LITCHFIELD COUNCIL

BUILDING BETTER REGIONS

Freds Pass Reserve Business Case

DelosDelta

March 2021

Contents

Executive Summary

Litchfield Council has worked with its diverse, motivated and informed community to develop a long-term masterplan for an integrated sporting and community facility—Freds Pass Reserve (Reserve). The Reserve supports more than 2,800 members from 23 User Groups, across 16 different onsite facilities, and is accessed more than 528,000 times per year.

The investment-ready community infrastructure improvements will increase sports participation, leverage additional community investment and develop the Reserve into a highly visible and well utilised community asset for generations to come. This project encapsulates the ideal BBRF project: not only does this project bring economic growth to the region, it secures and uplifts a key community asset that brings social and health benefits to tens of thousands of NT residents.

Success in the short-term is contingent on a major funding injection. This business case supports the Building Better Regions Fund (BBRF) application by highlighting the key drivers and relative costs and benefits of the project.

The key observations about the project proposal include:

- Doing nothing is not an option due to increasing asset obsolescence and risks to the community. The choice is between going slow using Council and community resources alone or working with the Australian and Northern Territory Governments to generate grant funding.
- The $10 million being sought through BBRF is around 25 percent of the total project portfolio and will be located in a primarily regional and remote LGA.
- The 10 priority projects listed for BBRF support are clearly in scope and are investment ready with minimal preparation required to initiate. Assuming orderly implementation, the projects will be delivered ahead of 31 December 2023.

The economic benefits of the partnership approach include:

- Investments that support up to 66 FTE positions, of which 13 could be Aboriginal. The BBRF component alone supports 105 FTE over the two-year funding cycle.
- Productivity gains delivered through increased utilisation of the Reserve asset, which encompasses increased field hire, increased community space use, expanded capacity for more sporting participants and improved accessibility
- A critical injection of investment into the LGA, and the Northern Territory, will boost economic activity, directly channelling funds into the construction sector and also indirectly into the wider region through increased activity. The impact is estimated at $15 million in direct and indirect additional gross regional product, in addition to up to $40 million in gross capital formation.

- A risk of not addressing challenges at the Reserve is that residents may lose a community asset and incur additional travel time and vehicle travel costs. Preventing those costs generates $11 million in community benefits.

The social benefits of priority projects are large and material. The projects secure the future of a loved and highly used community asset in Litchfield, that services up to 65,000 people, 20 per cent of whom are Aboriginal. The Reserve is vital to local sports teams, school activities, local community groups, and regional events. The infrastructure upgrades will:

- Deliver high-class community assets that draws people into the region and enhances participation in the various sports clubs, community groups and regional events it supports.
- Enhance regional health and wellbeing outcomes through increased physical activity levels and supported community inclusion and connection that uplifts mental wellbeing.
- Enable increased community collaboration, connection and inclusion, as residents from across the large LGA and surrounding areas can come together for sporting events, interest groups and exciting activities such as the Freds Pass Markets and annual Show.
- Improve safety, inclusion and satisfaction while using the asset, with the project encompassing critical building upgrades, female change facilities and amenities, increased capacity to reduce crowding and better general wayfinding.
- Enhance participation through enabling core infrastructure supporting the Reserve to meet the demand for new sport teams such as a basketball and netball teams, along with capacity for new community groups, cycling and running activities.

Improve, modernised, safe and smart new infrastructure will also unlock significant environmental benefits through less water wastage, better species selection for biodiversity improvement and carbon sequestration and a reduction in greenhouse gases from a shift to renewable energy.

The analysis of the quantifiable impacts shows that the priority projects have a cost benefit ratio of at least 1:1.14 (7 per cent discount rate). We have identified another 25 qualitative impacts which, if measured, would demonstrate convincingly that the returns to Litchfield and the NT from the Reserve Masterplan, and the priority projects funded by the BBRF component, would significantly outweigh all identifiable costs.

Implementing the priority projects in the Freds Pass Reserve Masterplan will provide the Australian Government with an excellent model of a regional local council, the NT Government and the Australian Government working together to achieve better regional economic, social and environmental outcomes through partnership funded community infrastructure projects.

Investment: Freds Pass Masterplan

The Litchfield Council is seeking funding from the Building Better Regions Fund (BBRF) that will be combined with other funds to support core infrastructure investments that drive regional participation in sporting and community activities.

The Precinct

Freds Pass Reserve (Reserve) is in the Northern Territory (NT) within the Litchfield Council boundaries.[1] The Reserve is a multifunction community site that caters to more than 2,800 members from 23 regular User Groups, across 16 different onsite facilities. It accommodates regular users from most football codes, cricket, archery, athletics, paintball, equine and canine activities with specialised facilities. The Reserve also hosts a weekly community rural market and an annual rural show, along with supporting a wide range of infrequent users like local families, schools, the Defence force and major corporates for one-off events.

The Reserve is a highly utilised community asset, accessed more than 528,000 times per year by users from within the Litchfield region, which is double the level of participation in 2014.[2] Some activities, like the annual show, have run on site for more than 40 years.

The Reserve covers approximately 82.75 hectares[3] and was valued at $4.9 million in 2018. The Reserve is owned by Litchfield Council and operated by an independent Freds Pass Sport and Recreation Management Board (the Board). The Council and Board have primary accountability for critical infrastructure on site. Additional assets on the Reserve that enable community participation are developed by User Groups from their own resources, by agreement with Council and the Board.[4] It has been observed that:

> *…ovals, playing fields and grounds were carved out of bushland by volunteers who loved their sport. User Groups applied to Government for seed funding and worked with local businesses who dedicated their time, equipment and energy. Consolidating substantial sponsorship and fundraising initiatives such as kiosks, bars and raffles enabled them to create the Reserve that is of a major benefit to the community.*[5]

[1] Physical address: 20 Bees Creek Road, Freds Pass, Northern Territory 0822 (see: https://g.page/freds-pass-reserve?share). Approximate latitude -12.53547 and longitude 131.05159.
[2] Freds Pass Sports and Recreation Reserve Management Board Inc., Masterplan 2018-2027, 201, p. 6.
[3] https://fredspassreserve.com.au/history-of-freds-pass-reserve/)
[4] Freds Pass Reserve Board, pp 7-9.
[5] Ibid, p. 9.

Community Led Masterplan

An important coordination mechanism for activity within the Reserve is master planning. This is a layered process. The Board, in conjunction with Council and the community, produce an overall Reserve Masterplan. Each major User Group also develops a specialised masterplan for aspects of the Reserve they support, aligned to the overarching Reserve Masterplan.

The 2018 the Board Masterplan process identified more than 100 individual projects of differing scales and priorities needed to address a range of challenges. These are high priority investments to deal with growing pains, increased participation issues and community safety challenges. The goal of all stakeholders is to implement these projects, over a period from 2018 to 2026, drawing on a combination of Council, Board, User Group and partner Government resources. Recent updated cost estimates suggest a funding envelope of at least $34 million (unadjusted 2018 values) is required over the entire period to complete these critical projects.

The Challenges

Research, community engagement and expert advice across engineering, hydraulic, traffic, electrical and work health and safety[6] identified a range of major issues with the current state of the Reserve. A high-level summary of challenges includes, in no particular order:

- Tragedy of the commons issues, for example: insurance management, volunteer coordination across multiple sites, alternative facilities during site utilisation, negotiation and coordinated booking of areas, marking of fields and lighting standards.
- Diminished playing quality on the fields and in facilities increasing participants' safety risks.
- Growth in equestrian activities driving a need to have additional "sand arenas", offset by reducing equestrian fields (which would also reduce mowing time and water usage benefit).
- Increased demand for suitable facilities, amenities and additional shared junior girl's oval for cricket and AFL driven by increased female participation across all sports.
- A need for improved athletics facilities to enhance participant safety and to separate them from Rugby League and Show activities.
- Community desire for access to additional sports who must otherwise travel to other areas, including for example: tennis, netball, basketball and bicycle and running tracks.
- A growing community need to have a centralised air-conditioned community hall with space for a range of current and additional activities including conference rooms, larger hall and sprung flooring (for karate, dance and other movement activities).
- Diminishing water supply, poor quality of existing irrigation infrastructure, leaking irrigation systems that prevent night watering and the impact of flooding on erosion.
- An absence of a reticulated sewer system across the Reserve.

[6] A summary of major discussions in Freds Pass Reserve Board Masterplan, sections 9 and 10; and, irwinconsult, Freds Pass Reserve Engineering Services Master Plan: For Freds Pass Reserve Board of Management, February 2016.

- Runoff in the rain season wiping out infrastructure investments in car parks and roads. The Reserve utilises mostly surface treatments to manage stormwater drainage and does not possess any underground stormwater drainage network to prevent this damage.
- Issues with the mostly unsealed internal road network and its suboptimal wayfinding.
- The incorrect certification of 96 assets across the Reserve. Several structures have been removed and more non-compliant building removals are required. These buildings need to be replaced with new certified structures. The goal is to ensure all structures are safe, including substituting demountable buildings for certified structures.
- The condition of most formal structures, which having been funded by the community over many years, are reaching the end of their useful and functional life.

In effect the basic core infrastructure—roads, power, water, irrigation, drainage, parking and lighting—need upgrading to enable a safer, more functional and community focussed Reserve for long term usage. These core infrastructure investments will allow User Groups to focus their resources and volunteering on improving their assets for the safety of their stakeholders.

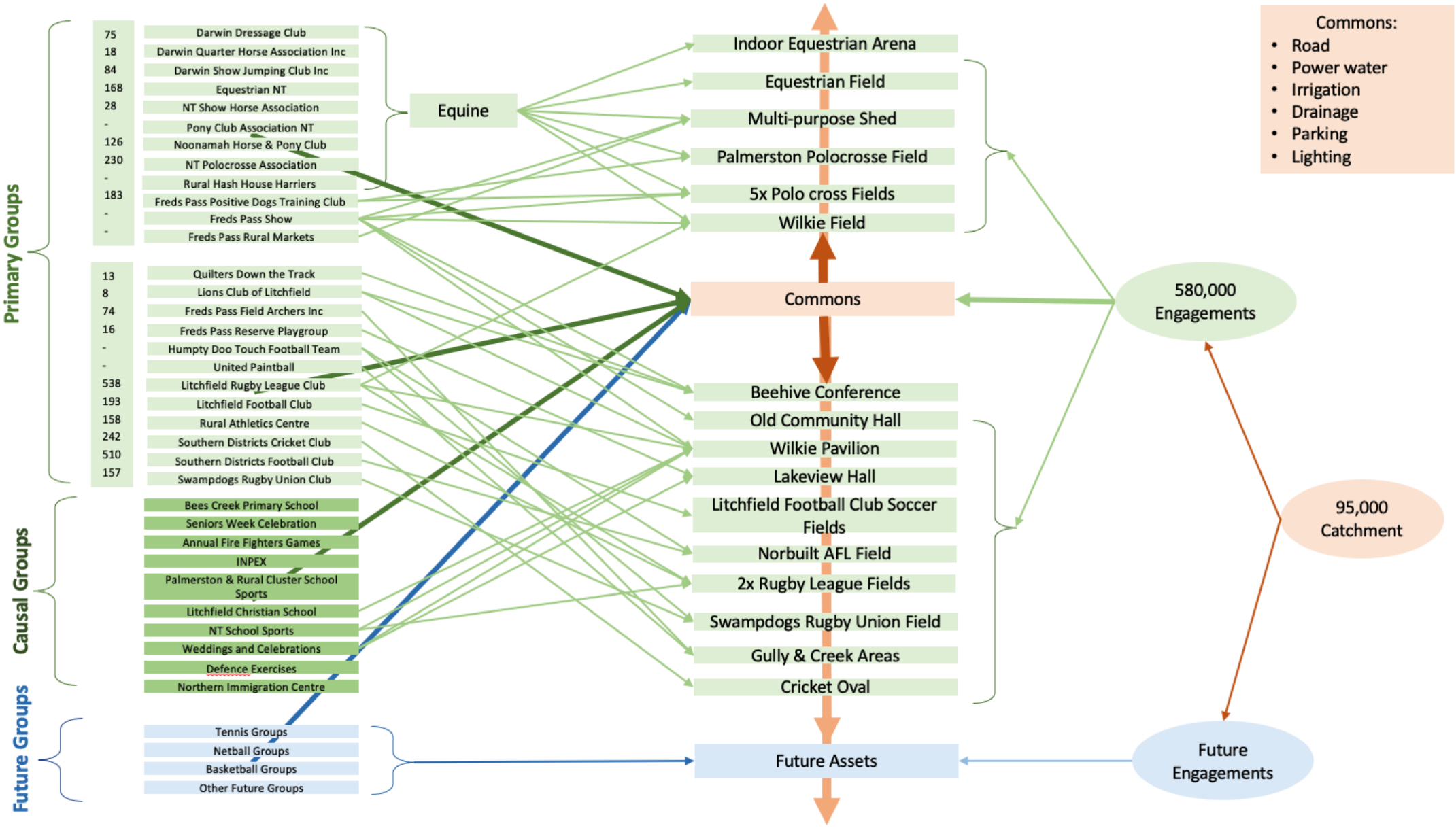
The Affected Community

The Reserve is a unique example of successful stakeholder management of a shared community facility. As the interconnected stakeholder system and interdependent assets rely on core infrastructure to survive and thrive, if the identified challenges are not met, infrastructure inadequacy may contribute to a decline in participation or failure of Reserve assets.

Figure 1 is a simplification of the connections between User Groups, current facilities, and utilisation, including some aspects of potential future growth. It is clear that the Reserve is integrated with a diverse set of Users, there are thousands of directly impacted people and that a critical risk is a lack of effective core infrastructure.

While these challenges are complicated, the consequence of not addressing them effectively, especially with core infrastructure, will result in a significant negative shift in community participation.

Figure 1: Stakeholders, assets and activity at stake

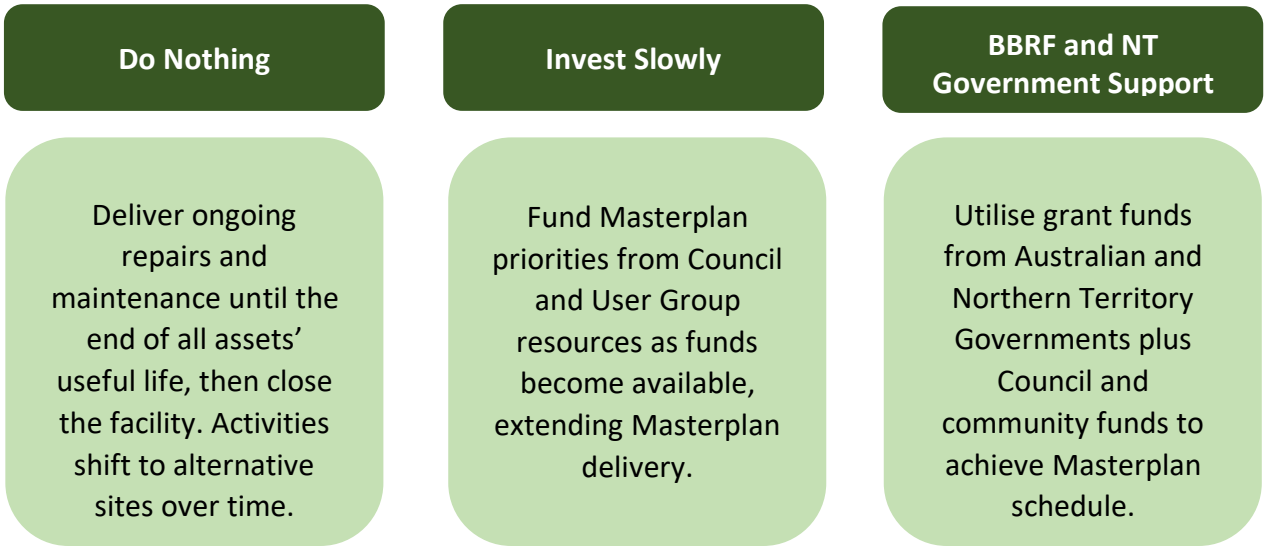


Alternatives Considered

The Board Masterplan was developed in 2018, and some investments have commenced. The preliminary investments have built on 17 projects co-funded with the NT Government which commenced in the 3 years prior to the Masterplan, including fencing, arterial roads and drainage, amenities and ablutions facilities, electrical and lighting upgrades, irrigation improvements, and playground upgrades. Continued investment is under review, and funding challenges have emerged.

To deal with the funding pressures, the Board has been investigating a range of alternative delivery options. The way in which these alternatives have manifested are summarised in Figure 2.

Figure 2: Alternatives for implementing the Freds Pass Reserve Masterplan



The do-nothing option is simple and affordable; however, it places at risk significant regional sports participation, economic activity and community networks. Community safety and waste challenges do not ethically allow for this option. This alternative has been excluded from consideration.

Investing slowly is the baseline scenario. The challenges and operations will remain in the absence of funding, which will leave Council and the User Groups to slowly implement change as opportunistic funding arises. This option has similar potential consequences as doing nothing, in that participation may diminish or shift to other locations as challenges remain unaddressed. It is highly likely this approach will extend the implementation timeframe beyond the nine-year Masterplan horizon and increase longer term cost pressures.

A viable counterfactual, developed and assessed in this analysis, is to seek support from the NT and Australian Government. NT funding is being discussed bilaterally with Council. For the Australian Government, the Masterplan represents a genuine community infrastructure challenge consistent with the Building Better Regions Funds (BBRF) goals. The counterfactual will support

achieving the Masterplan priorities directly, prevent risks of lower participation, lower the real cost of delivery, and by funding core infrastructure will prime additional resourcing from Council and User Groups for supportive community developed infrastructure.

Option Funding Structure and the BBRF

A summary of the complete project funding profile identified in 2018 is in Table 1. The base funding is current estimates based on 2018 prices. Allowing for trend inflation, the total estimate is more likely $2 million higher over the life of the project.[7] Also allowing for a global 10 per cent contingency on the inflation adjusted budget could add $3.6 million. In total, the 104 priority projects will cost between $34 million and $40 million over the identified years.

Table 1: Masterplan funding profile

Year	Projects	2018 Estimate	Inflation adjusted	Spent or Committed
2018	18	$4,558,000	$4,617,254	$2,030,000
2019	18	$2,508,310	$2,573,950	$50,000
2020	18	$8,025,000	$8,342,061	$0
2021	16	$5,555,000	$5,849,542	$100,000
2022	12	$1,930,000	$2,058,754	$0
2023	8	$3,580,000	$3,868,474	$0
2024	6	$1,040,000	$1,138,412	$0
2025	5	$1,515,000	$1,679,918	$0
2026	3	$5,620,000	$6,312,790	$0
Total	104	$34,331,310	$36,441,156	$2,180,000
Contingency			$3,644,116	

The Australian Government is not being asked to fund all of these project costs. The target funding the BBRF will contribute is $10 million towards 10 of the 104 project priorities that will commence between 2021 and 2022. The projects, cost estimates, priority and duration are summarised in Table 2. The $10 million will contribute to $11.24 million in project expenditures, $4.1 million in 2021 and $7.14 million in 2022, which will be delivered over 18-24 months.

In relation to the BBRF guidelines, each of these projects is 'investment ready' with minimal lead-time required to commence.

To be clear, funding has not been aligned 1:1 with all projects in each year. In effect, the Australian Government contribution will adjust the timing and financial participation of multiple parties. An analytical reprofiling of all projects, including the potential financing streams is provided in the key assumptions index. This is not a formal Litchfield position, just a financial sensitivity model.

[7] The report adopts a cost inflation rate of 1.3 per cent per annum, based on the ten-year compound annual growth rate in the Darwin 'All Groups excluding 'volatile items' consumer price index (CPI) series. Calculated from ABS, Consumer Price Index, Australia, December 2020, TABLE 5. CPI: Groups, Index Numbers by Capital City.

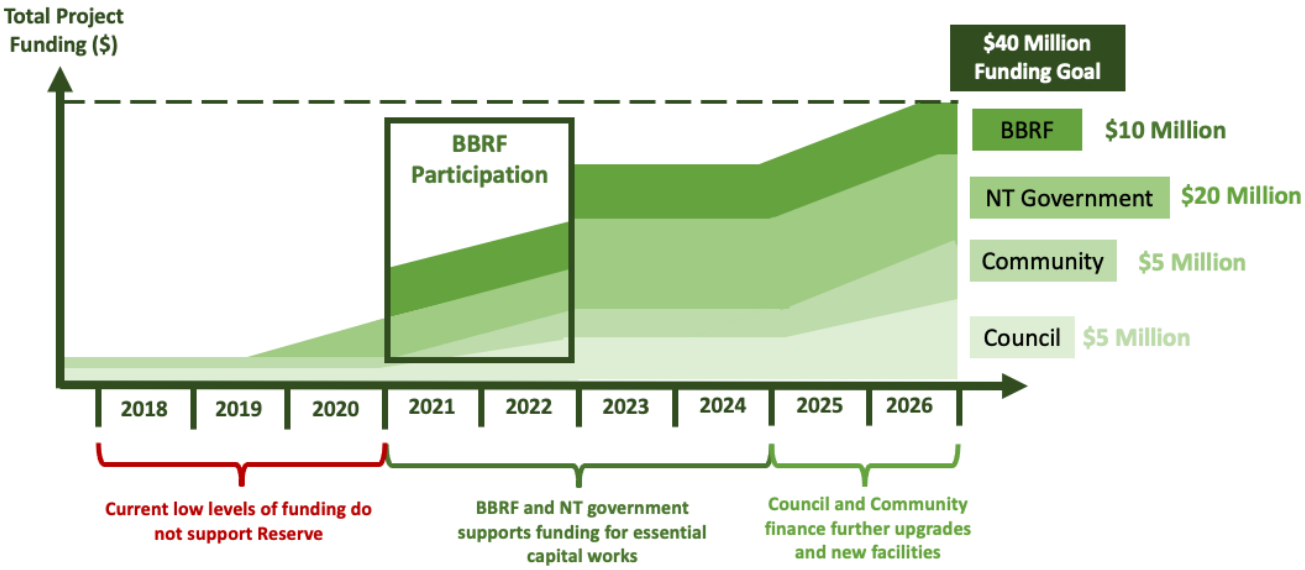
Table 2: Projects in scope for BBRF funding support

Year	Stage	Cost (nominal)	Description	Board Priority	Duration (months)
2021	1	$1,000,000	Drainage and erosion mitigation	High	18
	2	$400,000	Compliance work	High	12
	3	$1,500,000	Electrical Upgrades	Medium	12
	4	$650,000	Road Network upgrades Stage 3 and 4	Medium	6
	5	$550,000	Drainage and sealing to market carpark	Medium	6
2022	6	$180,000	Equestrian carpark area	High	6
	7	$560,000	Repairs and maintenance to seven bores	High	6
	8	$225,000	Construction of storage to replace decommissioned shipping containers	Medium	2
	9	$675,000	Soccer changerooms	Medium	8
	10	$5,500,000	Exhibition/events pavilion	High	18

Other funding is being sought from the NT Government, and being contributed by Council and by User Groups either in-kind or in dollars. Specifically, Council is negotiating with the NT Government to provide up to $20 million over the life of the Masterplan, and Council, the Board and User Groups (the community) will provide upwards of $5 million over the Masterplan period.

A conceptual presentation of the financial participation is in Figure 3. BBRF funding is timed to project funding requirements in 2021 and 2022. Mainly, it will adjust the funding patterns over the life of the nine-year project and potentially leverage more and earlier other supporting funds.

Figure 3: BBRF in the wider Masterplan context



When fully implemented, the Board Masterplan, supported by the BBRF, will deliver robust core infrastructure, world-class community developed sporting and community assets and high amenity values on the main transit corridor from the South to North of Australia.

If selected as part of the BBRF program, the Freds Pass Reserve Masterplan will be an excellent example of the local community, Northern Territory and Australian Government working together to achieve better regional outcomes from partnership funded core infrastructure projects.

Regional Insights

To understand the potential impacts of BBRF funding a contextual understanding of the region in which the assets exist is essential—this section provides high level regional insights on place, people, participation and contextual headwinds and tailwinds.

Place

Figure 4: Litchfield LGA (.idcommunity)

The Freds Pass Reserve is in the Litchfield Local Government Area (LGA). The LGA covers more than 290,000 hectares in the NT (0.22 percent). The scale and satellite features are illustrated in Figure 4.

The LGA is within the Lingiari Commonwealth Electoral Division. In the NT Legislative Assembly, the LGA is within the electorates of Daly, Goyder and Nelson.

The actual location of the Reserve is central to the communities of Freds Pass, Bees Creek, Humpty Doo, McMinns Lagoon, Coolalinga, Giraween and Howards Springs. It services all localities across the very large LGA.

The Reserve is close to the boundaries of the Palmerston LGA, Coomalie LGA and parts of the Darwin LGA. These locations have alternative facilities, however they also access the Reserve, especially for market and show activities.

The Reserve adjoins the Sturt Highway which is the major North-South transport connector for Central Australia from Adelaide to Darwin.

People

The Litchfield LGA is home to around 27,000 people. Of these people around 4,700 are of Aboriginal heritage and 22,300 are of non-Aboriginal heritage.[8] The population of the contiguous LGAs increases the potential users of the Reserve. In 2021, the total catchment is approximately 67,200. This has grown significantly from 58,100 in 2014, and is projected to grow to a robust 94,700 by 2036. The growth and composition are illustrated in Figure 5.

[8] Abs, Regional Data, and NT Treasury, Population Projections—2019 Release, 12 June 2020, https://treasury.nt.gov.au/dtf/economic-group/population-projections

Figure 5: Population levels within Reserve catchment

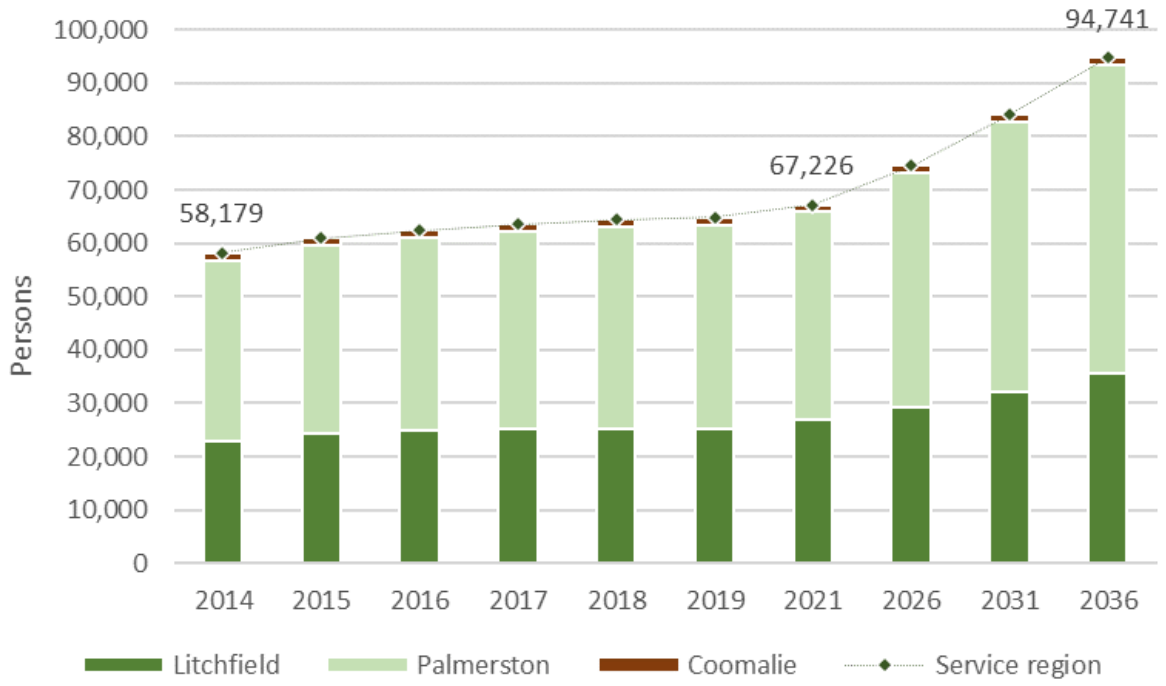
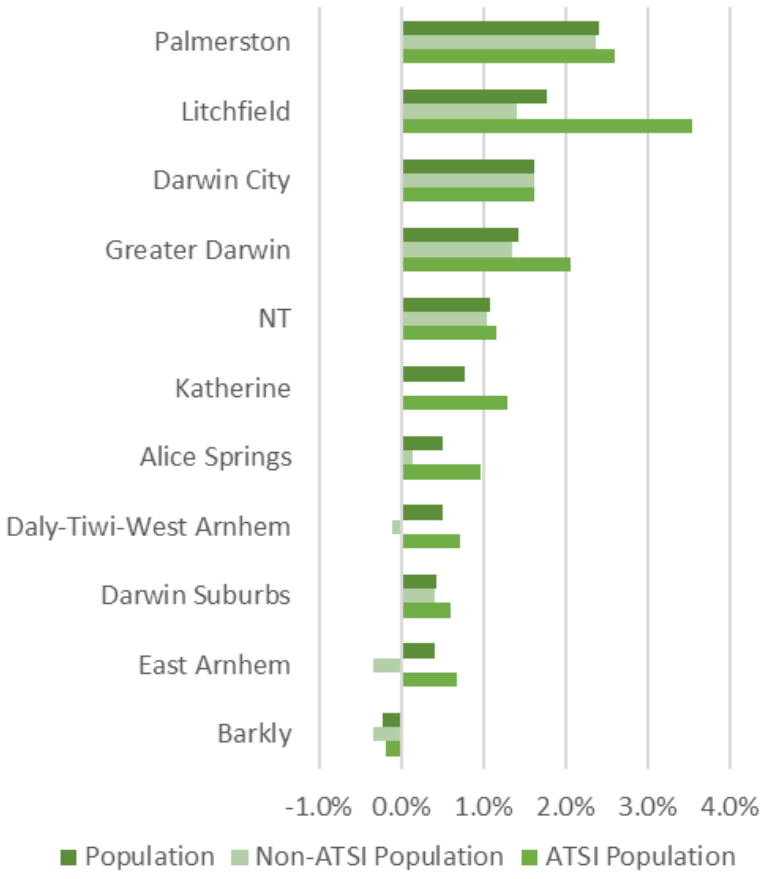


Figure 6: Trend growth rates 2016-2036



Significantly, across the NT, Palmerston and Litchfield are projected to be the two fastest growing regions in the NT between 2016 and 2036. The relative trend growth rates are illustrated in Figure 6.

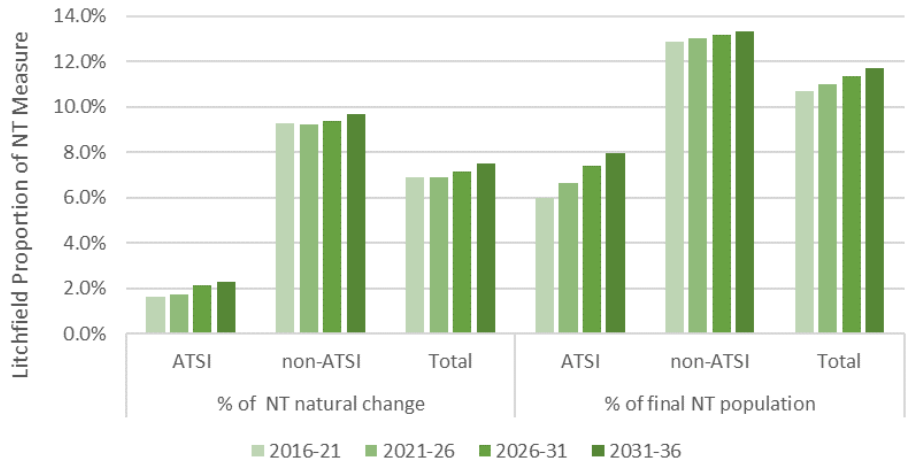
Palmerston has the fastest overall trend, 0.4 percentage points higher than Litchfield, however Litchfield has a 0.9 percentage point higher growth rate in Aboriginal population growth, with current Aboriginal population representing approximately 20 per cent of the LGA.

All of the Reserve catchment areas are predicted to grow faster than the NT as a whole, and with growth rates exceeding 1.5 per cent per year.

Litchfield will progressively increase its importance within the NT population. This is illustrated in Figure 7. For population growth by natural increase, for Aboriginal and non-Aboriginal cohorts Litchfield will have higher relative proportions between 2016 and 2036.

Similarly, Litchfield will progressively increase its share of the NT population from around 10 percent towards 12 percent over the same time frames.

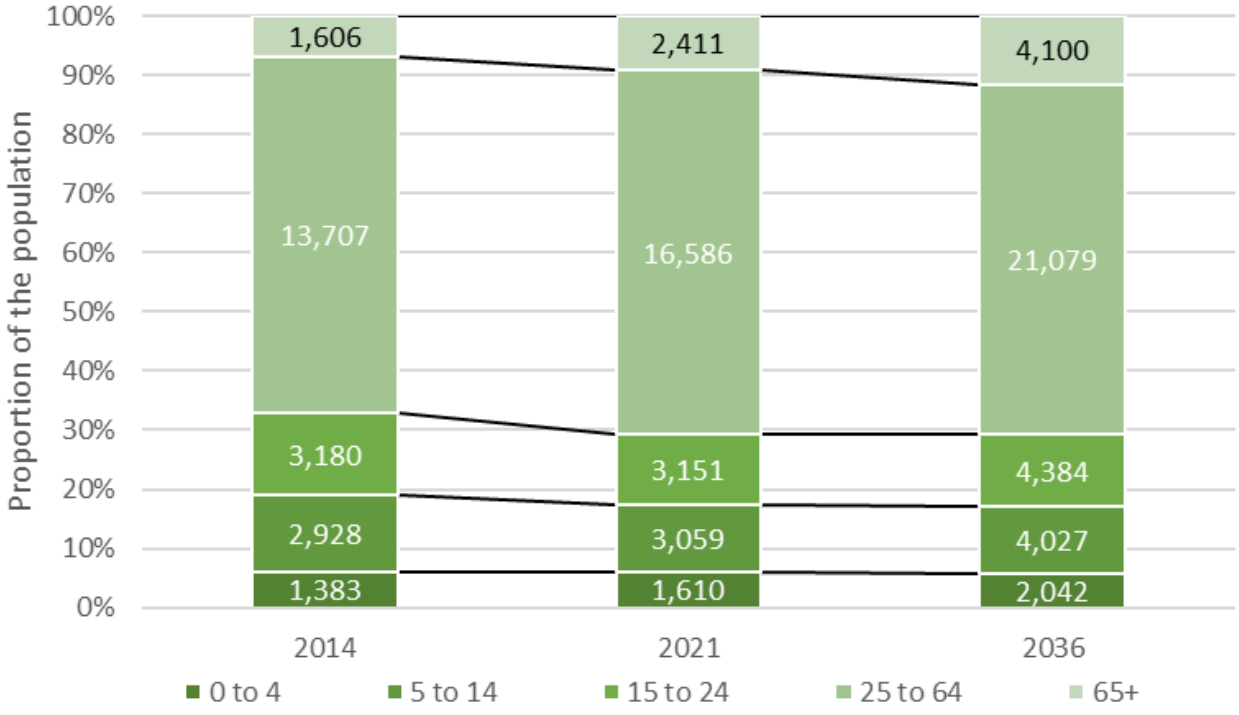
Figure 7: Litchfield in the context of the NT



As the population and relative shares increase, the age distribution of the population is also shifting slightly.

Comparing the 2014 to 2036 positions illustrated in Figure 8, the number of children and young people (0-25 years) will increase from 7,490 to 10,450, however they will fall from above 30 percent to just below 30 percent of the total population. Alternatively, the number of retirement aged people will increase to 4,100, but account for relatively more of the total population.

Figure 8: Litchfield population age composition and total change

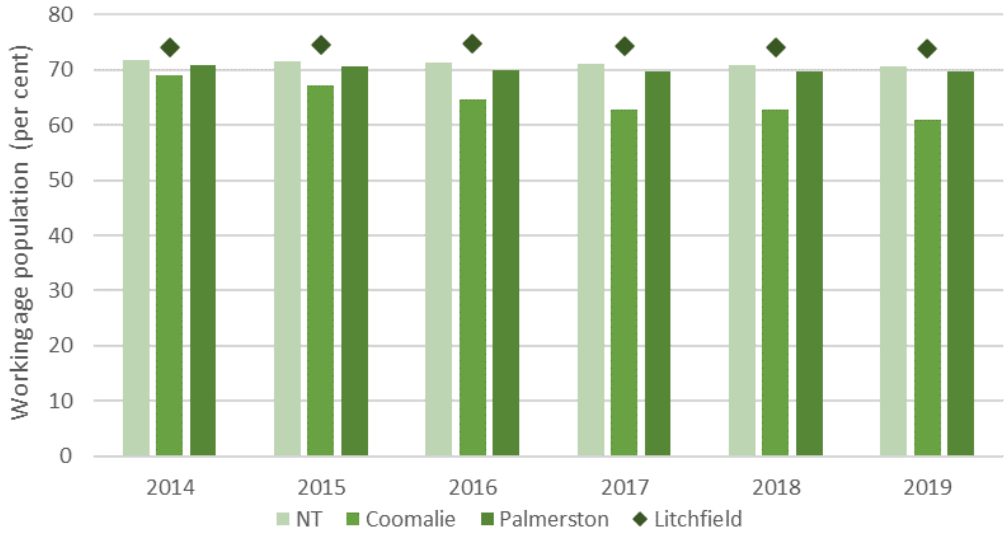


For the project, the key takeaway is that the areas that account for the potential user market are growing significantly, and relatively more than the NT overall. The demand for movement options and healthy activities facilities for ageing and young people will be strong. The LGA has a high and growing Aboriginal population who will benefit from this improved community asset.

Participation

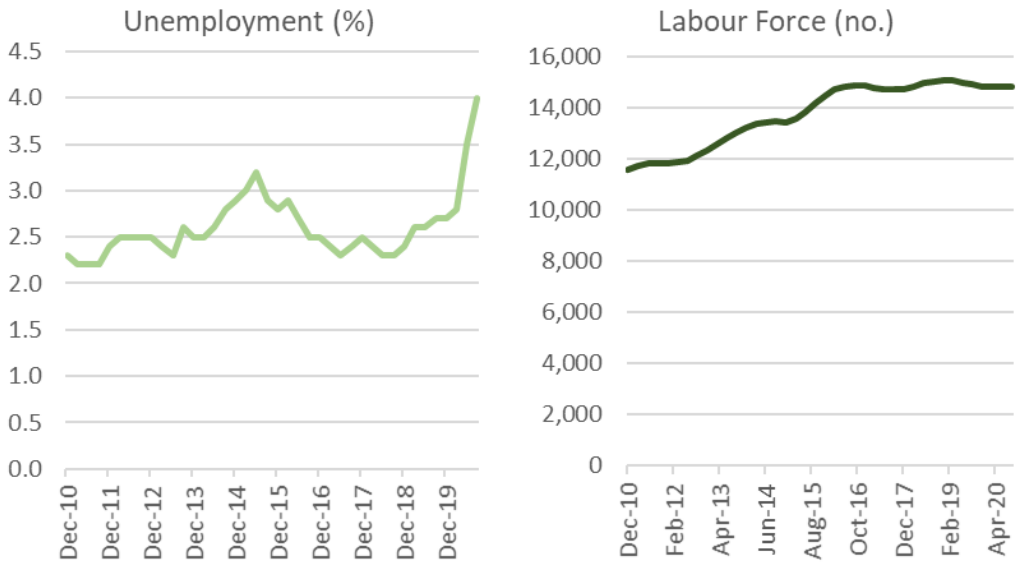
In an economic sense, participation drives demand and resources available for consumption and investment in an area. The Litchfield LGA has a relatively higher working age population than nearby LGAs, and the NT as a whole. In Figure 9, the Litchfield working age population ratio is consistently around 75 percent, which is higher than neighbouring Coomalie and Palmerston.

Figure 9: Working age population ratio



The labour market is also quite strong. Figure 10 illustrates recent seasonally adjusted unemployment and labour force monthly results. Generally, the trend unemployment rate is around 2.5 percent, and the labour force has been incrementally increasing over time. The COVID-19 pandemic in 2020 has impacted unemployment, with a clear uptick towards four percent, and a flatlining in the labour force.

Figure 10: Lichfield labour market dynamics



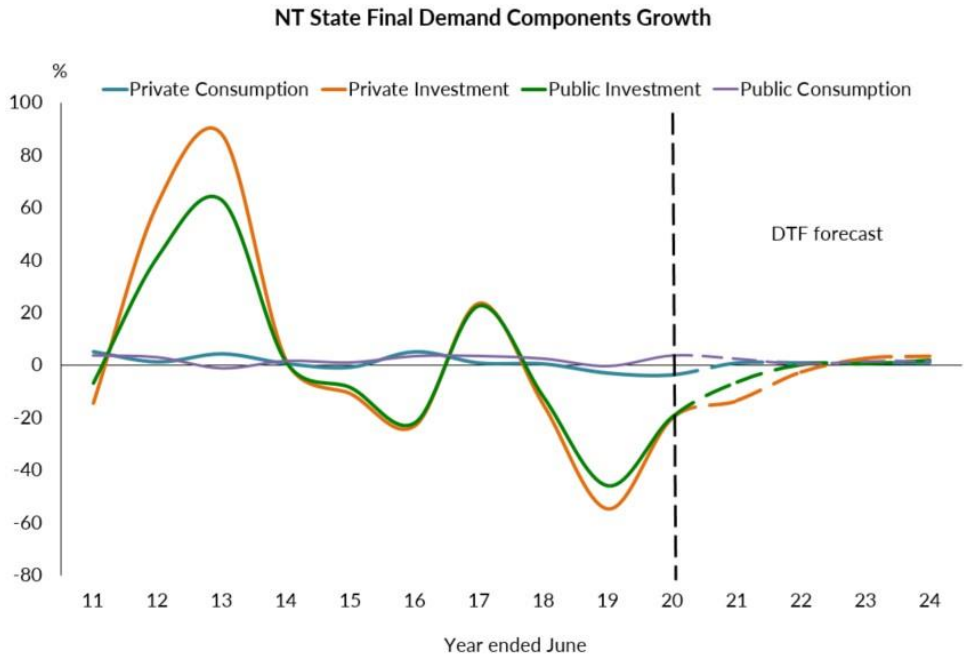
The key message from the analysis is that Litchfield is an active population, with a strong working population, which allows for support of the community facilities. There is also evidence of excess capacity which can be absorbed over the life of the project.

Local context

While the LGA has great tailwinds, and emerging headwinds, the NT has been through significant changes. Like the nation at large, the global COVID-19 pandemic has negatively impacted NT activity. Compounding this has been longer term declines in funding from goods and service tax equalisation, the wrap up of high capital expenditure projects supporting a range of liquified natural gas projects, general downturns in resource markets associated with Sino-Australian trade issues, and long-term drought impacts.

A useful manifestation of these contextual settings in seen the NT Treasury perspective of near-term Territory growth. In Figure 11, the most recent forecasts for territory final demand illustrate relatively flat line consumption growth, but contractions in public and private investment. The contractions started around 2017 and look to persist until potentially 2022.

Figure 11: NT Treasury Final Demand forecast[9]



While some of the reduction will be offset by investments in abattoirs, retail infrastructure, corrections facilities, and further LNG train development, there is a clear market for additional public capital expenditure.

The key point for the project is that the infrastructure spend, especially maintaining the timing of the investments, will be a crucial support to the Northern Territory at large.

[9] Australian Bureau of Statistics catalogue number 5220.0; Department of Treasury and Finance

Assessment Approach

The Freds Pass Reserve priority projects will be undertaken over time under a collaborative delivery model. A fundamental question for these projects, including to achieve BBRF support, is 'what impact will they have in the community during and after implementation?' Understanding the whole-of-life impacts provides insight into the value for money derived from the investment.

Marginal Impacts Matter

The assessment approach for this project is a rapid ex-ante benefit cost evaluation that specifies the type, magnitude and direction of impacts that might be expected from the investments.

Assessing the impact of any intervention requires unravelling a complex system of transactions between consumers, producers, government, and other institutions. Determining the impact is subjective and depends on predictable and unpredictable issues.

The essential precondition for any impact assessment is that something must be changing from a current state to a different state, and that these are different. The current state forms a baseline, against which alternatives—counterfactuals—are considered. The difference between the baseline and counterfactual is the impact of a project—the additionality or marginal change of the project in the community.

Estimating the impacts

This rapid assessment adopts a program logic framework. This approach links expected to actual outcomes and considers the whole life cycle of a project from concept to close. The framework defines, measures and compares:

- Inputs- funding, products or services put in initially
- Throughputs- intermediate goods or processes
- Outputs- products or services resulting from the inputs and throughputs
- Utilisation- how outputs are actually used
- Outcomes- the impacts from utilised output

The process aims to understand the alternatives, define potential changes and identify potential impacts in a high-level matrix.

The matrix comprises a number of components:

- Descriptors: the segment (economy, society, environment), major category and impact description.
- Type: direct or indirect impacts (see Annex for glossary)
- Sector: in our assessment this includes household, business, workers, government and catchment.[10]
- Direction: positive impacts (increased benefit, reduced cost) or negative impacts (reduced benefit, increased cost).
- Magnitude: the scale of the impact, relative to the location or context. For example, if the impact is 'increase infrastructure spend', the scale would be relative to a typical spend in the LGA (to the NT or Australia).
- Basis: how evidence is presented, whether qualitatively or quantitatively, to determine investment metrics.

Benefits or costs are assessed as quantifiable if data exists to enable the calculation of typical investment metrics (Net Present Value (NPV), Benefit Cost Ratio (BCR), Net Benefit to Investment Cost Ratio (NBIR), and Internal Rate of Return (IRR)). The easiest quantifiable results are where there is a reasonable market for an impact (prices, suppliers, and transactions). Markets are not easily specified for social, environmental, or behavioural outcomes. For these non-market impacts, 'non-market' valuations are required to measure the impact of an outcome, using methods such as shadow prices (market like prices), willingness to pay, hedonic pricing, travel costs or other contingent valuation measurements. Qualitative impacts can be described and subjectively ranked, but do not contribute to investment metrics.

Limitations and Assumptions

This assessment has standard limitations such as the coverage of our research, biases we bring to the project and the ability to deliver what is required in the timeframe and budget available.

There are fundamental limitations including the availability of data, the quality of the available data and the comparability of any data that has a high quality. Generally:

- Data, especially recent data, are commonly not available at a localised scale in the public domain for specialised infrastructure items or community activity.
- Where data is available, often the quality of the data is relatively low. Some is piecemeal, others are survey or assumption based and these sources have high statistical and human error rates.
- Where data is available and of quality, data drawn from a variety of sources may not be comparable. For example, data sets may have different geographic contexts, different reference frames and potentially different taxonomy or definitions.

[10] 'Government' includes Australia, NT, Council and the Board. 'Catchment' means' all stakeholders in the wider community.

Pragmatically, search costs have been minimised by drawing on extant assessment material. Not all of these sources, particularly academic and third-party research will translate directly to Litchfield. This may affect the translation of those results to Litchfield and consequently the assessment results.

Material assumptions are outlined in the Annex. Adjusting these assumptions in our assessment matrix will change the results. Users should maintain a change log to ensure they do not reach a conclusion that has incorrect provenance.

All results and conclusions need to consider these limitations.

Preliminary Impact Assessment

The baseline and counterfactual states are illustrated in this section, and preliminary impacts have been catalogued.

The Change

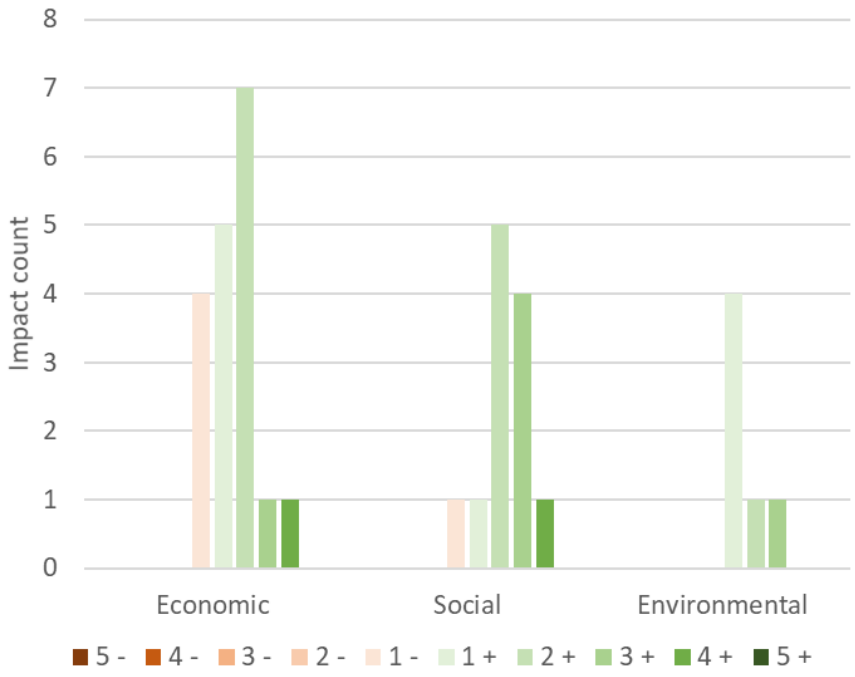
To contextualise what is different after implementing the Board Masterplan, see Figure 13: The current and potential future state informing impact assessment. Figure 13 compares the current and future states visually. Significant detail is available in the Masterplan. What is evident from the comparison is that there are more facilities, there is better internal flow and all parts of the Reserve are improved. What is not evident is the significant underground and above ground infrastructure asset investment that will enable the expansion.

High level distribution of preliminary impacts

Moving from the current to future state will generate a range of impacts. The preliminary impacts based on review of project plans, research and experience are summarised in Table 3.

The total count of all impacts identified in the matrix is 36. Of these, 18 impact the economy, 12 impact social factors, and six impact the environment. The impacts are mostly positive—86 percent, with just 14 percent negative. The magnitude is relatively low with 77 percent of impacts being between +/- 2 magnitude.

Figure 12: Impacts by category, magnitude and direction

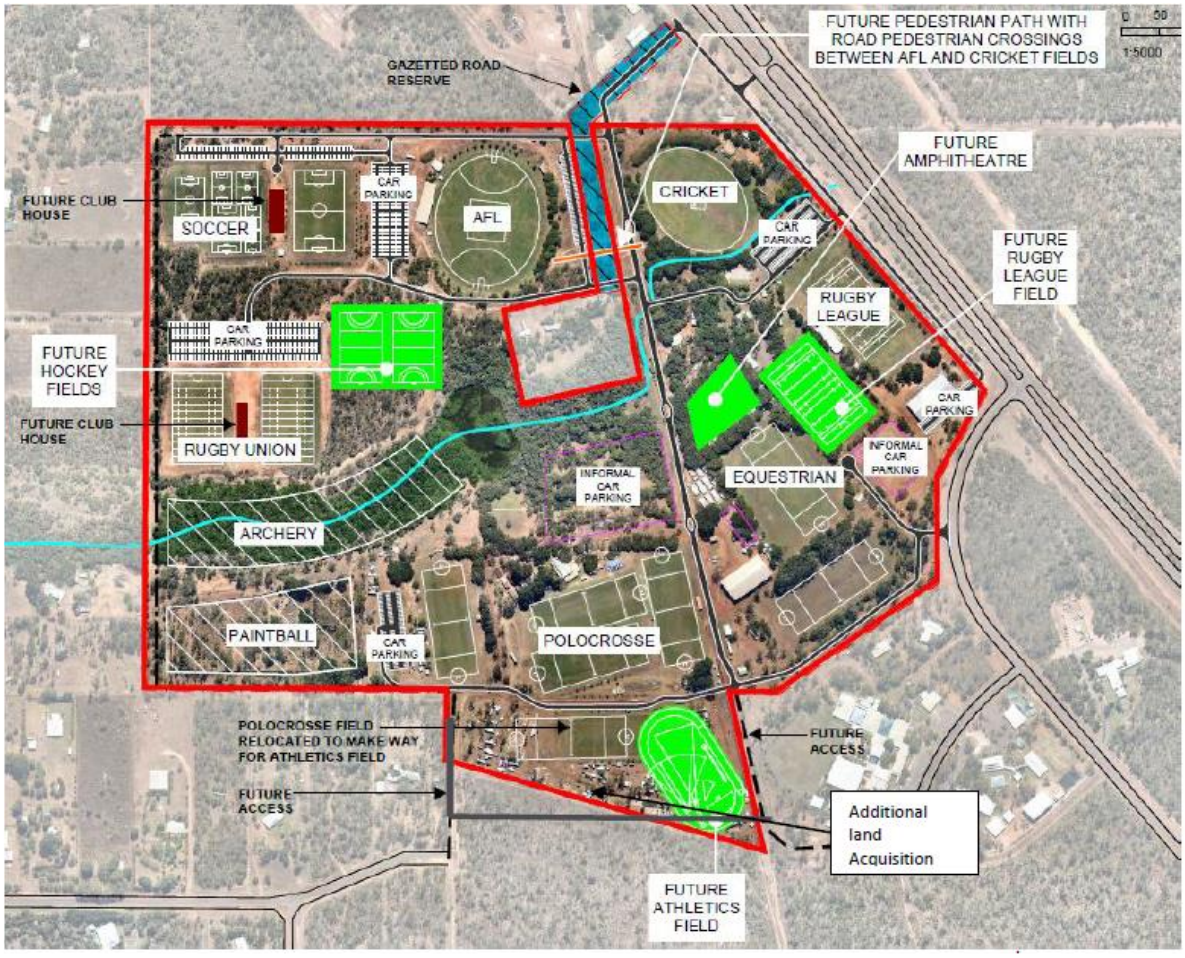


In the subsequent analyses there are 11 impacts that can be totally or partially quantified, and 25 that are qualitative but supported by research.

Figure 13: The current and potential future state informing impact assessment.

Current State

Desired Future State



Source: natioanlmap.gov.au and irwinconsult, 2016. *Note*: images do not illustrate specific infrastructure.

Table 3: Preliminary Impact Matrix

Segment	Category	Impact	Type	Sector	Direction [+-]	Magnitude [0-5]	Basis
Economic	Government	Potential expansion of tax base (Australia: income and profit taxes, transaction taxes. Territory: payroll, land tax, consumption. Council: value capture from contiguous land rates, usage fees and charges) from additional taxable activity (development costs, turnover, employment, profit)	Direct	Government	+	1	Ql
		Additional capex required by Territory and Council otherwise not included in the project scope (connected roads, amenities, rectification, public facilities etc)	Indirect	Government	-	1	Ql
		Potential lower health and policing expenditures from improved active participation and passive surveillance	Direct	Government	+	1	Ql
	Productivity	Smart metering and real-time management of utilities will reduce wastage and deliver longer-term operating and infrastructure maintenance savings	Direct	Government	+	2	Ql
		Increased utilisation of existing assets is a productivity gain, especially if the existing assets are improved with new technology, improve safety and avoid the need to create new assets or infrastructure expenditures elsewhere in the economy	Direct	Government	+	3	Ql
	Jobs	Consequential employment gains from temporary and permanent activity changes (employment multipliers)	Indirect	Business	+	1	Qn
		Employment supported through the capital expenditure phase	Direct	Business	+	2	Qn
	Small and Medium Enterprises	Increased localised consumption spending in nearby shops, cafes and restaurants. Short term: additional boost during construction. Long term: increased site utilisation	Indirect	Business	+	2	Qn
		Temporary activity interference from redevelopment activity, diversions and truck movements during construction	Direct	Business	-	1	Ql
		Additional Reserve spaces increases the potential for new small business creation and diversified economic activity	Direct	Business	+	2	Ql

Segment	Category	Impact	Type	Sector	Direction [+-]	Magnitude [0-5]	Basis
	Investment and Economic Growth	Temporary local stimulus from new capital expenditures to deliver the project, most of which can be sourced within the region skill and industry base	Direct	Business	+	2	Qn
		Indirect economy wide multiplier impacts from temporary stimulus and permanent changes in activity within the value chain, potentially absorbing underutilised economic capacity	Indirect	Catchment	+	1	Qn
		Australian Government participation in the project generates additional leverage from other funding agencies	Direct	Catchment	+	4	Qn
		Induced consumption – retail, accommodation and food sectors, based on increased spending in on-site and nearby shops from potential additional activity	Indirect	Business	+	1	Qn
	Costs to individuals	Increased congestion in local system creating delays and increased travel time.	Direct	Business	-	1	Qn
		Avoided travel time within the LGA from the retention of an operational, diversified, local Reserve with modernised infrastructure and facilities	Direct	Household	+	2	Qn
		Avoided vehicle operating costs within the LGA associated with retaining a local facility and no need for additional vehicle kilometres travelled	Indirect	Household	+	2	Qn
		Improved infrastructure may increase participation fees for User Groups to recoup some management costs	Direct	Catchment	-	1	Ql
Social	Health	Improvement in the physical and mental health of individuals (life expectancy, mortality and morbidity) from access to a well-structured, diversified, and expanded sporting facility, potential for improved activity levels from more and better facilities (e.g. new sports, running, riding and walking). The impact contributes to avoided health and productivity costs from extra physical activity and productivity from additional participant health gains.	Direct	Catchment	+	4	Qn

Segment	Category	Impact	Type	Sector	Direction [+-]	Magnitude [0-5]	Basis
		Reduced intersection safety due to increased passenger vehicle movements at primary intersections	Direct	Catchment	-	1	QI
	Community connection and Inclusion	Genuine and active impacted stakeholder engagement and shared design ensures governance and decision-making is aligned to actual community goals, improves public information, and ensures equitable and diverse stakeholder treatment	Direct	Catchment	+	3	QI
		Enhanced public spaces provide additional opportunities for social interaction, improved community welfare and connectivity for otherwise potentially excluded groups of individuals, including aged, children, linguistic and religious minorities, Non-government organisations and indigenous or ethnically diverse groups	Direct	Catchment	+	3	QI
		The enhanced Reserve increases the sense of pride in the facility, improves community identity and enhances the area's reputation which improves community participation and attracts new residents	Direct	Catchment	+	2	QI
	Safety	Upgraded core infrastructure improves community and participants perceptions of personal safety and reduces actual crime due to enhanced lighting, additional activity in the reserve increasing the likelihood of surveillance and reporting of criminal activity.	Direct	Catchment	+	2	QI
		Replacement of aged infrastructure and achieving certification increases player, volunteer and employee work health and safety across all Reserve assets (lower injuries)	Direct	Workers	+	2	QI
	Heritage	Preservation and enhancement of a facility established in the community for more than 40 years	Direct	Catchment	+	3	QI
	Participation	Improved and increased amenities and assets that cater for gender neutral participation in all sports, leading to increased female sports participation rate	Direct	Catchment	+	2	QI
		Improved assets and amenities improve Aboriginal community participation in sports and related community activities	Direct	Catchment	+	3	QI

Segment	Category	Impact	Type	Sector	Direction [+-]	Magnitude [0-5]	Basis
		Maintained and enhanced connection with informal labour force by undertaking onsite works and maintenance activities (e.g. corrections volunteers)	Direct	Workers	+	1	QI
		Increased volunteering activity on site to design, develop and support new sports and expanded modernised facilities on site	Direct	Household	+	2	QI
Environmental	Landscape improvement	Improved scenic and amenity values of the landscape in the updated precinct (willingness to pay for amenity improvement)	Indirect	Household	+	1	QI
	Environmental quality	Lower water consumption through smart metering, targeted capture and re-use, and real-time management using a modernised irrigation management system	Direct	Government	+	3	QI
		Substitution of aged and inappropriate trees, and a potential increase in stems per hectare to improve carbon sequestration	Direct	Catchment	+	1	QI
		Potential for improved biodiversity from better tree and flora selection during redevelopment and landscaping, a shift toward highest and best value environmental biodiversity	Indirect	Catchment	+	1	QI
	Climate Change mitigation	Lower consumption of energy through modernised on-site infrastructure and the likely addition of renewable energy sources lowers emissions from Reserve activity.	Direct	Government	+	2	QI
		Increased electricity efficiency, utilisation of renewables and minor additional flora will reduce general greenhouse gas emissions and increase carbon sequestration.	Direct	Catchment	+	1	QI

Qualitative impacts: Discussion

The impact matrix identified 25 qualitative benefits, of which eight impact the Litchfield economy, 11 impact at the societal level and six impact on the Litchfield environment. These are not individually discussed, instead the evidence of impact for each segment is grouped and the impacts discussed.

Economic impacts

The qualitative economic benefits primarily relate to returns to government, productivity gains and a range of indirect consequences from the investments over a longer-term period.

The major economic benefits are primarily related to increased capital expenditure in the short and longer term. The qualitative impact descriptions are relatively self-contained. Two stand out impacts that should be considered more are:

- As the assets are improved, there may be an increased pressure in the Board to recover operating and maintenance costs from the User Groups. This may have a negative impact on the Users who may face higher fees and charges. These will offset benefits from the investments.
- While there are range of multiplier effects from the capital, there is the potential for new business activity on site. These include indoor activities (karate and dancing), new sports (tennis, cycling, running) and new commercial activities. For example, the Masterplan identifies that commercial providers have discussed using the amphitheatre to deliver "additional events and festivals in the rural area".[11] These activities will increase economic participation and diverse economic activity.

Any qualitative impacts that materialise are additional to the quantitative economic measures.

Social and community impacts

As a central community asset, social impacts from the investment will be many and meaningful.

Unfortunately, social benefits—like inclusion, connectivity and safety—are difficult to evaluate in the absence of existing surveys or other non-market measurements. We can draw inferences from other work that has looked at outcomes from similar but different investments.

The genesis of much of the onsite social impacts are the operations of the facility. For example, Masterplan support material identifies that:

- Reserve "members contribute extraordinary amounts of time, equipment and funds to the various sporting and community projects." Some estimates place the commitment at 70,000 volunteer hours.

[11] Board masterplan, p. 29.

- The Reserve is used to support other social projects, for example the "Reserve receives additional assistance from the [NT] Department of Correctional Services who provide a team of low-risk trustees that perform routine property maintenance under the guidance of our staff."[12] This participation supports integrating offenders back into a community.
- Apart from the regular users, it is observed that "… there is an increasing usage of the grounds for non-formal activities such as walking, cycling, exercise classes, social ball activities, picnicking, barbecues, family events, weddings, concerts and other community gatherings."[13] In addition, the NT Police, Fire and Emergency Services, Australian Department of Defence and Impex utilise the Reserve and its facilities during the year.[14]

The impacts are described in the matrix. The consequences are hard to define.

A Community Centres SA study found that community centres across SA "…contribute to social capital formation by building networks, creating safety and trust in communities, promoting relationships between neighbours, and providing pathways to volunteering."[15] Some commentators have argued there is a social benefit in a more connected world saying "our reliance on each other grows as societies became more complex, interconnected, and specialized. Connection is a prerequisite for survival, physically and emotionally."[16] There is also the potential for improved cultural vitality, which "…is a function of creativity, connectedness, values, sustainability and engagement."[17] There is convincing evidence that "…local conditions (crime, area deprivation) are negatively associated with children's participation in physical activity."[18]

Participation

The two key benefits drivers for participation are increase female sports participation and increased Aboriginal participation. In particular, the Masterplan notes that "the introduction of Women's AFL, Club numbers have expanded by 15% in participants."[19] As noted earlier, 20 percent of the Litchfield population is of Aboriginal descent.

[12] Board masterplan, p. 9.
[13] Ibid.
[14] Ibid. pp. 6-7.
[15] Izmir, G, Katz, I and Bruce, J (2009), *Neighbourhood and Community Centres: results for children, families and communities*, Social Policy Research Centre; cited in The SA Centre for Economic Studies (2013), *Economic and Social Impact Study: Community and Neighbourhood Centres Sector Final Report*, p 21.
[16] Dr P B Rutledge, *Social Networks: What Maslow Misses*, Psychology Today, November 2011.
[17] C Moretti and J Spoehr, *Valuing Social Outcomes Discussion Paper*, Flinders University Australian Industrial Transformation Institute, 2017.
[18] Davison, K.K., Lawson, C.T. Do attributes in the physical environment influence children's physical activity? A review of the literature. Int J Behav Nutr Phys Act 3, 19 (2006).
[19] Board Masterplan, p. 27.

Research has noted that sport policies which encourage female sport participation need to also consider a range of associated factors, including maximising infrastructure utilisation, gender equity, facility usage policies and developing volunteer capacity.[20]

In terms of social exclusion, other research has noted key barriers for Aboriginal and Torres Strait Islander people to participate in sport include "…the difference and diversity of geographical location; the exclusiveness of the current structure of some sports; lack of financial resources; lack of role models working in and playing the game; lack of information and knowledge about the game, and the need for respect. In most remote Aboriginal communities, sports facilities still comprise an unmarked dusty paddock to practise football or cricket.".[21]

In a qualitative study of Aboriginal and Torres Strait Islander adolescents, Fitch, Ma'ayah, Harms and Guilfoyle demonstrated that involvement in sport positively influenced a wide range of areas including their motivation for education, school engagement, planning and decision-making, interpersonal skills and development of a more positive and empowered identity.

Generally, the Reserve supports excellent social outcomes, and the absence or diminution of the Reserve would impact greatly on those outcomes.

Environmental impacts

Environmental impacts are difficult to estimate without specialised tools and research. At the centre of the likely impacts is improved irrigation to minimise water usage and waste, the adoption of smart technology for infrastructure management and enhance species selection and landscaping.

Specifically, on the infrastructure technology, Council "…has commissioned advice on Smart Technology use covering a range of technology applications plus sought advice on the introduction of solar power to assist with the day-time power use at the Reserve." [22] This should materialise into "a fully integrated computer-controlled system which enables the Reserve to be watered at night to reduce the overall wastage of water through over-watering, evaporation and leaks. This system should include an in-line fertilisation method reducing additional manpower."[23] This is supported by the expert engineering advice with says AFL, NRL, Soccer and Cricket fields should be irrigated via an automatic sprinkler system. These areas could be irrigated at night to minimise water consumption and operational labour costs.[24]

[20] M. Casey, J. Fowlie, M. Charity, J. Harvey & R. Eime (2019) The implications of female sport policy developments for the community-level sport sector: a perspective from Victoria, Australia, International Journal of Sport Policy and Politics, 11:4, 657-678, DOI: 10.1080/19406940.2019.1618892
[21] Oliver, P., Sport's role in closing the gap for Australia's First Nations people, Sports and Development, https://www.sportanddev.org/en/article/news/sports-role-closing-gap-australias-first-nations-people
[22] Ibid, p. 6.
[23] Ibid.
[24] Irwinconsult. Recommendation.

These changes yield benefits such as improved efficiency, enhanced environmental sustainability, improved citizen engagements, improved government agencies, eliminating system redundancy, saving operating costs, streamlining workers responsibilities[25], improved speed, improved environmental services, better health outcomes,[26] lower transaction costs, lower coordination costs, higher productivity and improved asset utilisation.[27]

Quantifiable impacts

The impact matrix identified 11 impacts which are fully or partially quantifiable. Most of these (10) impact the economy, and one impacts society. The impacts are grouped into major segments and discussed.

There are caveats on these estimates:

- Some aspects are partially quantified. This means the results are partial at best, and are intended to enhance the understanding of magnitudes.
- Attribution in a multi-project platform is complicated. For example, the 104 projects are spread over nine years with four funding groups, whereas the BBRF application covers 10 key projects over two funding years. It is more efficient to estimate the entire project impact and allocate some causality to BBRF.
- There is uncertainty in option outcomes. Doing nothing, and going slow options retain a non-zero risk that the Reserve will not exist at some point in time, which will create costs to the community. Some estimation of probability is needed to determine the expected impact rather than absolute impact.

Capital formation and impact

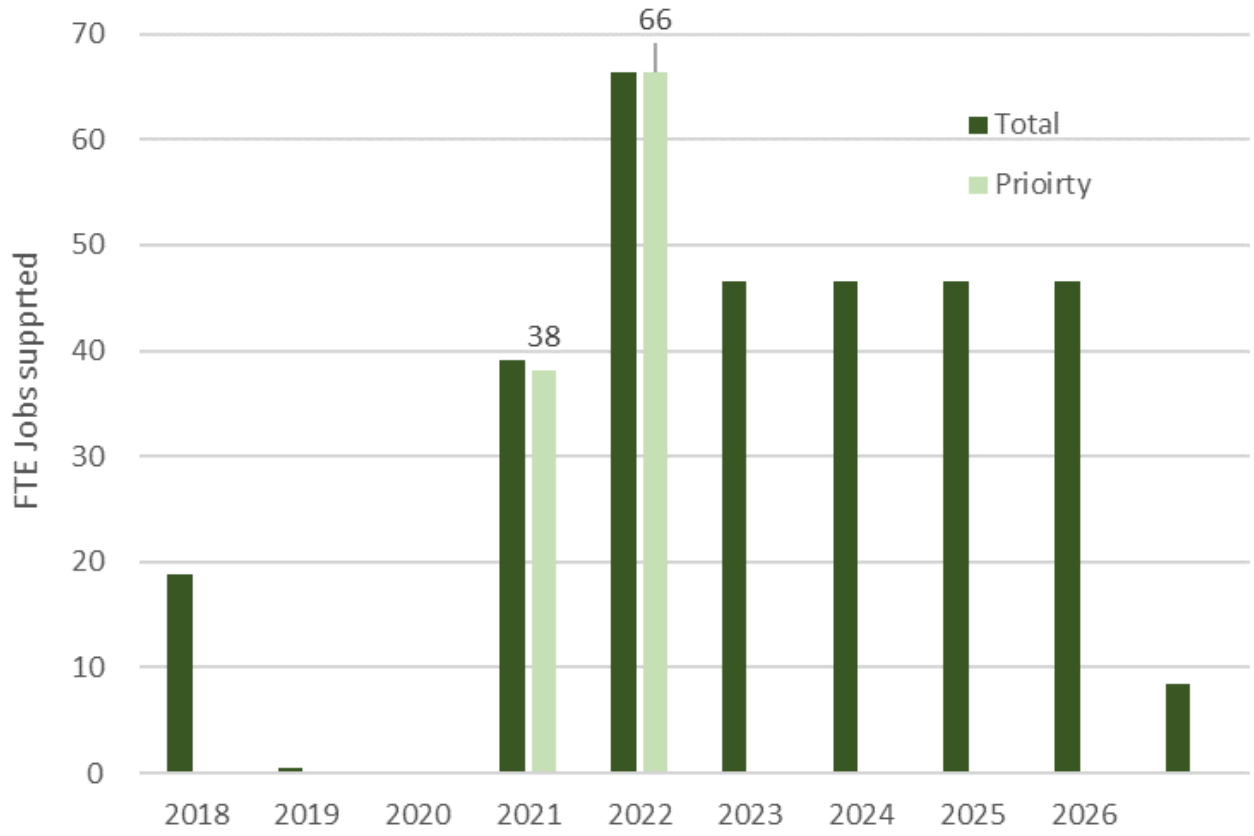
Project outflows are costs; however, they are captured in national accounting as new capital formation. This means in total the projects generate a $34-40 million increase in gross capital formation. If BBRF participation is successful, it would be a strong injection into the Northern Territory economy.

Recent published multipliers for the NT are not easily available. We have estimated from income data that it is reasonable to assume for each $1 million of new activity in the NT approximately 9.3 full time equivalent (FTE) positions are supported. Based on the total project profile, FTEs supported are between 8 and 66 depending on the year, illustrated in Figure 14.

For the 10 priority projects in the BBRF, employment is 38 FTE growing to 66 FTE. Of these, up to 13 FTE could be Aboriginal.

[25] K Smith, *How to ensure smart cities benefit everyone*, The Conversation, November 2016
[26] S P. Mohanty, U Choppali, and E Kougianos, *Everything You wanted to Know about Smart Cities*, IEEE Consumer Electronics Magazine, Volume 6, Issue 3, 2016.
[27] Deloitte, *Smart Cities: How rapid advances in technology are reshaping our economy and society*, GovLab Version 1.0, November 2016.

Figure 14: Employment supported during construction



The total employment profile, including all direct capital expenditure within the Masterplan, and wider project impacts in the Litchfield economy are summarised in Table 4. An additional peak of 39 FTE per year is feasible in the years the BBRF will cover. Of those. An additional 8 FTE could be Aboriginal.

Table 4: Employment impacts

Year	Capex FTE		Wider impacts			
	Total	ATSI	LGA Direct	LGA Indirect	Total	ATSI
2018	19	4	6	5	11	2
2019	0	0	0	0	0	0
2020	0	0	0	0	0	0
2021	39	8	12	11	23	5
2022	66	13	21	18	39	8
2023	47	9	15	13	28	6
2024	47	9	15	13	28	6
2025	47	9	15	13	28	6
2026	47	9	15	13	28	6
2027	8	2	3	2	5	1

The other major impact of the capital expenditure alone is direct and indirect uplift in the Litchfield area gross regional product (GRP). We have applied the capital expenditure profile to the Australian Urban Research Infrastructure Network, Economic Impact Analysis Tool for Litchfield.

Over the life of the project, the gross fixed capital expenditure will generate an additional $15 million in direct and indirect GSP, with 75 per cent of the growth experienced in the construction sector. Other industry sectors that will gain a minor increase in GRP are *Rental, Hiring and Real Estate Services*, *Manufacturing*, *Electricity, Gas, Water and Waste Services*, *Wholesale Trade*, *Transport*, *Postal and Warehousing*, *Professional, Scientific and Technical Services* and *Administrative and Support Services*.

Leverage

BBRF funding will provide leverage to support the entire funding profile of the Masterplan project list. Historically, the Northern Territory has supported a range of upgrades: amenities and ablutions, wayfinding, lighting and electrical upgrades, parking and access roads, user facilities upgrades, and underpinning maintenance assets. They have also provided significant support to Darwin city sports complexes.

The community—User Groups, Board and the Council—work together as well, with the Masterplan noting:

> *Development of club-based assets within the Reserve is determined by the User Groups. These groups drive the design, documentation and funding priorities based on their own plans, working with both the Board and Litchfield Council. Funding for many User Group projects will be sourced through Northern Territory Grants, Ausports Grants, sponsorship and independent fund-raising within their membership network.*

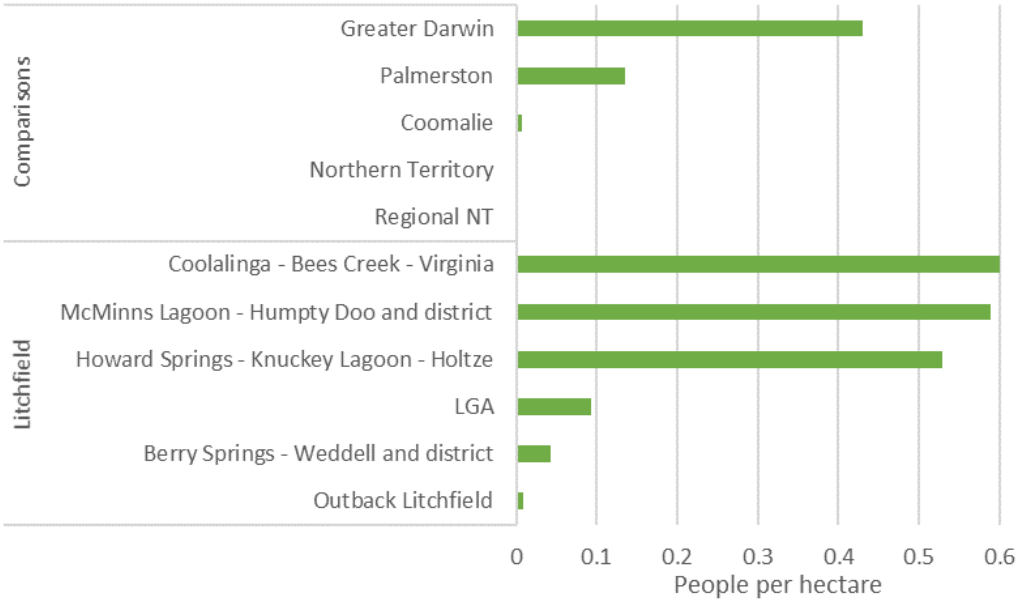
Litchfield intend to use any success in BBRF funding to extend discussions to leverage funds from the NT Government, which will build on funding. The leverage ratio could be as high as 4:1.

Costs to Individuals

The main impact that is quantified is the value of potential travel time and vehicle operating costs in the event the Reserve becomes unavailable because of the impact of the challenges identified (no buildings, too much risk, insufficient capex).

Under the baseline there is a chance that current users would need to access an alternative facility. The population is highly dispersed across Litchfield, with ratios of people to hectare ranging from less than 0.1:1 up to 0.6 (see Figure 15). This dispersion means there is no immediate natural alternative facility for all users.

Figure 15: Population dispersion



Using Google maps, we have estimated proxies for the potential impact of Users having to attend an alternative facility. The sampled alternate facilities are the heavily subsidised Marrara Sporting Complex in Darwin,[28] and the Asbuild Sporting Complex in Palmerston. Table 5 identifies for different Litchfield localities the difference between the alternative and the Reserve in average kilometres and mean peak hour travel times. Only residents of Knuckey Lagoon and Holz gain benefits, the rest of Litchfield has to travel further and longer.

Table 5: Estimated excess travel times to alterative complexes (Litchfield locations)

Litchfield location	Marrara Sporting Complex [Darwin]		Asbuild Sporting Complex [Palmerston]	
	Kms	Mins	Kms	Mins
McMinns Lagoon	25.4	23.5	10.9	10
Humpty Doo	27	26	12.5	12
Herbert	22.8	24	8.3	8
Girraween	23.2	21.5	8.4	10
Howard Springs	13.6	15	-0.9	2
Knuckey Lagoon	-11.3	-9	-10	-7.5
Holtze	-2.3	0	-8.7	-6.5
Virginia	19.3	18	4.8	5
Bees Creek	26.8	25.5	12.3	13
Berry Springs	20.2	23	3.4	3
Weddell	24.9	24	9.1	10
Lambells Lagoon	26.4	20.1	11.9	6.6

[28] Marrara received $71.5 m support from the NT Government. Litchfield Council, (Draft) Priority Project 01: Freds Pass Sports and Recreation Reserve Funding, 2021.

Using two elementary methods derived from Australian Transport Assessment and Planning guidelines—value of marginal vehicle operating costs and the value of travel time saved—we can estimate avoided transport costs to the consumer if the Reserve is not closed.

The avoided vehicle operating costs, conservatively, amount to $1.31 million per annum, and avoided travel time amounts to $1.48 million per annum. Assuming only a 50 per cent chance of Reserve failure, the NPV at 7 per cent of the benefits are $5.2 million and $5.9 million respectively, or $11.1 million.

Health and safety

The priority projects will enable easier access and more supporting assets and new activity options for the population. Increased recreational activity has a direct impact on community health and wellbeing. Measuring the impact of this is difficult, however, research illustrates the potential for significant systemic impacts from improved health and wellbeing.

The World Health Organisation (2010) has said, "that physical inactivity is the principal cause of approximately 21-25% of breast and colon cancer burden, 25% of diabetes and approximately 30% of heart disease". In Australia, it is understood "60% of Australians aged 15 and over… do not undertake sufficient physical activity to confer a health benefit. The proportion of people with insufficient levels of physical activity has increased with age, with 80% of women aged 75 and over not undertaking sufficient physical activity".

The direct benefits of increased physical activity across the population include improved mental health, a reduced risk of cardiovascular and metabolic disease, obesity, osteoporosis and colon cancer.

For children, additional physical activity assists reduce childhood obesity and the development of disease in later life. For older people, the benefits include increased functional capacity.[29] It has been noted "Healthy practices established early in life, such as adequate physical activity, a balanced diet with sufficient fruit and vegetables, may continue into adolescence and adulthood, thereby reducing a person's risk of developing conditions such as heart disease and diabetes. Conversely, risk factors such as being overweight or obese in childhood may increase a person's risk of developing such health conditions later in life."[30]

[29] T Kokolakakis, A Pappous, A Sakis and S Meadows, The Impact of the Free Swimming Programme in a Local Community in the South East of England: Giving with One Hand, Taking Away with the Other, Int. J. Environ. Res. Public Health 2015, 12, p 4463 and J Tower, K McDonald and B Stewart, Community Benefits of Victorian Aquatic and Recreation Centres, Institute of Sport, Exercise and Active Living Victoria University, 2014.

[30] ABS, Health Conditions and risks: Children's risk factors (2017-18), December 2018

Aboriginal and Torres Strait Islander young people who participated in sport were 3.5 times more likely to report good general health and 1.6 times more likely to have no probable serious mental illness than those who did not participate in sport. [31]

An increase in distance to and decrease in number of sports facilities were associated with a decrease in physical activity, suggesting that changes in availability of facilities may affect physical activity levels.[32] Regular participation in physical activity has positive physical, emotional, social and mental health benefits in children and adolescents[33].

The impact of making improvements to these diseases at a population level would be profound. The costs of physical inactivity are not immaterial—in Australia in 2016 a globally based estimate concluded the cost was US$555.6 million, of which 67 per cent is paid for by the public sector.[34]

Only very small activity gains have the potential to release several million dollars of recurrent health benefits to individuals and government. If these were estimated for the Reserve, which is a naturally active asset, the returns would outweigh the total cost easily.

Results Summary

From the additional GRP and avoided travel costs, when comparing the baseline to counterfactual (including BBRF), the assessment suggests at a minimum cost benefit ratio around 1.14:1 (seven per cent discount rate). The results are summarised below. The contribution of the Australian Government to this is $10 million.

To be clear, the project is investment ready, and has a positive benefit to cost ratio with just a few quantifiable impacts. We are confident that, on the balance of probability, if the other 25 qualitative impacts were measured the returns to Litchfield and the NT would significantly outweigh the overall Masterplan project costs.

	3%	7%	10%	Nominal
Project costs	$29.48	$22.34	$19.29	
Benefits	$31.31	$25.55	$18.97	
BBRF Contribution				$0
Additional Costs	0	0	0	0
Net Benefit	$1.83	$3.21	-$0.32	
BCR	1.06	1.14	0.98	

[31] May, T., Dudley, A., Charles, J., Kennedy, K., Mantilla, A., McGillivray J., Wheeler K., Elston, H., Rinehart, N.J., Barriers and facilitators of sport and physical activity for Aboriginal and Torres Strait Islander children and adolescents: a mixed studies systematic review, 2020, BMC Public Health 20:601

[32] Halonen,J.I., Stenholm, S., Kivimäki, M., Pentti, J., Subramanian, S.V., Kawachi, I., Vahtera, J., Is change in availability of sports facilities associated with change in physical activity? A prospective cohort study,
Preventive Medicine, Volume 73, 2015, Pages 10-14, ISSN 0091-7435,. P. 10.

[33] L. J. Reece, C. McInerney, K. Blazek, B. C. Foley, L. Schmutz, B. Bellew and A. E. Bauman, Reducing financial barriers through the implementation of voucher incentives to promote children's participation in community sport in Australia, 2020, BMC Public Health 20:19

[34] Dr T Kolbe-Alexander, "Move it or lose it", *UQ News* 28 July 2016.

Annex: Key Assumptions

For the quantifiable impacts, the key assumptions are listed below.

Assumption	Unit	Value	Note	Source
DCF				
Discount Rate - Moderate	%pa	7	Real rates	Practice and BBRF CBA guide
Discount Rate - Low	%pa	3	Real rates	
Discount Rate - High	%pa	10	Real rates	
Start Year	actual	2018		Board Masterplan
Start Year	bid for	2021	BBRF	Litchfield Project Priorities
Probabilities and proportions				
BBRF attribution	%	25	Estimate benefit allocate BBRF% of funding	Delos
NT Gov	%	50		Delos
Community	%	25		Delos
Closure probability (nothing and baseline)	%	50	Scales the benefits to event likelihood	Delos
Infrastructure				
Direct employment support - construction	FTE/$m	9.3	Median total income, grossed up 50%	Delos
ATSI pop share	%	20	Range 15-21%	NT Treasury forecasts
Traffic				
Vehicle Operating Costs-2013	c/km	30.2	Rural FLAT, Curvy Medium car 8m width	ATAP, road parameter values, p 49
VOC-2021	c/km	30.3	Adjusted for transport CPI Darwin	
Activations	#/year	528000		Litchfield
Share-Darwin	%	60.00		
Proportion cars	%	68	Travel to work in car proxy	
Proportion in Litchfield	%	70		
Movements	#/year	251328		
Median to Darwin	km	23		
Median to Palmerston	km	9		
Gross VOC-Darwin	$m	1.76		
Gross VOC-Palmerston	$m	0.65		

Assumption	Unit	Value	Note	Source
Weighted potential VOCs	$m	1.31		
Travel time value-2013	$/hr	14.99	Private non-urban	ATAP, road parameter values, p 19
Travel time value-2021	$/hr	15.05		ATAP (price adjusted)
Occupancy	pax	1.5		
Median to Darwin	hrs	0.36		
Median to Palmerston	hrs	0.11		
Gross travel time - Darwin	$m	2.06		
Gross travel time - Palmerston	$m	0.62		
Weighted potential Travel time	$m	1.48		
General or other				
CPI - NT Non volatile 10 yr CAGR	%	1.3		Delos, based on ABS CPI
Closure probability	%	50	Scales the benefits to event likelihood	Delos

As time has passed since the Masterplan was first prepared, some reprofiling of capital and financing was required to generate economic impacts. The updated profile is below.

Year	Project						Financing					
	Base Profile	Cumulative Base	Cumulative Base Spend	Reprofiled Priority Spend	Adjusted Cumulative Profile	Adjusted spend profile	BBRF	NT	Council/ Community	Profile	Cumulative	Gap
2018	4,558,000	4,558,000	2,030,000		2,030,000	2,030,000			2,030,000	2,030,000	2,030,000	0
2019	2,508,310	7,066,310	2,080,000		2,080,000	50,000			50,000	50,000	2,080,000	0
2020	8,025,000	15,091,310	2,080,000		2,080,000	0			0	0	2,080,000	0
2021	5,555,000	20,646,310		4,200,000	6,280,000	4,200,000	5,000,000		321,616	5,321,616	7,401,616	1,121,616
2022	1,930,000	22,576,310		7,140,000	13,420,000	7,140,000	5,000,000	5,000,000	321,616	10,321,616	17,723,231	4,303,231
2023	3,580,000	26,156,310		5,000,000	18,420,000	5,000,000		5,000,000	321,616	5,321,616	23,044,847	4,624,847
2024	1,040,000	27,196,310		5,000,000	23,420,000	5,000,000		5,000,000	321,616	5,321,616	28,366,463	4,946,463
2025	1,515,000	28,711,310		5,000,000	28,420,000	5,000,000		5,000,000	321,616	5,321,616	33,688,079	5,268,079
2026	5,620,000	34,331,310		5,000,000	33,420,000	5,000,000			321,616	321,616	34,009,694	589,694
2027	0	34,331,310		911,310	34,331,310	911,310			321,616	321,616	34,331,310	0
Total	34,331,310			32,251,310		34,331,310	10,000,000	20,000,000	4,331,310	34,331,310		

Annex: Glossary

	DEFINITION
ECONOMIC	Economic impacts affect the level and allocation of resources; usually from changes in the market value of some system, process, or resource caused by an intervention. They may be changes in indicators such as unemployment or the presence/absence of an industrial sector. Some indicators might be profits, wages, property values, productivity, business activity, and the quality or quantity of jobs.
SOCIAL	Social impacts consider human impacts. Some indicators might include changes in the way in which a community is organised, community safety, changes to the ethnic composition of a neighbourhood, burden of disease or the number and types of active community organisations. Social impacts necessarily incorporate cultural impacts, require non-market valuations and are difficult to quantify.
ENVIRONMENT	Environment impacts consider changes in environmental services such as air, water, soil, ecosystems and wildlife habitat as they affect social interaction. Environmental impacts can cause changes to the environment perceived to be deleterious or undesirable and can include non-market services such as an improvement in visual amenity. These impacts can require specialised skills and are difficult to price and quantify.
QUANTITATIVE	Quantitative impacts are additional, measurable and have a reliable data source or defensible assumptions that can be used to measure actual marginal gains or losses. These impacts are likely to have established markets, well-formed prices and quantities and can be measured in dollar terms.
QUALITATIVE	Qualitative impacts are those that can be identified in-principle based on research or reasonable assumptions, but can only be understood in terms of expected magnitude and direction. They generally cannot be measured because they lack the properties of quantitative impacts or lack a methodology to quantify the impacts. Qualitative assessments can be summarised and ranked using ordinal techniques, and improved with survey techniques.
TRANSFER	A value transfer occurs when there is no additionality even though there is change in wellbeing or utilisation. This is an issue with regional and localised analyses. Some activity *reorganises* resources in a zero-sum game—an intervention will have an impact in one location, which will have an equal offset in another location.
DIRECT IMPACT	A direct impact is measured based upon a causal change on the actual resources consumed or induced from a project (such as physical construction of a building or new wages from a new business)
INDIRECT IMPACT	An indirect impact is consequent on direct impacts, where a benefit or cost will have an impact beyond its direct effect (such as employment created from additional expenditures in service industries, or additional economic activity induced from new employment). These effects can be measured using a range of tools from simple input-output multiplier analysis through to complex dynamic computable general equilibrium approaches.

Resources

Australian Bureau of Statistics:

Health Conditions and risks: Children's risk factors (2017-18), December 2018

Regional Data: Litchfield (LGA), Litchfield (SA3), Palmerston LGA, Coomalie (LGA), Darwin (LGA)

General Social Survey: Summary Results, Australia, 2014

General Social Survey: Summary Results, Australia, 2019

National Health Survey: State and territory findings

Consumer Price Index, Australia, December 2020, TABLE 5. CPI: Groups, Index Numbers by Capital City

AIHW, Mortality Over Regions and Time (MORT) books

Australian Government, Labour Market Information Portal, Small Area Labour Markets (SALM), September Quarter 2020

Australian Government, Labour Market Information Portal, ABS Labour Force Region - SA4 Data.

.idcommunity, Litchfield Council, community profile

AusPlay, https://www.clearinghouseforsport.gov.au/research/ausplay/results

irwinconsult, Freds Pass Reserve Engineering Services Master Plan: For Freds Pass Reserve Board of Management, February 2016

Freds Pass Sports and Recreation Reserve Management Board Inc., Masterplan 2018-2027, 2018

Litchfield Council, Priority Project 01: Freds Pass Sports and Recreation Reserve Funding, 2021.

NT Department of Industry, Tourism and Trade, NT Economic Growth: Expenditure Approach (GSP E), https://industry.nt.gov.au/economic-data-and-statistics/economy/nt-economic-growth

Litchfield Council, Master Plan Priority Action Plan Yearly Tables (Updated March 2020), Excel l spreadsheet

www.nationalmap.gov.au

M. Casey, J. Fowlie, M. Charity, J. Harvey & R. Eime (2019) The implications of female sport policy developments for the community-level sport sector: a perspective from Victoria, Australia, International Journal of Sport Policy and Politics, 11:4, 657-678, DOI: 10.1080/19406940.2019.1618892

Eigenschenk, B., Thomann, A., McClure, M., Davies, L., Gregory, M., Dettweiler, U., Inglés, E., Benefits of Outdoor Sports for Society. A Systematic Literature Review and Reflections on Evidence, International Journal Environmental Research and Public Health 2019, 16, 937

Macniven, A., Canuto, K., Wilson, R., Bauman, A., Evans, J., The impact of physical activity and sport on social outcomes among Aboriginal and Torres Strait Islander people: A systematic scoping review, Journal of Science and Medicine in Sport 22 (2019) 1232–1242

May, T., Dudley, A., Charles, J., Kennedy, K., Mantilla, A., McGillivray J., Wheeler K., Elston, H., Rinehart, N.J., Barriers and facilitators of sport and physical activity for Aboriginal and Torres Strait Islander children and adolescents: a mixed studies systematic review, 2020, BMC Public Health 20:601

Oliver, P., Sport's role in closing the gap for Australia's First Nations people, Sports and Development, https://www.sportanddev.org/en/article/news/sports-role-closing-gap-australias-first-nations-people

L. J. Reece, C. McInerney, K. Blazek, B. C. Foley, L. Schmutz, B. Bellew and A. E. Bauman, Reducing financial barriers through the implementation of voucher incentives to promote children's participation in community sport in Australia, 2020, BMC Public Health 20:19

Carver, A., Timperio, A., Crawfrod. D., Playing it safe: The influence of neighbourhood safety on children's physical activity—A review, 2008, Health & Place, Volume 14:

May, T., Dudley, A., Charles, J., Kennedy, K., Mantilla, A., McGillivray J., Wheeler K., Elston, H., Rinehart, N.J., Barriers and facilitators of sport and physical activity for Aboriginal and Torres Strait Islander children and adolescents: a mixed studies systematic review, 2020, BMC Public Health 20:601

Halonen,J.I., Stenholm, S., Kivimäki, M., Pentti, J., Subramanian, S.V., Kawachi, I., Vahtera, J., Is change in availability of sports facilities associated with change in physical activity? A prospective cohort study, Preventive Medicine, Volume 73, 2015, Pages 10-14, ISSN 0091-7435, https://doi.org/10.1016/j.ypmed.2015.01.012

Davison, K.K., Lawson, C.T. Do attributes in the physical environment influence children's physical activity? A review of the literature. Int J Behav Nutr Phys Act 3, 19 (2006). https://doi.org/10.1186/1479-5868-3-19

McCullough Robertson - Andrew Bukowski, David Gilham, Evan Economo, Matt Bradbury, Strati Pantges, Wei Lim and Xavier Milne – An Extract from The Projects and Construction Review, 10th Edition, 2020 https://www.lexology.com/library/detail.aspx?g=ae0fc703-ffc8-4f1f-93e7-0b2f271d93bf

Transport and Infrastructure Council, Australian Transport Assessment and Planning Guidelines: PV2 Road Parameter Values, 2016.

Transport and Infrastructure Council, Australian Transport Assessment and Planning Guidelines: M4 Active Travel, 2016.

Australian Urban Research Infrastructure Network, Economic Impact Analysis Tool (EIAT), https://eiat.aurin.org.au/#/eiat/home