expected to grow from 202,850 in 2016 to approx 226,750 by 2036, annual growth rate of 0.56%

Scenario 2: Successful attraction of investment, business activity and jobs could alter the current trend leading to higher population growth scenarios. This scenario sees a greater recognition of the Lower hunter region as a preferred place to live and work. In this scenario, the population is expected to grow from 205,000 in 2019 to approx 250,000 by 2036 (+45,000 or 22%)

Scenario 3: A situation where Lake Macquarie and the region finds itself within the reach of the expanding global city. Sydney's liveability pressures could lead to population growth to over 300,000 by 2036 (+95,000 or 46%).

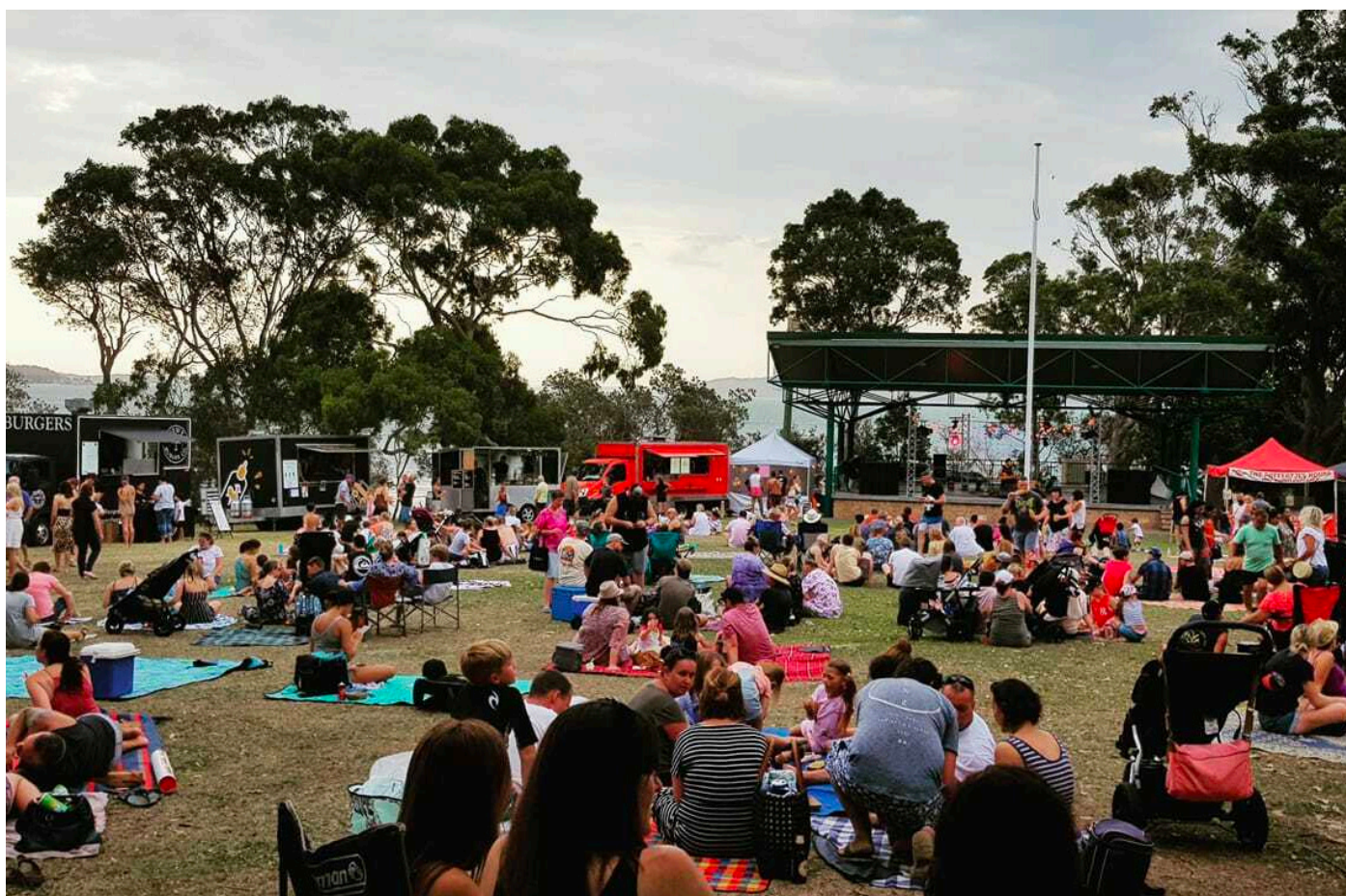*1. Lake Macquarie City Council Remplan (source: https://app.remplan.com.au/lakemacquarie)*

Figure 6 - Local Port Stephens community event 'Street Food Social'
Image source: Street Food Social Facebook

7. Existing social infrastructure provision

This section provides an audit of all social infrastructure that is identified as regional or district, located across the Greater Newcastle area. It includes where known, and planned (costed and approved) social infrastructure.

Initial stakeholder consultation was undertaken with Port Stephens Council staff as part of the early baseline analysis to discuss local provision of community and social infrastructure , major projects and future works as well as their views of the future provision requirements.

The audit of regional social infrastructure across the Greater Newcastle area as well as a more detailed audit of existing social infrastructure in and around the Williamtown SAP provides a 'jumping off point' to identify opportunities that are innovative and bespoke to the people and place context of the study area.

The strategic drivers analysis, audit and consultation suggests that open space and recreation is currently well provided and planned for, and supports existing local community' participation in sport.

While we understand that the social and open space provision may be adequate to service the local community now and in the future. However, the provision of community, cultural, recreation facilities and open spaces is also critical to attract that global talent and highly skilled workers who are choosing places for more than the job it offers but also the other liveability experiences.

The provision of social infrastructure within the Williamtown SAP will provide greater opportunities for the community to 'stay and play' which in turn gives more life and character to the place at all times of the day/night and across the week. Given the regional focus, the provision of a regional (Greater Newcastle) indoor recreation centre to service the needs of workers as well as the Greater Newcastle area could be appropriate.

Public facilities definitions & hierarchy

Community, cultural, sporting and recreation facilities can be defined within a hierarchy based on the catchment that it services in terms of geography and population size. The tables below provide the parameters for Regional/Metropolitan, District and Local level facilities.

Given the regional and national significance of this site and the initial constraints and opportunities assessment undertaken, the audit includes Regional and District level facilities from across the Greater Newcastle area and only provided an audit of local level facilities for the precinct and its surrounding suburbs with the Port Stephens LGA.

Table 2: Parameters defining the various levels of social infrastructure provision

	Regional/metropolitan	District	Local (not audited)
Location	Major centres/significant opportunity sites	Town centres/significant opportunity sites	Small centres/opportunity sites near transport
Catchment	150,000 to 200,000+	25,000 to 50,000+	Up to 20,000
Description	Provides the premier civic and cultural spaces to serve a municipality or larger area, with a wide range of social and cultural facilities and services	Provides multipurpose flexible social infrastructure that services multiple suburbs or planning catchments	Small scale local facilities
May include	• Central library • Major civic and/or cultural centre • Performing arts centre or exhibition spaces • International/national/State level sporting infrastructure • Adventure sports space requiring large land area • Large cultural production space	• District library • Multipurpose community centre • Indoor leisure centre (wet/dry) Performing arts centre or exhibition space • Smaller scale sports stadiums/infrastructure	• Neighbourhood centres/community centres • Branch libraries

Public recreational open space definitions and hierarchy

Public recreational open space will be defined in two ways, hierarchy and function. These definitions are based on contemporary approaches to open space planning including NSW Government Architect's Open Space for Recreation Guide (not finalised), and the 2012 NSW Department of Planning Recreation and Open Space Planning Guidelines for Local Government, 2012.

Definitions

We will categorise open space functions in accordance with the following Government Architect NSW categories:

Sports space

Primary function is to support/ organised sporting activities

Public Park

Primary function is to support informal recreation activities

Civic/Urban Space

Public space in urban developed areas. They include elements of public domain such as streets and plazas, and are often hard surface and event ready spaces.

Waterways

Primary function to connect and support water-based recreation. Has to have a recreation component

Natural Space
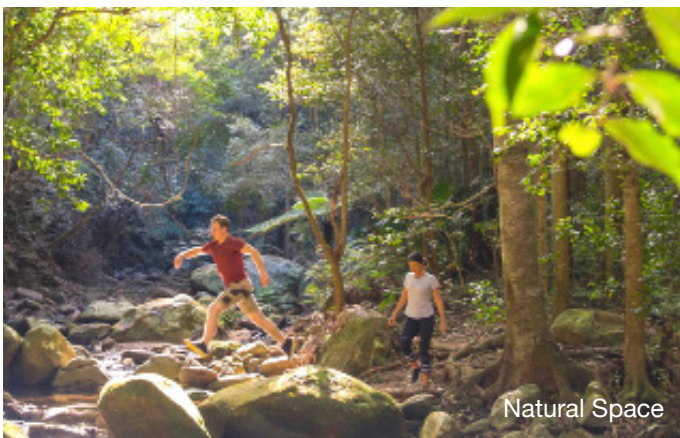
Primary function is to support biodiversity + terrestrial (fauna + flora). Usually E2 zoning.

Linkage

Primary function is to connect one open space are to another with recreational green links (who manages it open space or traffic/ transport)

Audit of existing community and cultural infrastructure

A social, cultural, and community infrastructure audit has been completed to understand the regional infrastructure across Greater Newcastle and a more detailed understand of the local social infrastructure located in the areas around the Williamtown SAP, including Raymond Terrace, which is the closest strategic centre.

The audit captured location data on public facilities within the Education, Hospitals and Healthcare, Emergency Services, Community Centres + Libraries, and Cultural Facilities realm and provides an accurate snapshot of existing facilities which the future workers and residents of the Williamtown SAP will has access.

Figures 7 and Figure 9 map the regional and local community and cultural infrastructure relevant to the Williamtown SAP.

Education

The University of Newcastle is the tertiary education institution that services not only the Greater Newcastle area, but the Hunter region and beyond. Current campuses are at Callaghan, NeWSpace and Honeysuckle in the Newcastle CBD and it has a strong regionally focus research intention.

Hunter Street TAFE (14km), Tomaree TAFE (30km) and Maitland TAFE (29km) also service the Greater Newcastle Area's tertiary educational needs.

University of Newcastle Strategic Plan

This strategic plan is of our regions and for our regions. Our University, its cities and regions have always been looking ahead. The spirit of looking to the future to imagine and then realise possibilities is at the essence of the University of Newcastle: our motto is 'I look ahead'

Relevant initiatives include:

New partners, new uses: Rethinking the role our campuses play, identify new partners and create new uses for our campuses that are civic-minded and attract new populations. With our new development partners and enterprise collocation, we will have greater connection and interaction with our communities, industry partners and stakeholders

Campus accessibility: Integral to the overall experience is how well we facilitate the movement within and between our campuses. Across all campuses we can deliver smart solutions to optimise and personalise the travel and transport experience. We will work with government and industry partners to explore opportunities to connect our Callaghan campus with our region in a way that hasn't existed before, through the creation of a regional transport hub

Locally, there are three public schools and one independent K-12 school within Raymond Terrace and the areas surrounding the Williamtown SAP.

Community Centres + Libraries

The central library for the Port Stephens LGA is located in Raymond Terrace (approximately 10km from the Williamtown SAP). In the areas surrounding the Williamtown SAP, there is one community hall at Williamtown, Salt Ash, and Bobs Farm Public Hall with the nearest community facility being Fern Bay Community Centre.

Cultural Facilities

The Newcastle Art Gallery and Maitland Regional Art Gallery, Newcastle Museum, Civic Theatre are the major cultural infrastructure servicing the Greater Newcastle Metropolitan area.

Located at RAAF Williamtown is the museum Fighter World that preserves and displays the history of fighter aircraft operations in the Royal Australian Air Force. Display items included aircraft parts and equipment, uniforms, photographs and memorabilia.

Murrook is used by the local Worimi people as a gathering place. The Murrook Cultural Centre is located in Williamtown and its purpose is to gather, sustain, protect and teach Aboriginal Culture to all people with an emphasis on Worimi culture being the land and people of this area. The Aboriginal Men's Shed utilise the back building at the Lakeside Sports Complex one night per week. The workshops held specialise in creative arts, metal work and wood work.

Within the surrounding area, there are a number of smaller cultural facilities, such as the Monarch Historical Museum, Sketchley Cottage and Museum and Scotty's Cinema.

Hospitals and Healthcare

John Hunter Hospital is the major trauma and teaching hospital outside Sydney and remains one of the busiest hospitals in NSW. John Hunter Hospital plays an important part in the state's network of tertiary services, serving not just its local and regional communities, but people from around NSW.

The John Hunter Health and Innovation Precinct will deliver updated and enhanced facilities providing a larger facility to meet the demands of the Greater Newcastle, Hunter New England and northern NSW Regions. The precinct will encourage partnership with key health, education and research partners from within and outside the region.

The new Maitland Hospital in Metford is expected to open in early 2022. The $470M facility to meet the growing health service needs for the surrounding communities of the Hunter Valley now and into the future. The new hospital will provide more beds and treatment spaces, including emergency care, chemotherapy chairs, surgical services, critical care, maternity services, pediatric care, cardiac, inpatient beds, mental health, rehabilitation services and outpatient clinics.

Other regional hospital and health facilities include Calvary Mater Hospital (Waratah, Newcastle LGA), Belmont Hospital (Lake Macquarie LGA). Locally, Tomaree Community Hospital, located in Nelson Bay and the Raymond Terrace Health Precinct.

Emergency Services

The Westpac Rescue Helicopters operate from one base within the Greater Newcastle area at Belmont Airport and its maintenance, engineering and administration are at Broadmeadow (Newcastle). The service is 24 hours, seven days a week and includes attendance at accident site, treat and transfer patients to hospital; transfer patients between hospitals for specialist treatment; and search and rescue. The service area extends from Sydney to Tweed Heads and Dubbo and Lighting Ridge in the West.

Locally, there are two emergency services, both located in Raymond Terrace. There is a NSW SES unit located at Raymond Terrace, and also Raymond Terrace Police Station Regionally-located emergency services have sites at Belmont, Lambton Heights, Hamilton East, Gateshead, Stockton, Metford, Maitland, and Nelson Bay.

The Kings Hill URA (GHD, March 2020) notes that *"while SES facilities are in good condition, RFS facilities are satisfactory for current requirements (Council consultation, 2019). Council has indicated that the number of volunteers joining the SES and RFS has been rising in recent years, which is partially caused by the increasing occurrence of natural disaster events, particularly flooding and bushfires and community motivation to provide assistance (Council stakeholder* 2020: 20)
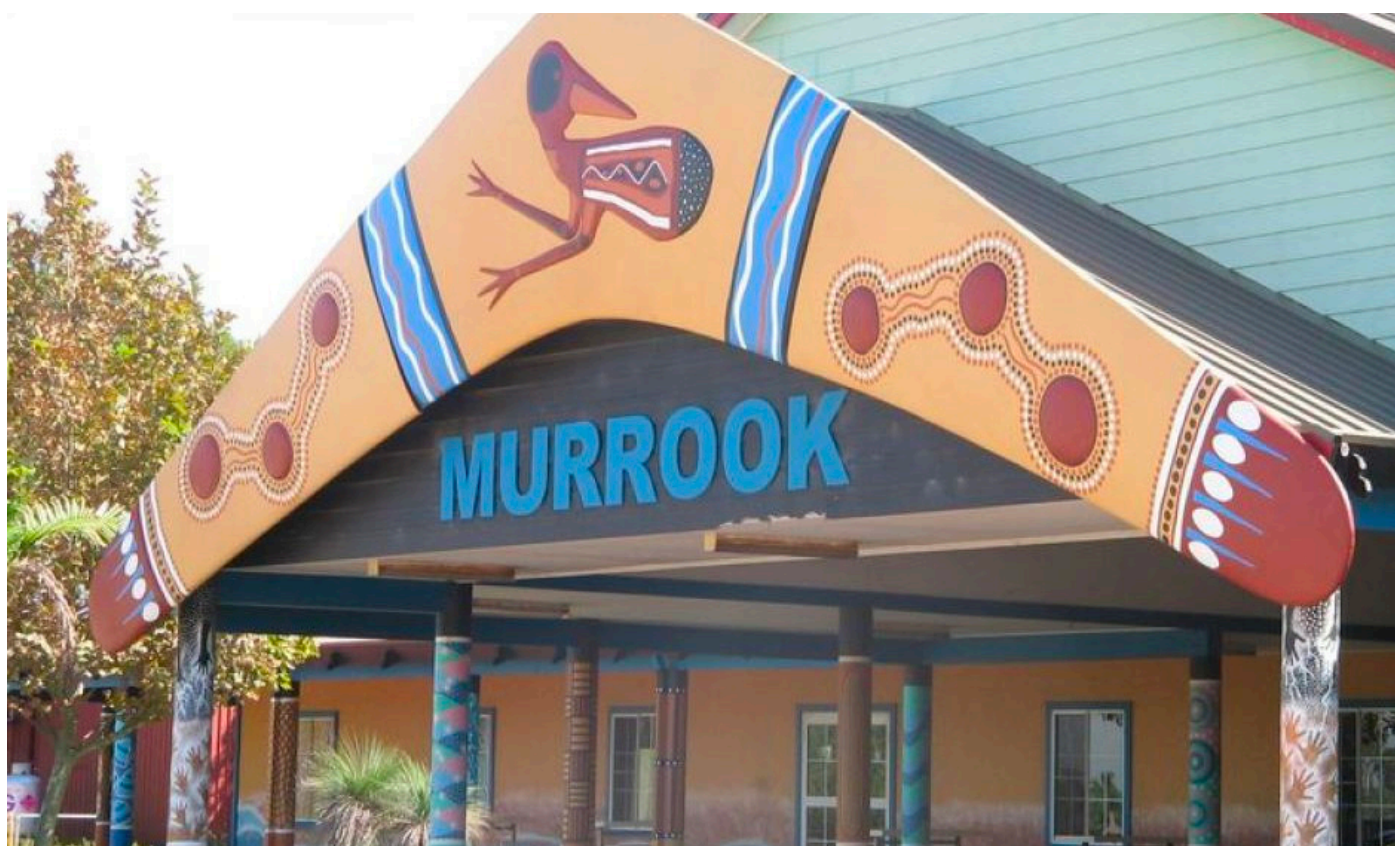

Figure 7 - Murrook Cultural Centre (source: Worimi LALC - worimi.org.au)

Audit of existing recreation, sporting and open space infrastructure

The Greater Newcastle area has a high provision of quality recreation and sporting infrastructure and open space - all which is central to the lifestyle brand of the region.

Port Stephens Council owns or manages approximately 415 hectares (ha) of recreational land. Based on the 2016 population of 69,537 (ABS Census) this equates to a provision level of 5.97 ha per 1,000 people and a future provision of 4.59 ha per 1,000 people for the projected 2036 population of 90,387.

Figures 7 and Figure 8 map the existing regional and local open space and recreation infrastructure relevant to the Williamtown SAP.

An aim of the Port Stephens Recreation Strategy (2018) is to ensure that there is a range of accessible, high-quality and highly valued recreation facilities available to everyone within the Port Stephens network. The Strategy also highlights that the design and level of innovation in Council's recreation spaces has historically been restricted due to a focus on maintenance driven results and limited capital funding.

The Strategy also notes that there is sufficient land allocated to recreation to 2036 with notable surpluses in Local and District Parks and Sportsgrounds. However there is a notable gap in the provision of basketball courts and Regional Sportsgrounds.Initial discussions with Ports Stephens Council indicated that their focus is on the upgrade of existing facilities to ensure they provide for multi-gender use responding to the increase in female participation in organised sports.

Best practise and discussions with Port Stephen Council as part of the baseline analysis indicated a preference for regional level facilities are suitably located close to large town centres. Council also noted that their program is focused on the upgrade of existing facilities and not the development of new facilities.

Parks and Open Space

Port Stephens LGA also has a large number of local parks and reserves. The quality and diversity of these spaces is another opportunity for improvement by Council. The creation of diverse landscape settings and recreational experiences will strengthen the network, with particular focus on achieving diversity within each Planning District.

Within the areas surrounding the Williamtown SAP (including Raymond Terrace and Medowie) there are 34 public parks, sportsgrounds and open spaces that are owned by Port Stephens Council. Of the 27 parks and open spaces, there is one district/regional-level sporting complex (Kings Park) with multiple sporting fields, located in Raymond Terrace.

Boomerang Park is a regional park in Raymond Terrace which has a strong nexus to the Williamtown SAP. While the park is catergorised for a regional catchment, the sports facilities are catering to a local catchment. The two sports buildings are located in the park - the dog club building and the croquet and petanque building are small social space. Other facilities located in the park are the synthetic croquet and petanque courts, a public dog off-leash areas and two rectangle fields. There are no formal sports clubs based at Boomerang Park.

Recreation and sporting Facilities

The Greater Newcastle Metropolitan Plan identifies Broadmeadow Sports and Entertainment Precinct (Hunter Park), within the Newcastle LGA as a significant regional sporting destination. Existing within this precinct is an international level football stadium and hockey complex with a district level tennis centre, showground and other sporting and recreation infrastructure. This precinct is planned to provide for regional elite and community sporting infrastructure.

Maitland Park is a regional facility offering a number of recreational experiences including an equal access regional playground, sporting fields, indoor/outdoor swimming pool with splash pad. Maitland Sportsground Complex is currently being developed into a regional sports facility. The Athletics Centre will be constructed to a regional standard and include a synthetic running track.

Within the Port Stephens LGA, the nearest major district sports complex to the Williamtown SAP is Kings Park in Raymond Terrace. The King Park Sports Complex is a large regional-level sports precinct with eight sports groups based at Kings Park. Most Raymond Terrace ovals are located at Kings Park (4x turf ovals, 1x synthetic oval, 2x fields, cricket training nets). The Vi Barnett portion of King Park includes 10x netball courts, 8x synthetic tennis courts, and athletics oval with running track and field sport facilities and cricket oval.

The Kings Hill URA Community and Recreation Infrastructure Assessment, March 2018 (GHD) notes that Council estimate that King Park sports facilities are used at 25-30% capacity (2019) partially caused by inefficient programing, inadequate floodlights and major draining and irrigation issues.
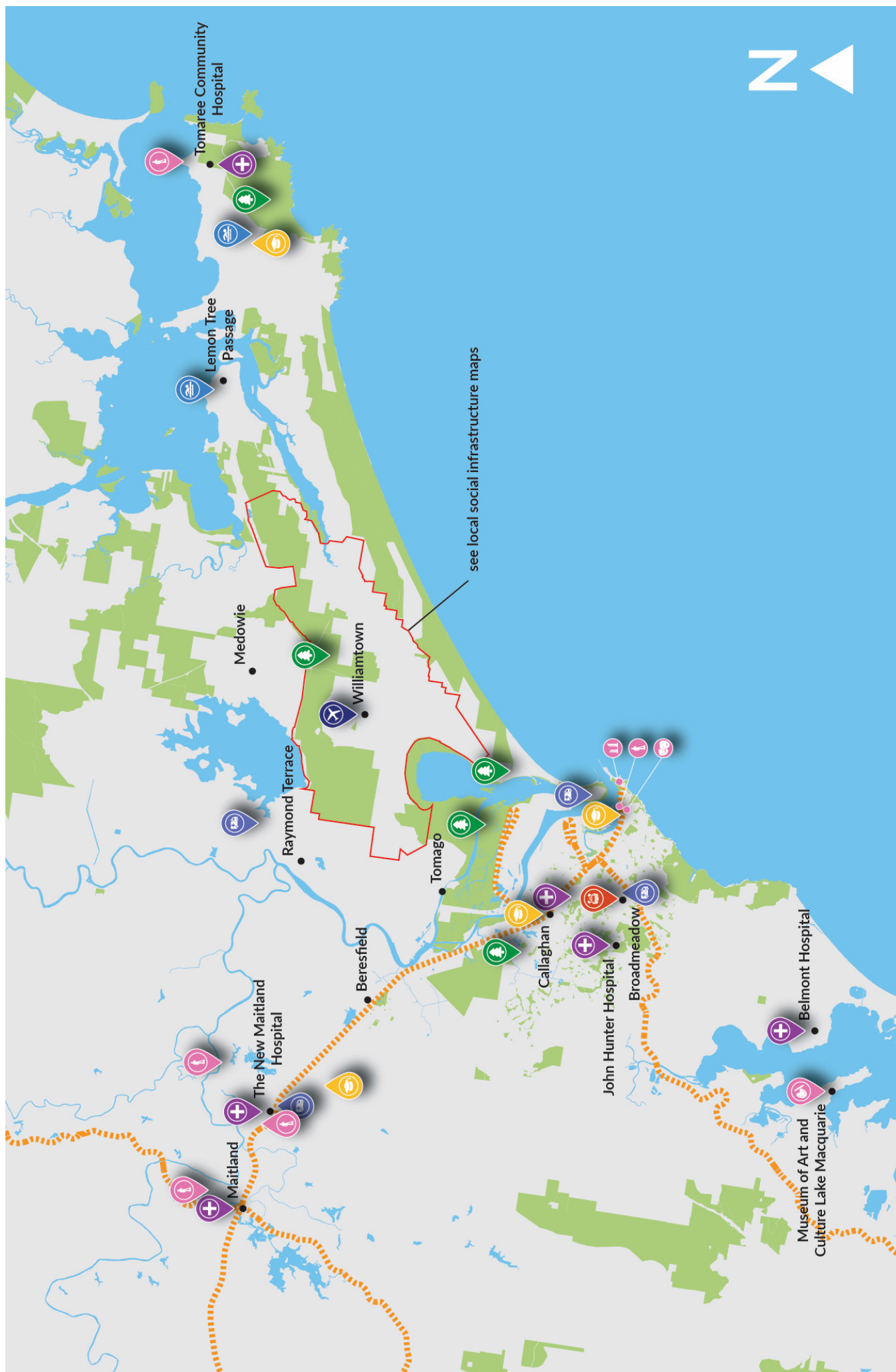
Within the areas surrounding the SAP, there are two aquatic and leisure centres and three boat ramps are located locally, at Tomago, Salt Ash and Raymond Terrace/Nelsons Plains.

Natural and Conservation Areas

There are three natural and conservation areas located around the precinct - Tilligerry State Conservation Area and Moffats Swamp Nature Reserve and Worimi Regional Park. Stockton Beach is also in proximity to the precinct. These natural assets within provide opportunities for improved connections and nature-based recreation.

Figure 8 - Social Infrastructure audit map of regional facilities across Greater Newcastle

Tomaree Community Hospital

Lemon Tree Passage

see local social infrastructure maps

Medowie

Williamtown

Raymond Terrace

Tomago

Beresfield

Callaghan

Broadmeadow

John Hunter Hospital

Belmont Hospital

The New Maitland Hospital

Maitland

Museum of Art and Culture Lake Macquarie

Please note that the red boundary on the map is the initial investigation area and the area that the infrastructure audits were conducted. This is not the final Williamtown SAP Structure Plan boundary.
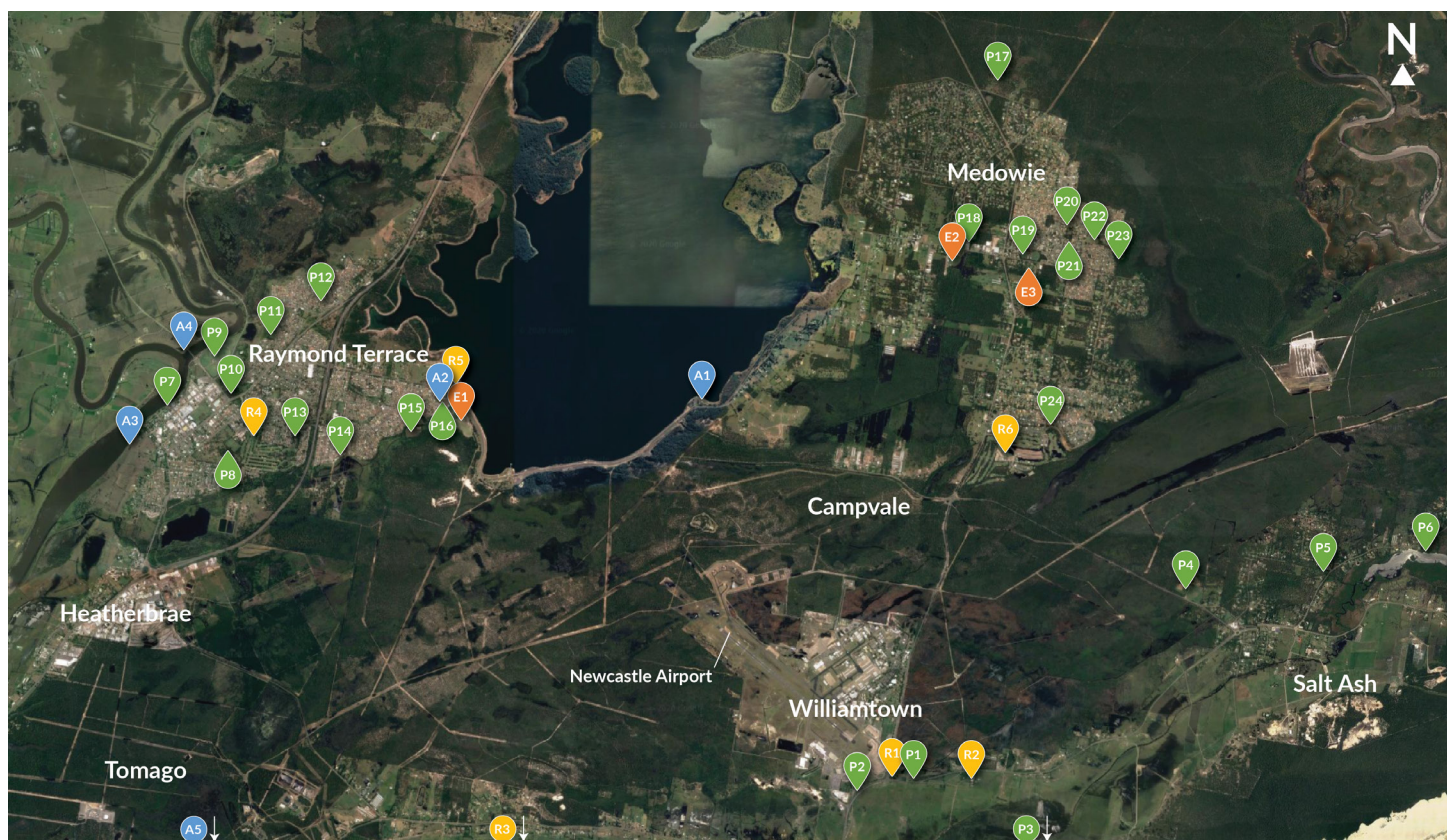
Figure 9 - Social Infrastructure audit map (local open space and recreation)

Map Ref	Name	Map Ref	Name
A1	Grahamstown Aquatic Centre	P13	Raymond Terrace On-Lead Dog Exercise Area 2
A2	Tomago Boat Ramp	P14	Raymond Terrace On-Lead Dog Exercise Area 3
A3	Old Wharf park Boat Ramp		
A4	Raymond Terrace Boat Ramp	P15	Anderson Oval On-Lead Dog Exercise Area
A5	Lakeside Leisure Centre (Aquatic)	P16	Lakeside Rugby Field
E1	Lakeside Sports Complex	P17	Bower Reserve
E2	Ferodale Sports Complex	P18	Yulong Oval
E3	Medowie Sports and Business Centre	P19	Boyd Oval
P1	Wiliamtown park	P20	Coolabah Reserve Playground
P2	Williamtown Hall	P21	Medowie On-Lead Dog Exercise Area
P3	Fern Bay Reserve	P22	Kindlebark Oval
P4	Salt Ash Sports Ground	P23	Medowie Off-Lead Dog Exercise Area
P5	Lee Thompson Park	P24	Hillside Park
P6	Old Wharf Park	R1	Newcastle OnRoad RC Car Club
P7	Riverside Park	R2	Quad Bike King Port Stephens
P8	Boomerang Park (Regional Park)	R3	Fern Bay Tennis Courts
P9	King Park Soccer Field	R4	Muree Golf Club
P10	Raymond Terrace On-Lead Dog Exercise Area 1 / Jack Johnson Trotting Park	R5	Raymond Terrace Ten Pin Bowling
P11	Raymond Terrace Off-Lead Dog Exercise Park	R6	Pacific Dunes
P12	Thomas Kearney Court		
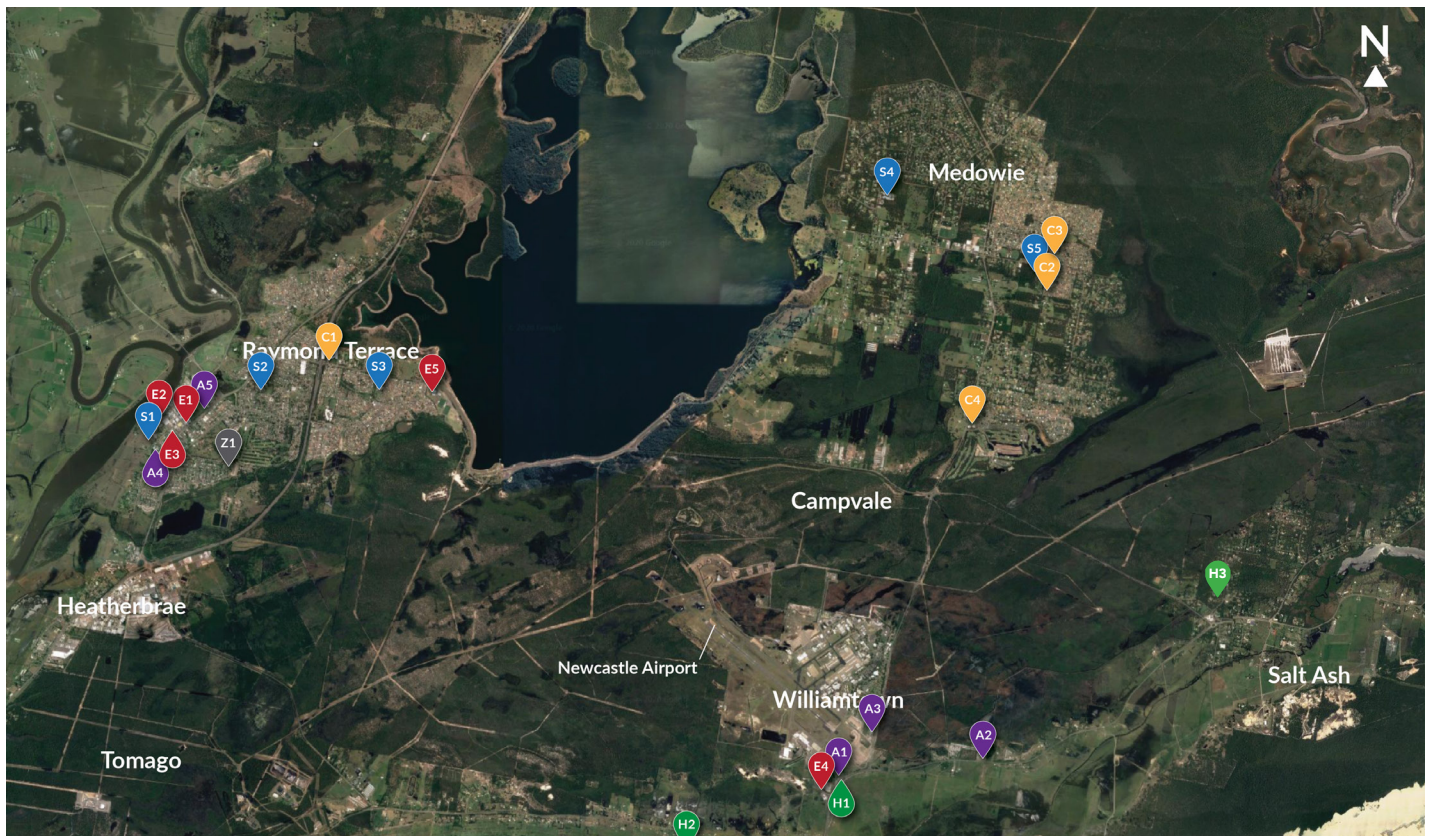
Figure 10 - Social Infrastructure audit map (local community and cultural facilities)

Map Ref	Name	Suburb
A1	The Monarch Historical Museum	Williamtown
A2	Murrook Culture Centre	Williamtown
A3	Fighter World	Williamtown
A4	Sketchley Cottage & Museum	Raymond Terrace
A5	Scotty's Cinmemas	Raymond Terrace
C1	TLC Early Learning Centre	Raymond Terrace
C2	The Medowie Gumnut Preschool	Medowie
C3	Uniting Early Learning Medowie	Medowie
C4	Kindy Patch Medowie	Medowie
E1	Raymond Terrace Police Station	Raymond Terrace
E2	Service NSW	Raymond Terrace
E3	Centrelink	Raymond Terrace
E4	Central Health Alliance	Williamtown
H1	Williamtown Public Hall	Williamtown
H2	Encantador The Riding School	Williamtown
H3	Salt Ash Community Hall	Salt Ash
S1	Raymond Terrace Public School	Raymond Terrace
S2	Irrawang Public School	Raymond Terrace
S3	Grahamstown Public School	Raymond Terrace
S4	Medowie Christian School	Medowie
S5	Wirreanda Public School	Medowie
Z1	Raymond Terrace Cemetary	Raymond Terrace

8. Social infrastructure participation trends

Community participation trends

The way that people participate in community and cultural activities has changed over time, and this influences use of communal spaces and the subsequent need for community assets. While there is no data specifically on community participation, through volunteering participation and demand for community spaces, the following trends have been identified:

There is increasingly a demand for incidental volunteering opportunities as opposed to ongoing and regular volunteering.

People are increasingly interested in activities and programs that occur after work and on weekends.

People are looking for opportunities to participate in programs where they can connect socially, build new relationships and contribute to their community.

There is increasing interest in programs and services that support capacity building, DIY and sustainability outcomes as demonstrated by the increasing number of maker spaces.

People are increasingly interested in accessing and borrowing new technologies, particularly the ones that people can't afford to buy.

People want to participate in community activities outside of the home, particularly for those of who live in high density housing.

Cultural participation trends[1]

Creativity connects us and is an important ingredient to bringing life into our regions, culture and economy and creates opportunities for connect, shared story telling and experiences for our communities contributing to building a strong sense of belonging and identity.

Research by the Australia Council for the Arts shows that the recognition importance of arts and culture is significantly cultural participation and attendance across Australia is increasing.

The results from the 'Creating Our Future: Results of the National Arts Participation Survey 2019' indicates that the significantly more Australians now recognise the range of positive impacts of arts and creativity in our lives and communities. In 2019, 84% of Australians acknowledged positive impacts, up from 75% in 2016.

The findings from the 2019 Survey show that the majority of Australians engage with the arts in some way or another, and this is equally true for people living in regional Australia. In fact, residents of regional Australia are as likely to creative participate in the arts as residents of metropolitan Australia (see Figure 2). In 2019:

- Nearly two in three (64%) regional Australians had attended a live art form such as music, theatre, dance, festivals or First Nations arts; and

- Over one in four (26%) regional Australians participated in visual arts and craft. (This was higher than Metropolitan residents at 24%).

First Nations arts are central to understanding who we are as Australians. More Australians now agree First Nations arts are an important part of Australia's culture (75%, up from 70% in 2016), though only half of Australians believe First Nations arts are well represented (51%, up from 48% in 2016).

For Williamtown SAP, there is a significant opportunity to work with the Worimi LALC and Elders to expand the activities that offer experiences to learn and understand local Aboriginal culture and to care for Country and community through continued access to songlines and significant cultural sites and important areas with the Precinct and surrounding.

Creative participation can take many forms – from artistic photography to playing an instrument; and from singing in a community choir or taking a community arts class, to more professional forms of arts creation.

The proportion of Australians who creatively participate in the arts (45%) has increased by 13 percent since 2016. This includes increased participation in visual arts and craft, music, creative writing, dance and theatre. Creative participation is particularly strong among young people, parents of children under 16 years, First Nations respondents, CALD respondents and respondents with disability.

Supporting innovation and capacity of the future workforce

New digital technologies, creative thinking and innovation are transforming industries, economies, and how we interact and expanding our reach from beyond our local places to connect with a global community. Creativity enables adaptability, experimentation and innovation.

As well as providing a platform to imagine new possibilities, investment in arts and creativity can cultivate new ideas, technologies, and cutting edge innovation; as well as fueling our talent pipeline and job growth.

Creative skills and creative thinking will be vital for the future workforce. Many agree that cultural and artistic experiences stimulate our minds and positively impact on our capacity to develop new ideas.

One in two Australians agree that the arts have a big or very big impact on building creative skills that will be necessary for the future workforce (47%). Further, one in eight Australians are motivated to attend the arts to develop skills for education, training or work (13%), including more than one in five young Australians aged 15–24 (22%) [1].

There is a significant opportunity within the Williamtown SAP to broaden and expand the existing cultural offering and aligning this to the building a national and international aerospace, defence and advanced manufacturing hub.

Figure 11 - Outdoor cinema *(source: www.whatsoninourbackyard.com.au)*

ABS survey of 'Attendance at Selected Cultural Venues and Events 2017-2018' show that:

Over **82%** of Australians attended at least one arts and cultural venue or event in the year prior, with attendance increasing since 2013-2014.

Open space and recreation participation trends

Popularity of walking on the rise

Activities done on paths and trails are popular such as walking, bush walking and running is the top recreation activity.

Individualisation of sports and fitness

Increasing individualised sport and fitness activities, with increasing participation in aerobics, running, walking and gym membership. People are fitting fitness activities into their busy lives rather than committing to regular organised sport.

Increasing demand for indoor recreation

Demand for indoor recreation is increasing for a number of reasons. One of those is increasing multi cultural communities and their sporting preferences that often can be catered for in indoor recreation facilities (e.g. basketball, futsal). Other reasons include climate comfort, safety at night and co-location with other facilities.

Increasingly time poor

People are generally spending less time recreating, but they are expecting more from their physical activity.

Casualisation of sports and recreation

Personal choice: Popular recreation activities include walking, going to a play space, relaxing in parks and casual ball sports – all activities performed solo or in small social groups.

Increasing participation of women and girls

Women and girls' decisions to engage and participate in sport, active recreation and physical activity is heavily influenced by a complex value system which fluctuates according to age and the life stage. Against the trends of participation, the number of women participating formal sports, particularly all football codes, is increasing.

Impact of climate on outdoor recreation

Climate change and increased days of extreme weather conditions is also driving up demand for indoor recreation facilities. On hot days, the use of outdoor sport and recreation facilities is limited. Whereas indoor facilities are often air conditioned, and can still support participation in sports and recreation regardless of weather (heat and rain).

Adventure sports

'Extreme' lifestyle, adventure and alternative sports are becoming more mainstream, particularly with younger generations. Examples include hiking, skateboarding, BMX and rock-climbing.

New business models for sports associations

Market pressures and new business models - Market forces are likely to exert greater pressure on sport, with loosely organised community sports associations replaced by organisations with corporate structures and more formal governance systems.

Accessible recreation

Universal access is an increasingly important issue, so everyone regardless of age, cultural background or physical ability can collectively enjoy activities. Australia has an ageing population. Providing recreation and fitness opportunities that are attractive and safe for older people will become increasingly important.

Cultural diversification

Recreational activities range from mountain biking to Tai Chi, due to a diversifying population with unique hobbies and interests.

National participation trends

The Australian Sports Commission (ASC) AusPlay survey tracks the recreation activities (both sport and non-sport physical activities) Australians participate in.

- A majority of Australians (55%) participate in sport or other physical activities at least 3 times a week. The most popular physical recreation activities were recreational walking, fitness/gym, swimming, and athletics
- Over the age of 18, sporting clubs are not the main way Australians participate in physical activity. Of the 89% of adults that participate in physical activity, 20% participate in sport based activity only, 31% in non-sport related physical activity and 38% in both
- Participation declines as age increases
- The major motivation for participation in physical activities is for physical health and fitness, followed by fun and enjoyment, and social reasons, and
- Not enough time, and poor health or injury, are the main barriers to participation.

Local participation trends

Port Stephens Recreation Strategy (2018) notes that a total of 7,400 people participated in registered club sport in the winter and summer 2016 season at Port Stephens facilities. This consisted of 4,876 junior players and 2,524 adult players. The research also noted key observations from analyzing club data was that the Tomaree Peninsula offers the greatest choice in sporting codes and like many other local areas, traditional male dominated sport, Football, AFL and rugby league, reported an increase in female membership

The top junior sports in Port Stephens are:

- Football (soccer) (28.32%)
- Netball (13.86%)
- Touch Football (13.25%).

Some of the top senior sports in Port Stephens are:

- Touch Football (30.19%).
- Football (soccer) (19.57%)
- Cricket (16.28%)

City of Newcastle Strategic Sports Plan outlines there were approximately 41,790 active participants in the sports in the LGA in 2018. Some of these could participate in more than one sport. Some of the top sports in City of Newcastle are:

- Football (soccer) (27.5%)
- Touch/ Oztag (21.1%)
- Cricket (13.1%), and
- Rugby league (10.7%).

Individual sports participation trends indicate:

- An increase in female participation across all ages in sports including AFL, baseball, cricket, and Rugby
- An overall decrease in traditional formats of sport such as athletics, cricket, and tennis.
- An increase in non-traditional format of sports. This is illustrated in the growing trend for out of Stadia athletic events such as Recreational Running Park Runs and XC and trail races; a spike in participation in modified football over the summer months; and increased interest in night-time competitions

Cessnock Recreation and Open Space Strategic Plan (2019) incorporated data from a Community Survey in 2015 that demonstrated participation preferences within the Cessnock community. It notes that a total of 216 responses were collected, and of the 216:

- Dancing was the most popular formal recreation activity (27%), followed by soccer (25%) and netball (19%).
- AFL was the least popular formal recreation activity (0%) followed by Lawn bowls (2%) and Hockey (4.41%).
- Walking was the most popular informal recreation activity (64%) followed y swimming (47%) and gardening (45%).
- Shooting was the least popular informal recreation activity (5%), followed by motorsports (6.16%) and physical activity as transport (7%).

The Maitland Recreation & Open Space Strategy (Feb 2004) utilised data from 2003 through a community-wide survey that demonstrated participation preferences within the Maitland community. Of 2,144 responses:

- 80% of respondents have participated in walking/ running for fitness and pleasure
- 68% have participated in picnicking or barbecues
- 56% have participated in swimming
- 34% have participated in team sports, and
- 33% have participated in cycling for fitness/pleasure.

Lake Macquarie City Council's Sports Facility Strategy (2015-2020) consisted of data provided by Sports Associations which captured participation numbers of sports from 2009 to 2013. This data showed that in 2013:

- Football was the most popular sport, with a 40% participation rate
- Netball was the second most popular sport, with a 16% participation rate, and
- Rugby League was the third most popular sport, with a 14% participation rate.

An estimated 19.279 people from 130+ clubs participated in organised sport in Lake Macquarie in 2013. The overall increase in organised sports participation from 2007 to 2013 was 779 people (or 4%).

9. Future Population profile + social infrastructure needs

Population and employment projections outlined in the Market Sounding and Economics Report, led by Deloitte (2021) builds on and revalidating previous, which focused primarily on defence and aerospace and freight and logistics industries.

Compared with Regional NSW, Port Stephens LGA has an ageing population, with the highest proportion of people entering retirement (60-69) making up 14.5% of Port Stephens' whole population. The area also has a significantly lower proportion of people working full-time (22.9% compared to 55.2%).

The shifting demographic profile as a result of the Williamtown SAP will shift the local demographic profile with an expected increase of young professionals, Therefore, it will be important to retain school leavers and university/TAFE graduates to the area and this may be facilitated and influenced by the SAP.

The baseline analysis to inform the structure plan identified existing and aspirational key personas that reinforce the continued and evolving objectives of the Williamtown SAP. The following key personas, along with the forecast population, provide an understanding of the future demographic profile that may evolve as a result of the SAP development and help to inform the assessment of future social infrastructure needs.

Highly skilled workers: After the working week weekend activities, including trendy brunch spots and participating in cultural, recreational and social activities is desired. With a dedicated lunch hour (12 - 2pm), they are looking for grab-and-go, cheap lunch options, as well as higher brow places for lunch with colleagues close by the office. Value quality open spaces to rest and enjoy breaks Desire easy access to and from workplace. Seeking early morning and after work activities including health and fitness programs and social work events and after work drinks. Value a sense of being part of a community, rather than being in isolation.

Defence personnel: Working in shifts around the clock, after hour activities including gym and food places are needed as well as lunch options before, during and after standard, 9-5 working hours. Desire easy access to and from workplace or may reside in on-site accommodation. Access to 'third spaces' - communal places that encourage and support people socialising and gathering are important, but more so with many on temporary or short term posting often from another city. Therefore, seeking a sense of community.

Families: Have young children and looking for child-friendly places and activities that are free/affordable as well as quality childcare and schools. Focused on health and well-being, seeking health and fitness activities and events for both children and adults. Desire cafes, restaurants and bars that are child-friendly for regular family outings but also looking for activities and social options targeted toward couples. Value quality green open spaces, urban spaces with integrated play elements, sporting facilities, parent/children social places and places to walk dogs

Students: Desire access to 'third space' - communal places that encourage and support people socialising and gathering, including residing in student style/shared accommodation as often from another city/country. Likely to use alternative modes of transport (walk, cycle, public transit) for daily life essentials, and to get to places of work, attractions and places of interest. Therefore, quality active travel routes and frequent public transit services is highly valued in deciding where to live.

Spend discretionary income on food and beverages during the day and night-time at affordable price points. Attracted to late-night restaurants, bars and weekend brunch spots. Have an irregular routine characterised by frequent time voids throughout the day, with more opportunities to use a diverse range of public open spaces that are welcoming and where they can participate in activities such as studying, socialising and relaxing and experience-based activities.

Eco-tourist: Seek to explore and learn from sustainable activities and environmental areas/organisations during the day. Highly value sustainable modes of travel, living and food production. Usually will stay in a range of accommodation depending on budget from camp sites and hostels to hotels or Airbnb accommodation and travelling mostly on foot, but also public transport, requiring effective wayfinding, frequent rest points,enjoyable walking paths and reliable transit services.

Attracted to quality green open spaces for relaxation as well as looking to be immersed in the authentic local culture and therefore seeking activities that are unique to the cultural fabric of the Precinct.

Table 3: Population and resident worker forecasts, Williamtown SAP (source TfNSW 2019 in Deloittte Analysis 2021)

	2016	2021	2026	2031	2036	2041	2046	2051	2056
Residential Population	727	749	783	810	832	866	897	909	933
Worker Population	354	350	348	343	337	340	342	334	329
Total	1,081	1,099	1,131	1,153	1,169	1,206	1,239	1,243	1,262

Table 4: Population and resident worker population scenarios, Williamtown SAP (source Deloitte Analysis 2021)

	2019	2021	2026	2031	2036	2041	2046	2051	2056
TfNSW	NA	6,100	7,400	8,200	8,700	9,000	9,300	9,500	9,700
Deloitte Base Case 1	5,800	6,200	6,700	7,000	7,500	8,000	8,400	8,800	9,300
Deloitte Base Case 2	5,800	8,000	7,400	7,900	8,800	9,100	9,400	9,800	10,200

Table 5: Summary of total projected employment growth + land area requirements for four scenarios (source Deloitte Analysis 2021)

	Employment (total jobs)				Land (Ha)			
	2019	2026 (Horizon 1)	2036 (Horizon 2)	Ultimate (Horizon 3)	2019	2026 (Horizon 1)	2036 (Horizon 2)	Ultimate (Horizon 3)
Scenario 1	5,764	8,140	10,049	11,966	9.8	53	71	83
Scenario 2	5,764	8,140	10,049	12,386	9.8	60	83	100
Scenario 3	5,764	8.191	10,277	12,693	9.8	62	86	102
Scenario 4	5,764	8.191	10,381	12,958	9.8	66	89	106

Table 6: Detailed summary of employment growth and land area requirements for Scenario 4 (source Deloitte Analysis 2021)

Industry	Description	Employment (total jobs)				Land (Ha)			
		2019	2026 (Horizon 1)	2036 (Horizon 2)	Ultimate (Horizon 3)	2019	2026 (Horizon 1)	2036 (Horizon 2)	Ultimate (Horizon 3)
Defence	Defence related	2,911	3,681	4,400	5,527	0.0	9	10	11
Defence contrators	Warehousing, workshop, manufacturing, aerospace, specialist uses	409	904	1,543	2,035	7.2	28	35	38
Local services	Storage, workshop, manufacturing	790	1,586	1,925	2,342	0.0	8	13	16
Industry	Storage, workshop, manufacturing, specialist uses (ie. secure buildings)	1,257	1,530	1,957	2,340	1.9	12	20	25
Health + Education	Office space, education training facilities	148	172	201	282	0.3	2	3	6
Amenity	Food, beverage, hotel and accommodation, recreation, sporting facility, conference facilities.	248	317	355	432	0.5	7	8	10
Total		5,764	8,191	10,381	12,958	9.8	66	89	106

Social infrastructure needs analysis for Williamtown SAP

The forecast population growth for the Port Stephens LGA is relatively small. Given the precinct's location, future role as a predominantly employment area, and proximity to the airport, the provision of social infrastructure will likely be facilities and uses that cater specific to the workers within the Precinct, or future regional facilities that are destinational and support the Greater Newcastle area.

Feedback from Port Stephens Council in the baseline analysis stage noted that currently that around the Williamtown SAP there is sufficient social infrastructure to support future service needs of existing residents and the forecast growth. They also noted a preference is for future social infrastructure to service the LGA be located in strategic centres such as Raymond Terrace.

It is important to note that benchmarking processes are not without limitation. Benchmarks take an historic approach to assumptions of future demand in calculating the quantum of community assets required. The output of population benchmarking is a numeric expression of demand, that enables the comparison of like for like infrastructure across time and geography.

Population based benchmarks are important as they often form the 'nexus' between future population and future demand for developer contributions planning. Given the aspiration for the Williamtown SAP, the social infrastructure needs assessment has been completed against Deloitte's 'Growth of non-adjacent/ancillary industries' (Scenario 4) which forecast a total of 12,958 jobs.

The needs assessment has utilised population benchmark methodology based on the population forecasts (as per Deloitte analysis 2021). However, the comparative/ precedent and best practice trends benchmarking methodology is the primary approach that has been used to understand future need given that the forecast population increase is minimal.

Event and gathering spaces

Given the location of Newcastle Airport within the Precinct, it may provide opportunities for large scale and destinational entertainment, event or sports infrastructure, particularly those not impacted by noise or those that require significant space.

Local event and gathering space provided in the Precinct will be focused on supporting the working population and be flexible to enable community use and activities on weekends, such as farmers markets and linking with the farm gate opportunities identified along the Nelson Bay Road corridor and activation of public spaces, for temporary uses as outlined in Council's LSPS (2020)

Community Facilities

Public libraries have several well-developed provision standards. These standards, or benchmarks, include those outlined by the State Library of New South Wales People Places Guidelines (revised April 2019) as well as the Guidelines, Standards and Outcome Measures for Public Libraries, developed by the Australian Public Library Alliance. The revised People Places, A guide for public library buildings in NSW benchmarks has been used for consistency with other NSW councils.

Based on the library benchmarks, the combined total forecast of 933 residents within Williamtown (TfNSW, 2019) and the maximum of 12,958 total jobs forecast within the Williamtown SAP would result in an additional demand for 190sqm of library floorspace. However, new library facilities are identified in both the Medowie and the Fern Bay and North Stockton Planning Strategies and in lieu of an on site floorspace provision, consideration should be given for a contribution to the proposed Medowie library in recognition of the future likely demand generated by workers from the development of the Williamtown SAP.

Sport and Recreation facilities

The population benchmarks for local multi-purpose courts is 1 per 10,000 residents and the provision of an indoor recreation centre is 1 per 20,000 residents. Given the Williamtown SAP is forecast to be workers only these benchmarks strictly don't apply. However, to achieve the vision and principles for Williamtown SAP and using the precedent benchmarking, the provision of 1-2 multi purpose courts would contribute to the well being of workers and create a healthy city.

The impacts of climate change and desire for workers to engage in after hours exercise, have contributed to the general trend of providing indoor recreation facilities. There is also an identified need within the Port Stephens LGA for an indoor recreation/sports facility. Given that these facilities would be to provide specifically for future workers within the precinct, it is suggested that space for a delivered and managed indoor recreation facility and multi-purpose courts.

Parks and Open Spaces

Population benchmarking and recent open space and recreation needs studies prepared by Port Stephens Council, indicates that there is adequate parks and open space within the LGA to meet the increase demand of the future development. The Williamtown SAP is located within significant natural areas which present an opportunity to be enhanced and create areas for outdoor learning, recreation and immersive environmental experiences such as bushwalking.

Analysis of the precedents shows that in all case studies, the provision of open space, trees and parks is critical to success and an important part of attracting and enhancing the lives of workers. These spaces provide places for active recreation and passive activities, for respite and thinking as well as connecting with colleagues and families to connect.

The Williamtown SAP should consider connecting the existing natural landscapes with the privately provided open space areas within the Precinct through high quality walking and cycling paths, that are safe both day and night. Initial ideas such as the green necklace would contribute to the workers well being and create an activity that would benefit the wider Port Stephens and Greater Newcastle community.

Cultural spaces

The established population benchmark for cultural spaces is 20sqm per 1000 residents. Assessment against the precedent benchmarks is that cultural activities can engage workers in participating in creative skills development and cultural activities which contribute to increased connections, team building and provide opportunities for knowledge spill and collision of ideas.

There is also a significant opportunity to contribute to the improvement and expansion of existing cultural facilities within Williamtown such as Murrook Cultural Centre and Fighter World. The reimagining of Fighter World could create a significant destinational facility as a nationally renowned transport and air travel museum, or a innovation space like Powerhouse or Questacon.

The cultural spaces also can be built within the landscape such as amphitheaters. The location of the significant RAMSAR wetlands presents the opportunity to link with the existing Hunter Wetlands at Shortland and create a new education and environmental discovery centre for learning and natural exploration for schools, eco-tourists and families.

Education

Applying a benchmark of 1 place for 40% of all children aged 0 to 4 years there are already sufficient ECEC places to service the community. This benchmark is based on the proportion of children aged 0 to 4 who attended formal education and care in 2019 as detailed in the Australian Government Productivity Commission's Report on Government Services 2020 and the forecast residential population for Williamtown.

The population benchmark indicates adequate supply to service the local Williamtown community and that future workers of the Williamtown SAP would likely utilise early education facilities close to home.

The future jobs forecasts focused on Defence workers and contractors and R&D knowledge workers. This means that there may be less demand for childcare services generated by the expected additional workers due to the temporary and short term nature of postings, and expected worker profile.

The location of childcare facilities within the Williamtown SAP is challenging with the significant noise generated by the airport and the RAAF base and specific requirementsfor child care facilties. Therefore, given these issues and the existing local provision of child care, it is not recommended that it be provided within the Williamtown SAP.

Partnerships with the University of Newcastle and TAFE for research, testing and development could provide an opportunity to connect with the existing aerospace and Defense activities and contribute to an innovative ecosystem within the Williamtown SAP. Further analysis and discussions with teritary education providers is required to determine th feasbility, size and space requirements forany future tertiary education provision within the Williamtown SAP.

University of Wollongong, ampitheatre [Image: Illawarra Mercury]

Williamtown SAP strategic planning framework

This section outlines the vision and principles for the Williamtown SAP which have been considered in the assessment of future social infrastructure needs. It also summarises the opportunities to ensure the Williamtown SAP is 'more than just an airport' or business park.

The Williamtown SAP vision and principles provide the framework by which the structure plan and the social infrastructure recommendations have been developed to ensure for those who will be working within and living nearby the Precinct are connected to Country, place and each other and inspired to create, experience and explore.

The opposite page and below outlines this strategic framework which has influenced the social infrastructure needs assessment as well as provided the matrix by which recommendations for the future social infrastructure provision within the Precinct have been developed.

10. Vision + Principles

Vision:

Williamtown SAP will be Australia's first Innovation Precinct at scale defined by symbiosis of Newcastle Airport and Defence Land and creative infrastructure solutions.

It will be achieved through a place-led approach to aerospace, defence, advanced manufacturing, emerging industries, community, connection to country and ecological urbanism and day and night activation.

It will lead and empower meaningful partnerships, tenant curation, co-design, innovation through collaboration, circular economy and resilience design and policy.

Principles:

stay + play

Optimise economic growth by delivering a mix of unique civic, cultural and recreation opportunities that are tailored to Defence families and highly skilled professionals; providing a mix of as flexible, multi purpose facilities that promote collaboration and innovation and research partnerships.

design for country + community

Create a regenerative place design process where priority is given to designing with and for country, celebrating and promoting diversity through cultural infrastructure that reflects our diverse identities, harnessing water, responding to climate, amplify greenery and tell human stories within a pattern of walkable, human scale places.

healthy city

Elevate the critical nature of health and recreation, creating a 50- 70km Williamtown Health Loop connecting to key cultural and recreation destinations at the same points as bus routes; promoting physical, cultural, environmental and mental wellbeing.

blue green grid

Stakeholder implementation of the SAP shall include strategic zoning and legislation to ensure a successful network, and will help establish the SAP as a national and international benchmark for blue green grid practices.

movement + place

Provide a truly integrated and iterative National Model for Precinct Movement and Place whereby thoroughfares are designed to attract intended business clusters and corridors whilst the land use/ sub-precinct character and degree of 'people focus' drives the thoroughfare design and location.

more than just an airport

Leverage the required advanced training structures and innovation relationships to implement a circular economy structure whereby sustainability drives the design brief, curates the tenancies and enables responsible development to occur where BAU would have otherwise prohibited.

an innovation precinct

Achieve a circular economy by becoming a global leader in resilience, achieving UNIDO certification to achieve an adaptable, cool, carbon neutral & water cycle Precinct; supported by Science, Technology, Research, Advanced Manufacturing & Aerospace & geared towards attracting global & local business, industry, research and endeavour.

11. Innovative + social infrastructure

The aim for Williamtown SAP is to ensure adequate investment in infrastructure to support job creation and economic development. At the heart of this innovation. To think outside the box as to how social infrastructure can support its grow as well as contributing to the wellbeing of workers and residential in and around the precinct and the Greater Newcastle area.

"Regional resource innovation precincts revolve around a particular resource base. Although these clusters can be in relatively remote locations, they are heavily dependent on technology and a strong commitment to research and development". (SGS 2016). According to Wagner and Storring (2016) conditions that drive successful innovation precincts include:

Critical mass: offering a density of assets (i.e. services/activities) which would cause residents, workers and visitors to stay and sit, experiencing the environment and space.

Competitive advantage: Is the sites unique context being fully utilised to leverage on the innovation district opportunity? In the case of the Williamtown SAP these assets would potentially include the natural ecosystem/conservation areas, the innovation, transportation focus of the precinct and a link to Indigenous cultural heritage.

Quality of place and character: does this (positive) user experience increase social interactions/connectivity and accelerate outcomes of innovation and collaboration.

Diversity and inclusion: does the innovation district celebrate diversity and further are inclusionary measures and means at the forefront of its delivery? Ensure the space offers equitable opportunities to all members of society and stakeholders.

Culture and collaboration: To what extent is the region and local area's existing culture strengthened by the precinct? More specifically how is the relationship between people, businesses, institutions and wider economic systems improved through the delivery of this precinct and can it create synergies at multiple scales/platforms as a ripple effect?

All of these objectives and measures are relevant to consider in the development of the final recommendations regarding the types of social infrastructure that will be required within the Williamtown SAP.

The Williamtown SAP presents the opportunity to integrate and demonstrate social infrastructure as being a fundamental part of creating a new innovation identity rather than it being a 'nice to have' for workers.

Appendix A2 provide a number of precedents and best practice case studies that have been used for the benchmarking and to think outside the box about what social infrastructure could be delivered within the Williamtown SAP that contribute to the innovation story and attraction for business. Provided below is a summary these precedents and case studies, distilled into relevant key themes.

Attracting global talent and knowledge workers is more than the job offer.

There has been a lot of research into the relationship between talent attraction and economic development. In recent years, cities and places have realised that to attract high knowledge workers and members of the creative class the offer needs to be more than the job itself.

Workers have become increasingly mobile, quality of place has become a key determinant of where people choose to live. Even cities and precincts with a wealth of employment opportunities cannot thrive if workers and residents are not given access to unique aesthetic, cultural, recreation or lifestyle offerings. Providing an authentic environment for working, living, and socialising can be the difference between choosing one location over another.

"After identifying their unique qualities, places must also craft a compelling narrative about who they are as a community. In any place it is important to find new, innovative ways to highlight local assets" *(S. Pedigo, resonanceco.com).*

Innovators Meet-up Event at The Factory Berlin Mitte [Image: Factory, Berlin]

Collision spaces creating knowledge spill and supporting business collaboration.

The design of the built environment and public spaces can create knowledge spillover by providing opportunities for social interactions among knowledge intensive workers. Providing the environment for collaboration between like-businesses, employees and the community is a key ingredient for new ideas to form and a catalyst for innovation.

In Cambridge, Massachusetts, the Cambridge Innovation Center develops entrepreneurial networks through weekly meetups and shared work spaces.

Tonsley Innovation district in Adelaide, South Australia, brings together creative individuals, business and researchers in collaborating, testing, building and growing in a flexible and supportive environment. The combination of economic, physical and networking assets provides an environment that is conductive to the sort of connections and collaborations that leads to innovation.

Tonsley is designed as a pedestrian friendly network of high quality formal and informal places for people to meet and exchange ideas, such as the award-winning Central Forest. Designers are now referring to these kinds of physical features as 'collision spaces', locations that support serendipitous encounters that can lead to the kind of knowledge spill over that feeds innovation.

Tonsley Innovation District: The MAB (top) and Central Forest (bottom) (source: www.marion.sa.gov.au/things-to-do/tonsley-innovation-district)

Creating a meeting place to connect communities

Developing a community in which workers and new residents are fully invested and engaged is beneficial for the local area, as well as being advantageous to increase global competitiveness of a precinct or city. Spaces that create opportunities for people to meet, host events, and develop initiatives and programs that sparked civic change, help to improve the community while supporting local workers and their families as well as the wider community. This in turn creates a strong local attachment beyond the job and beyond the precinct that encourages existing talent to stay and new talent to arrive.

The Australian Technology Park (ATP) located 3.5km south west of Sydney's CBD is home to media, government and financial businesses as well as the National Innovation Centre is home to a number of start ups and supporting the research and development interests of local universities. The heritage 'Locomotive Workshop' will include supermarket, fitness and entertainment uses, including popup events. Yerragbingin House (community building) includes Australia's first indigenous rooftop farm, solar panels, a community centre, a childcare centre and a gym. Within the precinct there is also a dedicated childcare centre, Basketball Court, tennis courts, outdoor ping pong table, skatepark and outdoor exercise stations, outdoor seating, and bicycle parking.

While these facilities provide for the wider Redfern and inner city community, the workers have places to meet during and after work hours, opportunities to meet and mingle, to recreate, relax and learn about local aboriginal culture.
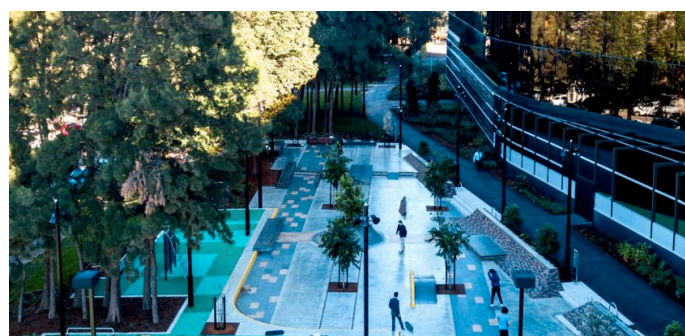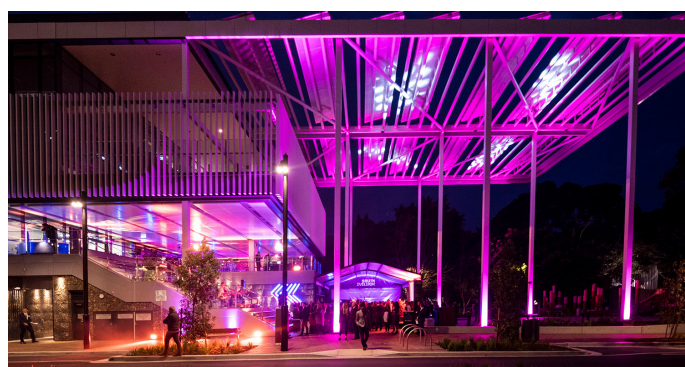
Top Photo: Event space at South Eveleigh (source: Mirvac); Bottom Photo: Australian Technology Park Skatepark (source: convic.com/projects/south-eveleigh-youth-space)

Creating connections is not just about the buildings and spaces, the coordinated management and programming plays a role. The management of Chiswick Park, a business park in London has a strong 'Enjoy-Work' philosophy. Businesses and their employees are seen as guests the "ethos is to make our Guests' lives easier [by] providing an extensive range of programs and services to make sure that our offer has the widest possible appeal".

In 2019, 75% workers engaged in 42 social events conducted. These include sport and recreational activities, open air theatre, cultural and speakers events, or classes and workshops from music to sign language and team building opportunities. According to their website, "86% of Guests believe the physical environment at Chiswick Park adds value"

The aim through this extensive programming is to provide workers with the opportunity to share experiences and "develop new skills, broaden their horizons and to helps employees network and build connections which are both personal, as well as beneficial to their employers.

Chiswick Park: Recreational activities on offer (top); The Enjoy-Work App to share experiences (bottom)

(source: https://enjoy-work.com/about)

Social infrastructure that supports innovation ecosystems

Spaces for co-working, testing, experimentation and sharing of ideas are critical to support the innovation economy.

The Kista Science City in Stockholm has scaled up the spaces for testing and experimental to provide an example of successful cross-disciplinary urban planning. Kista is Europe's largest ICT cluster and the third largest in the world.

Kista's collaboration model for urban development blurs the boundaries between the business sector, universities and the public sector. More recently, citizens, entrepreneurs, start-ups, and non-profit organizations have complemented the traditional original actors of Kista. "This recent group is assuming an increasingly crucial role for innovation and development of modern urban construction which requires modern and flexible environments in which bridges are built between individuals and institutions and where trust, participation and transparency are created between all facets of society". [1]

Within Kista Science City is the Urban ICT Arena which "aim to future-proof and be a testbed for new products, research and services that can be evaluated in a real urban environment. It provides a places that innovative companies, academia and the public sector can test, show and collaborate with a focus on is developing sustainable cities, boosting innovation and securing the jobs of tomorrow". [1]

Urban mobility projects being developed at the Urban ICT Arena and tested in real urban environments in Kista Science City
(source: https://urbanictarena.se/)

1. www.stockholmdiscovery.se/business-visits-lectures/2019/3/1/kista-science-city

Airport as a destination to stay + play, rather than just come to fly away

We traditionally think of airport precincts as places that people and freight travel through as quickly as possible. What if they could be a place for both tourists and residents and be a destination to stay and play?

The Changi Airport Precinct in Singapore provides a cohesive and immersive experience for residents and tourists alike. The airport functions as the anchor and these recreational activities that become magnets for more than those people arriving and departing from Singapore. The results in greater activation of the precinct.

The Ketam Mountain Bike Park is a 45-ha park features 10km of mountain bike trails catering to both leisure cycling and international competitions. Located around the fringe of Ketam Quarry, this re-landscaped mountain bike park also helps in nature rehabilitation, conservation and attracts local wildlife. Sun Plaza Park is a 9.6 hectare park that boasts an amphitheatre, a sense discovery garden, a beach ball court and a woodball course. Owing to the diverse and flexible programming of the place, the Plaza Park is a popular meeting place for cultural and social interactions

Creative learning + maker spaces

Learning and knowledge inspires innovation and the community of people, cluster of businesses and surrounding natural environment can spark ideas and creativity.

Fab City is a global project to develop locally productive and globally connected self-sufficient cities by 2054. The idea of a Fab City originates from the worldwide network of Fab Labs; local fabrication laboratories that use digital technologies to "make almost anything". The Campus was inhabited by students, scientists and (social) entrepreneurs, and also functioned as a big maker space: a place to collectively experiment, prototype and test new ways of creating an improved future urban environment.

Also in Amsterdam is NDSM is a former shipping wharf area in north-west Amsterdam which is used as a space for artists/exhibitions/festivals and also includes offices and student housing. **Kunststad (Art City)** houses 400+ artists, designers, architects and set designers: one of the biggest artistic incubators in The Netherlands. It also functions as a popular events location and also hosts the monthly IJ-Hallen flea market.

The Hunter Wetlands Environmental Learning Centre is a sustainable school in a RAMSAR internationally protected wetland. Forming a strong connection to the adjacent wetlands ponds and environment, it providing learning spaces focused on the local ecosystem. This is a local example of using the natural environment as an education, research and experiential opportunity.

Kunststad (Art City) NSDM, Amsterdam (source: April McCabe)

*Hunter Wetlands Environmental Learning Centre
(source: www.shac.com.au/portfolio/hunter-wetlands-environmental-learning-centre*

Social infrastructure directions + recommendations

Through the refinement of options and discussions with stakeholders and at the Enquiry by Design workshops, the type and recommended quantum of social infrastructure provision has been identified.

This section outlines the recommended social infrastructure planning directions, social infrastructure requirements, performance indicators and established precedents.

The performance indicators have been adapted from the Department of Planning and Environment's Great Public Spaces Evaluation Tool Criteria and NSW Government Architect's Designing with Country and Better Placed.

The future population generated by the Williamtown SAP is estimated to be up to 12,000 workers. The social and community infrastructure provision recommendations have been derived primarily from a comparative benchmarking approach.

The identified social and community infrastructure recommendations to support the development of a leading innovation precinct. The inclusions of social and community infrastructure are a critical element of the precinct will be a key factor in Williamtown SAP being more than just an airport or a business park.

Social infrastructure is critical to successful innovation precincts

Discussions with key stakeholders at Adelaide's Tonsley Innovation District early for the baseline analysis and various research on innovation districts has provided insights into the provision of social infrastructure that is fundamental to the factors they all identify of successful innovations precinct.

The following factors have been incorporated into the social infrastructure planning directions and in the development of social infrastructure recommendations and are as follows[1]:

- **Collaboration:** Facilities and programs to support collaboration between diverse organisations – from spaces for informal social 'collisions' through to commercial frameworks for joint ventures. This includes active networking and commercial partnerships.

- **Infrastructure:** Physical, transport and digital infrastructure that supports research, innovation activity and business connectivity within and outside of the precinct. This includes flexible facilities, services, amenities and maintenance of affordable commercial rents.

- **Amenity**: a vibrant and liveable location that attracts people to work, play and live there. It offers a sense of place for participants in the innovation ecosystem and the workers that provide ancillary services and is underpinned by flexible and adaptive land use planning regulations and well-designed local cultural infrastructure. This creates a sense of place, social interaction and inclusion through a mix of uses.

- **Strong entrepreneurial culture:** of risk-taking, collaboration and sharing ideas. This culture is supported by mentoring programs and a diversity of organisations and workers, and is influenced by the culture of the anchor institution.

- **Competitive advantage:** Clearly defined market advantage or sector specialisation that is communicated through strong branding to attract and retain talented workers and financial investment, supported by pro-productivity regulatory settings.

11. Social infrastructure planning directions

Through the baseline analysis, social and community infrastructure needs assessment and discussion with various stakeholders, the following planning principles have been developed to provide direction for the social infrastructure provision within the Williamtown SAP:

- Social infrastructure to support the needs of future workers of the precinct to support the knowledge based, R&D and innovation aspirations.

- Opportunistic, large scale and destinational social infrastructure that will contribute to the wider Greater Newcastle area and strength the local culture, place character and quality of place (ie. events, festivals, entertainment and sport).

- Social interactions between workers—essential to collaboration, learning, and inspiration—occur in concentrated "social infrastructure hot spots" co-located within the central location which will differentiate between a "buzzing" district from a ordinary one and contributes to building community.

- Create opportunities for people to connect with the surrounding natural landscape and provide immersive and learning experiences.

- Create various common gathering spaces (sizes, types of spaces, indoor/outdoor, passive/active) within the Precinct that enables workers, defence families and the community to meet and connect.

- Create opportunistic 'collision spaces' for knowledge spill and sharing of idea that is centrally located to enable workers from different businesses to meet.

- Considering streets as shared spaces also increases the public space available for events and community activities.

- Partner with the Worimi LALC, Elders, knowledge holders and community to care for and design with Country, support opportunities to share knowledge and where appropriate integrate the cultural importance and stories throughout the precinct

- Contribute to the improvement and expansion of existing social infrastructure within the surrounding Port Stephens LGA that future workers of the Williamtown SAP may increase demand on and utilise, particularly in Raymond Terrace and Meadowie.

- Programming a range of activities - across the precinct, both indoor and out - will help grow skills, strengthen and build business, worker and ideas networks is key to a strong innovation ecosystem.

- Publicly accessible spaces and facilities invited open up the precinct to the wider Port Stephens community into the Williamtown SAP, its stories, spaces and ideas. By being inviting and generous, good relationships with the local community can be built as well as contributing to their wellbeing as well as the precinct workers.

- Large-scale investments set the foundation upon which other activities can be layered, while short-term, community-led processes and provision of social infrastructure - both permanent and temporary - can inform bigger and lengthier undertakings and create crucial momentum[2].

1. NSW Innovation and Productivity Council (2018) 'NSW Innovation Precincts. Lessons from international experience'

2. Julie Wagner, Scott Andes, Steve Davies, Nathan Storring, and Jennifer S. Vey (2017) "12 Principles guiding innovation districts" accessed https://www.giid.org/12-principles-guiding-innovation-districts/

10. Social infrastructure recommendations, performance indicators + precedents

This section outlines the reecommended social infrastructure requirements to support the future development of a leading innovation precinct and align to the overall vision and principles for the Williamtown SAP and the social infrastructure planning directions.

Northern Precinct

Community and cultural spaces
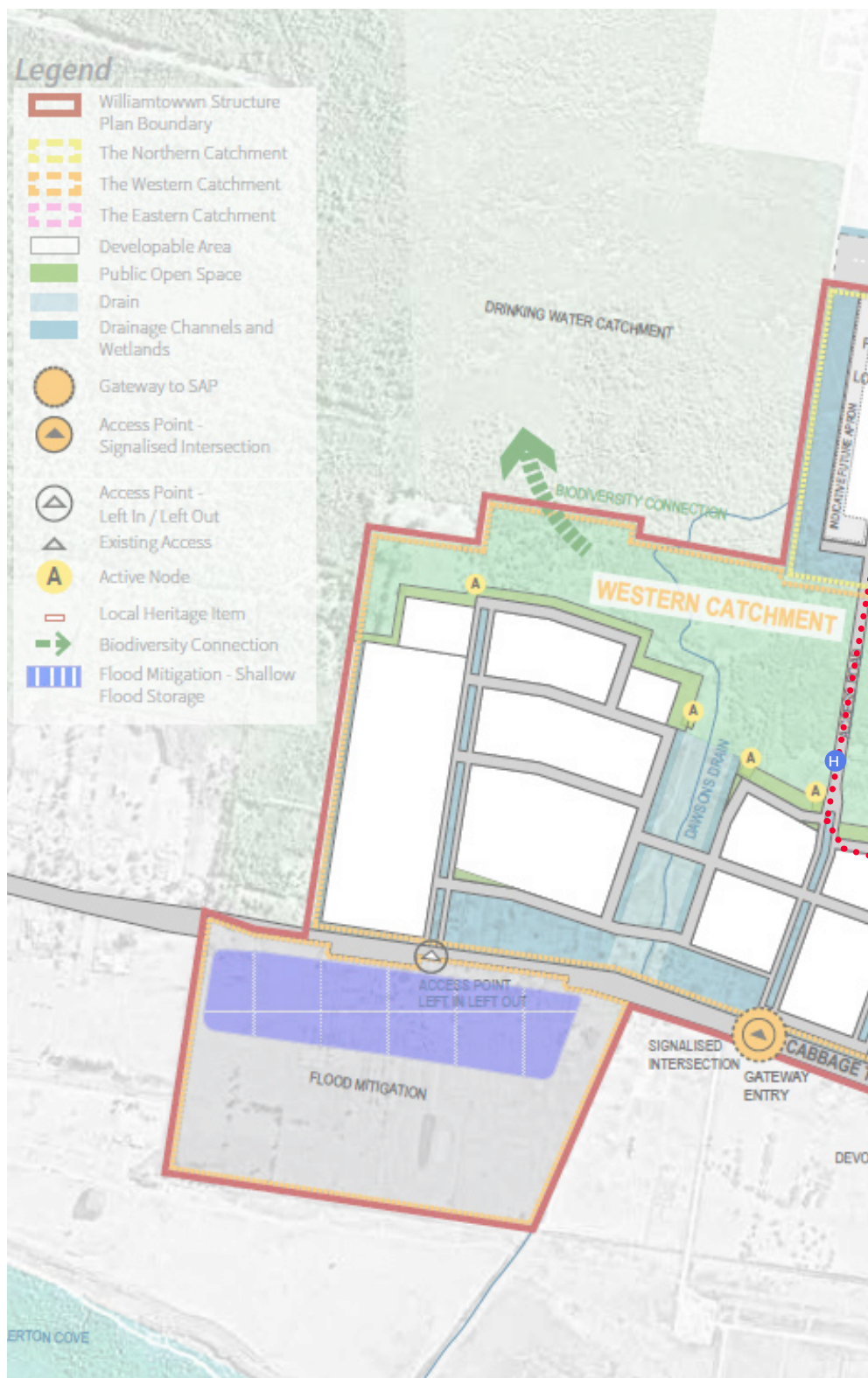
A   Transport/Aerospace/Science museum + event space

B   Central community hub + community meetings spaces

C   Small community/cultural space (relationship to Keeping Place)

D   Indoor/outdoor meeting, 'collision' and gathering spaces

Open space and recreation

E   Active recreation spaces - outdoor courts + sport/recreation field

F   Outdoor learning spaces connected to the environmental + cultural place story

G   Walking + cycling 'health loop' (Stage 1) connecting the active nodes

Western + Eastern Precincts

H   Walking + cycling 'health loop' (Stage 2)

I   New 'Gateway' Park (+ Devon House setting)

J   Future start up and community spaces

K   Indoor recreation centre/indoor courts

M   Outdoor fitness stations along the 'health loop'

L   Outdoor learning 'pods' along the 'health loop'

Legend

Williamtowwn Structure Plan Boundary
The Northern Catchment
The Western Catchment
The Eastern Catchment
Developable Area
Public Open Space
Drain
Drainage Channels and Wetlands
Gateway to SAP
Access Point - Signalised Intersection
Access Point - Left In / Left Out
Existing Access
Active Node
Local Heritage Item
Biodiversity Connection
Flood Mitigation - Shallow Flood Storage

RAAF BASE WILLIAMTOWN

FUTURE TAXWAY

FREIGHT AND LOGISTICS

NORTHERN CATCHMENT

STRUCTURE PLAN BOUNDARY

NEWCASTLE AIRPORT

P

P

P

P

MEDOWIE ROAD

RESEARCH AND DEVELOPMENT

A
D

COMMERCIAL CENTRE

A
B

D
A

G

FREIGHT LOGISTICS EXPRESS

EXISTING ACCESS

F

A
E

ENVIRONMENTAL PROTECTION AREA

EASTERN CATCHMENT

C
A

"THE KEEPS PLACE"

F
A

ACCESS TO FREIGHT AND LOGISTICS

WILLIAMTOWN DRIVE

SIGNALISED INTERSECTION GATEWAY ENTRY

A

A

M

A

L

A

A

NELSON BAY ROAD

K

J

LEARY'S DRAIN

SIGNALISED INTERSECTION

ST SAVIOUR'S ANGLICAN CHURCH

EXISTING ROUNDABOUT

I

TREE RD

NELSON BAY ROAD ALIGNM

LAVIS LANE

N HOUSE

ACCESS POINT LEFT IN LEFT OUT

FLOOD MITIGATION

Scale
1:5000 @ A1

N

0   1   2   3   4   5

The aim of social infrastructure throughout the Williamtown SAP is to provide high quality amenities to support workers, provide community benefit to the surrounding residential areas and create opportunities and reasons for international, domestic and local visitors to stay and play.

Innovation precincts take time to develop and need a variety of social spaces and infrastructure supported by curated programs to facilitate a strong a well-functioning innovation ecosystem and social fabric.

The expanded network of active nodes is programed to offer a variety of breakout spaces and social infrastructure elements, all intended to play a different role within the Precinct depending on location, proposed adjacent land uses and features of landscape.

The commercial centre is intended to be the heart or central meeting place of the Northern precinct - a 'sticky' place that draws people from their individual offices to meet, gather, relax and collaborate. Along with social infrastructure, it would also provide 'everyday' convenience retail, food and beverage for workers both day and night.

To maximise the connection of the Williamtown SAP to the existing communities and creating opportunities for workers to feel part of and participate in the Port Stephens community. Consideration has also been given to how the development of the Williamtown SAP can contribute to the embellishment and expansion of existing Council-owned facilities located in Williamtown, Salt Ash, Raymond Terrace and Medowie.

Northern Precinct

Proposed SI	SI type	Size	Description + rationale	Opportunities
Expanded transport/ science museum (Map ref: A)	Cultural	approx. 10,000-15,000m^2	Opportunity for Fighter World to become a larger transport and/or science museum that provides for learning and discovery around the aerospace, innovation and transport theme. This size is based on precedent benchmarks This space could also link to businesses within the precinct to showcase their ideas and innovations. It also adds value to the already strong tourist offer within the Port Stephens LGA. . Opportunities for aircraft viewing which are currently a drawcard of the existing Fighterworld location could utilise the rooftop of the museum. Feedback from staekholders is that if this facility is to expand and find a place in the SAP, it would be desirable that they are located outside the black noise zone, because volunteer staff can be inside most of the day where they are being exposed to aircraft noise of unacceptable levels.	This could include exhibition and presentation space, conference and event space, cafe and other ancillary activities catering for locals, domestic and international tourists, school groups, students. Destinational event, entertainment, cultural (ie. festival) spaces, taking advantage of Newcastle airport. This also could allow for large scale cultural and creative production spaces. It should be noted that currently Fighterworld is volunteer-based, and their funding streams are limited.
Central community hub (Map ref: B)	Community	1,000-1,500m^2	Provision of a central community hub, multi use 'collision' or gathering space which could be used as cultural, event or to have a central prototyping/experimentation space that brings the different R&D businesses together to collaborate. Suggest that it be co-located with open space. Provide for both hard and soft surfaces, spaces that can be used both day and night, communal gathering spaces, outdoor work stations and spaces for lunch.	Power outlets and wifi in the public spaces for temporary events and things like food trucks, markets, stages and music. Farmers markets and linking with the farm gate opportunities identified along the Nelson Bay Road corridor and activation of public spaces, for temporary uses as outlined in Council's LSPS (2020) See Tonsley Innovation District and NDSM Wharf case study.
Community meeting (Map ref: B)	Community /Health / Education	250m^2 approx. 4 rooms total	Located within the commercial centre community hub, these flexible rooms/ spaces provide for a variety of community uses such as meeting space, local pop-up/ temporary health consulting space, and program delivery space.	These spaces could also support local for businesses and employees to host workshops, meet ups and collaboration.

Opportunities cross the Williamtown SAP:

- Public art that generously responds the its context, and reflects the various stories, history, culture, local character and aspirations of Williamtown and the wider area

- Individual buildings are expected to provide private communal spaces for their employees within the business, while the public spaces intend to encourage interaction across all businesses within the Precinct.

- The active nodes and public spaces should as a minimum provide hard and soft surfaces for passive and active recreation, spaces for use both day and night, communal spaces for gathering and intimate spaces for work and reflection, seating, tables, shade (natural and built), wifi and power for temporary activities.

- The future worker population of the Williamtown SAP does generated a demand for 190sqm of library floorspace. However, new library facilities are identified in both the Medowie and the Fern Bay and North Stockton Planning Strategies. Therefore, consideration could be given for a contribution to the proposed Medowie library in lieu of an on site floorspace provision to respond to the demand generated by the future workers.

- Seek opportunities to provide temporary gathering, event and community spaces, especially as the Williamtown SAP develops over the next 20-40 years.

Proposed SI	SI type	Size	Description + rationale	Opportunities
Start up active node (Map ref: C)	Cultural/ Community	up to 1000m²	Given the location of this site at the gateway to the Precinct and at the edge of the Keeping Place, uses should reflect the place story. Could include a cafe, start up/ business space to support local Aboriginal businesses and employment.	Design in partnership with the Worimi LALC and community to support local Aboriginal employment and businesses.
Collision Spaces and nodes (Map ref: D)	Community	up to 1,000m²	Located within the smaller activity nodes, these become localised central meeting points for the surrounding offices and workers. Providing an outdoor space to sit, work, rest and get away from the desk is important to the wellbeing and productivity of employees. These spaces form part of the overall activity node network throughout the Precinct.	It is important that these space remain publicly accessible and provide an alternative space to any meeting/collaboration spaces provided within individual buildings.
Active green node (Map ref: E)	Park	Minimum 0.3ha	Based on the benchmarked minimum space for a local park, this provides active outdoor space for use by workers during the week and Defense personnel temporary posted on the nearby RAAF Base on weekends. Also consider the location of 2 multi use courts - (approx. 0.1-0.2 ha total) which could be used for a variety of sport.	This space could also be used as an outdoor event space. Power outlets and wifi in the public spaces for temporary events and things like food trucks, markets, stages and music.
Outdoor knowledge + learning node (Map ref: F)	Education	up to 1,000m²	The outdoor 'classroom' spaces at the edge of the wetland/environmental protection area and Keeping Place. These spaces would be suitable for use by groups of different sizes to work on collaborative projects; and to allow for an immersive learning about the significant wetland and environmental significance within the Precinct and to connect with Country and increase cultural understanding and learning. These spaces could be connect by boardwalks and provide platforms to view and protect and sensitive cultural and environmental areas, such as platforms to provide viewing points to the Stockton Dunes and the wetland areas.	Provide outdoor work stations or individual learning pods and spaces for lunch. Also consider the integration of community gardens for workers to access through the day and as part of the overall sustainability of the precinct.
Health Loop (Map ref: G)	Recreation links	NA	This also provides a walkable network for workers and visitors to easily move throughout the Precinct and access different areas by foot or by bike.	The local streets are an important part of creating continuous walking and cycle paths throughout the precinct and should be designed within people in mind

Eastern + Western Precinct

	SI type	Size	Rationale	Opportunities
Health Loop (Map ref: H)	Recreation links	NA	Creation of an active walking, cycling and running tracks around the edge of the environmental corridor, connected to walking and cycling paths throughout the precinct and into regional walking/cycling routes.	This also provides a walkable network for workers and visitors to easily move throughout the Precinct and access different areas by foot or by bike.
Gateway Park (Map ref: I)	Park	approx. 0.3-0.5ha	Provision of a new 'Gateway Park' integrate and enhances the setting of the heritage listed Devon House creating a sense of arrive to the mixed use centre with the precinct.\n\nIt would also support a quality, healthy and collaborative environment at lunchtime and before work for workers in the south of the Precinct and provide a variety of amenities	Design into the landscape, outdoor amphitheatre space at the edge of the mixed use and environ precinct for passive, individual and group activities as well as informal and formal uses such as events.
Small community hub (Map ref: J)	Community	500-1000m^2	Depending on the future development of this sub-precinct as a secondary mixed use centre, some provision for communal gathering spaces, outdoor work stations, spaces for lunch and after work and community meeting spaces would contribute to its activiation and to service the businesses in the southern part of the Precinct.	This could also include cafes, start up spaces, creative production spaces and some small food and beverage offerings.
Indoor recreation (Map ref: K)	Recreation	approx. 4,500m^2	This facility would serve a district catchment given the lack of indoor sport and recreation facilities within the LGA. This facility would cater to the recreation needs of both workers within the precinct as well as the wider Port Stephens community and should be privately managed and provide flexible, multi-use courts and space for a range of activities and ages.	Consider a destinational recreation facility, such a BMX racing and Pump track
Outdoor fitness stations (Map ref: L)	Recreation	1-2 per space	Provision within open spaces of outdoor gym/exercise equipment within open spaces and along the 'Health Loop' to create an exercise circuit. This responds to the forecast worker population and worker profile supporting exercise before, after and during lunchtime.	
Outdoor learning pods (Map ref: M)	Education	up to 100m^2	A series of connected learning pods throughout Precinct suitable for use by both individuals and groups of different sizes for private work, to socialise, or to work on collaborative projects; and to allow for an immersive learning. They should also provide seating, shaded areas, wifi and using planting and natural features to create intimate spaces for reflection and respite.	These pods could incorporate public art and story telling opportunities to reveal the place narrative along the health loop.

University of Wollongong, outdoor learning space and place for respite [Image: Illawarra Mercury]

Outdoor 'solardome' classroom in UK [Image: Solar Done Industries)

Social infrastructure performance indicators + precedents

The following performance indicators have been developed from the DPIE Great Public Spaces Evaluation Tool Criteria and the precedent benchmarking analysis to achieve the desired outcomes for the Williamtown SAP. All indicators have been categorised under the SAP principles.

Precedent examples have also been included to illustrate best practice and what could be possible within the Williamtown SAP. These case studies along with others are provided in Appendix A2.

stay + play

Performance Indicators

- The facilities and spaces encourage positive social interactions or individual experiences e.g. talking, casual or planned

- People with a diversity of ages, genders, cultural or ethnic backgrounds are using the public space

- People have the facilities they need to stay e.g. end of trip facilities or drinking water

- There is a choice of places or features to safely sit, play, thrive and relax

- There are social or cultural activities appropriate to the space and audience (i.e. programmed activities or events

- People can meet and socialise, and it is a positive place that people want to stay.

healthy city

Performance Indicators

- Well designed, visually attractive with scenic qualities

- The public space is lit at night and has clear sight lines and good visibility

- A range of comfortable places to sit, stay or relax and amenities are provided

- There are enough trees, grass and plants to make the public space shaded and comfortable

- A range of things to do in the facilities and space including exercise, recreation, play, meeting, gathering, knowledge sharing and/or learning opportunities

- Connect natural areas and waterways to support habitat and biodiversity in urban areas & connect people to nature

- People find it easy and pleasant to get to the public space, through a network of paths, streets, public transport and signage - success of the precinct should be measured by foot steps not vehicle kilometres.

EXPLORATORIUM, SAN FRANSISCO
Discovery + experiential learning spaces

Brings together art and science as complementary ways of exploring the world,through the artists and scientists that work alongside each other in envisioning new ideas and directions for the museum and its programs. It supports a culture of experimentation and collaboration, inspire curiosity understanding, and stimulates new ideas.

source: www.exploratorium.edu

THE GREENWAY, INNER WEST
Environmental and active travel corridor

The GreenWay is a 5.8km environmental and active travel corridor linking the Cooks River at Earlwood with the Parramatta River at Iron Cove. It features bike paths and foreshore walks, cultural and historical sites, cafes, bushcare sites and a range of parks, playgrounds and sporting facilities.
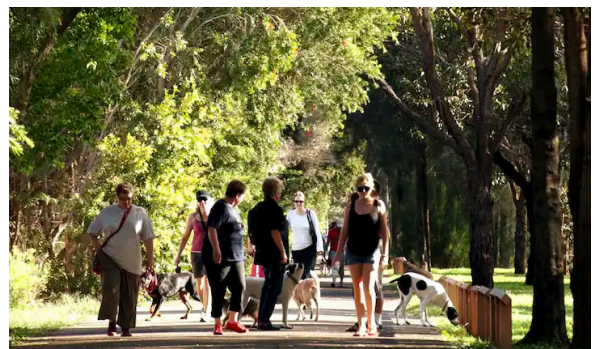
source: www.innerwest.nsw.gov.au/live/environment-and-sustainability/in-your-neighbourhood/bushland-parks-and-verges/greenway

design for country + community

Performance Indicators

- The public space feels welcoming with a sense of belonging and you feel encouraged to return

- There are local stories of significance (First Peoples, historic, cultural) told and celebrated in the public space and through the built environment and the activities

- Designed and developed in partnership with the Worimi people and surrounding local communities (workers and local residents)

- There is an interesting atmosphere and informal activities e.g. people watching, arts and cultural activations as well as organised/formal community, cultural, performance or creative activations

- People can easily access the space through multiple entrances and the majority of the space is publicly accessible

- There is evidence of community stewardship and/or the facilities and space are well-loved and well attended for its function

- Co-design of engagement processes with community on Country and embed Connecting with Country design principles within the design of the precinct.

- Future use of the precinct enables Traditional Custodians continue practices on Country

YERRABINGI ROOFTOP FARM
World first Indigenous rooftop farm

Built on the 500sqm rooftop space of an office building, the Rooftop Farm uses principles of Indigenous knowledge, collaborative design and permaculture, with over 2,000 edible, medicinal and culturally significant plant grown. This cultural community garden, is one of only a few sites in Australia that focuses on sharing Aboriginal culture and delivering environmentally conscious native landscapes and place making designs enriched with Indigenous narratives.

source: www.yerrabingin.com.au

NDSM WHARF, AMSTERDAM
Revitalising old world industrial to new world creative

NDSM is a former shipping wharf area in north-west Amsterdam which is used as a space for artists/exhibitions/festivals and also includes offices and student housing. The main building has been a large exhibition space and houses 400+ artists, designers, architects and set designers: one of the biggest artistic incubators in The Netherlands. The precinct also provides museum and gallery spaces (both inside and outside), co-working and affordable studio space, event and entertainment spaces.
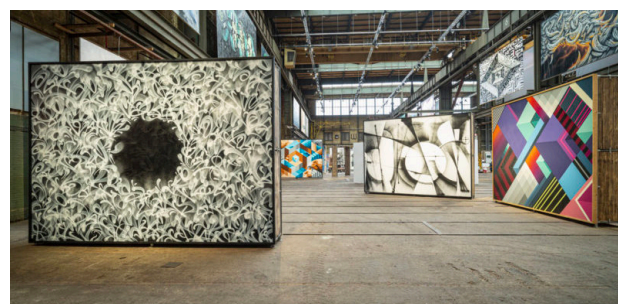
source: www.ndsm.nl/en/

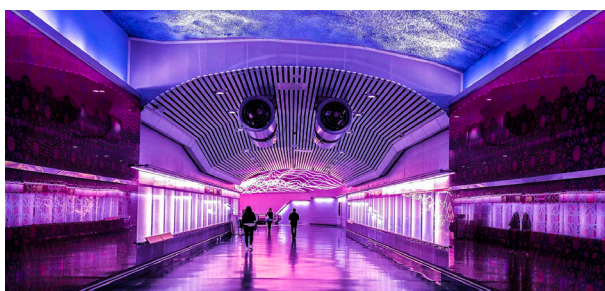# an innovation precinct +
more than just an airport

Performance Indicators

- Create an interconnected network of public spaces that is multi functional, flexible and versatile

- People are able to connect with each other in both a commercial and non-commercial settings

- The facilities and spaces encourage positive social interactions or individual experiences (e.g. casual or planned) as well as the collision of knowledge and ideas within a professional setting

- Space and facilities provide for the needs of workers before, after and during work hours, for meeting, sharing ideas and inspiring innovation.

- Programming a range of activities contributes to the creation of a strong innovation ecosystem.

TONSLEY INNOVATION DISTRICT
Collision space + knowledge spill = Innovation

A 61-hectare site located 10km south of Adelaide, the combination of economic, physical and networking assets at Tonsley Innovation District provides an environment that is conductive to the sort of connections and collaborations that leads to innovation. The buildings, spaces and infrastructure are organised to enable and encourage collaboration and innovation through the pedestrian friendly network of high quality formal and informal places for people to meet and exchange ideas.

source: www.marion.sa.gov.au/things-to-do/tonsley-innovation-district

KISTA SCIENCE CITY SWEDEN
Testbed for smart urban ideas + applications

The precinct is located 10kms north of the Stockholm City Centre, providing a physical space for innovation and collaboration between business, public sector and academia. The precinct operates as an open urban test beds where sensors, hardware and software can be tested for real. Located next to university, the precinct encourages research and innovation. Office spaces, co-working spaces, meeting rooms and open floor and more flexible spaces are available to suit different needs.

source: kista.com/english/

CHANGI RECREATION PRECINCT
A place to stay + play, not just to fly away

The Changi Airport Precinct brings together surrounding historical landmarks, nature, food and retail into a cohesive and immersive experience for residents and tourists alike, including a 45-ha park features 10km of mountain bike trails for leisure cycling and international competitions. The airport functions as the anchor that activates the areas around, which in turn become their magnets resulting in collective activation of the precinct.

source: ura.gov.sg/Corporate/Planning/Master-Plan/Urban-Transformations/Changi-Region

Appendix

A1: Approved population benchmarks

The following population benchmarks to determine regional, district and local needs for future residents and workers within the Williamtown SAP have been determined from a variety of sources and through the early reporting stage of this project were reviewed by Port Stephens Council and DPE.

FACILITY	BENCHMARK		SOURCE
Libraries 21st century libraries include: (list from definitions) - Flagship library - Co-located community library - Branch library - Digital library - Floating flexible outreach library - Pop up temporary tryouts	**Central or Flagship**		Benchmark based on State Library of New South Wales as well as the 'Guidelines, Standards and Outcome Measures for Australian Public Libraries' developed by the Australian Public Library Alliance and Information Association, 2016
	Rate of provision 1:100,000 +	Approximate GFA 28m2 per 1,000 people Plus 20% circulation	
	District or Branch		
	Rates of provision 1:20,000-35,000	Approximate GFA 39m2 per 1,000 people plus 20% circulation space	
	Rate of provision 1:35,000-65,000	Approximate GFA 35m2 per 1,000 people plus 20% circulation space	
Community Spaces - Multipurpose community hubs - Community centres - Halls - Meeting rooms - Subsidised office space/Centralised services hubs - Guide and scout halls - Surf life saving clubs	**Total community facility floors pace**		• City of Parramatta Community Infrastructure Strategy 2019 • Wollongong Social infrastructure 2018 • Growth Centre Commission • Kings Hill URA Community and Recreation Study March 2020 (GHD)
	Rate of provision 80m2 per 1,000 people across all community spaces		
	District (multipurpose community hub)		
	Rate of provision 1 per 30,000 to 50,000 people		
	Local		
	Rate of provision: 1 per 20,000 people		
	Target group specific		
	Delivered as part of multipurpose hubs. Rate of provision - 1: 15,000 to 20,000 people		
	Delivered as part of multipurpose hubs Rate of provision - 1:3,000 young people aged 12 to 17 years)		
Emergency Services - RFS - SES	No benchmark. The future requirements for emergency services facilities should be based on consultation as part of the detailed design and masterplanning stages.		Kings Hill URA Community and Recreation Study March 2020 (GHD)

FACILITY	BENCHMARK		SOURCE
Arts and cultural facilities Arts and cultural facilities includes the sub-sets of: • Performance & exhibition (museum, theatres, gallery, live music) • Cultural participation space (creative arts centre, maker spaces, men's sheds) • Festival, event space (purpose built space for events) • Practice, education & development space). (artists studios, cultural production space, art schools).	**Total cultural floor space**		
	20m² per 1,000 people		Wollongong Community Infrastructure Strategy
	Regional arts and cultural facility Rate of provision 1 per 150,000 people		Shoalhaven Community Infrastructure Strategy, 2017
	District arts and cultural facility Rate of provision 1 per 60,000 people		City of Newcastle Benchmark
	Local arts and cultural facility Rate of provision 1 per 30,000 people		Kings Hill URA Community and Recreation Study March 2020 (GHD)
Early childhood education and care - Long day care - Preschool - Out of School Hours Care	**Children aged under 5 years (Long Day Care and Preschool)**		Kings Park Hill Community and Recreation Study March 2020 (GHD)
	1 place per 5 children aged 0-4 years 1 place per 2 children aged 2-5 years		
	Children aged 5 to 12 years (out of School Hours Care)		
	1 place per 2 children aged 5-11 years		
State Government Services			
Hospital beds	Regional 3:1,000 people		Growth Centres Commission
Police stations	District 1 police station for every 20,000 people (4,000m2 for first 10 years)		
Ambulance station	Regional 1:20,000 people (to accommodate 12 ambulances)		
Primary schools	NSW Department of Education determines needs for school places based on capacity analysis		NSW Department of Education
High schools	NSW Department of Education determines needs for school places based on capacity analysis		
Tertiary	No accepted benchmarks		

PARKS AND OPEN SPACE	BENCHMARK	SOURCE
Parkland by function - Public parkland - Sports space - Linkage - Waterways - Natural space - Civic/urban - Showground	Regional: 0.25ha per 1,000 people LGA wide (up to 45mins drive)	Kings Hill URA Community and Recreation Study March 2020 (GHD) Port Stephens Recreation Strategy 2018
	District: 0.6ha per 1,000 people Ideally within 10km of residents (up to 20min drive) District parks should be 1.5 to 10 hectares and should be generally regular in shape preferably not less than 50m wide.	
	Local: 0.4ha per 1,000 people Ideally within 500 metres of residents (walkable catchment proximity, up to 10min walk) Recommended minimum of 0.3ha new local park	
Greenfield areas (new release)	2.83ha per 1,000 people Quantum of open space: 60% active (sporfields/courts etc) and 40% passive - active includes sportsfields/courts and possible indoor recreation courts/pools	Growth Centres Commission GANSW Greener Places recreation guide
High density/urban areas (new development)	- 20% of locale is dedicated as open space - 200m distance to nearest local open space	City of Parramatta Community Infrastructure Strategy, 2020

FACILITY	BENCHMARK	SOURCE
Sports fields (only for facilities that reach threshold)	District - 0.6ha per 1,000 persons Regional - 0.96ha per 1,000 persons Cricket - 1 oval per 4,000 people Soccer - 1 field per 5,000 persons Rugby League - 1 field per 5,000 persons	Kings Hill URA Community and Recreation Study March 2020 (GHD)
Indoor Recreation	Indoor courts - 1:20,000 people	Parks and Leisure Australia, 2012 Kings Hill URA Community and Recreation Study March 2020 (GHD)
	District (leisure) - 1:50,000 people	
Outdoor exercise facility	Benchmark based on 2016 population: 1: 38,854. 1:15,542 planned.	Newcastle Outdoor Exercise Equipment Strategy
Active youth hub, including skate and bmx facilities	Regional: 1 per 150,000 District: 1 per 25,000 Local: 1 per 4,000 people aged 5-24 years	- Newcastle Parks and Recreation Strategy, 2014 - Kings Hill URA Community and Recreation Study March 2020 (GHD)
Playspaces	Regional: 1 per 150,000 District: 1 per 15,000 – 25,000 Local: 1 per 1,500 people	Newcastle Parks and Recreation Strategy, 2014
Dog exercise area	1 dog off leash area per 8,000 people 1 fenced off leash dog park per 30,000 people and at least one dog park in each CB ward. Dog off leash areas in the Newcastle LGA shall be at least 0.3ha in size and fenced dog parks shall be at least 0.5ha.	Newcastle Dog Off Leash Plan

FACILITY	BENCHMARK	SOURCE
Outdoor Courts	Basketball - 1 court per 4,000 persons Netball - 1 court per 3,000 people Tennis - 1 court per 1,800 people	Kings Hill URA Community and Recreation Study March 2020 (GHD)
	Current provision 1 per 1,5191 (median rate based on modelling across LGA)	Newcastle Strategic Sports Plan – 10 years
	Multipurpose outdoor courts 1:10,000 people	Parks and Leisure Australia, 2012
Aquatic Centres	1 aquatic centre per 20,000-50,000 people	Kings Hill URA Community and Recreation Study March 2020 (GHD)

stay+play

CHISWICK PARK, LONDON
Supporting an Enjoy-Work philosophy

The Chiswick park precinct is more than just a location for business. Located close to Gunnersbury Train Station, its office spaces, retail spaces, restaurants, events plaza and other community facilities create an enjoy-work experience for employers and employees. The footbridge walk from the precinct leads to Chiswick Train Station in 4 minutes. The precinct includes:

- 75 Companies
- 12 office buildings
- 10,000+ workers
- 45,000 sq.ft of on-park retail

Sustainability
The precinct encourages environmental sustainability practices with initiatives including recycling of green waste, reduction of carbon footprint, on-site food recycling, sustainable energy and more.

Enjoy-Work Philosophy
The enjoy-work philosophy of the precinct believes that people stay longer and work harder when they have a happy workplace. Variety of public spaces, community spaces and programs exist in the Chiswick park area to encourage social connection.

Across the precinct there are 33 acres of Landscaped gardens that support a range of passive and active recreation, cultural, creative and team building activities and events. 75% workers engaged in 42 social events conducted last year (2019), including a fireworks event.

The Chiswick Park precinct has an exclusive community phone app that encourages everyone to interact with each other and build a strong sense of community. Exclusive offers are available in the local restaurants and shops to the local residents and guests. The aim is to create a sense of community and belonging, connecting employees digitally to activities and each other.

source: https://enjoy-work.com/

AUSTRALIAN TECHNOLOGY PARK
A place for work + play

The Australian Technology Park (ATP) is a site located 3.5km south west of Sydney's CBD. The park is home to the Seven Network and provides commercial office spaces to the NSW Government, the Commonwealth Bank of Australia and Uber Sydney. The ATP also includes the National Innovation Centre which houses the administrative offices of the ATP innovators such as the research and development interests of the universities who are involved in the precinct.

The built environment creates knowledge spillover by providing opportunities for social interactions among knowledge intensive workers as well as providing a destination for Sydney residents to meet, socialise, host special events, engage in active and passive recreation. The social infrastructure at the ATP includes:

- A dedicated childcare centre,
- Locomotive Workshop will include a supermarket, a health and fitness club and al fresco dining.
- Popup events in The Workshop
- Yerragbingin House (community building) includes Australia's first indigenous rooftop farm, solar panels, a community centre, a childcare centre and a gym,
- Australian Technology Park Basketball Court,
- 2 x tennis courts, Australia Technology Park Outdoor Ping Pong Table,
- Skatepark and outdoor exercise stations,
- Outdoor seating, and bicycle parking.
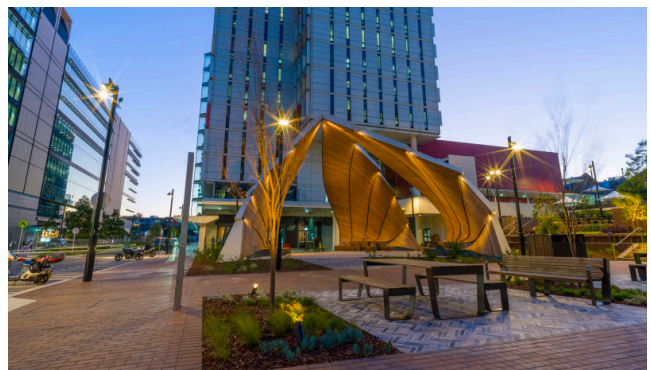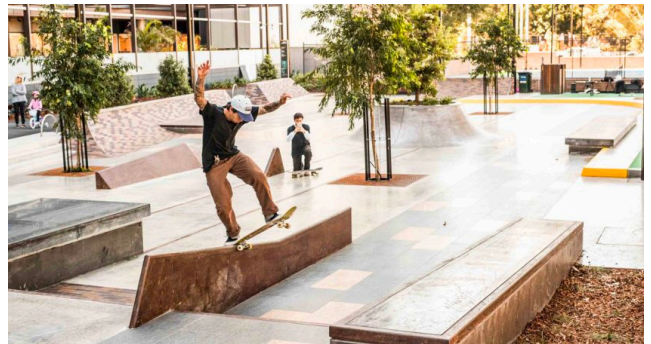
Top Photo source: convic.com/projects/south-eveleigh-youth-space
Bottom Photo source: Mirvac

EXPLORATORIUM
Discovery + experiential learning spaces

The Exploratorium is a science musum in San Francisco. It brings together art and science as complementary ways of exploring the world, and has been woven into the fabric of the institution. Through the programming, artists and scientists work alongside each other in envisioning new ideas and directions for the museum and its programs.

The Exploratorium's mission is to create inquiry-based experiences that transform learning worldwide. Through global collaborations, knowledge of exhibit making, program creation, and professional development is shared. This supports a culture of experimentation and collaboration, inspire curiosity and understanding, and stimulate fresh ideas and directions. The Exploratorium co-creates programs, conduct research, and develop staff across disciplines, collaborate, and prototype.

The various galleries (ie. The Tinkering Gallery) provides space for viewing, making, experimentation, seeing and listening, as well as interacting with the outdoor spaces. The Artists in Residence and Cinema Arts Programs engages artsists and filmmakers who create works that inspire the imagination and instigate conversation. It provides an opportunity for visitors to explore the compelling people, places, and ideas that extend through the museum and beyond.

source: www.exploratorium.edu

SANGAM DIGITAL MEDIA CITY
Industrial to media, digital + entertainment

The Sangam Digital Media City (DMC) was created as part of the larger Millennium City project in the Sangam-dong district of Seoul, 4 miles (7 km) from the CBD. Conceived as an industrial cluster of world-class digital media and entertainment companies, it now develops, produces and disseminates cutting-edge media contents. Facilites on site include an art Gallery, Film Museum, Park, Digital Pavilion, Art installations.

Two main objectives where to develop a complex where foreign and domestic high-tech digital businesses gather to enhance the national competitiveness and to create a city that serves as a 'gateway' with the Incheon International Airport nearby; an 'ecological city' where the people and environment coexist; and a 'hub of information exchange' with seamless IT infrastructure.

DMC has valued the eco-friendly development since first mapping out the urban regeneration plan to recover the abandoned former landfill. Most of its energy demand has been met by the methane gas generated by the nearby resource recovery plant and wind-power generation. In DMC, there are 387 total firms. Companies with fewer than 30 employees stands at 268 (69.3%) and 106 companies with fewer than 10 employee (27.4%)

source: use.metropolis.org/case-studies/sangam-digital-media-city-dmc-city-of-tomorrow

design for country + community
Precedent + Best Practice Case Studies

YERRABINGI SOUTH EVELEIGH ROOFTOP FARM
World first Indigenous rooftop farm

Built on the 500sqm rooftop space of an office building, the South Eveleigh Native Rooftop Farm uses principles of Indigenous knowledge, collaborative design and permaculture to create and maintain the Australia's first Indigenous rooftop farm for urban food production. On the roof of Yerrabingin House, over 2,000 edible, medicinal and culturally significant plant are grown.

This is a world-first Indigenous rooftop farm project to deliver an environmentally friendly rooftop greenspace on the edge of the bustling city. It provides a unique and authentic cultural heritage experience that interweaves tacit, knowledge and collaborative design thinking into the new public domain. This cultural community garden, is one of only a few sites in Australia to offer an array of engagement and educational experiences focused on celebrating and remembering Aboriginal culture and delivering environmentally conscious native landscapes and place making designs enriched with Indigenous narratives. It is also an event space, with 16+ events per month.

Yerrabingi (Pronounced: yer-ra-bing-gin) means 'we walk together'. Yerrabingin comes from the Indigenous language of Mooktung, spoken by the Bidawal and Maneroo people of the south eastern high country of NSW.

source: www.yerrabingin.com.au

NIWA NATIONAL CENTRE FOR MĀORI ENVIRONMENTAL RESEARCH
Working together with hapū, iwi, Māori communities and Māori business to deliver tailored science.

Te Kūwaha, NIWA's National Centre for Māori Environmental Research is a dedicated Māori research team, with a vision to work in partnership with others to enable complementary knowledge systems to support kaitiakitanga and provide environmental research excellence that enhances the social, environmental and economic aspirations of whānau, hapū and iwi, Maori communities and Maori business.

The aim is to:

- Provide environmental research of benefit to Māori through the formation of robust and meaningful partnerships with iwi, hapū and Māori organisations;
- Work collaboratively with Māori, other research providers, central and local government agencies, to identify and respond to Māori research priorities.
- Develop a distinctive body of knowledge at the interface between indigenous knowledge and research, science and technology.

Te Kūwaha is committed to the development of effective long-term relationships with Māori that have environmental and commercial needs.

NIWA is also working alongside Māori to develop gateways to science and technology partnerships that are helping grow the Māori economy.

source: niwa.co.nz/te-kuwaha

NDSM WHARF, AMSTERDAM
Revitalising old world industrial to new world creative

NDSM is a former shipping wharf area in north-west Amsterdam which is used as a space for artists/exhibitions/festivals and also includes offices and student housing. It has a unique atmosphere which is in stark contrast to the bustle of the old city centre. NDSM – Nederlandsche Dok en Scheepsbouw Maatschappij or Dutch Dock and Shipbuilding Company – became a haven for artists, squatters and skaters in the 90's after operations ceased. Today, NDSM is one of Amsterdam's prime spaces for creativity and development.

Kunststad (Art City)
The main NDSM hangar building (NDSM loods) has been a huge exhibition space and houses 400+ artists, designers, architects and set designers: one of the biggest artistic incubators in The Netherlands. It also functions as a popular events location and also hosts the monthly IJ-Hallen flea market.

Event Spaces: NDSM Fuse
An event and exhibition space where artists and designers from NDSM Art City and creative talent from outside can present their work to an international audience. A place of inspiration and urban energy, it is a unique meeting place with a wide spectrum of art, design, performances, music and theatre on offer.

Creative Spaces: The Treehouse and GWA
Central to the Treehouse concept is that every resident aims to presents its work or process (and themselves!). Set up to provide the best opportunities to create and expos for emerging businesses and creatives. The individual studios are not huge, so they are affordable to (almost) any wallet. GWA is the DIY Graphic Lab for Amsterdam, offering courses and workshops in old school printing: Letterpress, linocut, monoprint and bookbinding.
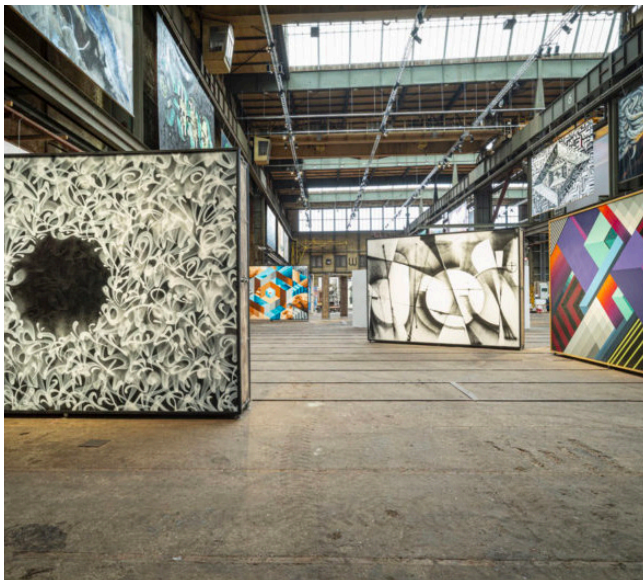
source: www.ndsm.nl/en/

Galleries + Museums
- STRAAT is a museum for graffiti and streetart, have works of street art by artists from all over the world. Under the same roof, it provides the variety of styles, shapes, techniques and narratives of the largest art movement of our times. Our collection is made of artworks as big as buildings, which were created here. In a former shipyard that is, by itself, a national monument.
- 'On The Inside' is a new platform for contemporary art in Amsterdam.
- The Museum for Unintentional Art ('Museum voor Onbedoelde Kunst' / MOK) was a temporary museum (till February 2021) in the outdoor space that exhibited 22 unintentional artworks that they have found scattered around the shipyard. The MOK contains many ingredients of a fully-fledged museum - a gift shop, an info desk - the only thing missing is the 'white cube'.

Entertainment + Food
- Sociëteit SEXYLAND is a temporary club that for 365 days it has a different owner, every day. The owner of the day decides what kind of club they like to have, varying from art exhibitions to sport events, from gangster rap to dinners in stroboscopic light.
- Pllek is openminded, free, surprising, warm and creative, focusing on conscious life and sustainability. The food is mostly organic, prepared with seasonal vegetables and local product has weekly programming with live music, film, dance nights, culinary events and more

Public Art
Across the precinct, there are seven public art installations - murals, sculpture and re imagining of architectural and shipyard structures. Two works include:

- The door to the welding shed is decorated with a 240m2 mural of Anne Frank, painted by world-famous graffiti artist Eduardo Kobra from São Paulo. Let me be myself (2016) was created following an invitation from Street Art Today.
- Neo Logos by Annaik Lou Pitteloud is four neon texts show a set of newly composed words. The words are constructed in Helvetica, a Swiss font designed for its neutrality and clarity. In Pitteloud's new vocabulary, the elite becomes a utopia: Elitopia. In the word Glamoglobality, the jet set becomes an attitude that sees tourism as a world view for the rich. At Narcynism, the selfish individual takes cynicism as a guideline above solidarity. Introspeculation makes self-image a value to speculate on profit.

a healthy city
Precedent + Best Practice Case Studies

THE GREENWAY, INNER WEST
*Environmental and active travel corridor*

The GreenWay is a 5.8km environmental and active travel corridor linking the Cooks River at Earlwood with the Parramatta River at Iron Cove.

It mostly follows the route of the Inner West Light Rail and Hawthorne Canal and features bike paths and foreshore walks, cultural and historical sites, cafes, bushcare sites and a range of parks, playgrounds and sporting facilities.

The Greater Sydney Commission has identified the GreenWay as the number one priority "green grid" project in the Eastern Sydney District Plan released in March 2018.

The key elements of the Cooks River to Iron Cove GreenWay are:

- The GreenWay Trail, a shared, off-road pedestrian and cycling path linking the Cooks River Cycleway at Earlwood to the Iron Cove BayRun at Haberfield.
- Creating a north/south "bush link", including community bushcare sites which provide valuable habitat and "stepping stones" for native flora and fauna
- The "GreenWay Trellis" aims to extend the GreenWay through neighbouring parks, reserves, and private properties, with quiet "green" streets for walking and cycling, and native plantings in parks, reserves and backyards to provide habitat for native flora and fauna.
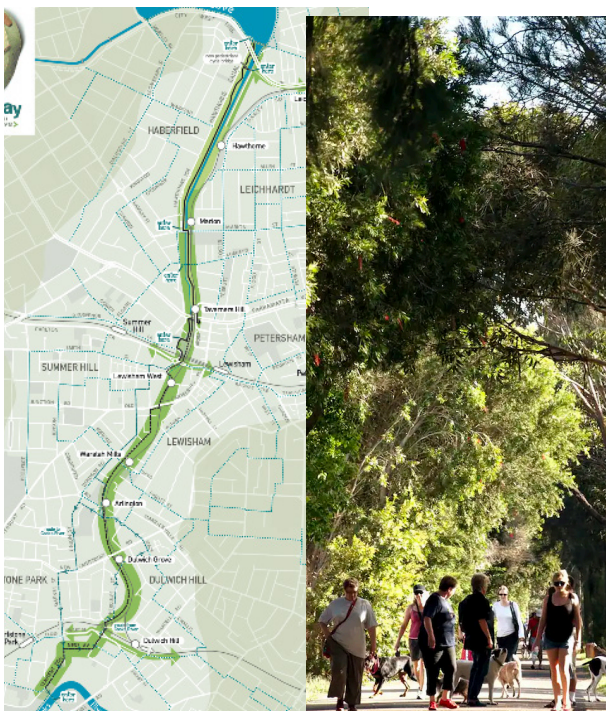
source: www.innerwest.nsw.gov.au/live/environment-and-sustainability/in-your-neighbourhood/bushland-parks-and-verges/greenway
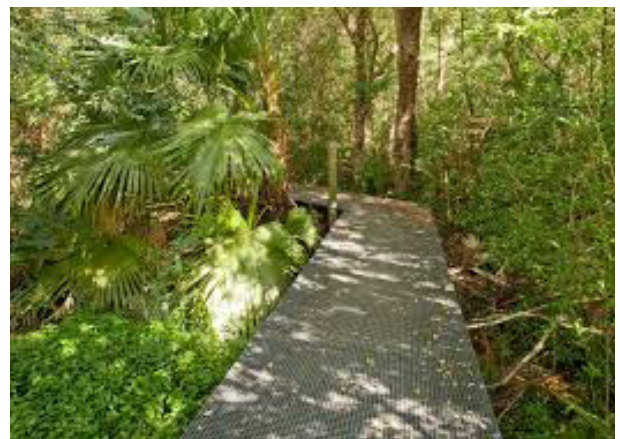
RYDE RIVER WALK
Looping connecting recreation infrastructure

Ryde River Walk was created to improve the community's enjoyment of the unique attractions along the foreshore of Parramatta River, with better public access and enhanced recreational facilities.

From Gladesville Bridge to Ryde Bridge, Ryde River Walk provides walkers and cyclists with breathtaking river and city skyline views as it meanders into bays, parks and playgrounds, through bushland and mangroves, past historic sites, Aboriginal cultural heritage sites and art installations.

The twelve-kilometre bridge-to-bridge walk explores a remarkable sweep of the northern shore of the Parramatta River and visually captures the important role our city plays in the life and history of greater Sydney.

Construction of Ryde River Walk began in 2007 with the adoption of the Ryde River Walk Masterplan and the first stage was officially opened in 2008. It includes a shared pedestrian and bike pathway from Meadowbank Park through to the eastern end of Kissing Point Park and a shared path in Morrison Bay Park.

source: www.ryde.nsw.gov.au/Recreation/Visitor-Information/Ryde-River-Walk

TALLOW CREEK, BYRON BAY
Child friendly recreation trails

Tallow Creek Pathway a short and easy walk/bike ride making it perfect for young kids. Tallow Creek has been zoned 'Special Purpose Zone' for protection, rehabilitation and indigenous use and there is plenty of birdlife to be spotted on and around the water.

Tallow Creek bridges connect the Suffolk community through the Tallow Creek Wetland Area to a number of key amenities such as schools, shops the beach - Tallow Creek Pathway, Suffolk Park.

source: arakwal.com.au/tallow-creek/
www.byron4kids.com.au/tallow-creek-pathway/

THE GOODS LINE, ULTIMO
Linear urban open spaces

The Goods Line is a urban linear park that is designed for daily use by students and workers alike. With elements of sit, play, and relaxation incorporated into a linear strip of open space, the needs of many local residents and commuters are met.

Public open space have traditionally shown to exhibit larger footprints and are wider. The Goods Line, and many other linear parks like it, have demonstrated that parks do not need to only be in a square shape, but adapted to better fit into an urban environment.

Location and demographics are key in determining the feasibility of an urban linear park. However, with the right conditions, a successful community open space can be fostered that is narrower and within a high density location, while retaining land area.

The Goods Line features several concepts of seating, as seen in the figures below. Differing seating arrangements allow for a variety of users across the park, increasing accessibility and usability. With the purpose of servicing workers and students in mind, the Goods Line allows for multi functional uses, such as recreational play at the table tennis installations, or for communal meetings with the amphitheater-style stairway seating at the park.
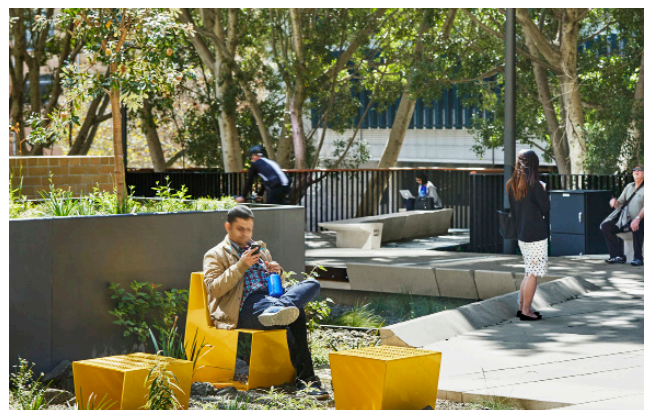
source: thegoodsline.aspect.net.au/

a innovation precinct
Precedent + Best Practice Case Studies

💡 TONSLEY INNOVATION DISTRICT
Collision space + knowledge spill = Innovation

A 61-hectare site located 10km south of Adelaide, Tonsley is recognised as the global benchmark for reimagining and redeveloping traditional manufacturing facilities. The industry sectors located within the district include Clean tech and renewable energy; health, medical devices and assistive technologies; mining and energy services; and automation, software and simulation.

Innovation Ecosystem
The combination of economic, physical and networking assets at Tonsley Innovation District provides an environment that is conductive to the sort of connections and collaborations that leads to innovation. The target industry sectors relate to the industry clustering concept of 'related variety', where the greatest opportunity for

innovation is where there is enough common ground to start a relationship, but enough differentiation for each party to bring new expertise into a collaboration.

Physical spaces that encourage collaboration
The buildings, spaces and infrastructure are organised to enable and encourage heightened collaboration and innovation. The district is designed as a pedestrian friendly network of high quality formal and informal places for people to meet and exchange ideas, such as the award-winning Central Forest. Designers are now referring to these kinds of physical features as 'collision spaces', locations that support serendipitous encounters that can lead to the kind of knowledge spill over that feeds innovation.
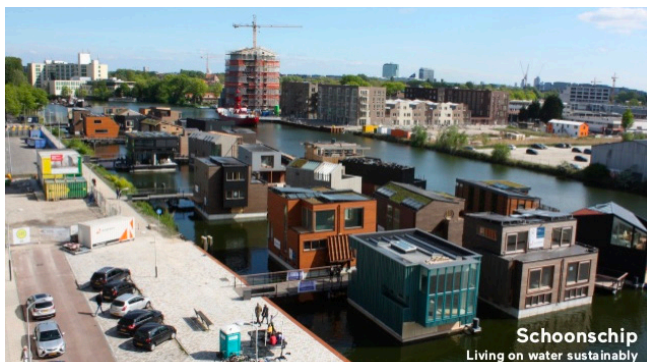
💡 FAB CITY CAMPUS AMSTERDAM
Urban Prototyping and Experimental Spaces

Fab City is a global project to develop locally productive and globally connected self-sufficient cities by 2054. The idea of a Fab City originates from the worldwide network of Fab Labs; local fabrication laboratories that use digital technologies to "make almost anything". The main objective of the Fab City Prototypes project is to set up a European experimentation playground — on- and offline — to implement, test and iterate innovative business opportunities at the local scale in cities' neighbourhoods, and create open markets for products and services that support the development of circular economy.

Schoonschip
Living on water sustainably

In early April 2016, a temporary and freely accessible Fab City Campus was built at the head of Amsterdam's Java Island in the city's Eastern Harbour District. Conceived as a green, self-sustaining city, the FabCity Campus comprised some 50 innovative pavilions, installations and prototypes. More than 400 young students, professionals, artists and creatives developed the site into a sustainable urban area, where they worked, created, explored and presented their solutions to current urban issues.

The Campus was inhabited by students, scientists and (social) entrepreneurs, and also functioned as a big maker space: a place to collectively experiment, prototype and test new ways of creating an improved future urban environment. It consisted of several pavilions showing different innovative ideas for the connected, self-sufficient and circular city.

FACTORY CAMPUS, BERLIN
Amenity + Innovation attract the brightest

The Factory Campus in Berlin is home to SoundCloud's global headquarters and anchors an innovation precinct that has excelled for its range and quality of amenity. At its heart is a former warehouse brewery re-designed from scratch to create a collaborative space to suit small and large firms ('stage agnostic'), spanning more than five sectors. High-quality audio visual equipment, recording studios, meeting and event spaces, fitness centres and art galleries are all integrated, along with options for six months on-site accommodation. The precinct has benefited from its management's experience in entrepreneurship, community management and event management. A sense of place and good liveability are key attractors for precinct members and influence the overall culture of the precinct.

Factory Berlin is an ecosystem of over 3,500 members located on two campuses – Factory Berlin Görlitzer Park and Factory Berlin Mitte. They curate businesses and creators from the tech, creative, and corporate industries. The diverse community comes together to connect, collaborate, and thrive. Opened in 2014, the aim was to create Germany's first and largest international network of tech startups, fueled by a passion for building spaces and to build a community for all types of experts and innovators. In 2018, the Factory Berlin Görlitzer Par opened providing 1,4000 sqm of innovation labs, shared workspaces, and event space, with a cinema, cafe, restaurant, music studio, a 360 XR Room, and the Creators Lab.

Factory Berlin curate and co-create events designed for knowledge sharing, networking, collaboration and interaction across industries and levels. These programs include a **'matchmaking'** to catalyse relationships between workers based on professional and personal profiles. **Circles** are self-organised sub-communities that are formed around shared interests, industries, and projects, where members exchange ideas, inspire and support each other. **Stealth Mode** is a mentorship program for female founders and women in tech looking to take their startup to the next level and to support the next generation of female, non-binary and underrepresented founders. **Artist in Residence** supports artists exploring new lines of inquiry intersecting technology & society. This program aims to discover, explore and showcase how creativity impacts innovation, problem-solving, work culture, how we collaborate, and how we come together as a community. **Ask an Expert** creates a space that members can easily approach professionals to access guidance, advice and expertise. **Roundatables** are a program to create the space for collaboration to help find innovative tool, practices and solutions to overcome challenges.
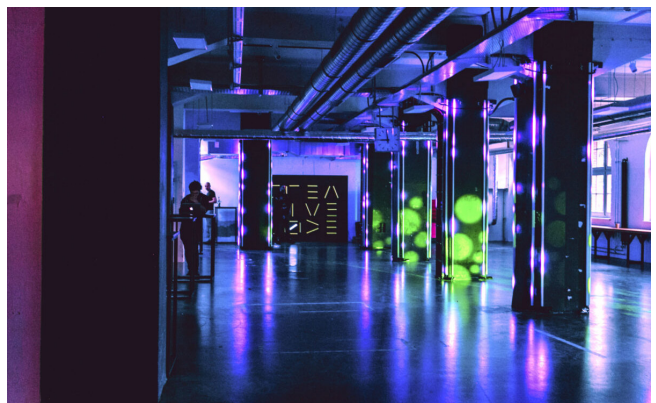
source: factoryberlin.com

a innovation precinct
Precedent + Best Practice Case Studies

KISTA SCIENCE CITY SWEDEN
Testbed for smart urban ideas + applications

The precinct is located 10kms north of the Stockholm City Centre, providing a physical space for innovation and collaboration between business, the public sector and academia. 927 leading organisations such as Ericsson, IBM Svenska, Fujitsu Sweden, City of Stockholm, Swedish Defence Research Agency, and KTH Royal Institute of Technology are located within the precinct making it easy to build a professional networks and collaboration opportunities for the 32,500 employees.

The precinct operates as an open urban test beds where sensors, hardware and software can be tested for real. Located next to university, the precinct encourages research and innovation. Office spaces, co-working spaces, meeting rooms and open floor and more flexible spaces are available to suit different needs. Guided tours, lectures and workshops are conducted to introduce a triple helix model to new people in the community.

Urban ICT Arena

It is a non-profit organisation facilitating collaboration between business, society, academia and to develop smart and digital solutions to sustainable cities. They are the providers of test beds and they encourage innovators in the precinct to use them. Urban ICT Arena coordinates the needs of the public sector with the abilities of the business community, to find new digital solutions for the sustainable cities of the future. It is also a space that helps connect the right innovators and business partners for collaboration and tests.
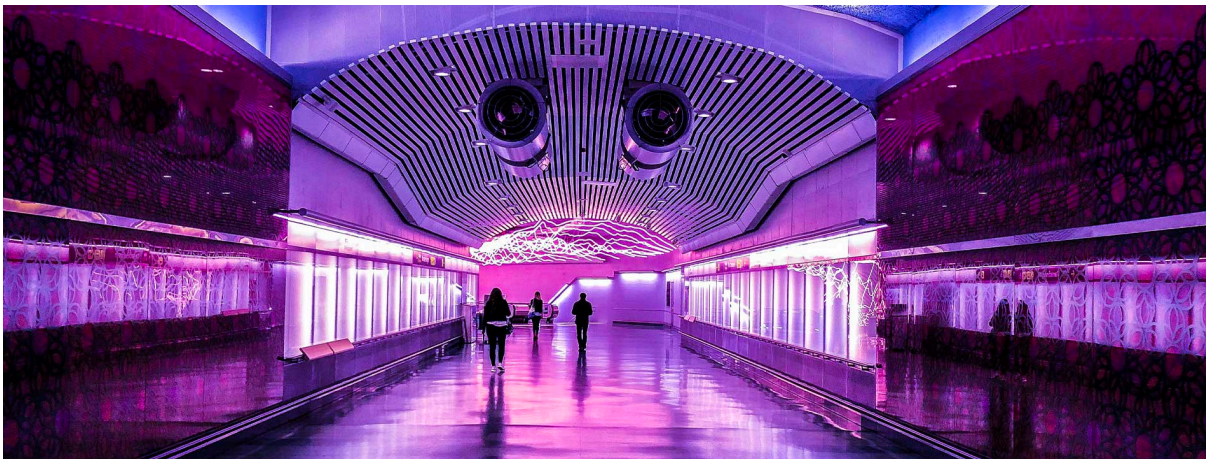
source: kista.com/english/

more than an airport
Precedent + Best Practice Case Studies

CHANGI AIRPORT + RECREATION PRECINCT
A place to stay + play, not just to fly away

The Changi Airport Precinct brings together surrounding historical landmarks, nature, food and retail into a cohesive and immersive experience for residents and tourists alike. The airport functions as the anchor that activates the areas around, which in turn become their magnets resulting in collective activation of the precinct.

Ketam Mountain Bike Park
The first in Singapore to meet international standards for mountain biking competitions. This 45-ha park features 10km of mountain bike trails catering to both leisure cycling and international competitions. Located around the fringe of Ketam Quarry, this re-landscaped mountain bike park also helps in nature rehabilitation, conservation and attracts local wildlife.

Pasir Ris Park
Pasir Ris Park is a beach park located in the eastern part of Singapore. This coastal park opened in 1989 and is among the largest in Singapore. It has modern park activities such as pony rides, water sports, cycling, inline skating and barbeque rental. It also has multiple trails and a carefully-preserved six-hectare mangrove forest.

Sun Plaza Park
Sun Plaza Park is a 9.6 hectare park that boasts an amphitheatre, a sense discovery garden, a beach ball court and a woodball course. Owing to the diverse and flexible programming of the place, the Plaza Park is a popular meeting place for cultural and social interactions.

Tampines Hub
Singapore's largest integrated community and lifestyle hub which offers a diverse range of facilities and services. It houses six swimming pools, a 5,000 sq ft playground and the Tampines Regional Library.

*source: ura.gov.sg/Corporate/Planning/Master-Plan/
Urban-Transformations/Changi-Region*

more than an airport
Precedent + Best Practice Case Studies

MUNICH AIRPORT LAB CAMPUS
Aviation Innovation hub

Munich's Airport is planned to be a thriving innovation hub, which aims to develop ideas for key sectors of aviation. Munich Airport's LabCampus sets out to foster cooperation between companies and industries by bringing together leading experts, companies – from start-ups to global players, creative minds and investors – at the heart of a transportation hub with links to over 260 destinations worldwide and plenty of room for real estate development.

An urban development concept
LabCampus is designed with a clear focus on shared innovation and collaboration which is physically embodied in its open, community-driven design. The site has a diversity of architectural styles, materials and creative accents that delineates the different spaces allocated for a variety of uses, but also creating a clear narrative and identify that defines the LabCampus.

Open space
Creating open space was of central importance in the LabCampus concept. It is focused on creating natural connections. The space between—outdoor areas—is deliberately left for residents to discover and make their own. The central walkway that meanders along the full length of the site is symbolic of the commitment to progress and inclusiveness. Currently, planters delineate and partition off the open space, creating intimate and shady spots for working or collaborating with colleagues.

Signage and lighting
The spirit of collaboration at LabCampus is also borne out in our unique signage system. Instead of mainstream signs or placards, uniquely designed artificial trees serve as sculptures that show the way. Streets, open spaces and squares are named to reflecting LabCampus' indentity and to also make wayfinding easy.

source: labcampus.de/en

Collaboration matters
LabCampus is being developed as an innovation cosmos and through the design of spaces - both inside and out, aims to cultivate a mindset of sharing that connects expertise across disciplines. These qualities—at their most basic—inspire cross-industry collaboration. The vision is that at their most developed, they generate centers of excellence capable of advancing the biggest trends and topics of our time. The intention is that "innovation and collaboration permeate deep into the design and architecture of the place".