



The Value of Community Sport Infrastructure

**Investigating the value of community
sport facilities to Australia**

2018

kpmg.com.au



Australian Government
Australian Sports Commission



Disclaimers and limitations

Copyright

© 2018 KPMG, an Australian partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Australia. KPMG and the KPMG logo are registered trademarks of KPMG International. Liability limited by a scheme approved under Professional Standards Legislation.

Inherent Limitations

The services provided in connection with this engagement comprise an advisory engagement, which is not subject to assurance or other standards issued by the Australian Auditing and Assurance Standards Board and, consequently no opinions or conclusions intended to convey assurance have been expressed.

Any reference to 'review' throughout this engagement letter has not been used in the context of a review in accordance with assurance and other standards issued by the Australian Auditing and Assurance Standards Board.

No warranty of completeness, accuracy or reliability is given in relation to the statements and representations made by, and the information and documentation provided by, the Australian Sports Commission (ASC) as part of the process.

KPMG have indicated within this report the sources of the information provided. We have not sought to independently verify those sources unless otherwise noted within the report.

KPMG is under no obligation in any circumstance to update this report, in either oral or written form, for events occurring after the report has been issued in final form.

The findings in this report have been formed on the above basis.

Third Party Reliance

This report is solely for the purpose set out in the Project Plan dated 16 June 2017 and for the ASC's information, and is not to be used for any other purpose or distributed to any other party without KPMG's prior written consent.

This report has been prepared at the request of the ASC in accordance with the terms of KPMG's contract dated 7 June 2017. Other than our responsibility to the ASC, neither KPMG nor any member or employee of KPMG undertakes responsibility arising in any way from reliance placed by a third party on this report. Any reliance placed is that party's sole responsibility.

Methodological limitations

In addition to the inherent limitations outlined above:

- This report does not represent a detailed technical report, but instead provides an overview of the process, methodology and outcomes of the investigation into the value of community sport infrastructure in Australia. The level of detail provided within this report has been deliberately reduced in order to support the broad acceptance of the narrative and conclusions of this project.
- The methodology used to quantify the value of community sport infrastructure that is summarised within this report has relied on currently available data and research, and where required these inputs and data points have been extrapolated across geographical locations, sports and facility types. The methodological challenges and limitations are outlined in further detail in Appendix 1: Methodology.
- It is acknowledged that there are a number of disbenefits associated with community sport infrastructure and associated activity, including the incidence of injuries that occur through participation in sport, and the potential for sport and community sport infrastructure to facilitate anti-social behaviour such as the consumption of alcohol and unhealthy food. These disbenefits have been considered as part of the development of the methodology for this study, however insufficient evidence and data was found to quantify these impacts.

Contents

01

**Executive
summary**

05

Introduction

07

Methodology

11

Economic impacts

13

Health impacts

17

Social impacts

21

Findings

23

The opportunity

27

Appendix

The Value of Community

Quantitative



Supported by

56.5m

hours of volunteer time annually



Used by 8m

people annually

Qualitative



Employment



Volunteering



A reduced risk of drowning and falls

Sport Infrastructure



Employing
57,000
people annually



Preventing
24,000
DALYs annually
(Disability adjusted life years)



Increased
economic activity

\$5.5b

+



Increased
productivity

\$0.8b

=



Economic value of
community sport
infrastructure

\$6.3b



Personal health
benefits

\$4.4b

+



Health system
benefits

\$0.5b

=



Health value of
community sport
infrastructure

\$4.9b



Human
capital uplift

\$4.2b

+



Green space
benefit

\$0.8b

=



Social value of
community sport
infrastructure

\$5.1b

Note: The headline figures do not add exactly due to rounding



**Social
inclusion**



**Community
pride**



**A reduction in crime
and anti-social
behaviour**



**Increased
levels of trust**

Executive summary

Sport is synonymous with the Australian culture and psyche. As a nation we intuitively understand its benefits, whether that be in relation to the health and wellbeing benefits of participating in sport or the national pride from major sporting triumphs on the world stage.



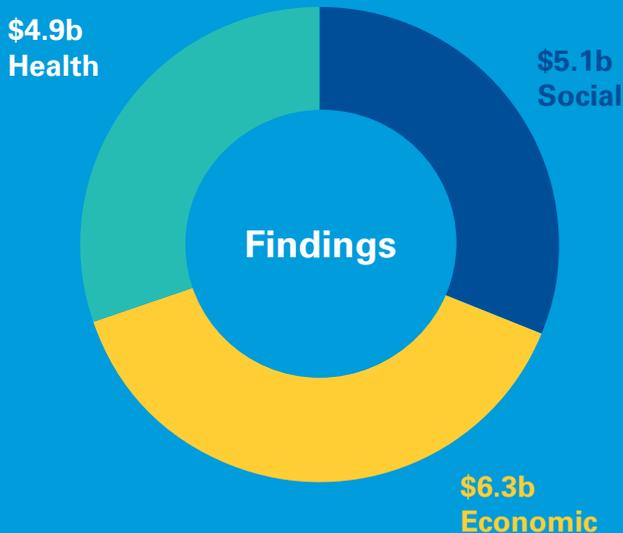


What is less understood, or at least less discussed, is the role and place of sport infrastructure and more specifically, community sport infrastructure. Yet, without the appropriate infrastructure and facilities to support sport and physical activities many of the associated benefits would be left unrealised. Further, those at the grassroots level understand that community sport infrastructure can be much more than just a place to play sport and that such facilities are critical infrastructure for the broader community.

It is with this in mind that the Australian Sports Commission (ASC) partnered with KPMG and La Trobe University to investigate the value of community sport infrastructure to Australia – including the value of economic, social and health benefits associated with such facilities. While the economic, social and health benefits of sport and physical activity more generally are well-documented, this study represents an unprecedented shift in focus by exploring the value delivered and supported by community sport infrastructure itself.

Defining community sport infrastructure

For the purposes of this study community sport infrastructure has been defined as local, regional or state-level sport and recreation infrastructure which is operated and maintained primarily for the purpose of the facilitation of community sports activities. This study has also considered any activity which is undertaken within community sport infrastructure, including participation in sport, volunteering and community activities. Importantly, this study does not consider any benefits associated with sport or recreation activity which does not occur within community sport infrastructure (e.g. running).



Employment



Volunteering



**Reduction in
drowning and falls**



Social inclusion



Community pride



**Reduction in crime and
anti-social behaviour**



Increased levels of trust

Note: The headline figures do not add exactly due to rounding

Findings

Community sport infrastructure is estimated to generate an annual value of more than \$16.2 billion to Australia, with \$6.3 billion worth of economic benefit, \$4.9 billion worth of health benefit and \$5.1 billion worth of social benefit.

The \$6.3 billion worth of economic benefit includes the economic activity associated with the construction, maintenance and operation of community sport infrastructure and the increased productivity of those who are physically active as a result of such infrastructure.

The \$4.9 billion worth of health benefit includes personal benefits to those who are less likely to contract a range of health conditions which are known to be associated with physical inactivity and the benefits to the health system from a healthier population.

The \$5.1 billion worth of social benefit includes the increased human capital resulting from the social interactions that are facilitated by community sport infrastructure and the broader community benefits of providing “green space” (e.g. sports fields).

In addition, community sport infrastructure is a key driver and enabler of a range of other benefits which can only be considered on a qualitative basis at this point in time, such as social inclusion and community pride.

Without community sport infrastructure, delivery of the combined health, social and economic benefits outlined in this report would not be achieved. Positive social and health outcomes occur through participation in recreation-based activities, however community sport infrastructure is a critical factor that amplifies outcomes across the participation spectrum; from volunteers and officials to team members and social supporters. Importantly, community members do not need to be active sport participants to derive value and benefit from community sport infrastructure. These facilities draw communities together by providing a gathering place for a broad range of events, celebrations and meetings. Community sport infrastructure also supports greater amenity within local communities, enhances connectedness and community pride, and provides safe spaces for responses to disaster and security threats.

While it is acknowledged that the partnership between programming and infrastructure is critical in delivering many of the benefits outlined within this report; the broad social, health and economic benefits provided by sport infrastructure cannot be replicated by participation and programming alone.

Relevance to the sector and policy makers

Community sport infrastructure is of significant value to the Australian community and while this value has long been understood by sector participants, articulation of this value has largely been in qualitative terms and potentially too focused on the value of sport alone. In a competitive funding environment, proponents of community sport infrastructure projects must be able to demonstrate that their proposals will deliver value to their communities more broadly than only to direct interest groups (whether that be sports clubs, state sporting organisations, or other community groups).

Further, the benefits of community sport infrastructure, as identified in this study, are directly aligned to the objectives of governments at all levels across Australia. Specifically, the availability and use of community sport infrastructure enables physical activity and, by extension, supports health and wellness in our communities, it provides a space for people of different walks of life to connect around common objectives, it supports employment and the economy, and it is a critical requirement for liveable cities and neighbourhoods.

It is acknowledged that governments at all levels significantly contribute to the provision of community sport infrastructure, however, the wide range of benefits brings with it a unique opportunity for further collaboration across governments and government departments to deliver improved value to their communities.

This study is just the beginning. It is hoped this report will play a role in transitioning the conversation around the provision of community sport infrastructure from one of 'cost' to one of 'investment, impact and value'. The findings of this report will also assist with facilitating future strategy and planning decision making and ensure that the investment in community sport infrastructure by all stakeholders is commensurate with outcomes generated by such infrastructure.





01

Introduction

The benefits of sport and physical activity to an individual's health and wellbeing are well established, as are the benefits to the economy, through increased productivity, job creation and increased economic activity. Literature examining the social benefits of sport is developing and there is a significant body of evidence that supports the role of sport and physical activity in building social connections, reducing crime and supporting improved educational and employment outcomes.

What is less well established is the role community sport infrastructure plays in generating these benefits, and any additional benefits to individuals and communities that are unique to community sport infrastructure.

What became evident in a review of available literature is that there is almost no published empirical work focussed on assessing the social and health impacts of community sport infrastructure, despite this being the major financial investment in sport by governments around the world.

However, there has been a steady increase in the demand from funding agencies and governments for organisations seeking financial support (such as for sport facility developments) to demonstrate their impact more explicitly, and where possible in a quantitative sense.

This report represents the culmination of a comprehensive study, commissioned by the Australian Sports Commission (ASC) and led by KPMG, to attempt to demonstrate the broader value of community sport infrastructure to society by quantifying its economic, health and social benefits.



What is community sport infrastructure?

For the purposes of this project, community sport infrastructure is considered to be any of the following that supports local, regional or state based sport or sporting activities:

1. Outdoor sport and recreation facilities (including playing fields, ovals and courts);
2. Indoor sport and recreation facilities;
3. Indoor and outdoor aquatic facilities;
4. Multi-use sporting hubs; and
5. Amenities and facilities associated with the above.

Specifically, for consideration in this value assessment, facilities must be operated and maintained primarily for the purpose of the facilitation of community sports activities. This leads to the exclusion of a number of facilities that host some community sport but are not primarily for that purpose, such as school facilities and parklands.

In addition to the above definition, the study has considered any activity which is undertaken within community sport infrastructure, including participation in sport, volunteering and community activities (collectively referred to as programming or programs). Importantly, this study does not consider any benefits associated with sport or recreation activity which do not occur within community sport infrastructure (e.g. running).

This narrowing of the definition reinforces that the primary purpose of community sport infrastructure is to enable or facilitate community sporting activities. It also takes into account the symbiotic relationship between facilities and programs and that many of the impacts identified in this assessment will be driven jointly by both of these factors.

Benefits, impacts and value

For the purpose of this report, the following terms have been used to describe the outcomes delivered by community sport infrastructure:

- **Impacts:** the outcomes facilitated by community sport infrastructure. Impacts can be both positive (benefits) and negative (costs).
- **Benefits:** the positive outcomes facilitated by community sport infrastructure. The term benefits is also used to represent the net impact (benefits less disbenefits) of community sport infrastructure in a certain category where that net impact is positive.
- **Value:** when aggregating the impacts explored within this report at a national level, the term value is used to describe the total net benefits delivered and supported by community sport infrastructure to Australia.

The role of the ASC

As Australia's peak strategic agency for sport, the ASC aims to enable more Australians to move more often. Given that the quality, availability and accessibility of community sport infrastructure is a key enabling factor to increasing participation in sport and recreation, the ASC has identified an opportunity to strengthen the planning, investment and design of community sport infrastructure to maximise community benefits. The ASC is also seeking to ensure that community infrastructure and government policy are invested in improving physical activity outcomes – with a greater focus on increasing the physical activity and participation levels of society.

It is with this lens that the ASC has commissioned this study.

02

Methodology

The value estimate presented in this report was shaped by a review of literature, other reports and case studies but also an extensive stakeholder consultation process. More than 100 representatives from federal, state and local governments, national and state sporting organisations, industry peak bodies, not-for-profits and the private sector participated in four workshops across the country (Sydney, Melbourne, Brisbane and Perth), with many providing additional support outside of this setting. In particular, State Sport and Recreation Departments provided significant assistance to the project.

This report is also underpinned by the expertise of our project partner, La Trobe University, particularly Pro Vice Chancellor (Research Development) and Director of La Trobe Sport, Professor Russell Hoye. Professor Hoye and his team, in addition to leading the literature review process, provided support and expertise in the sector workshops and were instrumental in the development of this assessment. Lastly, both the ASC and KPMG would like to thank and acknowledge the invaluable ongoing support provided by the Community Sport Infrastructure Working Group and its members.

Collectively, the research and consultation identified the following impacts of community sport infrastructure:



Economic

Increased economic activity: the value that expenditure on community sport infrastructure adds to the Australian economy

Increased productivity: the value of the additional productivity of physically active people (i.e. in this context those who participate through community sport infrastructure) add to the Australian economy

Employment: the number of people employed through community sport infrastructure

The contribution of volunteers: the value of the contribution of volunteers to community sport

Induced visitation: the economic benefit of tourism generated by events held at community sport facilities



Health

Personal health benefits:

the benefits derived by individual participants through decreases in their risk of developing chronic diseases and a reduction in the severity of mental illness as a result of being physically active

Health system benefits: the savings to the health system as a result of improved health of citizens

A reduced risk of accidents:

evidence suggests that participation in sports can significantly reduce the risk of fall related injury in the elderly, while learn to swim classes hosted at community pools and aquatic and recreation centres can reduce the risk of drowning



Social

Human capital uplift: participants in sport benefit from increased cognition as well as the development of a number of skills that improve their education and employability outcomes

Green space benefit: green space at community sport facilities generates numerous benefits for users as well as the wider community

Social inclusion: community sport infrastructure, by facilitating the creation of bridges between different sectors of a community, can improve social inclusion

Community pride: communities can take pride in the successes of their local sports teams, as well as events hosted at community sport facilities and the facilities themselves

Increased levels of trust: studies have shown that involvement in community sports can increase generalised levels of trust in a community

Positive role modelling: role models of positive behaviour provided for young people in the form of coaches and other players

A reduction in crime and anti-social behaviour: there is a significant body of both academic and anecdotal evidence to support a relationship between community sport and a reduction in crime and other anti-social behaviours

Elite sporting outcomes: the outcomes supported by the development of professional athletes through community sports, including national pride and the role-modelling of healthy lifestyles

Disaster response / community meeting place: the community benefits from broader uses of many community sport facilities, including as disaster response centres or as central meeting points in remote communities

While all of the impacts outlined above were investigated during this project, not all of the impacts are included within this value assessment. A number of these impacts have tenuous links to community sport infrastructure, some of the impacts represent the same underlying benefit, and in other cases limited data or methodological issues prevented quantitative analysis of an impact.

Following from the above, the diagram below provides a summary of the final methodological approach for valuing the benefits of community sport infrastructure.

This value assessment presents a numerical estimate of the **average annual economic, health and social value delivered and supported by community sport infrastructure in Australia.**

This value is necessarily conservative, an “at least” value. This conservatism is partly the result of certain benefits that, while material, are not currently quantifiable and are considered in a qualitative sense only.

All dollar values within this report are presented in 2017 terms.

Appendix 1 provides further detail in relation to the methodology development for this study.

The following chapters consider the economic, health and social impacts in more detail.

The value of Community Sport Infrastructure



Economic impacts

- Employment
- Economic activity
- Productivity



Health system impacts

- Savings resulting from the reduced incidence of health concerns outlined below



Personal health impacts

Benefits of physical activity

- Reduced incidence of chronic disease
- Reduced incidence of mental illness
- Reduced incidence of other accidents



Social impacts (non-user)

- Value of green space
- Community-use benefits



Social impacts (social connection)

- Reduction in crime and anti-social behaviour
- Human capital uplift
- Increased level of trust, community pride and social inclusion

Figure 1: Our methodological approach



03

Economic impacts

The economic impacts of community sport infrastructure are those that directly contribute to the size or efficiency of the economy. In general, these impacts are well understood and are included in value or impact assessments across other sectors of the economy.

The economic value of community sport infrastructure has been estimated at **\$6.3 billion**. This value includes the increased economic activity generated as well as the monetary benefit generated by the increased productivity of community sport participants. The activity generated by volunteer hours is also quantified, but not included in the value assessment to avoid double counting, as the output created by these volunteers is included in the 'increased economic activity' estimate. The personal benefits to volunteers are explored within the social benefits section of this report.



Increased economic activity

A key measure of economic contribution is value added (i.e. the total economic contribution of an industry or sector less the intermediate goods provided by other sectors that create this economic contribution). A measure of value added captures what community sport facilities add to the Australian economy over and above the inputs used in their construction, operation and maintenance (for example, the raw materials used to build the facility, the supply of sports equipment and the supply of food and beverage). It is out of the value added that salaries are paid to employees and profits are earned by owners.

To develop these estimates, we have used Australian Bureau of Statistics data estimating the government expenditure on community sport infrastructure as an estimate of the annual capital and maintenance expenditure, which was found to be approximately \$1 billion annually, when scaled as a proportion of Gross Domestic Product (GDP) to 2017 (ABS, 2001). This number was also compared with an estimate of the total capital stock within the sport and recreation sector and this indicated that it represented a refreshment (new build or capital replacement) of approximately 5% of community sport infrastructure annually.

This was combined with employment data for the sector from the Employment in Sport and Recreation dataset (2011), adjusted for the subset considered to be related to community sport infrastructure, as well as venue operations benchmarks to develop inputs into a Computable General Equilibrium Model of the Australian economy. The resulting value added measure supported by the economic activity resulting from community sport infrastructure and associated sport activity was estimated at **\$5.53 billion** annually.

Productivity

By participating in sport, individuals are mentally and physically healthier and have enhanced cognitive performance. As a result the economy is, on average, more productive. This is delivered through a number of mechanisms, including lower absenteeism from work, greater personal productivity and increases in human capital (personal skills and ability).

The productivity uplift captured in this report represents a reduction in both absenteeism – where employees do not come to work due to illness – and presenteeism – where employees come to work but are not performing at their best due to illness or other conditions as a result of physical inactivity.

Example evidence: “The Cost of Physical Inactivity” (KPMG-Econtech, 2008)

Much of the existing literature on the value of sport is underpinned by KPMG-Econtech’s 2008 report ‘The Cost of Physical Inactivity’ for Medibank Private which presents a relationship between sedentary behaviour and a negative impact on productivity in Australia. The authors estimated this impact to be an average loss of **1.8 working days per worker per year**, at a cost of \$458 per worker per year.

The KPMG-Econtech estimate of annual productivity lost due to inactivity was applied to the community sport participants who meet the Department of Health (DoH) physical activity guidelines to determine how many additional days of work result from workers being physically active. By multiplying this result by an average annual wage, it was estimated that through the physical activity it facilitates, community sport infrastructure contributes to a productivity uplift to the equivalent of **\$750 million** annually.

Employment

As one of the key measures of the economic contribution of an industry or sector, it is important to take into account the employment generated by community sport infrastructure.

As well as bringing benefit to individual employees, the employment that is created benefits the wider economy as these employees purchase goods and services and contribute towards economic activity.

It is estimated that **the employment of approximately 57,000 people is directly related to community sport infrastructure in Australia** representing approximately **33,900 FTEs** (Source: KPMG analysis based upon ABS 4148.0). The monetary value of this employment is captured in the ‘increased economic activity’ section above.



Volunteering

Volunteers at sport and recreation facilities produce outputs that contribute to the size and growth of the overall economy, and do so at no financial cost (although there is a real cost to the volunteer through contributing their time). They are a crucial element in the delivery of the benefits of community sport infrastructure to participants, acting as administrators, managers, coaches and organisers amongst other functions.

They act, in this way, as inputs into the generation of a number of the other benefits outlined in this report by facilitating participation.

For this reason, while the contribution of volunteers is estimated below, it is not included in the value assessment to avoid double counting.

By estimating the number of volunteer hours that support community sport infrastructure and using an average wage to capture the monetary value of these hours, **the contribution of volunteers was estimated at \$1.3 billion annually**.

Visitation

The events held at community sports facilities deliver benefits to communities, particularly regional communities, from the tourism expenditure associated with the visitors brought to those communities by those events.

However, this benefit would represent a redistribution of expenditure rather than an aggregate benefit to the nation. While this redistribution may generate some positive equity outcomes, it has not been included in the nationwide value assessment for this reason.



04

Health impacts

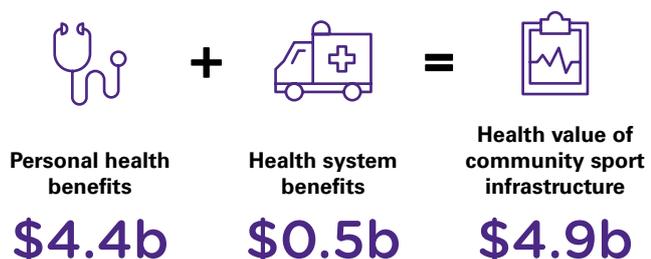
The health benefits from physical activity are well understood within society, and supported by a substantial body of literature. The following health outcomes are identified in this report:

- A lower risk of being affected by a number of chronic diseases, including cardiovascular diseases, cancers, dementia and diabetes;
- A reduced risk of falling or drowning; and
- Improved mental health.

These health outcomes then deliver the following benefits:

- Personal health benefits accruing to those persons with a lower risk of disease and accidents, or more effective treatment of mental health illness, who have a greater quality of life; and
- Health system benefits as a result of a lower incidence of disease, or better managed mental health issues, including lower wait times, less congestion and health cost savings.

For the purposes of the value assessment, only personal and health system benefits derived from the reduction in risk of developing chronic disease, as well as greater mental health and well-being outcomes, can be quantified. However, the reduction in the risks of falling and drowning are addressed qualitatively below.



Personal health benefits

Chronic disease

Physical activity has been linked to a reduced risk of developing a number of chronic diseases. A strong body of evidence supports the benefits of physical activity in reducing the risk of the following:

- Cardiovascular disease (AIHW, 2014)
- Breast cancer (Brenner, 2014)
- Bowel (colorectal) cancer (Ballard-Barbash et al., 1990)
- Type 2 diabetes (Al Tunajji et al., 2014)
- Dementia (Blondell et al., 2014)

Mental health outcomes: anxiety and depression

The 2014/15 National Health Survey found that 17.5% of Australians suffer from mental illness (ABS, 2015). However, researchers have been able to show a relationship between physical activity and improved mental health outcomes. Due to their prevalence in the literature, this report focusses on the impacts of physical activity on anxiety and depression specifically. There is evidence of physical activity's ability to both reduce the risk of developing anxiety and/or depression and to act as an effective treatment. In addition to supporting these outcomes through physical activity, community sport infrastructure may further assist those at risk of, or already suffering from, depression and anxiety through the socialisation it supports. However, in many of the studies conducted to test the impact of physical activity on mental health, participants were playing organised sport. This makes it difficult to isolate the impacts of physical activity from the broader socialisation associated with sport, and therefore distinction has not been made between these drivers of mental health benefits for the analysis within this report.

Example evidence: reducing the risk of anxiety and depression

A 2014 Australian study (Kremer et al) found that higher levels of physical activity (and lower levels of screen-based leisure time) were associated with lower depressive symptoms. The types of physical activity observed and analysed in the study included outside of class activity, school-based physical education, involvement in school and extracurricular sports teams. Similarly, meeting recommended guidelines for physical activity was also independently associated with lower depressive symptoms.

A US Department of Health and Human Services report found that the odds of developing an anxiety disorder were **53% lower in those who reported at least three hours a week of vigorous exercise**, compared with those who reported no activity. While this finding was not statistically significant due to a small sample, another study in Germany found a similar, statistically significant result, with regularly active young adults **48% less likely to develop an anxiety disorder** than those who did not exercise (Brown et al, 2012).

While there are a number of biochemical and physiological drivers for this relationship, a wealth of literature suggests a relationship between social connection and improved mental health. By fostering this connection, in addition to facilitating physical activity, community sport infrastructure may have a unique role to play in the wider sport and recreation landscape.

Reduced risk of falls

Many studies demonstrate a relationship between physical activity and a reduced risk of falling, particularly in elderly participants, a segment of the population for which falls often have serious long-term consequences.

Participation in physical activity allows older persons to increase their physical fitness, muscle strength and bone density and improve their balance, all of which can significantly reduce their risk of falling.

This reduction has been estimated at as much as 24% (Rose, 2006).

Reduced risk of drowning

Between July 2016 and June 2017, 291 people drowned in Australian waterways, while an estimated 685 serious but non-fatal drowning accidents left Australians hospitalised during the same period (Royal Life Saving Society Australia, 2017).

Learn to swim programs, often hosted in community pools and aquatic and recreation centres, are vital in helping prevent water deaths. A study in the United States estimated that childhood swimming lessons **reduced the risk of drowning by as much as 88%** (Brenner et al., 2009). While the body of literature is not developed, there is most likely a relationship between swimming education (which requires a pool facility of some description) and a reduction in risk.

Calculating personal health benefits

A person who is affected by a chronic disease has a lower quality (and potentially length) of life, than a person who is not, and it is the prevention of this impact on quality and length of life that the personal health benefits capture. The impact of a chronic disease on the life of a person can be measured in disability adjusted life years (DALYs), where one DALY can be thought of as the equivalent of one lost year of healthy life. By establishing, through review of the literature, the reduced incidence in the development of the chronic diseases outlined above that is supported by community sport infrastructure, the resulting savings of DALYs were able to be estimated.

A similar methodology has been used to quantify the saved DALYs resulting from the mental health

benefits of physical activity. However given the high prevalence of both anxiety and depression within society, as well as a lack of robust incidence data for these illnesses, the treatment effect of physical activity has been estimated. That is, this study quantifies the benefit of reducing the severity of symptoms for those who are already affected with these illnesses.

The total DALYs are then converted into a monetary value using the value of a statistical life year (VSLY - the Commonwealth Department of the Prime Minister and Cabinet have outlined that best practice for VSLY is to use the work of Abelson, which corresponds to a value of \$182,000 in 2014).

Using the methods outlined above, the personal health benefits of community sport infrastructure can be estimated at approximately **\$4.4 billion** annually.

Savings to the health system

Every case of chronic disease brings cost not only to the individual sufferer but to the health system as a whole. In addition, there is also cost saving associated with the greater treatment of mental illness through physical activity. By reducing the incidence of these diseases, and reducing the mental health related burden on the health system, participation facilitated by community sport infrastructure supports savings in the health system. Using the average Australian health system costs of each disease and illness, the benefit is estimated to be approximately **\$0.5 billion** annually.

05

Social impacts

In addition to generating and supporting economic and health benefits, community sport infrastructure can enable social benefits both for participants and users of the facilities and to the wider community.

These benefits are derived by users of facilities through both the sports activity as well as the broader social connection and networks created at community sport facilities. They are also derived by the wider community who are advantaged by improvements to their urban environment (e.g. the provision of green space through outdoor facilities) as well as the variety of other uses for community sport infrastructure.



Human capital uplift: improved educational and employment outcomes

The skills, knowledge and experience each individual accumulates (their human capital) determines their ability to perform the tasks asked of them, whether in a work, education or broader context. Some of this benefit is derived directly from physical activity, which has been linked to enhanced cognition and behavioural improvements and demonstrated to improve learning outcomes, sometimes significantly. Studies have shown increases in learning speed, grade point averages, test results, university entrance scores and levels of educational attainment as a result of participation in physical activity (Sport England, 2017a). More broadly, sport has been connected with the development of life skills such as goal setting, problem solving and positive thinking as well as higher levels of engagement with formal education (Sport England, 2017a). While the benefit of improved productivity associated with community sport infrastructure has already been captured as an economic benefit, this section measures the benefit individuals gain from these improvements.

Example evidence: “Learning to play and playing to learn: organised sports and educational outcomes” (Rosewater, 2009)

This report analysed existing research on the effects of youth participation in organised sport on educational outcomes, finding a substantial body of research in support of the following:

- Participation in sport provides intellectual and academic benefits, improving brain function
- It also is connected to positive educational aspirations, significantly, the desire to attend university
- Participation also encourages young people to stay in school for longer
- Those who participate in sport have a better occupational status and earn higher wages.

Overall, participation in sport generates improvements in human capital across participants’ education and well into their careers.

It is not just playing sport that drives improvements in human capital; evidence also points to the benefits of the pro-social nature of sport (Barber et al., 2001), with participation linked to the positive reinforcement of aspirations such as tertiary education (Marsh & Kleitman, 2003). Further, the social interactions within sport and associated organisations provide positive role-modelling opportunities for children, particularly through volunteering and community based events.

As participants move out of education and into the workplace, research suggests that this human capital uplift is taken into account by employers, with the inclusion of sports participation on an applicant’s CV contributing positively to their employability.

Example evidence: “The Impact of Engagement in Sport on Graduate Employability” (Allen et al., 2013)

This report was commissioned by British Universities & Colleges Sport in 2013 and drew on graduate outcomes surveys, as well as primary research with a number of graduates, employers and university executives to investigate the relationship between engagement in sport (whether through participation, volunteering or coaching) and employability.

It found that annual household income was higher for graduates who took part in sport, and higher again for those who also undertook volunteering in sport. Interviews with graduate employers further revealed that they are confident that the skills and strengths that participation in sport would give graduates would help them find employment and many actively look for sport engagement on applications.

In order to estimate the benefits of human capital improvements that result from community sport, the value that these personal attributes deliver to society needs to be determined. The best market indicator of the value of a person’s human capital is through labour market outcomes, and more specifically the wage premium associated with those improved characteristics. The literature review underpinning this report identified a strong evidence base for the connection between physical activity and improvements in both educational attainment and employment outcomes, with the core results showing an **uplift of between 5% and 10% in standard education scores or in wage improvements.**

For this analysis, we have used the lower bound of these measures to develop a conservative estimate of the wage premium associated with physical activity, however this benefit has only been accrued to those participants who regularly participate in moderate intensity physical activity that is facilitated by community sport infrastructure.

Further, and in a similar manner, we have estimated the human capital benefits to those who regularly volunteer at community sport facilities. While regular volunteers may not derive the cognitive benefits associated with physical activity, they are seen to benefit in many of the same ways as participants. As volunteers do not derive the total benefit that participants derive, we have applied a more conservative uplift in human capital; volunteers are assumed to receive half of the uplift of active participants.

The value of the human capital uplift associated with participation in sport through community sport infrastructure is estimated at approximately **\$4.2 billion annually.**

Other social impacts

Increased levels of trust

The relationship between community sport and an increased level of generalised trust (i.e. trust in strangers) has long been hypothesised due to the social inclusion and connectedness it promotes, as well as the team dynamics it facilitates.

While efforts to quantify this relationship have met challenges, a recent study by Brown, Hoyer and Nicholson (2014) was able to show a positive association between generalised trust scores and membership in community sports organisations.

Community pride

The role of sport in fostering a heightened sense of community pride is a well-accepted tenet of contemporary government policy and is based on the premise that hosting sport events, developing new sport infrastructure or developing new sport programs or services engenders feelings of pride amongst individuals.

Researchers have focussed on the impacts community sport has on the pride of the wider community, rather than sports participants, with most concluding that there is a positive relationship (Kim et al., 2015). However, there has not been, to date, any successful effort to quantify this relationship.

Social inclusion

As explained previously, community sport has been shown to create bridging social capital, facilitating connection building between different communities. Provided it meets the requirements outlined in our definition (Section 1), community sport infrastructure can promote and facilitate inclusion for a number of groups. Research suggests:

- By facilitating participation in sport for young people with a disability, through accessible infrastructure and programming, community sport infrastructure can assist in improving peer-to-peer integration and the development of social skills (Coalter, 2013).
- Community sport may improve engagement across multicultural communities (Oliver, 2014).

Reduced crime and anti-social behaviour

The Australian Institute of Criminology acknowledges the role of physical activity, but particularly sport, in preventing or reducing crime and other anti-social behaviours (AIC, 2003) (with anti-social behaviours including crime, substance use, suicide or self-harm, homelessness, unemployment, mental health, truancy and early school leaving).

The literature points to a number of channels through which sport and physical activity reduce criminal and anti-social behaviour, both direct and indirect (Sport England, 2017b). Most of these are a result of the social connections created, including improving self-esteem and emotional skills, increasing positive peer associations and facilitating good communication between family members. However, sport further acts to decrease the amount of unsupervised leisure time (and therefore the time available to take part in anti-social behaviour), reduce boredom and improve cognition.

Of particular benefit to youth, sport plays a role not only in preventing individuals from committing their first crime, but also past criminals from additional offences.

Case study: Midnight Basketball (Hartmann & Depro, 2006)



Starting as an initiative in Maryland, U.S. in the late 1980s, Midnight Basketball has become an institution around the world. The program involves a combination of basketball tournaments and life skills workshops targeted at vulnerable and at risk neighbourhoods and individuals. It was specifically designed to combat criminal and gang behaviour, which seemed to be most prevalent late at night and during the early hours of the morning.

A study looking at the impacts the program has had on crime concluded that cities with the program had a 5% higher drop in crime rate than cities without and that the program was particularly effective in reducing property crime.

Case study: The Wadeye AFL Development Program (Ware & Meredith, 2013)

The Wadeye AFL Development Program was instituted in the Northern Territory with the specific aim of increasing community safety and reducing violent behaviour. By rallying and uniting the community behind the team, Wadeye Magic, who were successful in entering the Northern Territory Football League, has reportedly become calmer and more cohesive, with community members claiming that the team has brought significant change by keeping players out of trouble.

High behavioural expectations are placed on Wadeye Magic players and as positions on the team are highly sought after, the team creates a strong incentive to improve behaviour.

Urban improvement and green space

Communities can benefit from increased amenity due to the redevelopment of existing facilities or the transformation of existing underutilised sites into new facilities.

Beyond sporting participants, it was identified throughout the consultation process that community sport infrastructure can also benefit other users through hosting community events, providing space for community initiatives (e.g. health clinics) or acting as evacuation centres in cases of natural disaster.

Benefits can also accrue to the wider community who do not have a physical touch-point with these facilities. There are a number of academic studies that highlight the association between improvements in the public realm and greater social outcomes. One such study was undertaken after an urban renewal program in Barcelona; this study was able to demonstrate the positive and important impacts of the program on the overall wellbeing of participant residents (Mehdipanah et al. 2014). More broadly, high quality urban design is understood to be able to improve safety and security in an area, with well lit, secure areas available for resident socialisation and recreation.

More specifically, there is strong evidence to suggest benefits from the provision of green space (i.e. via the provision of sports ovals and fields and surrounding areas) independent of the other benefits explored in this report. These benefits include mental health and wellbeing benefits and the creation of social cohesion by encouraging social participation.

People may also gain non-use benefits from proximity to green space, from being able to view it or even from the knowledge that it is there.

While there is a risk of double counting benefits if we were to estimate the use related benefit of facility amenity or green space, there is no such risk with the non-use value. For this analysis, we have estimated the value of green space associated with community sport infrastructure through the following steps:

- Estimation of the amount of “green” community sport infrastructure within Australia through a combination of Local Government benchmarks, Victorian facility provision data and field size standards;

- Restriction of the above data set to only those facilities within metro areas where green space is not abundant; and
- Application of a per square metre societal non-use benefit of approximately \$9 (adopted from Ambrey & Fleming, 2012).

The benefit of the green space associated with community sport infrastructure has been used as a conservative estimate for the related annual urban improvement benefit that accrues to non-users, and is estimated at approximately **\$844 million annually**.

Example evidence: “Public greenspace and life satisfaction in urban Australia” (Ambrey & Fleming, 2012)

This 2012 study looked at the impact green space has on the life satisfaction of residents in Australia’s capital cities and calculated that a resident has an implicit willingness-to-pay of \$1,168 in annual household income **for a 1% increase in public green space**.

Community use

Community sport infrastructure can be used for a variety of purposes outside of sport, acting as a space where community organisations can hold meetings and events, and local governments can run community programs and clinics. Community sport infrastructure can also act as assembly points during natural disasters and as a central point for the provision of services.

While there is insufficient data to quantify these benefits, there are many examples of facility management taking advantage of the multi-functionality of their venues. One of these is outlined below.

Case Study: Port Augusta Central Oval

Redeveloped in 2014, the Central Oval facility in Port Augusta boasts not only a variety of sports facilities but also a two-level function centre. For the small city, which had lost a number of its existing community spaces due to maintenance costs, the redeveloped Oval was revitalising. Not only do Port Augusta residents now have access to a venue for community events, but the city has been able to play host to larger events such as conferences. This project has also provided a number of related opportunities to local businesses as suppliers to the venue.



06

Findings

This study has found that the impacts of community sport infrastructure extend far beyond the buildings and facilities, and even beyond the sports that are played in or on them. Community sport infrastructure also enables meaningful connections through the various social interactions at these facilities, both on and off the field, which drive benefits that range from skill building for individuals to stronger, safer and more inclusive communities.

At a national level, community sport infrastructure is estimated to generate an annual value of more than **\$16.2 billion to Australia**, with **\$6.3 billion worth of economic benefit, \$4.9 billion worth of health benefit and \$5.1 billion worth of social benefit.**

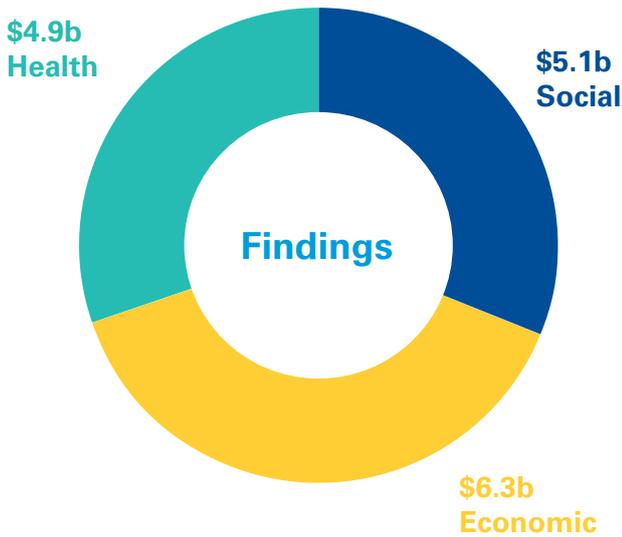
The \$6.3 billion worth of economic benefit includes the economic activity associated with the construction, maintenance and operation of community sport infrastructure and the increased productivity of those who are physically active as a result of such infrastructure.

The \$4.9 billion worth of health benefit includes personal benefits to those who are less likely to contract a range of health conditions which are known to be associated with physical inactivity and the benefits to the health system from a healthier population.

The \$5.1 billion worth of social benefit includes the increased human capital resulting from the social interactions that are facilitated by community sport infrastructure and the benefits of providing green space for the broader community.

In addition, community sport infrastructure is a key driver or enabler of a range of other benefits which can only be considered on a qualitative basis at this point in time, such as social inclusion and community pride.

This value is considered conservative and as the sophistication in data collection in the sector increases, along with the academic study, any future attempts will likely yield an even more significant value.



-  **Employment**
-  **Volunteering**
-  **Reduction in drowning and falls**
-  **Social inclusion**
-  **Community pride**
-  **Reduction in crime and anti-social behaviour**
-  **Increased levels of trust**

Note: The headline figures do not add exactly due to rounding

07

The opportunity

For the sector

Sector participants have long understood the value of community sport infrastructure. Articulation of this value, however, has largely been in qualitative terms and potentially too focused on sport alone which has at times seen community sport infrastructure fall down the priority list when compared to investment into other infrastructure, especially when compared to other sectors and proponents that have access to more mature valuation and quantification methodologies.

In a competitive funding environment, proponents of community sport infrastructure projects must be able to demonstrate that their proposals will deliver value to their communities more broadly than only to direct interest groups (whether that be sports clubs, state sporting organisations, or other community groups).

It is hoped that this study will play a significant role in **transitioning the conversation around the provision of community sport infrastructure from one of 'cost' to one of 'investment, impact and value'**. The findings of this report will also assist with facilitating future strategy and planning decision making and ensuring that the investment in community sport infrastructure by all stakeholders is commensurate with outcomes generated by such infrastructure.

For policy makers

Community sport infrastructure is of significant value to the Australian community. The benefits of community sport infrastructure, as identified in this study, are aligned to the objectives of governments across Australia. Specifically, community sport infrastructure enables physical activity and by extension supports positive health outcomes in our communities, it provides a space for people of different walks of life to connect around common objectives, it supports employment and the economy, and it is a critical requirement of liveable cities and neighbourhoods.

It is acknowledged that governments significantly contribute to the provision of community sport infrastructure, however, the wide range of benefits brings with it a unique opportunity for further collaboration across governments and government departments to deliver value to their communities.

For optimising benefits

While this study has outlined the benefits of community sport infrastructure, there is recognition that these benefits are not always optimised or could be further enhanced. For example, research by Coulter (Coulter, 2013) on the benefits of sport for Sport Scotland outlined three important factors in the ability of sports participation to drive social benefits, namely:

- management structures that are specifically designed to deliver the intended outcomes;
- leadership and supervision of activities that facilitates positive and inclusive relationships between participants; and
- programming that promotes frequent participation and active engagement.

Further, consultation for this study identified a number of additional limitations to optimising the benefits of community sport infrastructure, including (but not limited to):

- 
- Single-use facilities (either by design or management/use) as opposed to multi-use facilities;
 - Failure to foster inclusive environments or to adopt universal design principles (often given the age of the infrastructure);
 - Constraints imposed by the need to protect natural turf surfaces;
 - Inadequate facilities (e.g. lack of female change facilities);
 - Peak demand loads, particularly in the afternoon and evening;
 - Imposed physical barriers to accessing facilities (e.g. fences); and
 - Historical lack of flexibility by sports to develop tailored programs and products to work within facility constraints.

There is therefore a real opportunity for the sector to partner with governments and the community to remove or reduce these and other limitations in order to optimise the impact of both existing and new community sport infrastructure.

Future Opportunities

The study also uncovered future opportunities in relation to data across the sector and highlighted the need for further research and collaboration.

Data

A number of data sources relevant to community sport infrastructure do not yet exist, or do not exist to a sufficient level of granularity to be useable in a context such as this assessment, including:

- Data on the provision of community sport infrastructure at a national level (e.g. type, scale, features, location, etc.);
- Data on the investment (development, maintenance and operations) into community sport infrastructure at a national level; and
- Participation, particularly participation within community sport infrastructure.

Currently, data capture efforts are fragmented, irregular and without consistently agreed definitions or approaches. In particular, the sector would benefit from the harmonisation of data collection and consistent definitions.

Agreeing on a set of parameters around facilities and participation data collection nationally, and thereby harmonising this process, would be highly beneficial for quantifying the benefits of community sport infrastructure, as well as more broadly for policy development and infrastructure planning and prioritisation.

In addition to harmonising existing data collection efforts, a national audit of sporting facilities would assist significantly in these processes. In addition to parameters around data collection, it is vital that key data points are consistently defined across jurisdictions. For example, in order to aggregate participation information, it is important that the definition of a participant is standardised.

Further research and collaboration

Much of the literature to date investigates the benefits of sport or physical activity more broadly. However, there exists very little analysis of the specific value of community sport infrastructure.

Specifically, it is important that the social benefits of community sport infrastructure continue to be explored. Many of the stakeholders consulted as part of this process had projects underway looking at these benefits. However, given the challenges inherent in this research, collaboration and knowledge sharing will be invaluable for the development of a robust and evidence-based body of research.

The greatest impact on the quantification of social impacts could be made through further research into the causal relationship between the social interactions that community sport infrastructure facilitates and the resulting social network (and social capital more broadly) benefits to individuals and society. There is a well-established narrative to support the existence of these benefits, however establishing and quantifying a causal relationship would allow a much broader collection of social impacts to be quantified.

By way of example, the ASC together with the Griffith Business School at Griffith University, recently developed a model that provides an economic estimate (in Australian dollars) of the broader social benefits associated with the provision of, and participation in, club-based community sport to Australians. It is hoped that future research such as this will help to build an evidence base and further quantify many of the important social benefits that have been uncovered in this report.



Appendix

Methodology development

Key to developing a methodology for this value assessment was an understanding of the drivers of the benefits identified. As a result of the research and consultation process, it became evident that there are three central drivers that support the benefits of community sport infrastructure:

1. Participation in physical activity;
2. Social connection; and
3. Benefits derived from the creation of new facilities (which we have called the 'infrastructure' driver).

As shown in Figure 2 (below), only the 'infrastructure' driver relies directly on community sport infrastructure. However, without these facilities, participation in community sports and the social connection created would not be possible. In this way, community sport infrastructure plays a supporting role in the delivery of the benefits associated with these drivers.

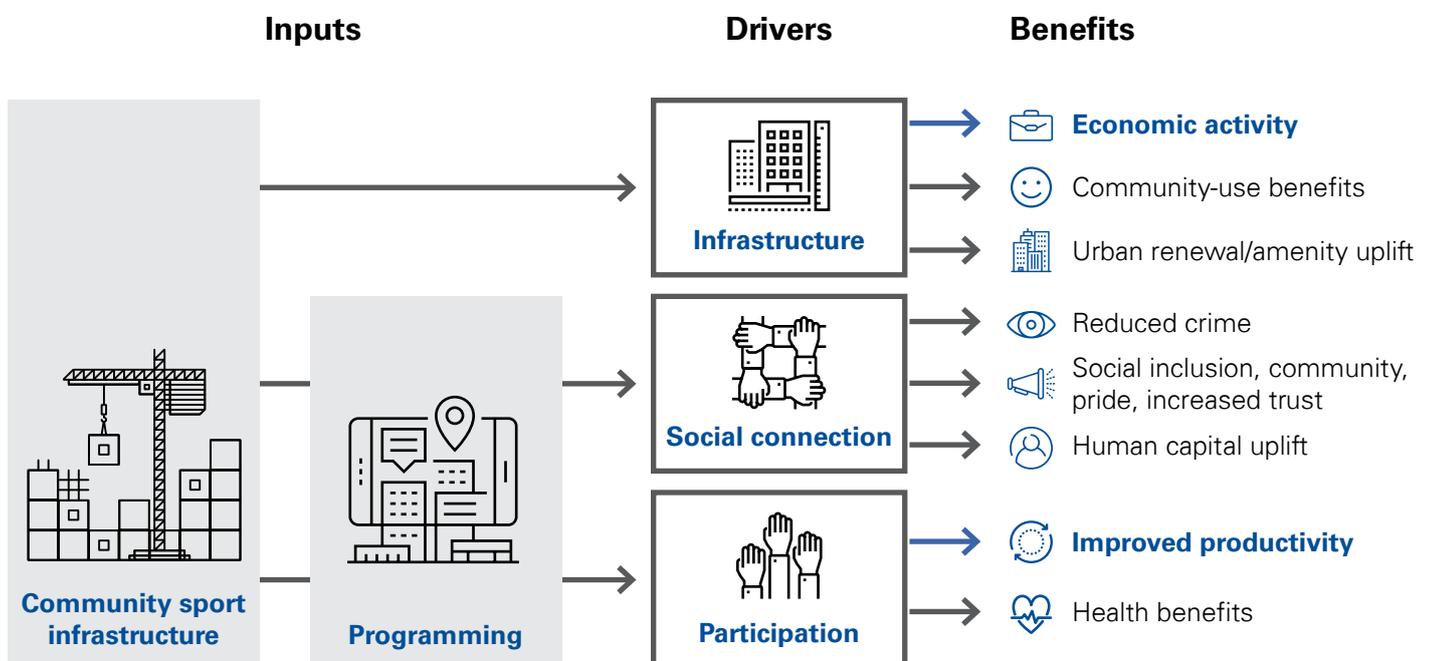


Figure 2: key drivers of the benefits of community sport infrastructure

1. Participation

The literature suggests that there are significant health benefits resulting from participation in sport and recreation. These benefits are a consequence of physically active persons having a lower risk of contracting chronic diseases than those persons who are physically inactive. However, not everyone who participates in physical activity receives these benefits. As a guide for the level of exercise required to receive health benefits, this project has adopted the Physical Activity and Sedentary Behaviour Guidelines developed by the Department of Health.

These guidelines state that, for a person to be considered physically active, they are required to accumulate 150 to 300 minutes of moderate intensity physical activity or 75 to 150 minutes of vigorous intensity physical activity (or an equivalent combination of both moderate and vigorous physical activity) each week (Department of Health, 2017). To the extent that it was possible given the participation data available, we have only included those individuals who meet these guidelines as a result of their participation – and who meet it by using community sport infrastructure. More detail on how participation in physical activity drives various health benefits is provided in Section 4 ('Health Benefits').

2. Social connection

A significant body of literature is devoted to investigating and demonstrating the ability of sport to create connections between individuals and strengthen communities. Much of this refers to the 'social capital' generated by community sport. Though the definition of social capital is contentious, it is generally accepted to be, in its simplest form, a commodity that promotes cooperation between individuals, thereby reducing social frictions and driving better societal outcomes.

Research suggests that sport is particularly effective in that it creates both 'bonding' capital (i.e. connection between individuals within a group or community) and 'bridging' capital (i.e. connections between different groups of communities). While both are important, it is sport's ability to build bridges between different groups that sets it apart from many other community activities (Tonts, 2005).

Due to the uncertainties that exist around social capital as a concept, this report instead refers to a more general idea of social connection, which includes social networks, inclusion and cohesion. Individuals who participate in sport, either as a player or as a volunteer, can be exposed to a wide variety of people in an environment that emphasises team work and mutual support.

Social connection has been found to drive a number of social benefits, such as a reduction in crime, human capital benefits, increased levels of trust, social inclusion and community pride as well as contributing to improved mental health outcomes. These social benefits are explored further in Section 5 ('Social Benefits'), while mental health is included in the 'Health Benefits' section (i.e. Section 4).

3. Infrastructure

The final driver is the infrastructure itself. The construction, operation and maintenance of community sport facilities supports economic activity and employment. The development of new facilities, or the redevelopment of existing facilities, often results in an amenity uplift to the environment in which it is situated in, transforming underutilised sites, making neighbourhoods safer by providing lighting and shelter and adding to the nation's provision of green space. This infrastructure also has a number of community uses outside of sport, such as events, training programs, health clinics and assembly points during natural disasters.

Assumptions

Necessarily, a number of assumptions underpin this assessment:

Macro-level analysis

This report presents an assessment of the benefits of community sport infrastructure at a macroeconomic, Australia-wide level. Taking into account the diversity of infrastructure provided and the significant geographical differences in communities (e.g. metropolitan vs. remote), this value assessment does not look to present a result which can be divided to highlight the value of specific community sport infrastructure assets or projects. Instead, it presents an indicative aggregate measure highlighting the gross value to the nation as a whole. In this way, it accounts for the diversity in outcomes that will result from the wide variety of facilities, sport, programming and participants.

An annual snapshot

This value assessment is an estimate of the value created in an average year using current levels of activity and prices.

Participation data

The quantification of the benefits that are driven by participation in community sport rely on participation data from the most recent available AusPlay survey at the time of writing (January 2016 – December 2016).

While the AusPlay data set is the most complete and current sport participation dataset available in Australia and reports participation through organisations and / or venues, it does not present a specific breakdown of the type of facilities used for participation. Therefore, as this assessment is of the value driven by community sport, some assumptions had to be made to qualify participants for these benefits. To account for these assumptions, the pool of participants that qualified for these participation driven benefits is conservative.

Using this data source, it has been estimated that approximately **8 million people** use community sport infrastructure in some form annually within Australia. Of these it is estimated, based upon frequency of participation within the AusPlay dataset, that approximately **2 million participants** represent regular users of community sport infrastructure.

Uncertainty

To account for uncertainty in the data inputs used in this assessment, as well as the relative immaturity of some of the research relied upon, conservative estimates of certain inputs (for example, the average annual spend on community sport infrastructure and the amount of community sports green space) were used to arrive at the value of community sport infrastructure figure. In addition, as detailed above, conservative data sets have been used when defining the recipients of these benefits. All of this means the estimate presented is an "at least" value.

Who is impacted?

It is also important in the framing of the value assessment to identify the bearers and beneficiaries of the impacts of community sport infrastructure. These groups vary between the different impacts included within this proposed methodology, but have been summarised into four key categories below.

- 1. Active participants:** individuals who are participating in sport through community sport infrastructure at a sufficient level to meet the (DoH) Physical Activity Guidelines and therefore are eligible to receive the health benefits that come from physical activity.
- 2. Non-active participants:** individuals who participate in sport through community sport infrastructure but not sufficiently to meet the DoH guidelines.
- 3. Non-playing participants:** individuals who regularly participate in non-playing activities (i.e. volunteers and spectators, users of facilities for non-sport purposes like community activities).
- 4. Non-users:** individuals who benefit from community sport infrastructure without using it directly (i.e. the wider community who benefit from the economic activity or amenity benefits generated by community sport infrastructure).

Our approach

Significant consideration was given to the outcomes of the research and consultation processes undertaken as part of the development of this document in determining the most appropriate methodology through which to package these benefits.

It was found that in order to include the three categories of benefits in a robust and well-evidenced assessment, each category needs to be examined in isolation. These values were then added together to generate an overall value of community sport infrastructure.

This approach deviates from much of the existing literature that evaluates sport through a social return on investment (SROI) lens. However, it is not without precedent (a notable example is 'The Economic and Social Value of Sport and Recreation to New Zealand' by Lincoln University).

This proposed approach represents a combination of the following:

- **Economic impact** assessment of the direct and indirect economic activity generated or supported by the construction, operation or maintenance of community sport infrastructure;
- Quantification of the **health impact** of community sport infrastructure and associated activities using a disability adjusted life years methodology common within health economics, similar to that used by the World Health Organisation (WHO) and Australian Institute of Health and Welfare (AIHW) to calculate the burden of diseases on society; and
- Quantification of the **social impact** of community sport infrastructure and associated activities using methods common within SROI.

The following diagram provides a summary of our methodological approach:

The value of Community Sport Infrastructure

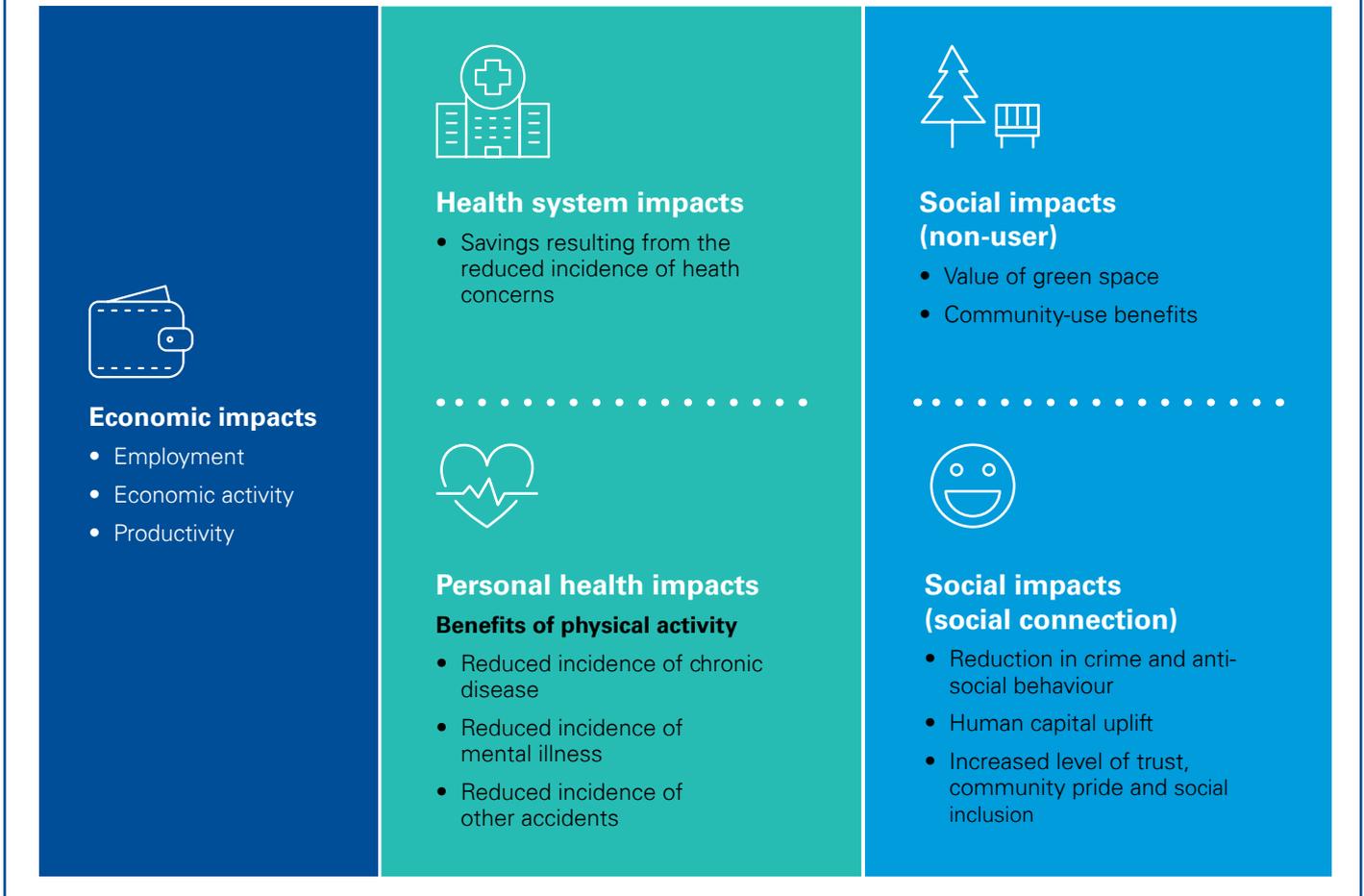


Figure 3: Our methodological approach

Challenges and limitations

The key challenges faced in measuring the value of community sport infrastructure were:

Sport vs. Sport infrastructure

Much of the literature to date investigates the benefits of sport or physical activity more broadly. However, there exists very little analysis of the specific value of community sport infrastructure.

It is important to acknowledge that while many of the benefits included in an assessment such as this are derived primarily from sports and activities, these could not take place without the infrastructure to support them.

To overcome this challenge, as outlined earlier, for the purposes of this assessment a number of simplifying assumptions have been used to ensure that the analysis is only including sporting activities within community sport infrastructure, and we have assumed that where

this activity is occurring, it is effectively programmed such that it delivers the social benefits found through the literature review process.

Data availability

A number of data sources relevant to community sport infrastructure do not yet exist, or do not exist to a sufficient level of granularity to be useable in a context such as this assessment.

Facilities data

The first notable gap in available data is in the provision of community sport infrastructure around the country. There is no central repository of community sport facilities and while attempts have been made to collate facilities data, a number of differences in data collection both across the country and across the different owners and funders of infrastructure make this difficult. Any analyst looking at community sport infrastructure must rely on a best guess based on data that is available for certain locations or certain sports.

Similar to the provision of community sport infrastructure, there is little data available on the infrastructure spend nationally. There is significant variety in the way infrastructure is funded, operated and maintained around the country. Moreover, there is significant variety in the infrastructure itself (for example two facilities may be different in size, the sports they host and their operating models). For this reason, benchmarks are primarily relied on, supplemented by estimates provided by various levels of government.

Participation data

As detailed earlier, while national participation data like the AusPlay survey exists, this data has some limitations in its applicability to an assessment such as this without a number of generalising assumptions. Firstly, as already discussed there is no dataset specific to participation through community sport infrastructure. Secondly, while previous data collections like the National Health Survey contain information on participants' intensity of participation, AusPlay does not. Therefore, an assumption has been made around the intensity levels of different sports and accompanying sporting behaviours (for example, if a respondent is participating regularly it can be assumed that they are playing at a higher level of intensity as they are likely to be participating at competition level rather than socially). In addition, the AusPlay survey is designed to report reliable participation estimates at a national and state / territory level. There are a number of impacts included within this report that could be investigated in a more robust way if a greater regional breakdown was available of participation in various sports, however this would require access to research that had been designed for this specific purpose.

Access to current data

While a number of datasets exist for sport and recreation, many are now out-of-date. Where current data is unavailable, and no information exists as to how the composition of this data may have changed over time, the assumption has been made, where reasonable, that a particular dataset is still applicable.

Comparability of the benefits

When aggregating the various economic, health and social benefits articulated in this report, it is important to ensure that all of these benefits are directly comparable and can be added together. This is particularly challenging when some of the benefits accrue to individuals and some accrue to the wider society, and when some impacts represent tangible economic values, while others less tangible social welfare measures. The primary step taken to ensure this comparability was to convert all quantified benefits into monetary equivalent values. In addition, it was important to avoid double counting and for this reason, some benefits were excluded altogether or not included in the headline value of community sport infrastructure but only in the wider narrative (e.g. Volunteering).



References

- Abelson 2007, Establishing a Monetary Value for Lives Saved: Issues and Controversies, Working Papers in Cost benefit Analysis WP 2008-2, Department of Finance and Deregulation, Retrieved from <http://www.dpmc.gov.au/office-best-practice-regulation/cost-benefit-analysis>.
- Allen, K, Bullough, S, Cole, D, Shibli, S, Wilson, J. (2013). The Impact of Engagement in Sport on Graduate Employability. London: British Universities & Colleges Sport (BUCS). Retrieved from http://c1593.r93.cf3.rackcdn.com/BUCS_Employability_Research_Report.pdf.
- Al Tunaiji, H., Davis, J.C., Mackey, D.C., & Khan, K.M. (2014). Population attributable fraction of type 2 diabetes due to physical inactivity in adults: a systematic review. *BMC Public Health*, 14(469).
- Ambrey, C & Fleming, C. (2012). Public greenspace and life satisfaction in urban Australia. Donvale: Australian Agricultural & Resource Economics Society. Retrieved from <https://ageconsearch.umn.edu/bitstream/124302/2/2012AC%20Fleming%20CP.pdf>.
- Australian Broadcasting Corporation. (2016). Auburn Giants multicultural women's AFL team. Retrieved from <http://www.abc.net.au/radio/programs/sundaynights/sunday-nights---aurn-giants/7510162>.
- Australian Institute of Criminology. (2003). The role of sport and physical activity programs in crime prevention. Canberra: AIC. Retrieved from <http://www.aic.gov.au/publications/current%20series/crm/1-20/crm013.html>.
- Department of Health. (2017). Australia's Physical Activity and Sedentary Behaviour Guidelines for Adults (18-64 years). Canberra: Department of Health. Retrieved from <http://www.health.gov.au/internet/main/publishing.nsf/content/health-publhlth-strateg-phys-act-guidelines>.
- Australian Institute of Health and Welfare. (2014). Cardiovascular disease, diabetes and chronic kidney disease — Australian facts: Prevalence and incidence. Cardiovascular, diabetes and chronic kidney disease series no. 2. Cat. no. CDK 2. Canberra: AIHW. Retrieved from <https://www.aihw.gov.au/reports/heart-stroke-vascular-disease/cardiovascular-diabetes-chronic-kidney-prevalence/contents/table-of-contents>.
- Australian Institute of Health and Welfare. (2016). Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2011. Canberra: AIHW. Retrieved from <https://www.aihw.gov.au/reports/burden-of-disease/australian-burden-of-disease-study-impact-and-causes-of-illness-and-death-in-australia-2011/contents/highlights>.
- Ballard-Barbash, R., Schatzkin, A., Albanes, D., Schiffman, M.H., Kreger, B.E., Kannel, W.B., Anderson, K.M. & Helsel, W.E. (1990). Physical activity and risk of large bowel cancer in the Framingham Study. *Cancer Research*, 50(12), 3610-3613.
- Barber, B, Eccles, J & Stone, M. (2001). Whatever happened to the Jock, the Brain, and the Princess?: Young Adult Pathways Linked to Adolescent Activity Involvement and Social Identity. *Journal of Adolescent Research*, 16(5), 429-455.
- Brenner, D.R. (2014). Cancer incidence due to excess body weight and leisure-time physical inactivity in Canada: implications for prevention. *Preventative Medicine*, 66, 131-139.
- Brenner, R. Tangeja, G. Haynie, D. Trumble, Ann. Qian, C. Klinger, R. Klebanoff. M. (2009). Association Between Swimming Lessons and Drowning in Childhood: A Case-Control Study. *Archives of Pediatrics & Adolescent Medicine*, 163(3), 201-210.
- Brown, K., Hoye, R. & Nicholson, M. (2014). Generating trust? Sport and community participation. *Journal of Sociology*, 50(4), 437-457.
- Brown, W, Bauman, A, Bull, F & Burton, N. (2012). Development of Evidence-based Physical Activity Recommendations for Adults (18-64 years). Canberra: Commonwealth of Australia. Retrieved from [http://www.health.gov.au/internet/main/publishing.nsf/content/3768EA4DC0BF11D0CA257BF0001ED77E/\\$File/DEBPA%20Adults.PDF](http://www.health.gov.au/internet/main/publishing.nsf/content/3768EA4DC0BF11D0CA257BF0001ED77E/$File/DEBPA%20Adults.PDF).
- Coalter, F. (2013). *The Social Benefits of Sport*. Glasgow: Sport Scotland.

- Hartmann, D & Depro, B. (2006). Rethinking Sports-Based Community Crime Prevention: A Preliminary Analysis of the Relationship Between Midnight Basketball and Urban Crime Rates. *Journal of Sport and Social Issues*, 30(2), 180-196.
- Kim, W., Jun, H.M., Walker, M. & Drane, D. (2015). Evaluating the perceived social impacts of hosting large-scale sport tourism events: Scale development and validation. *Tourism Management*, 48, 21-32.
- KPMG-Econtech. (2008). The cost of physical inactivity. Australia. Retrieved from http://www.medibank.com.au/client/documents/pdfs/the_cost_of_physical_inactivity_08.pdf.
- Kremer, P, Elshaug, C, Leslie, E, Toumbourou, JW, Patton, GC & Williams, J. (2014). Physical activity, leisure-time screen use and depression among children and young adolescents. *Journal of Science and Medicine in Sport*, 17(2), 183-187.
- Marsh, HW & Kleitman, S. (2003). The effects of playing sport on growth and change during high school. *Journal of Sport and Exercise Psychology*, 25, 205-228.
- Mehdipanah, R, Malmusi, D, Muntaner, C & Borrell, C. (2014). An evaluation of an urban renewal program and its effects on neighborhood resident's overall wellbeing using concept mapping. *Health & Place*, 23, 9-17.
- Oliver, P. (2014). *The Power of Sport: Building social bridges and breaking down cultural barriers*. Perth: Curtin University.
- Rose, D. (2006). *The Role of Physical Activity in the Prevention of Falls in Older Age*. Fullerton: California State University. Retrieved from <http://www.who.int/ageing/projects/6.Role%20of%20physical%20activities%20in%20falls%20prevention.pdf>.
- Rosewater, A. (2009). *Learning to Play and Playing to Learn: Organized Sports and Educational Outcomes*. Oakland: Team-Up for Youth. Retrieved from <https://www.issuelab.org/resource/learning-to-play-and-playing-to-learn-organized-sports-and-educational-outcomes.html>.
- Royal Life Saving Society Australia. (2017). *Royal Life Saving National Drowning Report 2017*. Sydney: Royal Life Saving Society. Retrieved from <https://www.royallifesaving.com.au/about/news-and-events/news-items/release-of-the-royal-life-saving-national-drowning-report-2017>.
- Sport England. (2017a). *Education and Lifelong Learning*. London: Sport England. Retrieved from <https://www.sportengland.org/research/benefits-of-sport/the-value-of-sport-monitor/education/>.
- Sport England. (2017b). *Crime Reduction and Community Safety*. London: Sport England. Retrieved from <https://www.sportengland.org/research/benefits-of-sport/the-value-of-sport-monitor/crime-reduction-and-community-safety/>.
- Tonts, M. (2005). Competitive sport and social capital in rural Australia. *Journal of Rural Studies*, 21, 137-149.
- Ware, V & Meredith, V. (2013). *Supporting Healthy Communities Through Sports and Recreation Programs*. Canberra: AIHW. Retrieved from <https://www.aihw.gov.au/getmedia/61c83f53-3d74-40e4-8c99-554b5bce71cf/ctgc-rs26.pdf.aspx?inline=true>.

References

Data sources

- Australian Bureau of Statistics. (2001). Sport and Recreation Funding by Government. ABS: Canberra. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/0/C1E4C4D3478C2D2DCA256C7500765137?OpenDocument>.
- Australian Bureau of Statistics. (2010). Volunteers in Sport. ABS: Canberra. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4440.0.55.001>.
- Australian Bureau of Statistics. (2011). Employment in Sport and Recreation. Canberra: ABS. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/0/C1E4C4D3478C2D2DCA256C7500765137?OpenDocument>.
- Australian Bureau of Statistics. (2011). National Health Survey: Summary of Results, 2001. Canberra: ABS. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/4364.0Main+Features12001>.
- Australian Bureau of Statistics. (2014). Causes of Death, Australia, 2014. Canberra: ABS. Retrieved from <http://www.abs.gov.au/AUSSTATS/abs@.nsf/Lookup/3303.0Main+Features22014?OpenDocument>.
- Australian Bureau of Statistics. (2015). National Health Survey: First Results, 2014-15. Canberra: ABS. Retrieved from <http://www.abs.gov.au/ausstats/abs@.nsf/mf/4364.0.55.001>.
- Australian Institute of Health and Welfare. (2012). Dementia in Australia. Canberra: AIHW. Retrieved from <http://www.aihw.gov.au/WorkArea/DownloadAsset.aspx?id=10737422943>.
- Australian Institute of Health and Welfare. (2016). Australian Cancer Incidence and Mortality (ACIM) books: Breast cancer. Canberra: AIHW. Retrieved from <http://www.aihw.gov.au/acim-books/>.
- Australian Institute of Health and Welfare. (2016). Australian Cancer Incidence and Mortality (ACIM) books: Colorectal cancer (also called bowel cancer). Canberra: AIHW. Retrieved from <http://www.aihw.gov.au/acim-books/>.
- Australian Sports Commission. (2017). AusPlay 2016 calendar year data by activity. Provided to KPMG directly by the ASC.
- Clearinghouse for Sport. (2017). Sports Facilities Data Map. Retrieved from https://www.clearinghouseforsport.gov.au/sports_facilities/map.
- Clearinghouse for Sport (2017). AusPlay Survey Results. Retrieved from <https://www.clearinghouseforsport.gov.au/research/smi/ausplay/results>.
- National Mental Health Commission. The 2016 National Report on Mental Health and Suicide Prevention. Canberra: National Mental Health Commission. Retrieved from <http://www.mentalhealthcommission.gov.au/our-reports/our-national-report-cards/2016-report.aspx>.
- Additional data was supplied directly from state departments of sport and recreation, national sporting organisations and the Clearinghouse for Sport.



Contact us

For further information, please visit us online at kpmg.com.au or contact:

Ron Zubrik

Partner, KPMG Sports Advisory

T: (07) 3233 3289

M: 0415 391 035

E: rzubrik@kpmg.com.au

Chad Gardiner

Associate Director, KPMG Sports Advisory

T: (07) 3233 9550

M: 0468 783 251

E: cjgardiner@kpmg.com.au

kpmg.com.au

© 2018 KPMG, an Australian partnership and a member firm of the KPMG network of independent member firms affiliated with KPMG International Cooperative ("KPMG International"), a Swiss entity. All rights reserved. Printed in Australia.

KPMG and the KPMG logo are registered trademarks of KPMG International.

Liability limited by a scheme approved under Professional Standards Legislation.

Designed by Australia Creative Services | ACS096375

