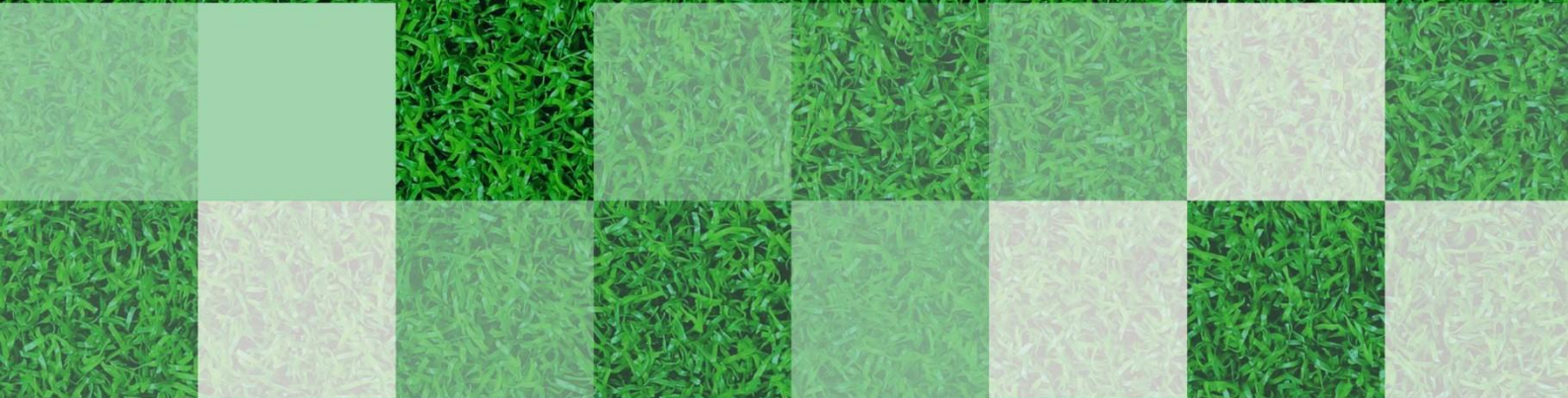
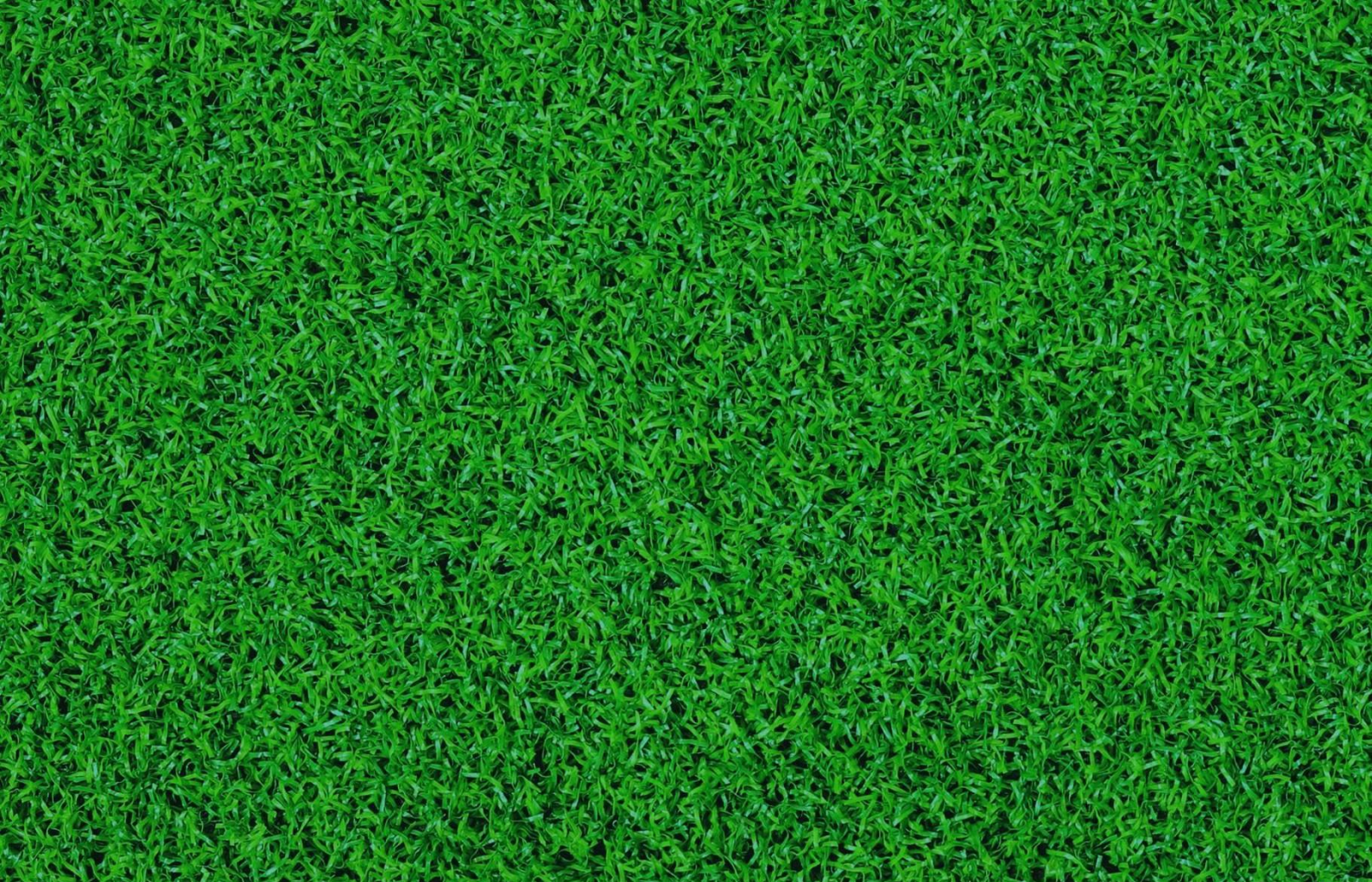




SALGRSN

SYNTHETIC SPORTS SURFACES

GUIDELINES FOR DECISION MAKERS

ACKNOWLEDGEMENTS

Acknowledgement of Country

The South Australian Local Government Association Recreation and Sport Network (SALGRSN) and partnering local governments acknowledge First Nations peoples as the Traditional Owners of South Australian land and waters and we extend our respect to Elders past, present and emerging.

We value and recognise the ongoing cultural and heritage beliefs and relationship First Nations peoples have with these lands and waters and the continuing importance of this today.

The South Australian Local Government Association Recreation and Sports Network (SALGRSN) has, in partnership with the South Australia Office of Recreation, Sport and Racing, collaborated with industry expert Smart Connection Consultancy to develop a suite of Guidelines and Tools.

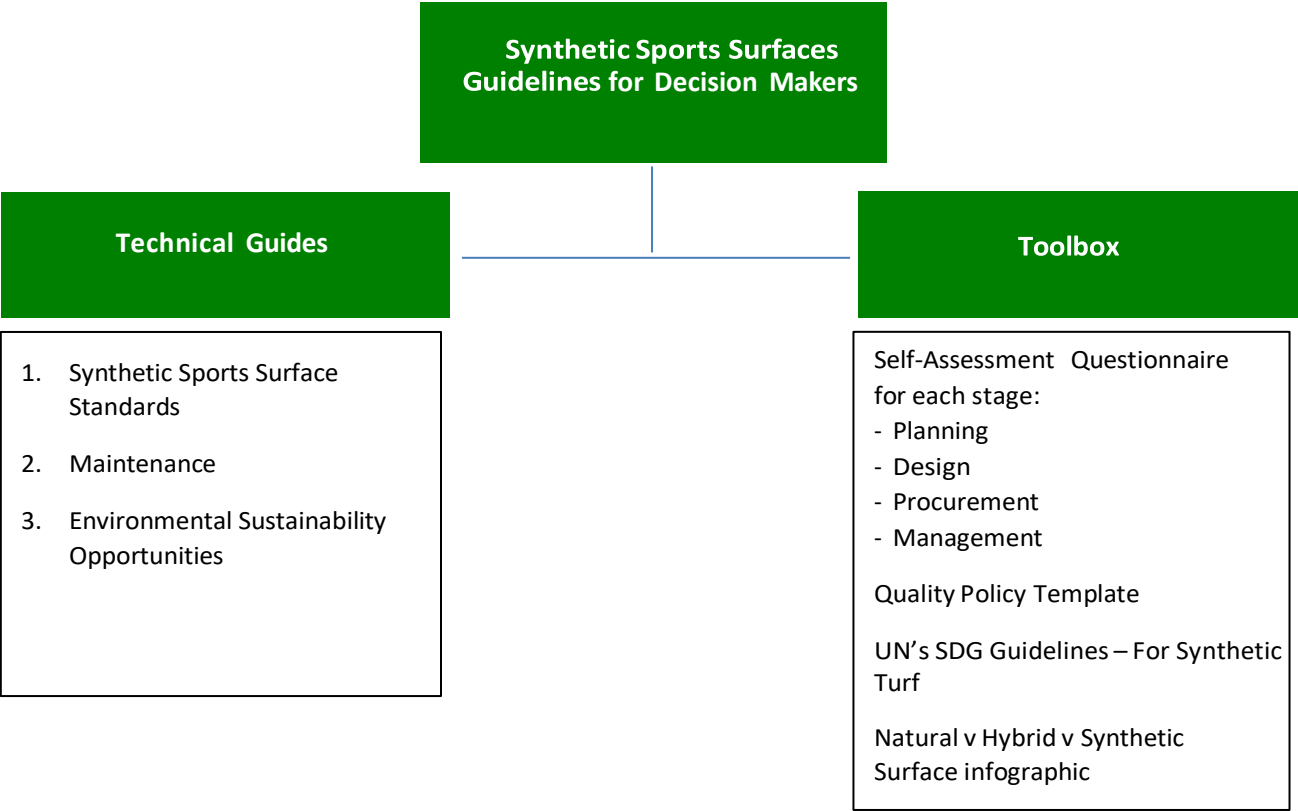
We acknowledge and thank the South Australian Government Office for Recreation, Sport and Racing for providing the funding that has made this synthetic turf project possible. We also recognise Craig Hobart - City of Onkaparinga for leading the project on behalf of the South Australian Local Government Recreation and Sport Network, and extend our appreciation to our project steering committee Colin Donnelly - City of Port Adelaide Enfield, Bryce Norton - Town of Gawler, Travis Beard - City of Mitcham, Emily Moskwa - City of Campbelltown and David Nash and Sarah Horgan from the Office for Recreation, Sport and Racing for their contribution and support.

These required resources aim to increase knowledge, provide a suite of tools to use, and provide a transparent and rigorous approach to the planning, design, procurement and management of these surfaces.

The SALGRSN Decision Making Framework builds upon the NSW Department of Planning, Housing and Infrastructure Draft Guidelines for Decision Makers (2024) regarding Synthetic Turf in Public Open Space.

Guidelines Structure

The SALGRSN Guidelines refers to a library of documents including:



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1. Introduction

1.1. About the Project

The South Australian Local Government Association Recreation and Sport Network (SALGRSN) initiated the development of Synthetic Sports Surfaces Guidelines for Decision Makers with the aim to provide South Australian local governments with essential tools for safe, effective, financially viable and environmentally sustainable synthetic playing surface management.

SALGRSN discussions exposed a notable information gap hindering informed decision-making by South Australian councils. SALGRSN consensus was clear: local government authorities lack the necessary technical, research, and operational information for sound decision-making. Furthermore, a report from the NSW Chief Scientist highlights the need for improved decision-making processes regarding the use and disposal of synthetic playing surfaces, which the NSW Department of Planning, Housing and Infrastructure has now completed with the publication (May 2025) of the Synthetic turf sports fields in Public Open Spaces – Guidelines for Decision Makers¹.

The growing popularity of synthetic playing surfaces by sports and local government, to compliment natural turf sports fields, underscores the need to comprehensively understand their long-term effects on users and the environment. This understanding is vital for strategic decision-making, understanding the impact to the receiving environment, and managing lifecycle costs.

The development of evidence-based guidelines will encompass planning, maintenance, utilisation, and end-of-life disposal considerations.

The development of these guidelines has been made possible through funding support from the South Australian State Government. This investment reflects a shared commitment to strengthening local government capacity, improving community sport infrastructure, and ensuring that decisions around synthetic playing surfaces are underpinned by robust evidence and best-practice management.

1.2. Changing Demographic Impacting Sports Surfaces Options

Over the past 21 years, Australia's population has grown by over six million people—a 33% increase—from approximately 18 million to over 25 million. This growth, coupled with ongoing urbanisation and evolving participation trends, has created substantial demand for resilient and adaptable sports field infrastructure nationwide.

In South Australia, the 2021 population was 1.82 million. According to the South Australian Department of Infrastructure and Transport's population projections, this figure is expected to grow to between 2.33 million (medium scenario) and 2.53 million (high scenario) by 2051. This increase of approximately 532,000 to 731,000 people—representing around 30% growth—will place added pressure on urban centres like Adelaide, Mount Gambier, Whyalla, and the Barossa region, as well as fast-growing peri-urban and regional communities. Many of these communities already face significant constraints in the availability and capacity of natural turf fields to meet increased demand for training and competition.

The growth is further compounded by changes in how sport is played. Across Australia and particularly in urban South Australian regions, there has been a rapid increase in the popularity of modified and small-sided sports formats—such as AFL 9's, Touch Rugby, 5-a-side Football, Viva Rugby, and Hockey 5's—particularly among younger players and culturally diverse communities. These formats often involve more frequent turnover and higher player density on fields. For instance, a traditional football (soccer) field, typically used by 22 players in a standard match, may now be used by 80 or more players per hour in these small-format or training contexts. This shift significantly increases field wear and raises the question of how to sustainably meet this new demand profile.

Australia's 2022 Population Statement, developed by the Australian Government, reflects the long-term impacts of COVID-19 on population trends. It predicts growth from 25.7 million (2021) to 29.9 million by June 2033, with a projected national population of 39.2 million by 2060. For both South Australia and the nation at large, this will necessitate forward-thinking planning in community infrastructure—particularly open spaces and sports precincts.

Health data underscores the urgency of planning for active living environments:

- 1 in 4 children aged 5–17 and 1 in 2 young adults (18–24) in Australia are now considered overweight or obese.
- Sedentary behaviours are rising due to increased screen time and declining informal outdoor play, a trend visible across urban Adelaide and regional centres.

¹ [Synthetic turf sports fields in public open spaces - Guideline for decision-makers](#)

- There is growing concern that today's sedentary children may become tomorrow's sedentary adults, compounding intergenerational health risks.

Cultural and demographic shifts are also shaping demand for inclusive, accessible, and adaptable sports facilities:

- 29.1% of Australia's population was born overseas, placing Australia 9th globally in the United Nations' multicultural population rankings.
- South Australia, particularly Greater Adelaide, is home to emerging communities from India, China, the Philippines, Nepal, and African nations, which bring new sporting preferences, expectations, and engagement styles.
- By 2060, 74% of Australia's population growth is expected to come from overseas migration, further diversifying sport and recreation needs.

These trends point to the growing importance of sport as a platform for social cohesion and community integration—especially in South Australia where community sporting clubs are often the first point of connection for new arrivals. Sport plays a key role in promoting belonging, health, and social mixing.

With limited land and competing demands for green space—particularly in expanding Adelaide suburbs like Playford, Salisbury, and Onkaparinga—sporting infrastructure must be both efficient and future-proofed. Synthetic sports surface technology can be a key part of this solution. Unlike natural turf, synthetic fields can support 2–3 times the intensity of use, accommodate multiple sports codes, and maintain playable conditions year-round, regardless of rainfall or irrigation restrictions—a critical advantage in South Australia's dry climate.

Strategically locating multi-sport synthetic surfaces in growth corridors, supported by master planning frameworks from the South Australian Office for Recreation, Sport and Racing, could reduce the need to convert passive open space to active space. This allows for a better balance between community recreation, environmental conservation, and population growth pressures.

Physical Activity Levels of South Australian Children and Young Adults

Despite broad awareness campaigns and investments in physical activity programs, many South Australian children and young people are not meeting recommended activity levels. According to the 2022 AusPlay survey, only 18% of South Australian children aged 0–14 met the Australian Physical Activity Guidelines, which recommend at least 60 minutes of moderate to vigorous physical activity per day. This is slightly below the national average of 20%.

For young people aged 15–24, participation rates in sport and active recreation decline significantly. The Office for Recreation, Sport and Racing's (ORSR) Strategic Plan notes that:

- Only 44% of South Australians aged 15–17 participate in organised sport at least once per week.
- Among 18–24-year-olds, participation drops further to around 35%, as pressures from work, study, and transport access increase.
- Girls and young women in both age groups are less likely to participate in club-based sport than boys and young men, although informal and social formats (e.g., dance, gym workouts, social sport) are more popular.

Concerningly, the South Australian Department for Health and Wellbeing's 2021 Childhood Health Indicators Report found:

- Just one in five primary school-aged children in the state achieved the daily physical activity recommendation.
- Physical activity levels decline with age, particularly during the transition from primary to secondary school.
- Screen time continues to displace physical activity for many children and teens, with over 75% of adolescents exceeding recommended screen time limits.

These trends highlight the need for accessible, appealing, and high-capacity sporting facilities that can engage young people in both structured and unstructured physical activity. With changing social preferences, there is growing demand for facilities that support flexible, casual, and small-sided formats rather than traditional full-sized, single-use fields.

The implementation of synthetic sports surfaces—particularly in school-community shared sites and community hubs—can play a critical role in enabling higher frequency, informal, and multi-sport activity among young people, helping reverse the inactivity trend and promote lifelong participation.

1.3. The Maintenance of Parks, Active and Passive Open Spaces

Governments will continue to create healthy places by balancing open space between passive parklands and active spaces. As the population increases, active spaces may struggle to cope with the growth in demand for places to exercise, play, recreate, and participate in community sports. The growth and intensity of usage may create burdens on natural surfaces that even science and good management practice cannot meet.

To that end, embracing some technological advances could result in alternative surface types being considered where appropriate. These alternatives could include:

- Hard surfaces – acrylic for recreational spaces, 3-on-3 basketball, tennis, 5-a-side football, and fitness..
- Synthetic (short) grass – for tennis courts, recreation areas, bowls greens, Hockey 5's and more.
- Rubber surfaces – for jogging, running, exercise areas and playgrounds.
- Synthetic Grass (long-pile) – for football codes of soccer, rugby union, rugby league, Australian rules.

1.4. Impact on Decision-Makers

Some sports only ever want engineered solutions as an alternative to natural grass, including:

- Netball – acrylic and hard surfaces are the key choice
- Hockey – Hockey turf is engineered specifically for the sport and how the game has been played since 1970s
- Athletics – Track and field athletics, since the 1960s have used rubber tracks for both safety and performance reasons.

When deciding on what surface to invest in, there are many variables and the Decision Making Guide for the South Australian Local Government Association Recreation and Sport Network (SALGRSN) has been developed to encourage a holistic and structured approach to ensure everything has been considered.

The Decision Makers Guide explores four stages in the life of a project: Planning, Design, Procurement and Management. In addition it embraces views from a Multiple Bottom Line framework with the 4 P's: People (community), Planet (environment), Prosperity (economic) and Performance (of the sports surface).

1.5. Stakeholders

This Guide has been developed by SALGRSN to support anyone involved in the Planning, Design, Procurement and Management of synthetic sports surfaces, including:

- S.A Councils and State Government Agencies
- Open Space, Sports & Recreation Planners
- S.A sports associations and specifically those involved in the key sports of Football (soccer), Rugby Union, Rugby League, Australian Rules, Hockey and Bowls
- Policy makers with State and local government and sports
- Landscape architects, designers and construction managers
- Asset Managers
- Community and environmental chairpersons
- Non-government agencies

1.6. How To Use This Guide

This Guide has been developed to support decision makers, planners, sport and recreation managers, sports (state and local) and local government asset/parks owners, who may be exploring alternative surface types to natural grass.

The Guide has embraced the high-level principles from the NSW Department of Planning, Housing and Infrastructure (DPHI) from the Guidelines for Decision Makers.

The aim of this Guide is structured to provide South Australia's local government and sports managers with an understanding of considerations that impact surface type (chapter 2), the suggested Decision Making Process (chapter 3) and there is a Self-Assessment checklist to use that helps develop and Action Plan (chapter 5) and additional information (chapter 4) on Policy templates and content details (chapter 6).

There are a set of tools that have been developed to assist and support the industry, and these are explained in each of the chapters together with links to good management practices and South Australian case studies. The structure of this Guide is:

2: Considerations Impacting Surface Type

3: Decision Making Process

4: Synthetic Surface Policy Considerations

5: Self-Assessment Checklist & Action Plan

6: Reference Tools and Project Advisory Group

CONSIDERATIONS IMPACTING SURFACE TYPE



2. Considerations Impacting Surface Type

2.1 Introduction

Sport and government providers are continually working to align the aspirations of the sporting community with the broader needs of active parklands, ensuring they contribute positively to the municipality's overall open space planning. With the latest science around natural turf, grass fields can certainly accommodate more usage than even a decade ago. The evolution from basic soil-based grass fields to highly engineered sand-based profiles, or profile reinforced grass has allowed local government and sport to accommodate the growing population demands.

In determining the surface type various aspects need to be considered and based on a balanced sustainable approach many local governments use of environmental, economic and community this Guide will explore the 4P model of sports surface type.

- People (community): Exploring supply and demand, greater diversity and creation of environment for more people to be active.
- Planet (environment): How best to consider the long-term environmental impacts of increased usage and use of synthetic surfaces on the environmental footprint.
- Prosperity (economic): The whole of life best value considerations to such an investment.
- Performance (of the surface): Ensuring the chosen surface (natural or synthetic) is fit for purpose.

2.2 People (Community) Sustainability

The primary driver of increasing demand for sports field infrastructure in South Australia is the projected annual population growth of 1% to 1.4% over the next three decades. This growth will be felt most acutely in inner-metropolitan council areas such as Adelaide, Charles Sturt, Prospect, Norwood Payneham & St Peters, and Unley—areas already experiencing high utilisation of limited open space.

As urban densification continues and “vertical living” becomes more common, particularly in the CBD and inner suburbs, public open spaces will become even more critical. For many residents in high-density housing, these green spaces act as “backyards”, offering vital opportunities for physical activity, social connection, and mental health recovery. The demand for flexible, accessible open spaces suitable for both structured sports and informal recreational use will continue to grow.

This shift is not limited to traditional weekend sports. There is an increasing trend toward adaptive, social, and small-sided formats, including informal football matches, bootcamps, yoga, and casual group fitness—many of which rely on accessible public fields and multi-use synthetic surfaces.

Recent participation data supports this trend. According to the 2022 AusPlay survey, between 2017 and 2022:

- The number of South Australian adults participating in organised sport at least once a week increased by 9%, and
- The number participating three or more times per week increased by 13%.

This demonstrates a clear and sustained growth in demand, particularly for facilities that are accessible outside of traditional club hours and not weather-dependent. Synthetic fields, with their durability and flexibility, are increasingly viewed as essential infrastructure to accommodate this broadening demand profile.

Additionally, school-community shared facilities and local park precincts are increasingly being repurposed or re-designed to handle both formal competitions and casual use, supporting everything from after-school programs to lunchtime walking groups and informal fitness training.

As demand continues to evolve—driven by population, lifestyle, cultural preferences, and changing urban form—local and state governments in South Australia will need to consider how best to balance structured sport with spontaneous and inclusive forms of play. Planning for flexible and high-use facilities, such as synthetic multi-sport surfaces, will be a key response to this challenge.

Diversity and Equitable Opportunities

Over the past decade there has started to be a significant shift in the demographic make-up of the participants, including:

- increased female participation in all football codes,

- greater participation in the over 50's, using sport to become fit again, with programs such as 'walking football, netball' etc,
- cultural diversity preferences for adaptive and more locally organised community sport based on their cultural heritage,
- school children using the public spaces when they have limited spaces at their own educational establishments.

The Supply Aspect

Some clubs are having to turn participants away or reduce the intensity of training due to the inability of natural sports surfaces to be able to cope with the demand capacity.

Even well designed, constructed, irrigated and drained fields with the right growing medium and turf struggles to cope with demand on 30 hours a week for the football code surfaces.

Embracement of natural turf good practices including the use of hybrid turf in high wear areas, sand slit drainage and irrigation are being used to extend natural turf from 20 to 30 hours per week and should be seen as the starting point.

Sharing the load across a number of natural turf fields is an excellent way of ensuring that the demand can be realised.

The community should be at the centre of the decision making and how can local government and sport collaborate to provide greater opportunities for their local communities to be more active, more often.

2.3 Planet (Environmental) Sustainability

To focus on the reduction of any surface type, on the environmental impact needs to be considered holistically and strategically. This should include aspects such as:

- **Water usage**

Natural turf surfaces need water to grow and recover after usage, and in the summer months can need a significant amount of water. According to Football NSW Guidelines a field should have approximately 50,000 litres applied three times a week with greater operational guidance provided as part of the SA Code of Practice, Irrigated Public Open Space -Operational Guide².

Synthetic surfaces (bowls, hockey and football) can all collect and water harvest the rain for the rest of the parkland and trees, providing significant environmental benefit and reduction in water/bill costs.

- **Carbon footprint**

Natural turf areas can provide a small amount of carbon sink, depending upon the grass, soil type and the frequency of grass cutting. Synthetic surfaces provide no such benefit.

The environmental footprint should be considered during the procurement stage with the synthetic surface, including the CO₂ levels of manufacturer, transport and maintenance, compared to that of natural turf.

- **Biodiversity**

Natural turf can provide biodiversity value to local fauna and flora and although this is significantly reduced by the maintenance on natural turf fields it will still be greater than synthetic turf.

That said, with good design of the parkland, both surfaces can have this negative reduction negated with use of good landscape management practices, investment in tree canopy, flora areas around the sports surface field of play and reuse of the top-soil on site.

- **Soil and water pollution**

Natural turf typically uses a significant amount of fertilisers, pesticides and weed killers and can leach into the waterway ecosystems.

Synthetic surfaces, if well designed and align with global environmental standards for heavy materials (FIFA requirements), PAH leaching (EN Chemical Standards) and good practice at installation, have been shown to improve the quality of water discharge, due to the filtration of water through the dense sand within the carpet.

- **Soil health**

Natural sports surfaces are part of a larger environmentally healthy ecosystem predominantly. Many sports fields are built on old rubbish tips and so the methane finds its way naturally through the soil to the open air, contaminating much of the soil on route.

² Code of Practice – Irrigated Public Open Space (2015 edition) recommends for irrigating level 3 TQVS (Turf Quality Visual Standard)
https://www.sawater.com.au/data/assets/pdf_file/0020/40493/Code_of_Practice_Irrigated_Public_Open_Space_201015_standard-UPDATED.pdf

Synthetic surfaces, dependent upon their design and use of the pavement (e.g. asphalt for athletics tracks and hockey fields) doesn't allow the ecosystem to work typically 300-500mm under the surface. Deeper than that the subsurface works the same for both natural and synthetic surfaces.

Good practice design for synthetic surfaces re-uses the top 300mm across the site, thus keeping the soil health balanced for the whole site.

- **Urban Heat Island effect**

With the continued urbanisation across our State, the effects of Urban Heat Island (UHI) continues to grow. The NSW Chief Scientists recognised that the effect of a synthetic surface to the UHI effect is minimal and localised. That said it is important for all designers to reduce even this small impact by embracing organic infills, use of additional tree canopy and planting of additional fauna. This balanced perspective can create an immediate impact.

- **Microplastic Migration**

Research by the International Union for Conservation (IUCN)³, found that plastic pellets, typical of synthetic fields is only 0.3% of all the microplastics found in the ocean. That said it is important that the design, procurement and management of synthetic fields continually to reduce any microplastics. This is easily managed by adopting the following aspects.

- i. Procure a surface that has zero rubber infill
- ii. Adopt the best of Australian Standard SA TR CEN 17519:2021'Surfaces for sports areas – Synthetic turf sports facilities – Guidance on how to minimise infill dispersion into the environment'
- iii. Procure only a 3G football turf field that has a monofilament/tape structure to eliminate ball splash
- iv. Do not use harsh brushing or steel drag mats
- v. Procure a synthetic surface that has at least 200,000 Lisport (2012) durability cycles and not the standard FIFA test

- **Environmental Health Perceptions**

There are a number of perceptions in the community that may be raised if the surface is changed to synthetic including:

- Heat stress
Irrigated grass will be significantly cooler than acrylic surfaces, rubber tracks and synthetic grass. By not using rubber infill and embracing either organic infill (cork, corn husk, wood chip etc) the heat normally stays at the same level in the hot summer as a browned natural grass field.
- Injury
Sports-related injuries may occur on both natural turf and synthetic turf and the maintenance of both will make the difference. In summer when natural turf fields may not be watered it is advised to not play on those surfaces due to the increased compaction of the soil and being more prone to injuries.
- Toxins
The NSW Chief Scientist and Engineers Report noted that the risk of toxins being a health issue are likely to be very low. That said by embracing the European Standard EN 71.3 (2013) Safety of Toys – Part 3 Mitigation of Certain Elements Table 2 Category iii (Scraped off materials).
Natural turf fields that have turf treatments such as fertiliser, weed and pesticide control should have the fields closed off whilst being applied and the time taken to work.
- Smell
The perception of smell and odors are limited with rubber infills. It is recommended that without the rubber infill this perception will be mitigated.

- **End of Life**

At the time of writing, Australia now has a functioning Synthetic Turf recycling plant which is recycling the carpets of hockey, football, tennis surfaces. Any infills are being cleaned and re-used.

Other commercial entities are now developing machinery to do a similar process. This is an opportunity for SA as the number of their synthetic surfaces continue to grow.

- **Investment in Environmental Good Practice**

Climate positive design projects must be the aspiration of all sports facilities moving forward, in a manner that can create net positive climate outcomes and environmental benefits.

According to the [Australian Institute of Landscape Architects publication 'Climate Positive Design'](#) there are three

³ IUCN Primary microplastics in the oceans Boucher, Julien and Friot, Damien (2017) - <https://portals.iucn.org/library/node/46622>

aspects that we need to consider:

- i. Understand the environmental and carbon impacts of what we do through evidence-based research
- ii. Manage and mitigate these impacts through good planning and design
- iii. Advocate and educate for both the understanding of carbon neutral and climate positive design.

For future sports fields there are several important aspects to consider, including the opportunity to deliver positive environmental changes, with examples including

- Reducing the amount of potable water needed by water harvesting from the surface to the natural landscape and use of indigenous planting
- Expanding the tree canopy to provide greater shade, increased water evaporation from the trees leaves and reduced Urban Heat Island impact
- Retaining as much natural grass area as possible by using viewing mounds, creating attractive grassed areas and using grass on pavilion roof tops
- Using renewable energy for services (lights, power etc).

Additional environmentally responsible elements that should be considered include:

- **Pavement base**- use low carbon materials including recycled aggregate and not virgin materials
- **Design longevity** – 30-50 years should be the new norm and not just 10-20 years
- **Drainage**- use recycled or plastic materials, which is heavy duty to last longer within the Australian climate
- **Shockpad**- use recycled product rubber for insitu pads from tyres or infill from synthetic fields or recycled pro-forma pads made from rubber shoes etc. The Pad should have a warranty of at least 20 years to ensure that it can be reused with 3 carpet installations
- **Carpet**- use a biopolymer yarn as opposed to petro-polymer based yarns. Explore carpets that are easily recyclable 100%, including backing. Only use dual yarn (monofilament and tape combination) to reduce infill breakdown, migration and reduced amount of maintenance needed.
- **Infill** - embrace organic infill with a low weight ratio to sand by using a quality shock pad with a 20-plus-year warranty.

Associated design elements to create positive impact may include:

- Design determined by calculating the Embodied Carbon Emission for sports surface reduction strategies, based on [European Guidelines](#)
- Tree planting (with appropriate tree root barriers) to offer extended tree canopy (**30% target**) and additional evaporate cooling, shade to spectators and reduction of Urban Heat Island Impact
- Water harvesting to collect rainwater and re-use on natural landscapes and trees, thus improving amenity value, reducing the use of potable water and extending the life of natural turf, shrubs and trees in warm weather
- Improved quality of water through sand filtration on surface sand ballast
- Concrete pathways to embrace 'Green' concrete to reduce the environmental footprint of the paths (e.g. Use of Fly Ash to replace part of the Portland cement)
- Lights – consider the use of 'renewable' energy to power the lights and whether the 'competition lights' need to be used for training. Consider using lighting software to only light the areas that are being played on. When the games are due to finish, lower the lights to pedestrian levels (e.g. <20lux) to allow the players to leave the field safely.
- Fauna and Flora – any displacement where possible should be restored in other areas across the parkland
- Reduction of impact of Deadly Heat Days through climate positive landscape design
- Use of electrical vehicles for the maintenance transitioning from petrol
- Circular economy with zero waste strategy
- Request for Environmental Product Disclosure (EPD's) Statements for supplier/contractor products

2.4 Prosperity (Economic) Sustainability

It is important that the economic value of the facility development is considered from a capital and whole-of-life (WOL) costs perspective to identify how the 'asset' programming needs to be maximised to create a positive community Return on Investment.

Identify the WOL costings for the design and construction of the facility (Capital cost), the ongoing management (OPEX) and replacement cost (Sinking Fund) to ensure that the 'price of use' point reflects the 'recovery' strategy that the Council agrees to.

The WOL costs can be calculated considering the following:

- Capital costs of the design, procurement and construction,
- Maintenance costs, and
- Replacement costs of facility components.

This should provide a total over an agreed life expectancy. If the field is designed for 30 years, the shockpad shouldn't need a full replacement, the carpet will be replaced at years 10 & 20 (estimated) and the pavement may after year 30 need some repairs depending on the building strategy.

The annual monetised costs can then be identified and possibly broken down more to hourly rates, depending on scenarios of usage (e.g. Average usage of 20,30,40,50,60 hours scenarios), which will provide an hourly fee needed to cover the WOL costs. (Suggest based on 50 weeks usage).

The owner may then consider their 'financial cost recovery strategy',

- Scenario 1: Full WOL recovery
- Scenario 2: WOL % recovery (e.g. 20%)
- Scenario 3: Only Maintenance & Sinking Fund recovery

By exploring the difference between all surface types we can review the sustainability options.

NATURAL V HYBRID V SYNTHETIC SURFACE LEVELS



MULTIPLE BOTTOM LINE SUSTAINABILITY COMPARISON

	NATURAL TURF FIELD Community standard Sand profile with warm season grass over sown with winter grass	HYBRID SPORTS TURF REINFORCEMENT Community standards Natural turf plus reinforced areas around the goals, running lines & centre circle	ENTRY STANDARD SYNTHETIC TURF FIELD FIFA Quality FIFA Quality with shockpads with monofilament 3G Turf	SMART SYNTHETIC TURF FIELD FIFA Quality with shockpads and additional durability and performance dual yarn 3G Turf	BEST PRACTICE SUSTAINABLE SYNTHETIC FIELD As Smart Synthetic Turf with a whole of parkland integrated, holistic view based around the UN's SDG's
	PEOPLE (COMMUNITY) LENS				
Maximum hours of usage Hours Usage (week/year)	30 hrs/week 1,200 hrs/year	35 hrs/week 1,400 hrs/year	42 hrs/week 2,100 hrs/year	60 hrs/week 3,000 hrs/year	60 hrs/week 3,000 hrs/year
Intensity of usage (PEOPLE PER HOUR/YEAR)	30 ph 36,000 annually	30 ph 42,000 annually	40 ph 84,000 annually	60 ph 180,000 annually	60 ph 180,000 annually
	PLANET (ENVIRONMENT) LENS				
Water used – weekly annually ² (based on 25 weeks at 150k L pw)	150,000 L 3,750 Million/L	150,000 L 3,750 Million/L	Zero	Zero	Zero and water harvested for the rest of the natural assets in the parkland
Bad weather days closed	c. 15 days 10 WET / 5 HEAT	c. 15 days 10 WET / 5 HEAT	c. 10 days 10 HEAT IF RUBBER	c. 5 days 5 HEAT IF ORGANIC	c. 5 days 5 HEAT IF ORGANIC
Maintenance needed (HOURS PER WEEK)	3 HRS	3 HRS	2 HRS	1.5 HRS	1.5 HRS
Pesticide/herbicides used	■ x2-3 herbicide applications ■ x1 insecticide ■ x4-6 fertiliser applications	■ x2-3 herbicide applications ■ x1 insecticide ■ x4-6 fertiliser applications	Reduced annually with spot sprays	Reduced annually with spot sprays	Reduced annually with spot sprays
Acceptance by Community as Active Parkland	Excellent acceptance (as long as not too busy!)	Excellent acceptance (as long as not too busy!)	Sporting community excellent. Passive usage can struggle if too busy or if fenced off.	Sporting community excellent. Passive usage can struggle if too busy or if fenced off.	Sporting community excellent. Passive usage can struggle if too busy or if fenced off.

⁴ Code of Practice – Irrigated Public Open Space (2015 edition) based on 5000kl per hectare/ per year for sports fields.

	NATURAL TURF FIELD Community standard Sand profile with warm season grass over sown with winter grass	HYBRID SPORTS TURF REINFORCEMENT Community standards Natural turf plus reinforced areas around the goals, running lines & centre circle	ENTRY STANDARD SYNTHETIC TURF FIELD FIFA Quality FIFA Quality with shockpad with monofilament 3G Turf	SMART SYNTHETIC TURF FIELD FIFA Quality with shockpad and additional durability and performance dual yarn 3G Turf	BEST PRACTICE SUSTAINABLE SYNTHETIC FIELD As Smart Synthetic Turf with a whole of parkland integrated, holistic view based around the UN's SDG's
PROSPERITY (ECONOMIC) LENS					
Initial Capital costs (8,500m ² field)	\$0.9 M	\$0.9 M	\$1.2 M	\$1.4 M	\$1.6 M
Maintenance costs (pa)	\$30,000	\$35,000	\$25,000	\$20,000	\$20,000
Whole of Life (WOL) costs* over 30 years	\$2.4 M	\$2.4 M	\$3.8 M	\$4.4 M	\$4.8 M
WOL Cost per hour of usage over 30 years	\$65.30 p.h.	\$58.04 p.h.	\$59.52 p.h.	\$48.89	\$53.33
PERFORMANCE LENS					
Playing standards	Limited (e.g NPL) not certified ■ Turfgrass composition and coverage ■ Surface hardness ■ Surface levels ■ Surface traction ■ Water infiltration ■ Water distribution uniformity (>85% DU)	Limited (e.g NPL) not certified ■ Turfgrass composition and coverage ■ Surface hardness ■ Surface levels ■ Surface traction ■ Water infiltration ■ Water distribution uniformity (>85% DU)	FIFA Quality FIFA Quality Plus additional Australian standards	FIFA Quality Plus additional Australian standards	FIFA Quality Plus additional Australian standards ■ Safety standards ■ Durability standards ■ Porosity standards ■ Health standards ■ Microplastics standards
Additional standards	NONE	NONE	NONE	Safety standards Durability standards Porosity standards Health standards Microplastics standards	UN's Sustainability Goals (SDG's) Australian Institute of Landscape Climate Change Guidance Holistic Environmental Sustainability best practice
Surface performance	Seasonality driven linked with intensity of usage	Seasonality driven linked with intensity of usage	More consistent	More consistent	More consistent
Expected closure for renovations annually**	6 - 10 Weeks	6 - 8 Weeks	1 Week	1 Week	1 Week

2.5 Performance (Fit for Purpose Surface) Sustainability

- Types of surface standards

Many of the national and state sports organisations have provided guidelines for their facility surface types that they prefer to perform on, at community levels. These are summarised below:

Sport	Elite/Stadium Level	Community Level	Link to Sports Standards
ATHLETICS	IAAF 1	IAAF 2	World Athletics Guidelines
AUSTRALIAN RULES FOOTBALL	N/A	Community	AFL Guidelines
CRICKET	N/A	Community	Community Cricket Guidelines
FOOTBALL (SOCCER)	Quality Pro	Quality	Football Turf
GRIDIRON	None	None	Gridiron Guidelines
HOCKEY	Global and Global Elite	National and Multi-sport	Information Hub - Hockey Australia
LAWN BOWLS			Bowling Green Guidelines
NETBALL			Netball Guidelines
RUGBY UNION	Regulation 22	Regulation 22	Rugby Turf performance World Rugby
RUGBY LEAGUE	Stadia	Community	NRL Guidelines
TENNIS	ITF 2	ITF 1	Court-surfaces.pdf

Table 1: Performance standards of synthetic playing surfaces for a range of sports

A full explanation of the standards of the individual sports surfaces together with the performance standards for the Construction can be found in **SALGRSN Guide 1: Synthetic Sports Surface Standards**.

- Types of surface

To meet the various sports standards there are a number of surface types linked to each sport. These include:

i. Natural turf (20-30 hrs per week)

Natural turf used for sports fields is an engineered design and is not just natural grass from a paddock, that some believe costs next to nothing. To cope with the modern day demands of community sport it will normally consist of drainage, irrigation, growing medium (e.g. sand or sand slit/soil), and the appropriate grass species for the way it needs to be used.

ii. Hybrid turf (25-35 hrs per week)

Usually a matting structure with approximately 5% of synthetic fibre to provide support to the natural grass root system – excellent in high wear areas for the football codes.

iii. Synthetic Football turf (40-70 hrs per week)

Football Turf (to give it its proper name) is normally referred to as third-generation (3G) fields and composes of carpet (50-70mm) with infill and sits on a shockpad and pavement. This long-pile normally has two levels:

Entry level – FIFA Quality – expect 42 hrs per week

Smart level – with additional durability, porosity and U.V degeneration identified to increase usage to over 60 hrs per week.

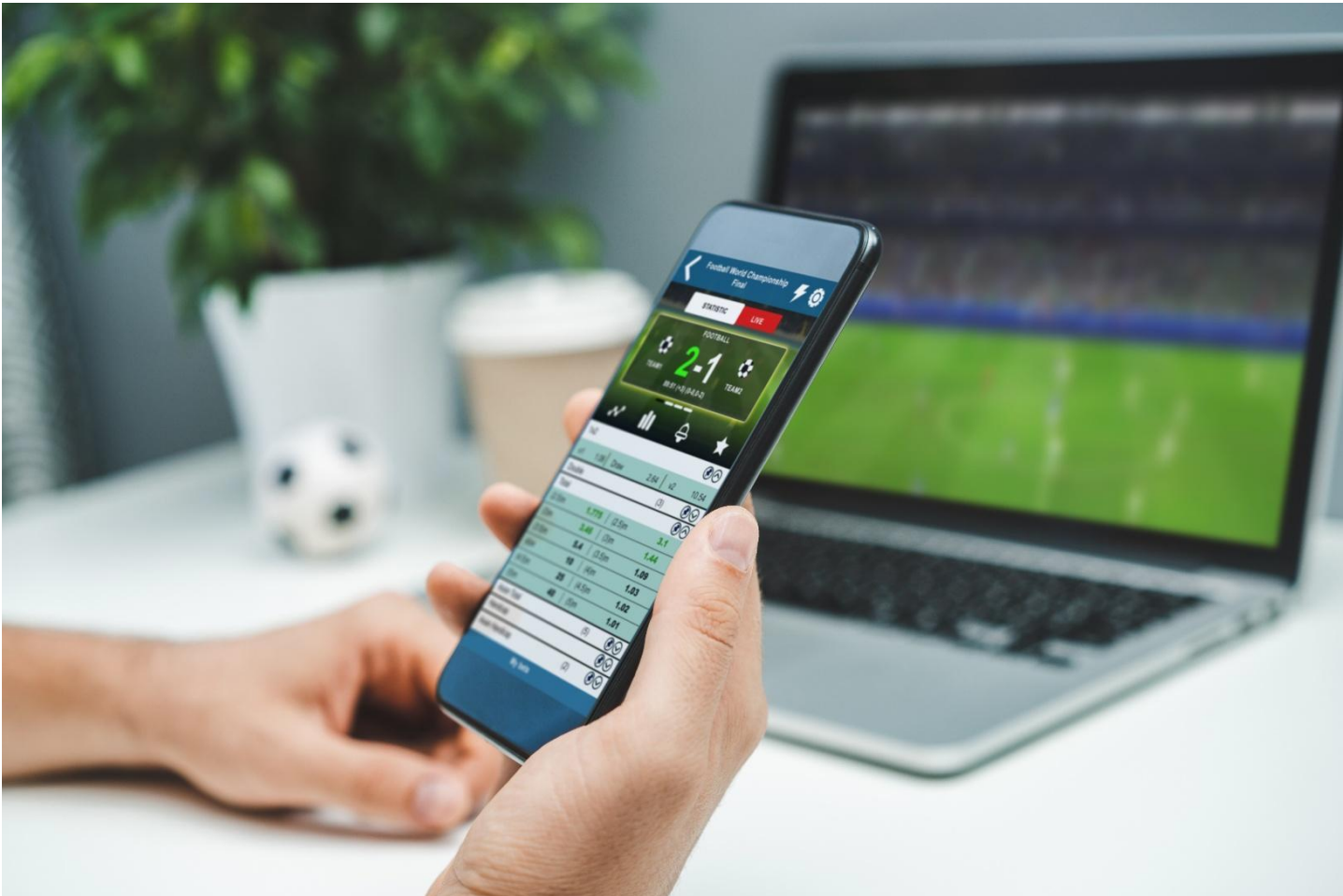
iv. Synthetic Hockey turf

Short-pile turf, either sand dressed and can be played wet or dry and an even shorter-pile, which is only used for wet hockey surfaces (no infill).

v. Woven short-pile synthetic turf

Mostly used for Bowls and is non-directional.

DECISION MAKING PROCESS



3. Decision Making Process

Objective Decision Making

This Guide has embraced a number of reference guides and frameworks for recreation planning, decision making for facilities and for synthetic surfaces. This provides an objective and logical format for the four key stage of PLANNING, DESIGNING, PROCURING & MANAGING the delivery of a synthetic sports surface.

These four stages include:

PLAN Consider the holistic approach to reflect community needs, how the facility will be used, during and at the end of its life. Consider the 4P's of People, Planet, Prosperity & Performance so that the design, procurement and management stages are clear.	DESIGN Design for 30 years plus, embracing good practice from industry peak bodies for landscape design, sports performance, environmental good practice to ensure it meets the performance standards required for these specific needs.
PROCURE Understanding how to procure and project deliver the facility is critical. Only design and ask what is possible and not what is aspirational. Ensure that you can afford what you are asking for. The procurement process should ensure that the provider can achieve the environmental, economic and performance goals you require.	MANAGE Good management balances the performance, usage, maintenance and end of life requirements equally as the surface progresses through its life. Understanding what to look for is critical as you monitor and evaluate its ongoing surface delivery.

3.1. Plan

The first step is the most important aspect as the PLANNING stage needs to bring together all of the external and internal influences and priorities. The planning stage needs to reflect every stage of the facility or surface usage from the

- Strategic planning – to reflect internal and external priorities, location and community needs and aspirations.
- Field of play key considerations.
- Sustainability lens (4P's)
- Life cycle considerations
- Community consultation

Planning Stage Deliverables

- | | |
|-----------------------|---|
| • Strategic Plan – | could be a feasibility study, sports fields plan etc, which brings together open space strategy, recreation/sports plan, sports field strategy etc, Councils asset management plan and/or Councils funding strategy. The siting options should be considered at this stage including heritage overlay. |
| • Sports Field Plan – | could include exploration of supply and demand to justify need and/or change from current surface. Should explore capacity and availability together with the options of natural grass improvements, use of hybrid technology for high wear areas before automatically assuring that a synthetic field is the only answer. Consideration to it being a multi-sport and/or multi-use should be part of this stage. The plan needs to connect the 4p's of sustainability in detail at this stage. |

- **Community Consultation –** An engagement plan to identify the users and non-users of the field of play, exploring the consequences of a change of surface type together with the impact (perceived and actual) onto them. A broad range of the community should be contacted and not just the normal respondents to ensure that the wider community has the option to respond.
- **Management Plan –** For any sports or parkland, a management plan should be developed that explores the Principles of use between active and passive participation, management responsibility for programming, wayfinding, maintenance, annual renovation, parking, budgets, including sinking fund and the end-of-life replacement.

Associated Tools	Links
• Self-Assessment tool	Section 4 of this Guide
• AFL / CA Preferred Community Facility Guidelines (2024)	AFL PFG-2024 DIGITAL (1).pdf
• Football NSW Guidelines (x6)	Facility Guides - Football Facilities
• SA Office for Sport & Recreation	Office for Recreation, Sport and Racing Office for Recreation, Sport and Racing
• Masterplanning Guide	Recreation and Sport Facility Design Guide (Office for Recreation, Sport and Racing)
• WA Governments Sport & Recreation Planning Guidelines	CSRFF guidelines CITS
• NSW Department of Planning, Housing & Infrastructure	Department of Planning, Housing and Infrastructure NSW Government

3.2. Design

The design stage interprets the planning scope into the delivery ready for procuring the best value surface that is fit for purpose.

The importance of this stage is to ensure that all aspects of the site are considered to create the best outcome for the surface and the parkland. It is possible as the early stage of the DESIGN process that when the site assessments are completed (e.g. Geotech engineers assessment and /or environment assessment) that this preferred site is deemed not appropriate. Due to this some councils complete these two components in the planning stage as part of the specific parkland assessment.

The Design process should include:

- Site evaluation
- Community engagement (if not as part of the planning stage)
- Civil/construction design – concept and detailed design
- Landscape design
- Performance surface design
- Stormwater and drainage strategy
- Environmental considerations

Experts should be engaged to ensure that the design can achieve its strategic and pragmatic objectives.

Design Stage Deliverables:

- **Site evaluation –** The site needs to have all services detailed and this should include a detailed site survey (3D – CAD files), Geotech assessment, environmental assessment, DBYD, stormwater and drainage assessment etc.
- **Community engagement –** As detailed in the planning stage.

- Civil/Construction design - Schematic drawings working up to 50/80/100% design drawings depending upon the Tender Contract strategy. These should address the drainage drawings, any irrigation, pavement base, fencing, paths, lighting etc.
- Landscape design - To address various environmental considerations, such as the tree canopy, landscaping around the field of play, relocation of 150mm of turf/top-soil, new viewing rounds, water harvesting, fauna and flora etc.
- Performance surface - To ensure that the surface is designed to meet the sports design overlays, including aspects such as field of play sizes, run-offs, surface type, shade structures, coaches boxes etc.
- Stormwater & drainage strategy- To ensure that, working backwards that the stormwater exit can work with the amount of water that needs to be accommodated with the strategic Annual Rain Intensity.
- Environmental considerations - To address any specific aspects for the site and especially lighting spillage, fauna and flora design etc.

Associated Tools	Links
• Rugby & Climate Change – Projected Impact on Rugby in a +2°C World	Rugby for Nature World Rugby
• Sport & Plan Industry Association (SAPIA) Code of Practice – Construction, surfacing and maintenance of sports courts	SAPIA-Code-of-Practice-for-Sports-Courts-1.pdf
• Bowls Green – Construction Guidelines	Bowling Green Guidelines
• Hockey Australia Guides (x6)	Information Hub - Hockey Australia
• DDA Compliance	D.D.A. guide: The ins and outs of access Australian Human Rights Commission
• Access 4 all abilities in design	Design for accessibility and inclusion Style Manual
• Design for gender neutral facilities	Gender Neutral Work-Space Design and Certification.
• Wayfinding Guides	Wayfound Victoria - A free resource to improve the consistency of wayfinding signage across Victoria.
• Climate Positive Design: Vol 1: Action Plan for Australian Landscape Architects (A12A)	Climate Positive Design

3.3. Procure

The procurement and delivery of the project should reflect the design considerations with the procurement and project management to ensure that the field of play is delivered.

The stage of this process is normally:

- Design and procurement documentation
- Procurement process
- Construction and project management
- Certification and handover
- Dilapidation period

This process should be aligned with key internal dates of the organisation to make the decision, which could include Council meetings, organisation board meetings, etc.

Project Stage Deliverables

- Design & procurement documentation – The final design drawings need to be aligned with the Request For Tender, Conditions of Contract, RTF Schedules and the Specification (Performance Surface and Construction).

- Procurement process – There should be a skilled team to evaluate the submissions from the tender process, with key evaluation criteria should include, price, quality of offer, their experience, capability & capacity of the tenderer, project plan and methodology.
- Construction & project management - Identifying the Critical Hold Points and Witness Points through a strong communications process between all parties. The construction stage should also address the Traffic Management Plan, OHS, Environment Management Plan etc.
There should be a Project Manager appointed by the organisation to ensure weekly meetings between all parties can be delivered within budget and on time.
- Certification & handover - If the field of play surface is to be certified by an independent organisation (e.g. Hockey – FIH, Football – FIFA, Rugby – World Rugby etc) that should be addresses in the project plan.
There needs to be a comprehensive handover documentation that addresses the As Built drawings, 3D designs, all documentation from equipment, warranties, etc.
- Dilapidation period - An agreed dilapidation period should be agreed as part of the tender documents initially.

3.4. Management

The management of the surface will be influenced by different stages of the life plan of the surface and should include both the programming, maintenance and renovation, end of life considerations and the asset management.

The key stages that need to be considered include:

- Programming
- Maintenance and renovation roles and responsibilities
- Asset registration, monitoring and review
- End of life considerations

Management Stage Deliverables

- Programming – The programming of the field should consider rotation of routine usage or drills to reduce the impact on the surface.
The programming should be linked to the maintenance obligations for the surface.
- Maintenance & Renovation roles - Defined maintenance roles should be specified between all parties, including what needs to be completed after game days and routine drills.
Clear definitions between the users, council/sport and the specialist contractor are needed.
- Asset registration, monitoring & review - An annual update for the asset registrations and a conditional assessment to ascertain the likelihood of achieving its life expectancy (10 years).
- End of life considerations - A half-life and 8-year review should be considered with any major renovations considered.

SYNTHETIC SURFACE POLICY GUIDELINES



4. Synthetic Surface Policy Guidelines

4.1. Policy

Why do Council's need a synthetic turf policy?

Councils require a synthetic turf policy to provide clear direction for decision making and ensure equitable community access to facilities. This policy framework will enable council's to:

- Deliver strategic outcomes by aligning synthetic surface installations with council's community, sport and recreation, sustainability and wellbeing objectives.
- Identify conditions where and when synthetic surface use is appropriate and where it is not.
- Ensure equitable access through transparent processes that maximise community benefit while managing use arrangements that benefit all aspects of the community.
- Manage risks effectively by establishing clear compliance requirements for planning, environmental and safety legislation, alongside financial and operational risk controls.
- Optimise asset value by balancing the benefits of year round playability and increased capacity against whole of life costs, environmental considerations and maintenance requirements.
- Circular economy considerations and how synthetic surface products should be treated at each stage including end of life.
- A well defined policy will assist to prevent ad hoc decision making, provides guidance to administration and chamber decision making, reduces disputes, and ensures synthetic turf installations deliver maximum community value while meeting council's strategic priorities.

4.2. Leasing

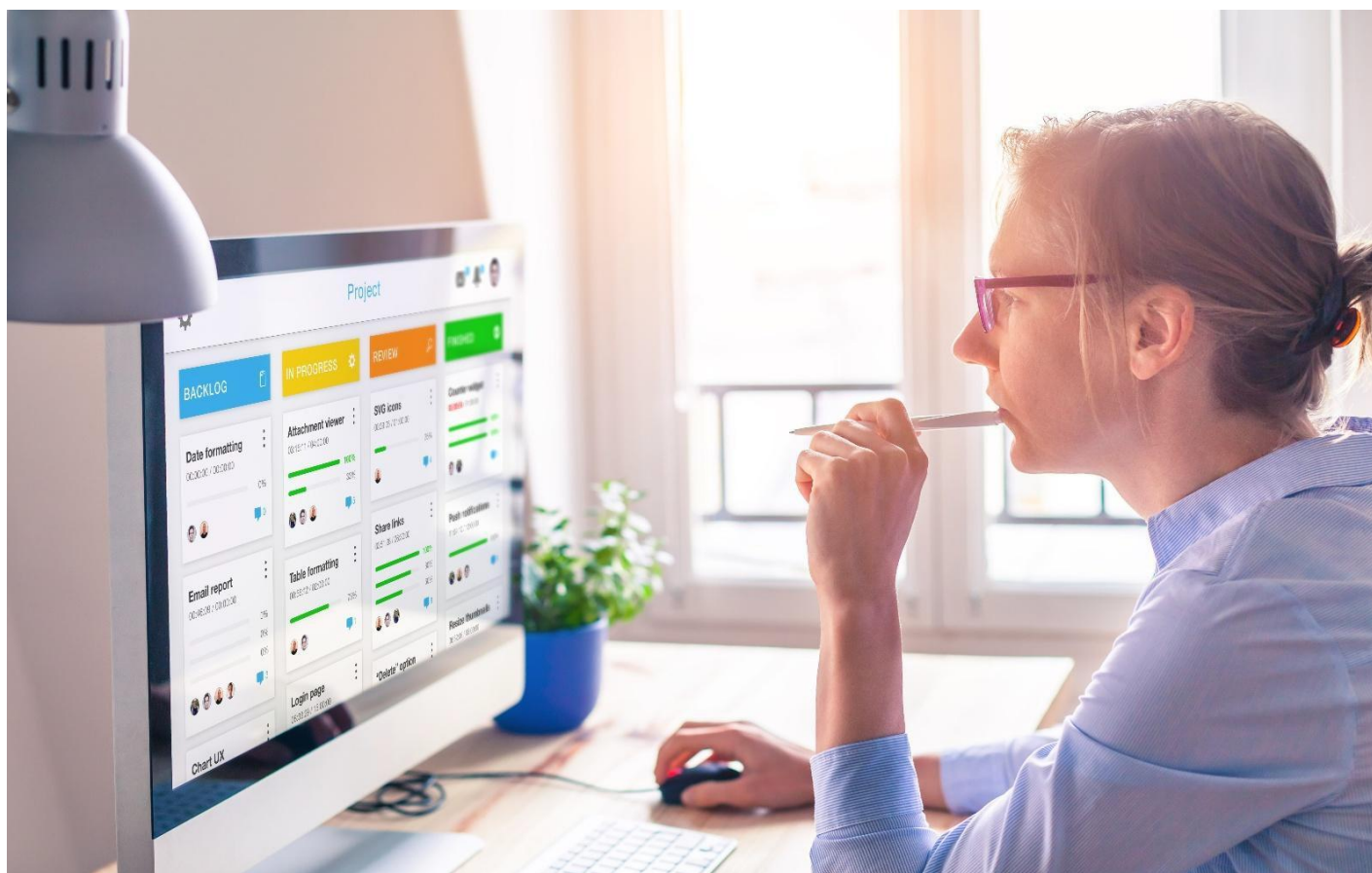
What should be included in a lease for locations with a synthetic playing surface.

Synthetic turf installations represent significant long term investment in community infrastructure that require careful governance to maximise public benefit. Occupancy agreements provide clear direction to all parties on their responsibilities. Councils should refer to the Leasing & licensing sport & community facilities guide commissioned by the South Australian Local Government Recreation Forum. www.lga.sa.gov.au/members/services/research-and-publications/library/2018/leasing-licencing-sports-community-facilities

4.3. Policy Template

The SALGRSN Toolbox provides an example template to be considered by local government when they are planning for the use of synthetic surfaces, whether they be rubber, acrylic, long grass or short grass.

SELF-ASSESSMENT PROCESS & TOOLS



5. Self-Assessment Checklist

To assist the organisation appreciate their current position a 'Self-Assessment Checklist' has been developed to deliver a sports surface.

Sports Surface Component Considerations	Benchmarked Solution and Preferences	Self-assessment Result
1. PLANNING		
Scope of Brief Confirmation		
Clarity of Brief	Is there clarity on the scope of the brief to ensure it meets the criteria and benefits of the broader community.	
Needs Assessment		
Catchment area identification	Has a need been established within the local government area and has this been agreed by the sport e.g. State Sports Association (SSA), local Council &/or state government.	
Existing facilities audit	Has local facilities in the area been audited by council, the sport or other organisations to demonstrate specific needs for this request. This may include Regional Associations, SSA or NSO facility audits/ state strategies or local council recreation policies etc.	
Demographic analysis for current and future growth needs	Does the local demographic profile align with the facility request and programming ability. The demographic analysis should be able to justify any gaps between the needs and wants of the project.	
Participation data collected to determine needs	Have you embraced demographic data currently and for the future (25 years plus) this should allow for the collection of information on population density, age and gender structure, income and household profiles, and ethnicity. Expectations for growth or demographic changes are needed.	
Alignment of sport and recreational needs analysis	Does the local participation data provide the supply and demand modelling to justify the needs of any future facility.	
	Does the demand justify the level of provision, whether that be local, district, regional, state or national level. This data should provide the reality, not the aspiration of needs.	
Stakeholder alignment	Has stakeholder and community consultation been conducted to support the project in an open and transparent manner.	
Conversion from natural to synthetic or hybrid surfaces	Has the social trade-off of reducing natural turf been assessed? (i.e. if the site was used casually for play, social sport, picnics etc. and it is converted to synthetic and also therefore potentially fenced off, has the loss of natural turf been considered? (I.e. not just getting councils to assess the needs and demands, but the reverse loss in not being able to use it for more social/recreational purposes?)	
Provision Assessment		
Site assessment	Justification that the current site cannot accommodate the current or future demand without such technological improvements.	
	A council/regional-wide geographical assessment should consider which is the best site to encourage broad community usage.	
	Number of synthetic fields of play in the area and how does the proposed one complement others and are part of a network solution to address capacity issues in the area.	
	Exploration of other options (e.g. natural surface upgrade with drainage & irrigation system improvements or use of hybrid technology).	

	Exploration of flooding, bushfire, environmentally or residentially sensitive areas prior to the agreement of the site.	
Supply and demand identify needs and gaps	There is a need to quantify current and future needs for participants and this will allow clarity on the surface type needed.	
Sports Provision & Capacity	Complete a demand assessment analysis, agreed with the Sports SSA, to justify the need for new facilities and/or upgrade existing ones. This should consider recreational needs, training, and competition needs.	
Community & stakeholder consultation	Community consultation at an early stage to reflect the whole community, including all (potential) users, key stakeholders, and the community who may be impacted by the development potentially from increased usage, traffic, noise, or lights.	
Policy & Strategy Alignment		
Organisational alignment	Does the project consider the open space, recreation needs, and sporting facilities strategies as well as the SSA needs studies.	
External alignment of policy and strategies	Consult and confirm any strategic needs and how this planning request will fit into state/territory, commonwealth, and local government strategies, both within this location and the neighbouring ones.	
Approved masterplan	Is there a masterplan or identified need by council for the facility as this site that has been agreed by council that you can align to.	
Sports Specific Needs		
Aspirations	How does the organisations aspirations align with the demographic and sporting needs for the future.	
Specific technical needs for surface	Certain sports have requirements for the surface types and performance criteria and most are linked to the level of play, from multi-sport to training, community, regional, state, national, and international; play requirements.	
	Work with local SSA to identify the actual standards and type of surface needed for the field of play, not just the aspirational needs	
Surface type	A decision should be made that clearly justifies why a specific surface type is decided upon, whether that be natural grass, synthetic or hybrid grass, acrylic surface, rubber track or specialist surfaces for each sport (e.g. woven carpet for bowls etc)	
Sport specified surface	Does the sport specify a specific type of surface, such as Hockey, Athletics, Netball etc that means it will not be played on natural grass	
Management Considerations for Future Proofing		
Site management Strategies	Has the owner of the facilities (e.g. local council) agreed how the site should be managed (e.g. lease, license, Council management etc) and will this impact the management of the proposed facility.	
Maintenance responsibilities and strategies	Is there an agreement (MoU/Lease agreement etc) that clearly identifies the maintenance, repair, restoration and replacement of the surfaces being requested.	
Usage levels	Is there clearly modelled (& conservative) projected usage of the proposed surface and will that surface be able to cope with the demand modelling.	
Standards of play	Are the standards of surface clearly defined, fit for purpose and meets the Australian weather challenges.	
Risk mitigation strategies	Has all risk mitigation strategies been considered for the proposed surface, including:	

	i. Environmental aspects, ii. Community usage, iii. Economic considerations.	
Technology usage	How can technology be used to assist with the management of the facility (e.g. Tennis Australia's Book A Court platform, Lighting software, Intelligent Play etc).	
Program needs & management	Does this new surface allow for greater programming and usage without detrimental impact on the surface.	
Replacement strategy	Has a replacement strategy and funding fund been considered.	
Environmental Considerations		
Whole of parkland assessment	Exploration of a whole of parkland masterplan should be considered to ensure that any field of play design is aligned with the strategic needs of the site. Impact of the field of play for the whole site - including tree canopy, fauna, flora, water harvesting, parking, lights, etc).	
	Placement of field of play – to minimise the impact of the field on other environmentally or community-sensitive areas (e.g. waterways, bushfires, etc).	
	Climate change impact - has the design embraced the Australian Institute of Landscape Architects, Climate Positive Design (Vol 1-3) Guidance.	
	Tree planting – to reduce climate challenges and carbon sink and possible impacts to Urban Heat Island (UHI) impacts.	
	Active, Passive recreation impact – will the new facility have a significant impact on passive recreation in the area? Will it significantly impact the hours of play in a manner that will impact the local community.	
	Accessibility – Consider whether the new facility will impact people using the site, accessing the site and whether will it be perceived as being safe and accessible by all.	
Civil engineering considerations	Site geotech report - to ascertain the ability of the site to accommodate the pavement base, and in what form to ensure that it can be built for a minimum of 20 years.	
	Site environment assessment – to consider all soil health issues.	
	Flood report – that may impact the site longevity and ability to construct as flooding needs strategic engineering solutions for certain types of flooding.	
	Site survey – to be able to design and build the site to its optimal performance.	
	Tree management report – in relation to any trees impacting the field of play and also how the tree canopy can be expanded with the careful planting of additional trees, for shade, reduce surface heat, and offset any UHI impact. Need to consider new legislation - Urban Forest Act 2023. Consider 30yr forecast of tree root system and branch overhang.	
	Review of the whole of site access – to ascertain pedestrian and vehicle travel around the site from the development and during the development, reducing the impact on the community.	
	Site overlays – has the site any overlays such as heritage importance, restrictive zoning, previous landfill, existing easements etc.	
	Pavement base - 20-year minimum design and preference is for 30 years to ensure that the investment can make a difference to generations of children and sports players	
	Geotech site assessment is needed to ascertain the ability of the site to accommodate the pavement base, and in what form to ensure that it can be built for a minimum of 20 and preferably 30 years.	

	Drainage strategy – to address a 1 in 20-year ARI event of approx 20 mins is allowed for and preferably 1 in 50-year ARI. It is important that the drainage can disperse the water after heavy rainfall and for the sport to resume within an acceptable period.	
	Water harvesting – where affordable should be considered to provide a benefit back to the whole parkland.	
Planning approval	New facilities, where a Development Application is required, need to adhere to local council obligations including a range of statutory documents and additional reference documents (e.g. District and Zone policies, Technical Specifications, Design Guides, District Strategies).	
Environmental standards and Strategies	Environmental strategies to consider may include open space and tree canopy strategies, urban heat island impact reduction strategies and circular economy policies to name but a few.	
	Environmental standards to be considered should include the mitigation of microplastics etc.	

Sports Surface Component Considerations	Benchmarked Solution and Preferences	Self-assessment Result
2. DESIGN		
Performance Standards for Surface		
Sports performance levels/ standards	The surfaces should be designed according to the International Federation standards for community sport, namely: • Football – FIFA, Quality mark • Rugby Union – World Rugby, Regulation 22 • Rugby League – NRL, Community Standard • Australian Rules – AFL/CA Community Standard • Hockey – FIH Natural Standards • Athletics – World Athletics, Category 2 The International Federation surface standards are the starting point and additional performance standards are needed for Australia due to our intensity of use, the environmental conditions, and the community's concern about health and safety.	
Size of playing area	Ensure that the field size is linked to the level of play that is going to be held on the field, as the difference for an aspirational-sized field may add a further 25% to the costs.	
Surface design specified	Line Marking - The line marking should meet the appropriate sports standards (e.g. state, national sports organisation, and that of the International Federation) depending upon the jurisdiction.	
	System design – Yarn - Dual yarn of monofilament and fibrillated tape with additional durability testing (Lisport test 2012 – over 100,000 cycles) to allow it to stand up to the intensity of use in Australia. Reduce ball splash and migration of infill, more durable combination and reducing the maintenance needs. Also reduces the likely migration of infill outside of the field of play. The design of the Field of Play needs to be designed to achieve AS TR CEN 17519:2021 Surfaces for Sports Areas – Synthetic turf facilities – Guidance on how to minimise infill dispersion into the environment	
	System design – infill - Organic infill options with a preference for limited floating. Heat level of 1-2 on the FIFA scale as opposed to rubber was 2.5 to 3 (40% heat reduction).. It is environmentally positive as it removes the rubbers from the system and the possible migration from the field. It will reduce the heat impact significantly and positively impact the perceptions of the community. This will address the perceived issue with some of the community who fear the rubber may have negative health impacts – which although not proven at any level – will stop this narrative.	

	Shockpad - Every system should have a shockpad that meets the European standard (EN 15330-4 (2022) Surfaces for sports areas (Part 4) and has been tested to the Sports International Federation standard. The shockpad should have a manufacturer (not supplier) warranty of a minimum of 20 years and for a minimum of 60 hours and not the normal 40 hours per week that some offer. The environmental preference is for the shockpad to be constructed from recycled products.	
Certification standards	Is certification needed by the sport for compliance (Rugby Union, AFL only), if not does the sport require it?	
Additional considerations	Additional standards for porosity and U.V. durability should be considered at this stage.	
Planet (Environmental) Standards		
Open Space strategy / master planning	Has the sports surface been aligned and agreed within a whole of open space masterplan, so that the environmental benefits (e.g. water harvesting, tree canopy, Urban heat island impact) have been embraced.	
Surface environmental standards	The following SMART standards should be embraced for environmental good practice: • Infill and yarn should be tested to AS/NZS 2111.18 (1997) AS/ISO 9239-1 Flammable / melting point is acceptable • The Heat Indices (FIFA Quality manual) should be within a 1-2 score • All drainage should be under the field of play and achieve the AS Standards for Mitigation of Microplastic's • European REACH regulations, Annex. XVIII entry 50: 2021 if rubber infill used • EN71.1 Safety of Toys – part 3 Mitigation of Certain elements, table 2 – category III (Scraped off material) or US standard ASTM F3188-16 The carpet system needs to be tested for additional durability for Australia (FIFA 2012 Quality manual – Lisport test with a minimum of 100,000 cycles and the higher the better, with some systems now offering over 300,000 cycles.	
Climate action design alignment with good practice	Has the design embraced the Australian Institute of Landscape Architects, Climate Positive Design (Vol 1-3) Guidance.	
Civil engineering standards	Has the pavement design been designed for 20 – 30 years.	
Drainage strategy	Has the drainage been designed to accommodate and Annual Rain Intensity (ARI) of at least 1 in 20 year plus event.	
Water harvesting	Can your design embrace water harvesting to water the rest of the parkland.	
Lighting strategy	What lighting do you need for the fields (e.g. 50/100 lux) and what Australian Standards are needed. The light system should be LED, and have smart technology that allows for various settings including 'warmup/down',	

	Training, and competition (Various levels) to optimize costs and performance needs The standards should be specified against the various Australian Standards and aligned with the various sports needs - AS 2560.1 Sports Lighting, Part 1: General Principles - AS 2560.2 Sports Lighting Part 2: Specific Applications AS/NZS 4282:2019 Control of obtrusive effects of outdoor lighting (general and specifically appendix C).	
Fence / netting standards	Fencing and netting need to balance the role between safety (keeping the ball within the field of play and reducing the opportunity of interaction with spectators or passers-by) and keeping spectators out of the field of play while balls are being used. Consider public access where required. (non-exclusive lease).	
	AS 1725.5 – 2010 (reconfirmed 2020) Chain link fabric fencing Sports ground fencing – general requirements	
	Higher fencing should be considered at key points around the field of play to reduce the ball entering roads, high-use pedestrian areas and to protect other buildings, etc	
Maintenance and renovation	Has the maintenance and renovation program been aligned with the life of the surface, with clear roles and responsibilities defined.	
People (Community) Standards		
Durability / intensity standards	If the facility is being used over 40 hours per week additional intensity usage standards need to be designed in.	
Parking and transport	Public transport should be considered for access to fields. If this is difficult then there should be adequate parking for peak times and turnover of participants etc Conversion of current facilities needs Ensure adequate parking is available Explore the ease of public transport Lighting in parking areas to ensure that there is safety of users	
Access to site and around whole of parkland	Is there good paths around the parkland to key local areas, including parking, toilets and amenities.	
	The width of the paths should be sized to their usage, 2.5-3m in high use areas.	
Way finding	Has the way finding signage been developed and tested on people.	
Pedestrian and vehicle access	Access points need to be DDA compliant and on a level to the paths with NO step down.	
Equipment standards	International and SSA Sports standards need to be embraced.	
	Goal posts should be procured as aligned with the Australian standards compliance obligations, AS4866.1: Playing Field Equipment – Soccer goals.	
	Identify the standard of play that the field is primarily used for (not the aspirational level) and align the size of posts (e.g. AFL, Rugby, etc) as the post heights differ between local, district, and state-level competition.	
Accessibility for public casual Usage	How will the site be designed to allow access for casual usage, so fences/gates are open for public use.	
Prosperity (Economic) Standards		
Whole of life costings	Has whole of life costings been calculated in a manner that includes capital costs, maintenance/renovation and replacement costs at the end of life.	Whole of life costings

Warranty's	The performance system should have a manufacturer (not a supplier) warranty of 8 years (min) against a minimum of 60 hours of usage per week for 50 weeks a year (3,000 hours per annum).	Warranty's
Operational budget expectations	Operational costs for management, maintenance, replacement of infills (synthetic grass or sand) and repainting should be considered.	Operational budget expectations

Sports Surface Component Considerations	Benchmarked Solution and Preferences	Self-assessment Result
3. PROCUREMENT		
Procurement Process		
Transparent process	A procurement program is needed to ensure transparency and rigor to secure fit for the for-purpose field of play.	
	Council procurement program should be used where possible to ensure transparent and rigorous procurement protocols are followed.	
Tendering suitability	The tenderer chosen must have experience in the construction of these standard fields and the surfaces must be certified and approved by the Sports International Federation.	
	Tenderers/suppliers of such sports surfaces must be a licensed or preferred provider of the International Federation or an Agent of such an organisation and can supply a sports system that has been tested and has been certified by them to meet the sports standards/requirements.	
Procurement documentation	The common Design and Construct (D&C) procurement strategy is fraught with dangers and although may present as a cheaper option in the short term will be more costly in the whole of life of the field.	
	Choose either a Design Finalisation and Construct (DF&C) or a Detailed Design (DD) strategy.	
	Where possible utilise the Government's standard documentation specifically amended for this type of contract.	
Specification development	The development of the specification needs to consider the performance surface that is fit for purpose, the construction process and standards, environmental expectations, timelines and details from the client side to ensure that the tenderers have a complete understanding of the site history, current condition and how it will be used.	
	It is imperative that the writer is knowledgeable of all standards and needs.	
	Encourage innovation in the system options to demonstrate best value for the community and user.	
Evaluation strategy	The evaluation strategy should consider a weighted system that explores, the experience and capability of the tenderer, their capacity and availability for your timelines, the costs (whole of life recommended), the product you are purchasing and the methodology they will employ to construct and install it.	
Procurement timetable	The procurement time lines need to explore the tendering timelines (4-5 weeks), the evaluation and decision-making process (4+ weeks), the negotiation period (2-4 weeks), the project management of the design finalisation, manufacturing process, construction, installation and certification process.	
Certification standards	Certification to the International and ASC Sports standards once complete and ongoingly.	
	All sports fields need to be procured in a manner that ensures that the International Sports Federations' performance standards are achieved as a minimum, plus Australian-specific needs as per the Design Guide (e.g. UV radiation, water porosity, etc).	
Construction Project Management		
Project Management	A detailed project plan and an identified project manager from both teams.	

	Ensure sufficient time is allowed for each stage, for wet days, and a contingency is built in.	
	A detailed project plan will bring together all parties and ensure an aligned timeline that reduces the probability of overrun and additional costs.	
Quality Control	Assuring the quality is crucial throughout the project and once it has been installed.	
	There should be Critical Hold Dates that allow for independent assessment before the next stage continues, around project management, construction steps, and completion.	
	The field should be certified by an approved International Federation approved assessment company to ensure that the surface performs to the levels specified.	
Handover		
Formal handover process	There should be a default handover period, normally 12 months so if anything goes wrong then the tenderer corrects it at no cost to the sport or the purchaser.	
Handover documentation		
Defects liability period	This should be for 12 months and have an independent assessment at the end of that period to provide council with the confidence especially over the performance of the surface.	

Sports Surface Component Considerations		Benchmarked Solution and Preferences	Self-assessment Result
4. MANAGEMENT			
Facility Management			
Management options	The management of the facility should be considered in a manner that allows the greatest number of people from across the community to utilise the asset and play sport. This should be documented and all partners agree the delivered outcomes.		
	Management options may be documented as lease agreements, licences to use, MoU's etc.		
Roles & responsibilities	There needs to be clarity of roles between all parties including management issues, cleaning & maintenance, programming, replacement funding, management of revenue and expenses, etc.		
Maintenance			
Roles & responsibilities	The maintenance of the surface is paramount to its performance, safety and life expectancy. The tasks needed for this should be clearly articulated and defined between ALL parties. These cannot be abdicated through a contract.		
Routine maintenance	Routine maintenance, such as brushing is needed and should have shared responsibility between the Club and specialist machinery (e.g. Council and contractor).		
Programmed maintenance	Programmed maintenance such as 'Deep Cleans' and infill replacement need to be allocated across the year so that they are completed at the correct parts to the season.		
Seasonal renovations	Seasonal renovations should be planned to have pre or post season so that it impacts the players positively. This should include infill upgrades, deep water cleaning, line marking, etc.		
Specialist work	Is there specialist work that needs to be identified that isn't operationally completed on-site by the club or council? This is normally where specialist machinery is needed.		
Older life maintenance	As the surface ages additional maintenance and repair work will be needed and this should both be programmed in to the maintenance/renovation calendar and economic resources allocated.		
Repairs	Repairs will need to be accounted for, so a contingency operational budget should be allocated.		
Annual review	An independent annual review should be developed to ensure that the life expectancy can be addressed.		
Surface Programming			
Routine programming	Programming of the field/surface should include working with other stakeholders, such as local schools and other sports to manage the assets.		
Technology embracement	Technology for the lights, maintenance and program should be connected if it allows greater data to be collected and management decisions to be made. This could include use of intelligent play, booking systems, etc.		
Measuring Impact			
Demonstrating impact	To create a community impact focused on growing participation can be created by additional hours for children and adults to have access to more sports fields. Measuring this impact will quantify the effects that technology can have on actual participation.		

KPI's	Identify key measures to justify the impact that the new sports facility is having on the community by collecting the data that should include: • Club members – annual before and after • Usage – the number of hours per week/year • Usage – the number of players (adults/Children) • Hours of maintenance/hours of use ratio • Cost of maintenance per annum • Hectares of synthetic v natural turf fields in the municipality • Amount of water used before and after installation	
Replacement Strategy		
Replacement	The anticipated replacement date should be calculated annually to ensure that the field can achieve its life expectancy, which will be determined by the type and intensity of usage with the maintenance program to reduce the impact of the usage. From the annual review consider when the field of play needs to be replaced and ensure that there is a sinking fund in place to be able to afford its replacement.	
Supporting infrastructure and equipment standards		
Pathway standards	The width of the pathways should be a minimum of 1.8m and preferably 3m, linked to the expected number of spectators while still allowing 1.8m outside of the spectator's 'line.'	

6. Reference Section

6.1. Guidelines Advisory Group

The SALGRSN Advisory Group Consists of:

- Craig Hobart, City of Onkaparinga
 - Colin Donnely, City of Part Adelaide Enfield
 - Bryce Norton, Town of Gawler
 - David Nash, Office for Recreation, Sport and Racing
 - Sarah Horgan, Office for Recreation, Sport and Racing
 - Emily Moskwa, City of Cambelltown
 - Travis Beard, City of Mitcham
-

6.2. Key Contacts

SA Specific Industry Contacts

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International Sports Federations

Football/Soccer – FIFA - Quality Program for Football Turf
[FIFA Quality Programme for Football Turf](#)

Rugby Union – World Rugby - Rugby Turf Program
<http://playerwelfare.worldrugby.org/rugbyturf>

Hockey – International Hockey Association (FIH) [FIH Quality Programme](#)

