

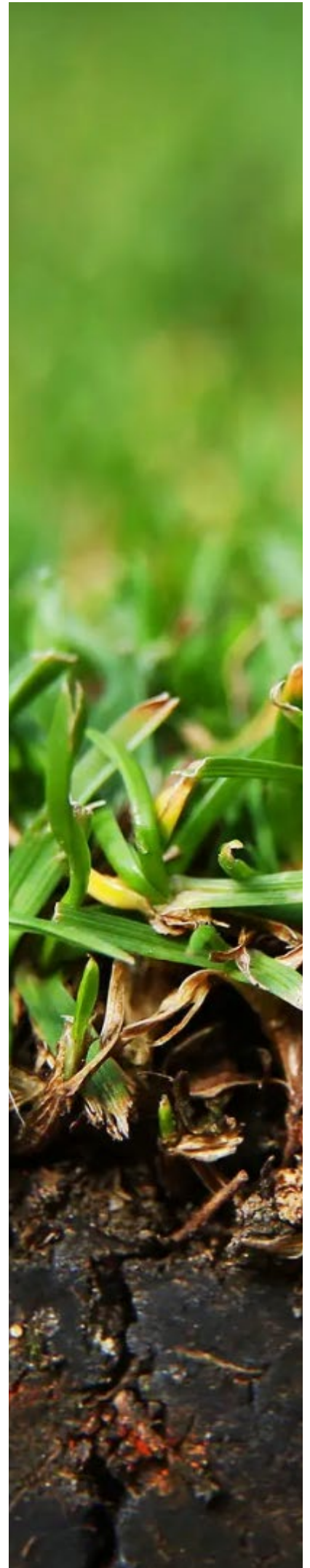


Hallowed Turf

The Economic, Environmental and
Social Value of Natural Turf in Australia

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Economic Contribution of Natural Turf

\$5.1B

Contributed by the Australian
Natural Turf Industry to the
Australian Economy every year

including **~15,500**
jobs supported

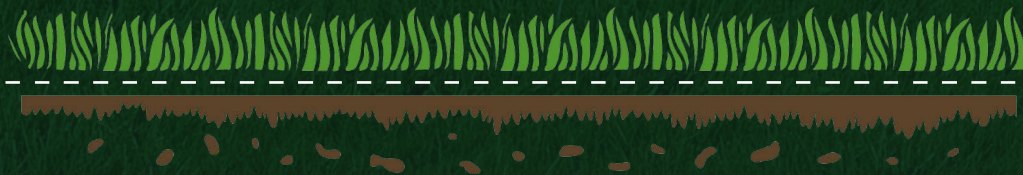


DIRECT CONTRIBUTION

\$332.8M PA

1.3K FTES

(\$234M PA VALUE ADDED)



INDIRECT CONTRIBUTION

\$4.8B PA - 14.2K FTES



**LAWN CARE
PRODUCTS**

\$2.5B PA - 4.1K FTES



**LAWN
MAINTENANCE
SERVICES**

\$2.3B PA - 9.8K FTES



INDUCED

\$64M PA - 303 FTES

Source: TU24004 2026 conducted by Greenfields Consulting

This project has been funded by Hort Innovation, using the Turf industry research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

Footnotes:

1. Direct Contribution - the gross value of production (GVP) generated by turf growers

2. Value Added - Net contribution to gross domestic product (GDP) through payments to labour, capital and land (subset of direct production value)

3. Indirect Contribution - Downstream and adjacent activity enabled by natural turf

4. Induced Contribution - the economy-wide flow-on activity generated by household spending supported by turf industry income and employment

5. FTES - Full time equivalents

Economic, Environmental and Social Value of Natural Turf

Natural turf delivers an estimated

\$42B

in economic, environmental and social value to Australians each year

ENVIRONMENTAL IMPACT

 NATURAL	HEALTH & EXPOSURE	SYNTHETIC	
✓ -10 to -30 degrees cooler and cools the ground	Urban heat mitigation	Can reach ~70-85 and stores heat	×
✓ No microplastics & biodegradable	Microplastics and end-of-life	Sheds plastic fibres (can exceed 100,000/sq km)	×
✓ Sequesters -1.7-4.7 t Co2-e/ha/yr	Impacts Carbon Sequestration	No sequestration (fossil-plastic based)	×
✓ Captures 5-20g of particulate/sqm	Air Quality	No pollutant capture (biologically inert)	×

 NATURAL	INFRASTRUCTURE RISK	SYNTHETIC	
✓ Classified as low-threat vegetation	Bushfire risk reduction	No fire-mitigation classification	×
✓ Reduces sediment loss by ~50-90%	Erosion control	Does not stabilise soil or filter runoff	×
✓ Infiltrate 150-300mm rainfall per hour	Stormwater Management	Does not absorb rainwater; accelerates stormwater runoff	×



ENABLING ICONIC SPORTING MOMENTS



\$20.4B



SPORTING UTILITY



COMMUNITY WELLBEING

\$14.4B

\$4.9B



AVOIDED LIFE-CYCLE COSTS



RESIDENTIAL AMENITY VALUE

\$2.8B

Source: TU24004 2026 conducted by Greenfields Consulting

This project has been funded by Hort Innovation, using the Turf industry research and development levy and contributions from the Australian Government. Hort Innovation is the grower-owned, not-for-profit research and development corporation for Australian horticulture.

Footnotes:

1. Carbon sequestration - the process of capturing and storing atmospheric carbon dioxide to reduce global warming and slow climate change

2. Particulate - matter composed of distinct, tiny separate particles

3. Sporting Utility - captures the wellbeing and participation value derived from time spent training and playing sport on natural surfaces by individuals and families

4. Community Wellbeing - reflects the utility Australians derive from passive and active use of parks, gardens, playgrounds and open spaces

5. Avoided Lifecycle Costs - quantifies the lower whole-of-life costs of natural turf relative to synthetic, including maintenance, replacement, heat management and end-of-life disposal

6. Residential Amenity Value - measures the higher residential amenity value associated with lawns and proximity to turf-based green space

Executive summary



The Australian Turf Industry contributes approximately **\$5.1 billion** to the **national economy every year** and supports approximately **15,500 jobs**



Natural turf delivers an estimated **\$42 billion in economic, environmental and social value** to Australians each year

Collectively, these figures show that natural turf is both a material economic contributor and a nationally significant public asset.

Natural turf is foundational to Australia's urban environment, underpinning community life, organised sport, everyday recreation and residential living. Almost all Australians (97 per cent) regularly use community spaces and around half participate in organised sport, with natural turf remaining the overwhelmingly preferred surface across parks, sporting fields and public open spaces. Beyond public settings, natural turf is also the preferred surface for residential use, forming a core element of private gardens and neighbourhood streetscapes.

The economic footprint of the turf production industry is substantial, generating approximately \$330m and supporting approximately 1,300 jobs. However, this production value represents only a fraction of turf's broader contribution. The benefits of natural turf extend well beyond industry output to deliver enduring economic, social, health, and environmental outcomes for individuals, communities and governments.

This report provides the most comprehensive valuation of natural turf undertaken to date. Using updated data and contemporary valuation methods, it captures the full spectrum of benefits generated through turf production, installation and maintenance, iconic sporting moments, community sport and recreation, urban cooling and environmental factors, improved

health and wellbeing, increased property values, and avoided costs associated with alternative surfaces.

The analysis draws on robust evidence, integrating publicly available data, three quantitative surveys of 2,614 Australians, and 48 in-depth interviews with residential, commercial and government stakeholders. All modelling inputs are independently sourced and based on statistically robust data.

To ensure rigour and avoid double counting, the report applies **two distinct and mutually exclusive valuation** frameworks:

- 1. Economic Contribution** – quantifying the annual commercial value of the turf industry and related sectors, including employment (FTEs).
- 2. Economic, Environmental and Social Value** – capturing the broader utility delivered to Australians, including environmental benefits, sporting culture, sporting use, community wellbeing, avoided life-cycle costs, and property and amenity uplift.

Together, these findings demonstrate that natural turf is not simply a production industry, but a high-value public investment that supports liveable cities, healthier communities, and sustainable urban infrastructure.



Economic Contribution

The first valuation approach assesses natural turf's annual contribution to the Australian economy across three components:

1. **Direct contribution** – the gross value of production (GVP) generated by turf growers, reflecting the total value of commodities produced and associated FTEs
2. **Value added** – payments to labour, capital, and land across the turf supply chain
3. **Indirect contribution** – economic activity generated in adjacent industries, including turf installation and maintenance services, equipment supply, enabling infrastructure, and induced household spending supported by industry employment.

Using this framework, the Australian turf industry is estimated to contribute **\$5.1 billion annually** to the national economy and support approximately **15,500 jobs** (directly and indirectly).

Table 1: Economic Contribution of the Australian Turf Industry (2026)

Component	Economic contribution (\$ pa)	Employment (FTEs)	Description
Direct contribution	\$332.8 million	1,345	Farm-gate value of turf production generated by turf growers, including associated direct employment
Value added¹	\$233.9 million	-	Net contribution to GDP through payments to labour, capital and land (subset of direct production value)
Indirect contribution	~\$4.8 billion	~14,200	Downstream and adjacent activity enabled by natural turf, including lawn maintenance services, lawn care products, and induced contribution ²
Total economic contribution	~\$5.1 billion	~15,500	Combined direct and indirect economic activity supported by the Australian turf industry

The majority of this employment is generated through downstream and adjacent industries enabled by the widespread use of natural turf, underscoring its role as an economic enabler rather than a narrowly defined production sector. As such, natural turf supports sustained economic activity and employment well beyond the farm gate.

¹ Value added is reported separately as a standard GDP metric and is not additive to gross production or indirect contribution.

² Induced contribution refers to the economy-wide flow-on activity generated by household spending supported by turf industry income and employment.



Economic, Environmental and Social Value

A second and distinct valuation approach assesses natural turf as an enduring **economic, environmental and social asset**, capturing the broader public benefits it delivers over time. This asset value is conceptually separate from — and must not be aggregated with — annual economic contribution, as it reflects non-market benefits and avoided costs that accrue to governments, households, and communities rather than to industry output.

Natural turf's asset value is estimated across six components:

- 1. Environmental Impact** – including two different impacts:
 - **Health & Exposure** – capturing urban heat mitigation, microplastics and end-of-life impacts, carbon sequestration, and improved air quality,
 - **Infrastructure Risk** – capturing erosion control, bushfire risk reduction, and stormwater management
- 2. Enabling iconic sporting events** – reflecting the role of natural turf as critical infrastructure underpinning nationally significant sporting moments such as the Boxing Day Test, Melbourne Cup, Australian Rules and Rugby Grand Finals
- 3. Sporting utility** – capturing the wellbeing and participation value derived from time spent training and playing sport on natural surfaces by individuals and families
- 4. Community wellbeing** – reflecting the utility Australians derive from passive and active use of parks, gardens, playgrounds and open spaces
- 5. Avoided life-cycle costs** – quantifying the lower whole-of-life costs of natural turf relative to synthetic, including maintenance, replacement, heat management and end-of-life disposal
- 6. Residential amenity value** – measuring higher residential amenity value associated with lawns and proximity to turf-based green space.

Using this framework, natural turf delivers an estimated **\$42 billion in economic, environmental and social value** to Australians each year. This value is conceptually distinct from GDP and employment measures and must not be aggregated with economic contribution.



Table 2: Economic, Environmental and Social Asset Value of Natural Turf (Annualised, 2026)

Asset value component	Estimated annual value (\$billion pa)	Description
Environmental Impact	Qualitative	Value of natural turf in reducing heat, pollution and runoff exposure while lowering flood and bushfire risks, thereby protecting public health and infrastructure from costly climate damage
Enabling Iconic Sporting Events	Qualitative	Cultural and civic value associated with nationally significant sporting moments hosted on natural turf venues; recognised but not monetised to avoid speculative valuation
Sporting Utility	\$20.4	Wellbeing and participation value derived from organised sport played on natural turf, based on participation frequency and per-session wellbeing valuation
Community Wellbeing	\$14.4	Social and wellbeing value from everyday use of turf-based parks, school grounds, playgrounds and community open space
Avoided Life-cycle Costs	~\$4.9	Annualised long-term cost savings from retaining natural turf rather than converting to higher-cost synthetic surfaces
Residential Amenity Value	~\$2.8	Annualised residential amenity value associated with lawns and proximity to turf-based green space
Total Annual Asset Value	~\$42 billion	Aggregate annualised value of economic, environmental and social benefits delivered by natural turf to Australians

Note: Values represent annualised asset and wellbeing benefits and are conceptually distinct from — and not additive to — annual economic contribution or GDP. Qualitative elements are reported to reflect material public value but are not monetised to avoid speculation or double counting.

The majority of natural turf's economic, environmental and social value arises from its widespread use across urban, community and sporting environments rather than from market transactions alone. These benefits accrue progressively over time through the delivery of environmental services, support for community wellbeing and participation, contribution to nationally significant sporting and cultural activities, and the avoidance of higher public and private costs — including those associated with heat-related health impacts, stormwater damage and alternative surface lifecycles. Accordingly, natural turf should be regarded as a long-lived public asset that generates sustained public value beyond that captured in conventional measures of economic output.

So what?

Quantifying the monetary value of natural turf enables more informed decision-making and a clearer understanding of its environmental, economic and social contributions among industry, government, residential users and the wider public.



The **\$5.1 billion annual economic contribution** demonstrates that natural turf is not a marginal or niche industry, but a material, employment-intensive economic system that underpins activity across multiple sectors. This contribution reflects not only turf production but a broad ecosystem of installation, maintenance, grounds management, equipment supply, professional services, and local employment supported through community and sporting use. With approximately **15,500 jobs** supported nationally, much of them in regional and peri-urban areas, the turf industry functions as a stable source of ongoing employment and small-to-medium enterprise activity, rather than a one-off capital works industry. Importantly, the majority of this economic activity is generated downstream of production, reinforcing natural turf's role as an economic enabler embedded in local economies, councils, sporting clubs and community infrastructure.

The \$5.1 billion contribution highlights the economic consequences of policy, planning and procurement decisions affecting natural turf. Decisions that reduce investment in turf — or displace it with higher-cost alternatives — do not simply alter surface choices; they risk contracting employment, reducing service-sector activity, and increasing long-term public expenditure through higher maintenance, replacement and heat-management costs. Conversely, maintaining and investing in natural turf sustains jobs, supports local suppliers, and keeps economic value circulating within Australian communities.



The estimated **\$42 billion per year in economic, environmental and social value** represents a distinct but complementary perspective on the role of natural turf. It reflects the scale of benefits at risk when natural turf is undervalued, under-maintained or replaced without full consideration of whole-of-life costs and non-market impacts. In residential settings, natural turf contributes materially to household amenity and neighbourhood liveability, with this contribution reflected in the capitalised value embedded in residential properties. From a cost-benefit perspective, natural turf delivers substantial avoided expenditure across health, climate adaptation, urban cooling, infrastructure renewal and community sport, while also enhancing the performance, resilience and longevity of both private and public open-space assets.



Taken together, these findings show that natural turf should be understood as both an ongoing economic contributor and a high-value public asset. Treating natural turf as essential infrastructure — rather than a discretionary amenity — supports more efficient capital allocation, strengthens local economies, reduces long-term fiscal liabilities and maximises net public benefit. In this context, investment in natural turf is best understood as an investment in resilient cities, preventative health, employment, and nationally significant sporting and community infrastructure.

2 Introduction

2.1 Background and Objectives

Natural turf is a foundational element of Australia's urban and suburban landscape, supporting organised sport, everyday recreation, residential amenity and public open space. Despite its ubiquity, natural turf is frequently undervalued in policy, planning and investment decisions, with its contribution often assessed narrowly in terms of farm-gate production rather than the full range of economic, social and environmental benefits it delivers.

In July 2023, Hort Innovation published Economic Contribution of the Australian Horticulture Industry (MT21010), prepared by the Centre for International Economics (CIE). That study estimated that in 2020–21 the Australian turf industry generated \$308.0 million in gross value of production (GVP), contributed \$216.5 million in value added, and supported 1,333 full-time equivalent (FTE) jobs.⁷ While these estimates demonstrate the importance of turf production within horticulture, they capture only part of turf's overall contribution.

The value of natural turf extends well beyond production at the farm gate. Ongoing economic activity is generated through turf installation, maintenance and renewal, while broader benefits accrue through improved health and wellbeing, community cohesion, environmental services, urban cooling, and avoided long-term costs relative to alternative surfaces. In residential settings, natural turf contributes to household amenity and is reflected in property value outcomes. In public and sporting contexts, it underpins both everyday participation and nationally significant sporting events. Many of these benefits are not reflected in conventional economic statistics, yet they are central to the outcomes governments, councils and communities seek to achieve.

This project (TU24004: Usage, Attitudes and Contribution of Natural Turf) builds on previous research by providing an updated and more comprehensive assessment of the economic, environmental and social contribution of natural turf in Australia. It draws on contemporary industry data, refined valuation methods and an integrated research design to better reflect the full spectrum of benefits delivered by natural turf, while strengthening the evidence base available to industry and decision makers.

The project is intended to support improved decision-making within the natural turf industry and to provide a robust, independent evidence base assessing investments in sporting, recreational and community spaces where natural turf or alternative surfaces are under consideration. By quantifying both market and non-market benefits, the analysis supports consideration of whole-of-life costs, long-term public value and broader community outcomes.

The study integrates two complementary research streams — a Usage and Attitudes (U&A) Study and an Economic, Environmental and Social Contribution Study — into a single, cohesive framework. The purpose of this report is to present clear, evidence-based findings with a particular focus on residential users, commercial users and decision makers across government agencies, local councils, sporting organisations and educational institutions.

2.3 Approach

To assess and quantify the economic, environmental and social contribution of natural turf, a rigorous multi-method research program was undertaken. The approach combined qualitative stakeholder engagement, large-scale quantitative surveys, and detailed desk research and data analysis to ensure findings were robust, comprehensive and grounded in both industry experience and empirical evidence.

2.3.1 Stakeholder interviews

Seventeen in-depth interviews, each of approximately one hour in duration, were conducted with key industry stakeholders identified by Hort Innovation. Participants included members of the Turf Strategic Industry Advisory Panel (SIAP) and representatives of the Natural Turf Alliance. These interviews provided strategic, technical and industry-wide perspectives and informed both the study design and the interpretation of findings.

2.3.2 Desk research and literature review

An extensive review of Australian and international research publications, industry reports, academic studies and publicly available datasets was undertaken. Sources were identified in collaboration with Hort Innovation and industry stakeholders and supplemented by independent research conducted by Greenfields Consulting. This material informed the design of the Usage and Attitudes surveys and underpinned the development of the economic, environmental and social contribution modelling. All sources are footnoted and fully referenced in this report.

2.3.3 Nationally representative survey

A nationally representative online survey was conducted in July and August 2025 for two primary purposes.

First, it informed incidence estimates for the residential and commercial quantitative surveys conducted in October 2025, including:

- recent purchasers of turf, split by natural and synthetic turf (within the past three years)
- intended purchasers of natural and synthetic turf (within the next two years, for new build or renovation)
- frequency of use of turf in community and public spaces (natural and synthetic)
- frequency of use of sporting fields and ovals for organised sport (natural and synthetic).

Second, the survey provided inputs to the updated Economic, Environmental and Social Contribution study, including data on:

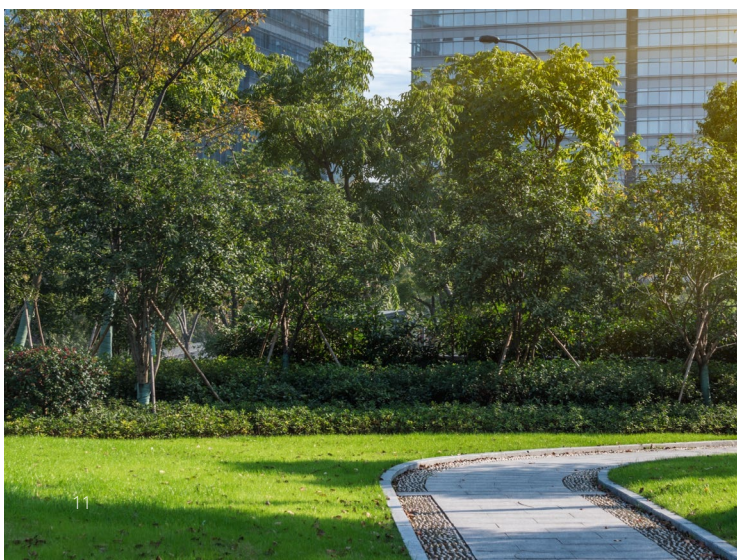
- environmental contributions (e.g. urban heat mitigation, avoidance of microplastics, air quality, soil erosion, water and soil retention)
- social contributions (e.g. aesthetic appeal, community gathering spaces, recreation and sporting opportunities, mental health and wellbeing, sense of community pride)
- other contributions, such as reduced sporting injuries.

The survey took approximately ten minutes to complete and sampled Australians aged 18 years and over. Quotas were applied by age, gender and location to ensure national representativeness. A total of 1,025 valid responses were obtained following screening and data cleaning.

2.3.4 Residential quantitative survey

A residential-focused quantitative survey was conducted online in October 2025. The survey was approximately twenty minutes in length and nationally representative by age, gender and location. Participants were screened to include residential decision makers who had purchased turf within the previous three years, or who intended to purchase turf within the next two years for a new build or renovation.

The final sample comprised 986 completed surveys after screening and data cleaning. This included 522 respondents who had purchased natural turf in the last three years and 446 respondents who had purchased synthetic turf over the same period.



2.3.5 Commercial quantitative survey

A commercial-focused quantitative survey was also conducted online in October 2025. The survey took approximately fifteen minutes to complete and was nationally representative by age, gender and location. Participants were screened to include individuals who regularly play organised sport on turf sporting fields, as well as parents or guardians of children who regularly play organised sport on turf surfaces.

The final sample included 603 completed responses following screening and data cleaning. This comprised 436 respondents who personally train or play organised sport on turf fields, and 334 parents of children who regularly train or play organised sport on turf fields (with 167 respondents answering on behalf of both themselves and their children).

2.3.6 Commercial qualitative in-depth interviews

Thirty-one qualitative in-depth interviews were conducted with a broad cross-section of commercial, government and institutional stakeholders, including:

- seven (7) landscapers
- nine (9) architects and developers
- five (5) local councils
- seven (7) sporting organisations (including national Australian Rules and Cricket Australia representatives, as well as state and local soccer and Australian Rules clubs)
- three (3) education-sector participants, comprising two schools and one state education department.

These interviews provided detailed insights into decision-making processes, cost considerations and perceptions of turf performance and value across different use contexts.

2.3.7 Contribution modelling

The contribution modelling draws on data collected through the quantitative surveys, qualitative interviews, and the desk research and literature review.

The modelling framework comprises **two distinct and mutually exclusive elements**, designed to ensure conceptual clarity and avoid double counting

The first element estimates the **Economic Contribution**, measured in annual dollar terms and full-time equivalent (FTE) employment. This captures the commercial activity generated by turf production and adjacent sectors, along with employment supported across the value chain

The second element estimates the **Economic, Environmental and Social Value**, expressed using appropriate annualised and asset-based measures. This captures the broader utility delivered to Australians, including environmental services, community wellbeing, sporting participation and culture, residential amenity and property value outcomes, and avoided costs associated with alternative surface types.



3 Economic Contribution

3.1 Measuring Economic Contribution



The Australian Turf Industry contributes approximately **\$5.1 billion** to the **national economy every year** and supports approximately **15,500 jobs**

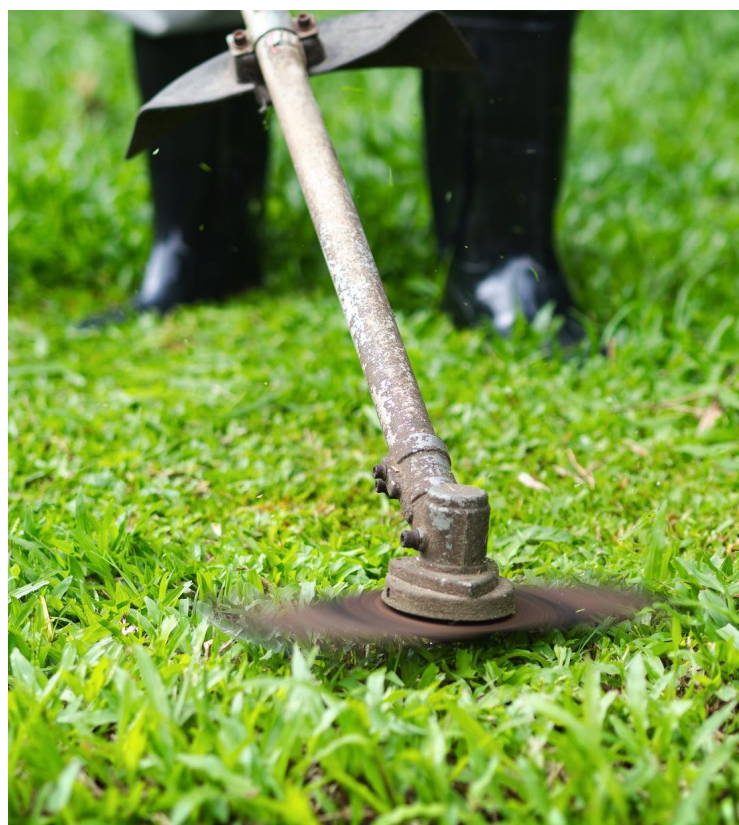
This section presents an assessment of the economic contribution of the Australian turf industry in 2026. Economic contribution analysis is used to describe the scale and composition of economic activity associated with an industry, including its contribution to production, income and employment.

Consistent with standard economic practice, the analysis distinguishes between direct, value-added and indirect contributions. Direct contribution is presented using both Gross Value of Production (GVP) and Value Added (GDP contribution). These are alternative measures of the same direct activity and are not additive.

- **Direct contribution** measures the value of turf production at the farm gate and the employment directly engaged in turf growing activities
- **Value added** measures the net contribution of turf production to the Australian economy after accounting for intermediate inputs, and reflects payments to labour, capital and land and is the component that contributes directly to gross domestic product (GDP)
- **Indirect contribution** captures economic activity occurring beyond turf production itself. This includes economy-wide flow-on effects generated through household spending supported by turf industry income, as well as downstream and adjacent service and product markets enabled by the installation and ongoing maintenance of natural turf, and enabling infrastructure surrounding natural turf amenities.

The estimates presented in Sections 3.2 to 3.4 are derived using publicly available data, authoritative industry benchmarks and conservative assumptions. Methodological details and data sources are documented in Appendix A.

Economic contribution analysis is descriptive in nature. It does not measure net economic benefits, economic efficiency or the impacts of marginal changes in output, and should not be interpreted as an assessment of economic welfare or policy effectiveness.



3.2 Direct Contribution

The **direct contribution of turf production in 2026** is estimated at **\$332.8 million**, supporting approximately **1,345 full-time equivalent (FTE)** jobs across the turf growing sector. These figures represent the farm-gate value of production and associated direct employment.

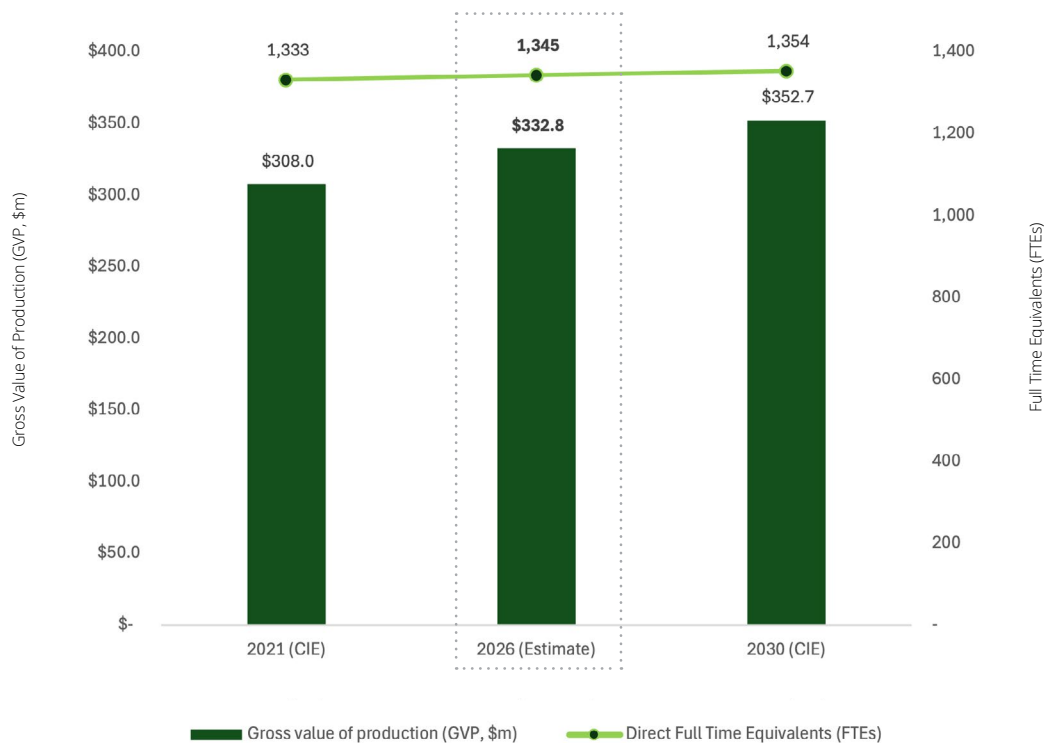
Both estimates have been derived using benchmark data published by the Centre for International Economics (CIE) in The Contribution of the Australian Horticulture Industry (July 2023).⁷ That report provides authoritative estimates of turf production value and employment for 2021 and forward projections to 2030, but does not report interim-year values.

To estimate the 2026 position, a linear interpolation approach was applied between the 2021 and 2030 benchmarks. This involves calculating the implied average annual nominal change over the period and applying five years of change from the 2021 base year to arrive at a 2026 estimate. This method preserves the structure and timing of the original CIE projections and avoids introducing additional assumptions about short-term volatility or cyclical effects.

Using this approach:

- Production value increases from **\$308.0 million (2021)** to **\$352.7 million (2030)**, resulting in an estimated **\$332.8 million in 2026**
- Direct employment increases from **1,333 FTEs (2021)** to **1,354 FTEs (2030)**, resulting in an estimated **1,345 FTEs in 2026**.

Figure 1: Direct Contribution of Turf Production (GVP \$m pa, FTEs)



Both estimates sit comfortably within ranges suggested by other independent data sources. Recent Australian Horticulture Statistics published by Hort Innovation¹¹ indicate steady nominal growth in turf production through to 2024, while industry research (including IBISWorld)¹² supports modest, stable employment growth over the medium term.

Sensitivity Analysis

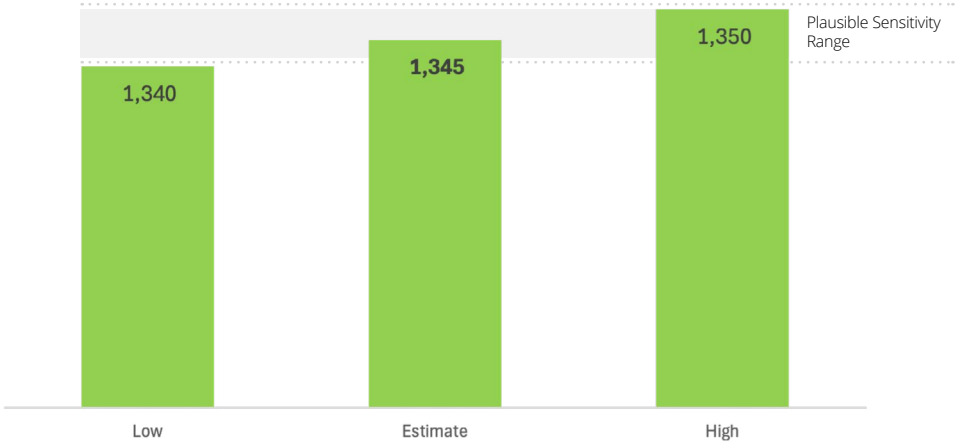
Sensitivity analysis suggests that a plausible 2026 range of **\$320–335 million in production value**. The central estimate **\$332.8m lies toward the upper-middle** of the range and is retained to maintain consistency with the CIE framework and avoid understating medium term industry contribution.

Figure 2: Plausible Sensitivity Range for Production Value



For Full Time Equivalents, a reasonable sensitivity range is 1,340–1,350 FTEs, with the adopted estimate representing a conservative-to-central value, reflecting medium term structural stability.

Figure 3: Plausible Sensitivity Range for Full Time Equivalents



3.3 Value Added

The **value-added contribution of turf production in 2026** is estimated at **\$233.9 million**. Value added represents the net economic contribution of turf production to the Australian economy, capturing payments to labour, capital and land after accounting for intermediate inputs. It is the appropriate measure for assessing direct contribution to gross domestic product (GDP).

This estimate has been derived using benchmark data published by the Centre for International Economics (CIE) in *The Contribution of the Australian Horticulture Industry (July 2023)*.⁷ That report provides authoritative estimates of value added for the turf industry in 2021 and forward projections to 2030 but does not report interim-year values.

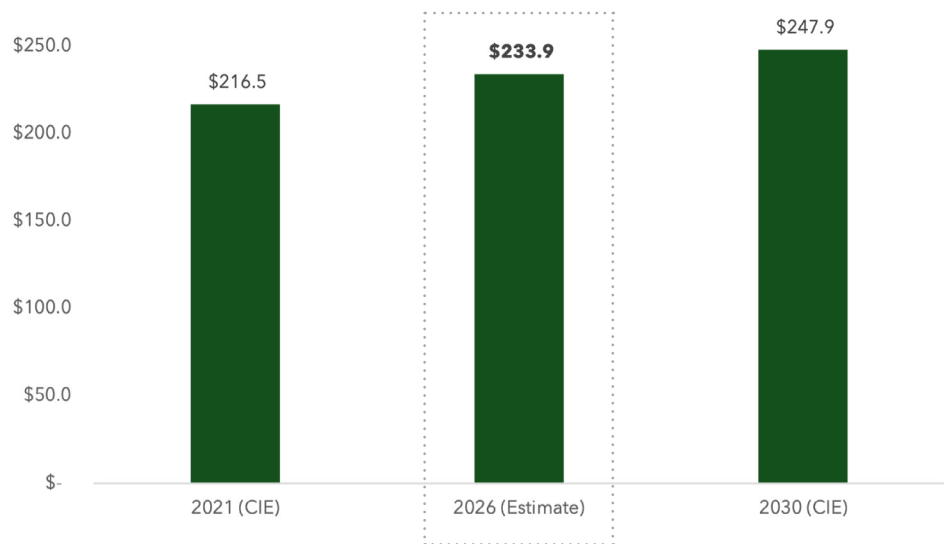
To estimate the 2026 position, a linear interpolation approach was applied between the 2021 and 2030 benchmarks. This involves calculating the implied average annual nominal change over the period and applying five years of growth from the 2021 base year to arrive at a 2026 estimate. This method preserves the structure and timing of the original CIE projections and avoids introducing additional assumptions about short-term volatility or cyclical effects.

Using this approach:

- Value added increases from **\$216.5 million (2021)** to **\$247.9 million (2030)**, resulting in an estimated **\$233.9 million in 2026**.



Figure 4: Value Added Contribution of Turf Production (\$m pa)

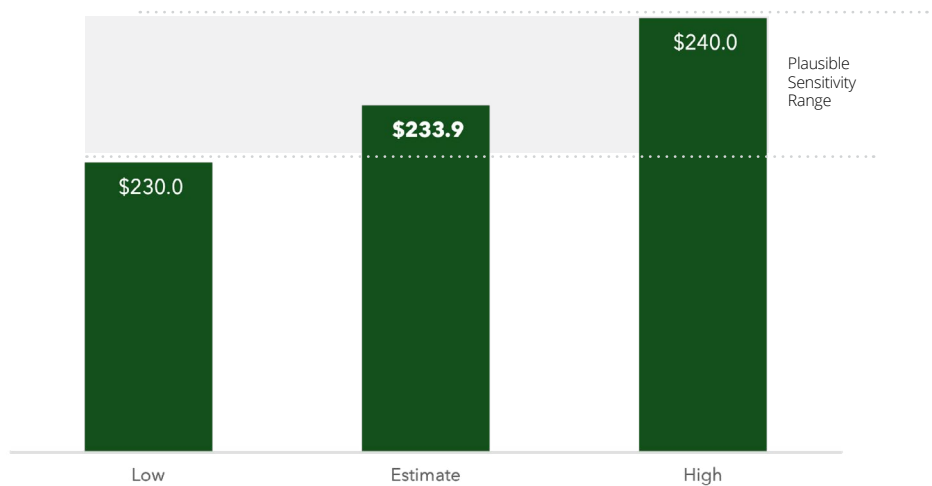


This estimate is consistent with broader trends observed across the horticulture sector. Recent Australian Horticulture Statistics published by Hort Innovation¹¹ indicate steady growth in horticultural production and value added through the early-to-mid 2020s, while industry research (including IBISWorld)¹² suggests a stable, gradual uplift in sectoral value added over the medium term.

Sensitivity Analysis

Sensitivity analysis suggests that a plausible 2026 range of **\$320–335 million in production value**. The central estimate **\$332.8m lies toward the upper-middle** of the range and is retained to maintain consistency with the CIE framework and avoid understating medium term industry contribution.

Figure 5: Plausible Sensitivity Range for Value Added Contribution



3.4 Indirect Contribution

Indirect contribution captures the economic activity generated beyond turf production itself, including economy-wide flow-on effects and the substantial service and input markets enabled by the widespread installation and maintenance of natural turf. These impacts occur downstream of production and reflect the role of natural turf as an economic enabler embedded across households, councils, sporting organisations and service industries.

Using this framework, the **indirect contribution of natural turf in 2026 is estimated at approximately \$4.8 billion**, supporting around **14,200 full-time equivalent (FTE) jobs** across the Australian economy.

The indirect contribution comprises four components:

1. **Lawn care products** – expenditure on lawn-specific equipment and inputs used to maintain natural turf
2. **Lawn maintenance services** – professional services associated with maintaining residential, commercial and public lawns and turf
3. **Induced contribution** – economy-wide flow-on activity generated by household spending supported by turf industry income and employment
4. **Enabling infrastructure for sport and events** – the role of natural turf in enabling sporting participation and event delivery, noted qualitatively but not monetised.

Each component is estimated or described using publicly available data and conservative assumptions, with methods aligned to Australian Bureau of Statistics (ABS) industry classifications and Centre for International Economics (CIE) contribution modelling conventions.

3.4.1 Lawn care products

The lawn care products contribution in 2026 is estimated at **\$2.49 billion**, supporting approximately **4,100 full-time equivalent (FTE) jobs** across manufacturing, wholesale and retail supply chains. This component captures expenditure on lawn-specific equipment and inputs required to maintain natural turf, including mowers, trimmers, irrigation products, fertilisers and related consumables.

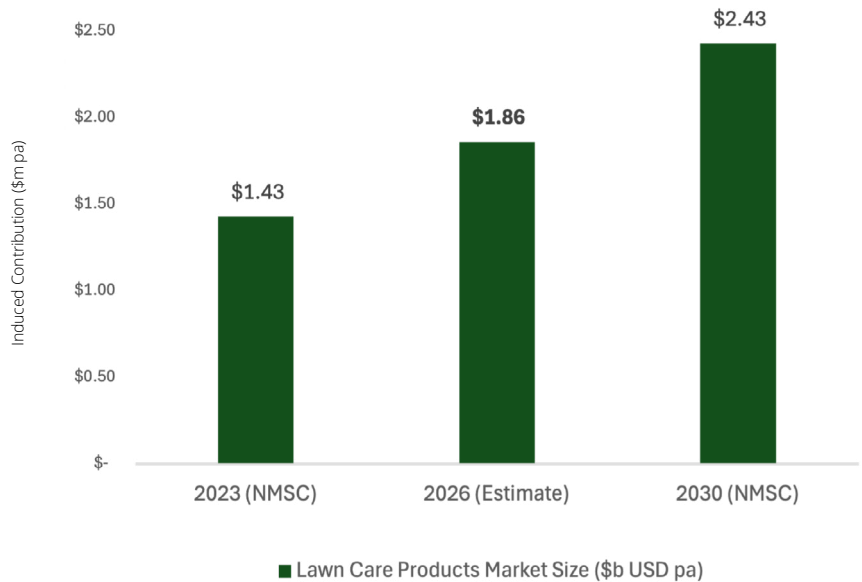
This estimate has been derived using benchmark data published by Next Move Strategy Consulting (NMSC)¹³, which reports that the Australian lawn care products market was valued at **USD 1.43 billion in 2023 (AUD 1.92bn)** and is forecast to reach **USD 2.43 billion by 2030 (AUD 3.26bn)**. Interim-year estimates are not published.

To estimate the 2026 position, a linear interpolation approach was applied between the 2023 and 2030 benchmarks, consistent with the methods used elsewhere in this report. This involves calculating the implied average annual change over the forecast period and applying three years of growth from the 2023 base year to arrive at a 2026 estimate.

Using this approach:

- Market value increases from **AUD 1.92 billion (2023)** to **AUD 3.26 billion (2030)**, resulting in an estimated **AUD 2.49 billion in 2026**.

Figure 6: Lawn Care Products Contribution (\$m pa, FTEs)



Employment associated with lawn care products is estimated at approximately **4,100 FTE jobs**. This estimate is derived by applying industry-standard employment-to-turnover relationships observed across manufacturing, wholesale and retail trade sectors most closely associated with lawn care products. These ratios are informed by Australian Bureau of Statistics (ABS) industry employment and turnover data and are consistent with observed labour intensity across comparable consumer equipment and input markets.^{1 2 3}

As the underlying market definition is explicitly lawn-care specific, **100 per cent of this expenditure and associated employment is attributed to turf and lawn activity**. No allowance has been made for potential increases in participation, product intensity or premiumisation, reinforcing the conservative nature of the estimate.

Footnote (exchange rate): Market values were converted from USD to AUD using a long-run average exchange rate of 1.34 AUD per USD, based on historical annual average exchange-rate data published by the Reserve Bank of Australia¹⁷. This approach smooths short-term currency volatility and is consistent with standard practice in economic contribution and cost-benefit analysis.



3.4.2 Lawn maintenance services

The **lawn maintenance services contribution in 2026** is estimated at approximately **\$2.25 billion**, supporting around **9,800 full-time equivalent (FTE) jobs** across Australia. This component captures professional services associated with maintaining residential, commercial and public lawns and turf, including mowing, edging, fertilisation and routine turf care.

This estimate has been derived using data from the Australian Bureau of Statistics (ABS) Counts of Australian Businesses⁴, drawing on ANZSIC 7313 (Gardening Services)⁵. This industry classification explicitly includes lawn mowing and lawn maintenance activities and excludes landscape construction, ensuring close alignment with the scope of lawn and turf maintenance services.

To estimate the 2026 position, total industry turnover for Gardening Services was first derived using ABS counts of businesses by annual turnover size band. Conservative turnover-point assumptions were applied to each band (using lower-quartile values rather than midpoints) to estimate aggregate industry turnover. This approach yields an estimated total Gardening Services industry turnover of approximately **\$5.63 billion**.

Based on this estimate, a **conservative attribution of 40 per cent** of total Gardening Services turnover was applied to lawn and turf maintenance activities. This reflects the fact that while Gardening Services includes a range of activities, industry evidence consistently identifies lawn mowing and lawn care as the largest and most common service segment within the industry.

Using this approach:

- Total Gardening Services turnover is estimated at approximately **\$5.63 billion**
- Applying a **40 per cent attribution** yields an estimated **\$2.25 billion** in lawn and turf maintenance services in 2026.

Employment associated with lawn maintenance services is estimated at approximately **9,800 FTE jobs**. This estimate reflects the highly labour-intensive nature of gardening and lawn maintenance services and is derived by applying ABS-consistent employment-to-turnover relationships for service-based industries to the estimated lawn maintenance turnover.² These ratios are consistent with observed employment density in ANZSIC 7313 and related personal and property services sectors.⁵

Scenario analysis indicates that plausible alternative assumptions would yield higher values for both economic activity and employment. For example, higher attribution shares consistent with industry descriptions of Gardening Services would materially increase both turnover and FTE estimates. Accordingly, the adopted estimates should be interpreted as **conservative, lower-bound values**.



3.4.3 Induced contribution

Induced contribution in 2026 is estimated at **\$64.3 million**, supporting approximately **303 FTE jobs**. These effects capture broader economy-wide activity generated through household spending of incomes earned within the turf industry and its supply chain.

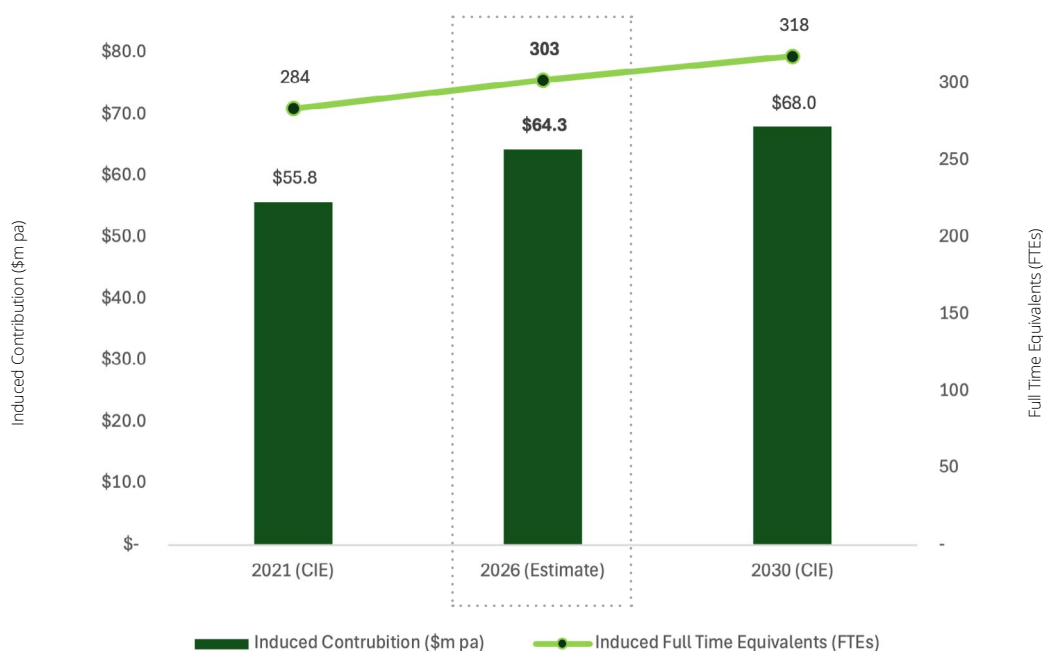
These estimates are derived using benchmark data published by CIE7, which provides induced value added and employment estimates for 2021 and forward projections to 2030 but does not report interim-year values.

To estimate the 2026 position, a linear interpolation approach was applied between the 2021 and 2030 benchmarks, consistent with the methods used for direct contribution and value added.

Using this approach:

- Induced contribution increases from **\$59.77 million (2021)** to **\$68.0 million (2030)**, resulting in an estimated **\$64.3 million in 2026**
- Induced employment increases from **284 FTEs (2021)** to **318 FTEs (2030)**, resulting in an estimated **303 FTEs in 2026**.

Figure 7: Induced Contribution of Turf Production (\$m pa)



3.4.4 Enabling infrastructure for sport and events

In addition to generating downstream economic activity through products and services, natural turf also functions as **enabling infrastructure** for sporting clubs, schools, councils and major event venues. High-quality turf surfaces allow these organisations to operate sporting fields and venues at scale, host competitions and events, and sustain high levels of participation and utilisation over time, without incurring the substantially higher capital, replacement and lifecycle costs associated with alternative surface systems.

While this enabling role is central to the operation of community sport and nationally significant events, it is **not treated as an additional financial component** of indirect economic contribution. Assigning a separate dollar value would risk double counting activity already captured through lawn maintenance services, lawn care products and induced effects. Instead, the infrastructure-enabling role of natural turf is recognised as an important **qualitative benefit** that underpins many of the economic, social and cultural outcomes described elsewhere in this report.

Together, these components highlight the substantial scale of downstream economic activity enabled by natural turf and underscore its role as a critical enabler of employment, small business activity and service-sector growth across Australia.

Why this estimate is conservative

The estimated **\$4.8 billion** indirect contribution of natural turf has been deliberately derived using conservative assumptions at each step of the analysis.

In particular:

- **Lawn care products** are estimated using publicly reported market forecasts and simple linear interpolation, without applying any uplift for potential growth in participation, product intensity or premiumisation
- **Lawn maintenance services** are estimated using Australian Bureau of Statistics (ABS) data for Gardening Services (ANZSIC 7313), with total industry turnover derived using lower-quartile turnover assumptions rather than midpoints. Only **40 per cent** of this industry is attributed to lawn and turf maintenance, despite industry evidence indicating that lawn mowing is the largest service segment
- **Induced Contribution** are based on Centre for International Economics (CIE) parameters applied narrowly to turf value added only, and interpreted cautiously to avoid overstatement or double counting
- **Enabling infrastructure for sport and events** is recognised qualitatively but **not monetised** within the indirect contribution estimate. While natural turf enables the operation of sporting clubs, community facilities and major event venues, assigning a separate financial value would risk double counting activity already captured through maintenance services, input markets and induced effects. Excluding this enabling role from the dollar estimate further reinforces the conservative nature of the adopted approach.

Scenario analysis indicates that plausible alternative assumptions would yield materially higher estimates for lawn maintenance services and associated employment. Accordingly, the adopted estimate should be interpreted as a **lower-bound estimate** of the indirect economic and employment activity enabled by natural turf, rather than a maximum or exhaustive measure.

3.5



Why this Economic Contribution matters

The results in Section 3 show that

natural turf supports a substantially larger share of economic activity and employment than is apparent from farm-gate production alone.

While direct turf growing is modest in scale, the industry's economic footprint expands materially through downstream services, maintenance activity, input supply and induced household spending.

This structure is important for policy and planning. Most employment supported by natural turf occurs in labour-intensive service sectors — particularly lawn maintenance, installation and equipment supply — which are geographically dispersed and dominated by small businesses. As a result, natural turf plays a meaningful role in supporting local employment and service-sector resilience across metropolitan, regional and peri-urban Australia.

The analysis also highlights that

natural turf functions primarily as an economic enabler,

rather than a narrowly defined production sector. Decisions that reduce turf provision or substitute alternative surfaces therefore have implications that extend well beyond growers, potentially affecting employment, small business activity and service markets that rely on its ongoing use.

Importantly, the estimates presented are conservative and avoid double counting. They should be interpreted as a lower-bound measure of economic activity supported by natural turf. Recognising this broader contribution improves the quality of decision-making in urban planning, sports infrastructure investment and local government budgeting, where surface choices can have lasting economic consequences.

4 Economic, Environmental and Social Value



Natural turf delivers an estimated **\$42 billion in economic, environmental and social value** to Australians each year

While economic contribution analysis measures the commercial footprint of an industry, it does not capture the full range of benefits that natural turf provides to Australian communities. In particular, it does not reflect environmental services, sporting culture, social wellbeing, recreational utility or avoided costs associated with alternative land covers.

This section presents an assessment of the **broader economic, environmental and social value of natural turf in Australia**. These values represent the utility derived by households, communities and governments from the existence and use of natural turf, rather than market transactions or industry output.

Consistent with best practice, these values are treated as **distinct from economic contribution** and are not additive to measures of GDP or industry output.



4.1 Framework for Measuring Economic, Environmental and Social Value

The **Economic, Environmental and Social Value** of natural turf **reflects the broader benefits**

Australians derive from the presence, use and performance of turf across urban, community, sporting and residential environments. These values extend beyond commercial activity and market transactions and capture forms of utility and public benefit that are not measured through conventional economic contribution metrics or gross domestic product (GDP).

To ensure transparency and avoid double counting, this report adopts a structured framework that distinguishes between different sources of value and recognises their distinct mechanisms. Each element is assessed separately using appropriate qualitative or quantitative methods, with detailed valuation approaches outlined in Appendix B.

Under this framework, the Economic, Environmental and Social Value of natural turf is assessed across six elements:

- 1. Environmental impact** – the ecosystem provided by natural turf, including urban cooling, microplastics and end-of-life impacts, carbon sequestration, air quality improvement, bushfire risk reduction, erosion control and stormwater management
- 2. Enabling iconic sporting moments** – the cultural and social value derived from nationally significant sporting events and traditions that are intrinsically linked to natural turf venues
- 3. Sporting utility** – the value associated with participation in organised and informal sport conducted on natural turf, including health, wellbeing and community engagement benefits
- 4. Community wellbeing** – the everyday social and health benefits Australians derive from access to natural turf in parks, gardens, school grounds, streetscapes and other public and residential spaces
- 5. Property value uplift** – the contribution of lawns and green space to residential amenity, reflected in capitalised property values and neighbourhood quality
- 6. Avoided costs** – the long-term economic savings associated with choosing natural turf over alternative surfaces, including lower lifecycle costs and superior environmental performance.

Together, these elements provide a comprehensive and structured framework for assessing the broader Economic, Environmental and Social Value of natural turf in Australia.

Note: Sporting utility and community wellbeing are estimated using distinct participation datasets and valuation frameworks to minimise overlap.



4.2 Environmental Impact

Natural turf delivers a suite of environmental benefits that support urban liveability, climate resilience and public safety. Unlike synthetic or inert surfaces, turf is a living system that cools urban environments, stores carbon, improves air quality and stabilises soils. These benefits are particularly relevant in Australian cities, where climate risks such as heatwaves, bushfire and stormwater impacts are intensifying.

The environmental impact of natural turf is assessed across six interrelated elements, each reflecting a distinct environmental benefit or risk-mitigation function delivered by turf in urban and peri-urban environments:

- 1. Urban heat mitigation** – reducing surface and near-surface temperatures through evapotranspiration and biological cooling, thereby moderating the urban heat island effect and improving thermal comfort and public safety during extreme heat events
- 2. Microplastics and end-of-life impacts** – avoiding the generation of microplastic pollution and long-term landfill waste associated with synthetic turf systems, and reducing associated environmental and human health risks
- 3. Improving carbon sequestration** – storing carbon in turf biomass and, predominantly, in soils over long timeframes, contributing to climate-mitigation objectives in urban environments
- 4. Improving air quality** – capturing particulate matter, absorbing gaseous pollutants and suppressing dust resuspension, particularly in areas of high human activity
- 5. Bushfire risk reduction** – functioning as low-flammability, managed groundcover that limits ignition, fire spread and radiant heat exposure, consistent with Australian bushfire planning and building standards
- 6. Erosion control** – stabilising soils, reducing runoff velocity and filtering sediments and nutrients, thereby protecting waterways and reducing downstream treatment and remediation costs
- 7. Stormwater management** - enhancing infiltration, reducing surface runoff and moderating peak flow volumes during rainfall events, thereby lowering flood risk, supporting groundwater recharge and improving urban water-quality outcomes.

Together, these elements describe the contribution of natural turf to environmental resilience, public safety and risk management in Australian cities and communities. While each element can be considered individually, their combined effect reflects the role of natural turf as integrated green infrastructure delivering multiple environmental services concurrently.

The key environmental contributions of natural turf are outlined below with supporting technical evidence and references provided in Appendix B.



4.2.1 Urban Heat Mitigation

Natural turf can be approximately **10–30°C cooler** than synthetic turf under peak summer conditions.^{16 18}

Urban heat is one of the most significant and rapidly intensifying climate risks facing Australian cities. Built environments dominated by hard and synthetic surfaces absorb, store and re-radiate heat, driving the urban heat island effect and increasing exposure to extreme temperatures during heatwaves. These impacts are most acute in open spaces, sporting facilities, school grounds and residential areas where people are directly exposed to ground-level heat.

Natural turf mitigates urban heat through biological cooling processes that are not available in synthetic or inert surfaces. Living grass cools the surrounding environment through evapotranspiration, whereby heat energy is dissipated as water is released from plant surfaces rather than being stored in the ground. This process actively moderates surface temperatures throughout the day and reduces heat retention into the evening.

Australian and international field studies consistently show that natural turf remains substantially cooler than synthetic turf under comparable conditions. Measurements taken during summer heat events indicate that synthetic turf and rubberised surfaces frequently exceed 70–85°C in full sun.¹⁶ By contrast, natural turf typically remains much closer to ambient air temperature, even during extreme heat. Under some conditions, temperature differentials between natural and synthetic surfaces exceed 20–30°C¹⁶, with the commonly cited 10–11°C difference¹⁸ representing a conservative, representative estimate.

These surface temperature differences translate into meaningful improvements in human thermal comfort. Research shows that reducing ground surface temperatures by around 10°C can lower near-surface air temperatures by approximately 2–4°C, particularly within the first two metres above ground where people live, play and exercise. This reduces radiant heat load on the body, extends the safe use of outdoor spaces during hot weather, and supports broader heatwave adaptation objectives for cities.

Natural turf also delivers a direct public safety benefit, particularly for children. Contact burns can occur within seconds on surfaces above approximately 70°C. Synthetic turf and rubber play surfaces regularly exceed this threshold during Australian summers. Natural turf does not. As a result, turf materially reduces the risk of heat-related burn injuries in playgrounds, school grounds and sporting facilities.

While natural turf does not replace the shading function of trees, it plays a complementary role by cooling the ground plane, reducing heat storage and limiting night-time heat re-radiation. In combination, trees and turf form an effective, low-energy urban cooling system that requires no mechanical input and delivers benefits continuously over time.

Further technical detail and source material are provided in Appendix B.1.1



4.2.2 Microplastics and End-of-Life Impacts

Synthetic turf systems shed microplastic fibres that have been detected in surrounding waterways at concentrations exceeding **100,000 fibres per square kilometre²⁶** near urban sporting facilities.

Natural turf and synthetic turf differ fundamentally in their environmental performance because one is a living biological system and the other is a plastic-based surface. A key point of distinction is the generation of microplastics and the management of materials at end of life.

Synthetic turf is manufactured from petroleum-derived polymers, including plastic fibres, backing materials and, in many systems, rubber or plastic infill. Over time, these components degrade through mechanical wear, ultraviolet exposure and weathering, releasing microplastic particles into surrounding environments.

Peer-reviewed environmental studies have identified synthetic turf as a measurable source of microplastic pollution in soils, stormwater systems and nearby waterways. Monitoring of urban rivers and coastal waters has recorded microplastic fibre concentrations exceeding 100,000 fibres per square kilometre in areas associated with artificial turf runoff.²⁶ Once released, these particles are persistent, mobile and effectively irrecoverable.²⁶

Natural turf does not generate microplastics. As a living system composed of plant biomass and soil, it integrates into natural biological and nutrient cycles rather than contributing to long-lived plastic pollution.

Microplastics are now widely detected in air, water and food systems. While research into human health impacts is ongoing, emerging evidence links microplastic exposure to inflammatory and cellular stress responses. Children are considered a higher-risk group due to closer contact with ground surfaces and greater exposure through play and sport.

From an ecological perspective, microplastics can interfere with soil organisms, aquatic life and nutrient cycling, compounding environmental stress in already modified urban systems.

Synthetic turf has a finite operational life, typically around 10–12 years, after which full surface replacement is required.¹⁰ Due to the composite nature of synthetic turf systems — combining plastics, rubber, adhesives and backing materials — recycling options remain limited. As a result, most removed synthetic turf is disposed of to landfill or incinerated.

In contrast, natural turf does not create a persistent waste stream. Turf renovation materials are biodegradable and return organic matter to soils, avoiding long-term disposal impacts.

The distinction between natural and synthetic turf is material for infrastructure, environmental and waste-management policy. Natural turf avoids microplastic emissions entirely and does not contribute to long-term landfill accumulation. These characteristics are increasingly relevant as governments seek to reduce plastic pollution, manage waste volumes and improve the environmental performance of public assets.

Further technical detail and source material are provided in Appendix B.1.2



4.2.3 Improving Carbon Sequestration

Managed turf can sequester approximately **1.7–4.7 tonnes of CO₂-equivalent per hectare per year.**²⁷

Natural turf contributes to climate mitigation by functioning as a living carbon sink, storing carbon in both above-ground biomass and, more importantly, in soils. While turf is not a high-density carbon sink like forests, its contribution is material at scale and particularly relevant in urban environments where turf replaces biologically inert or disturbed surfaces. While maintenance activities generate emissions, studies indicate that net soil carbon accumulation remains positive under typical management regimes.

Peer-reviewed studies indicate that lawns and turf typically sequester between approximately 46 and 127 grams of carbon per square metre per year, depending on climate, soil type, grass species and management. Expressed at scale, this equates to around 1.7–4.7 tonnes of CO₂-equivalent per hectare per year. Importantly, the majority of this carbon is stored below ground as soil organic carbon, which is relatively stable and can persist for decades.²⁷

The carbon role of turf matters in cities for three reasons. First, scale: lawns and turf represent one of the largest forms of managed vegetation in urban Australia, covering residential yards, sporting fields, parks, road verges and institutional land. Second, longevity: research shows that soil carbon accumulation in turf systems can continue for 30–50 years following establishment, particularly where soils were previously disturbed or low in organic matter. Third, counterfactual land use: in many settings, turf replaces bare soil, compacted fill or impervious surfaces that store little or no carbon.

Management practices influence sequestration outcomes, but optimal performance does not require specialised intervention. Returning clippings, maintaining healthy growth and avoiding repeated soil disturbance are sufficient to sustain long-term soil carbon gains under standard maintenance regimes.

Synthetic turf does not sequester carbon. Instead, it is manufactured from fossil-fuel-derived polymers and generates greenhouse gas emissions during raw material extraction, manufacturing, transport and disposal. Lifecycle assessments consistently show that synthetic turf systems have a net positive emissions profile, particularly when infill replacement and end-of-life disposal are considered.

From a climate perspective, the distinction is clear: natural turf provides an ongoing, biogenic carbon benefit that accumulates over time, while synthetic turf represents a net emissions source with no sequestration function.

Supporting evidence and methodological notes are provided in Appendix B.1.3





4.2.4 Improving Air Quality

Natural turf can remove approximately **5–20 grams of particulate matter per square metre per year** in urban environments.³⁰

Natural turf contributes to improved local air quality by acting as a biologically active surface that captures particulates, absorbs gaseous pollutants and suppresses dust. These functions are most relevant in areas where people live, exercise and congregate, including parks, sporting fields, school grounds and residential neighbourhoods.

Turf improves air quality through several mechanisms. Fine particulate matter settles on leaf surfaces rather than remaining airborne, while gases such as ozone and nitrogen dioxide are absorbed through plant stomata. Turf also stabilises soils, reducing wind-blown dust and the resuspension of particulates caused by foot traffic, sport and vehicle movement.

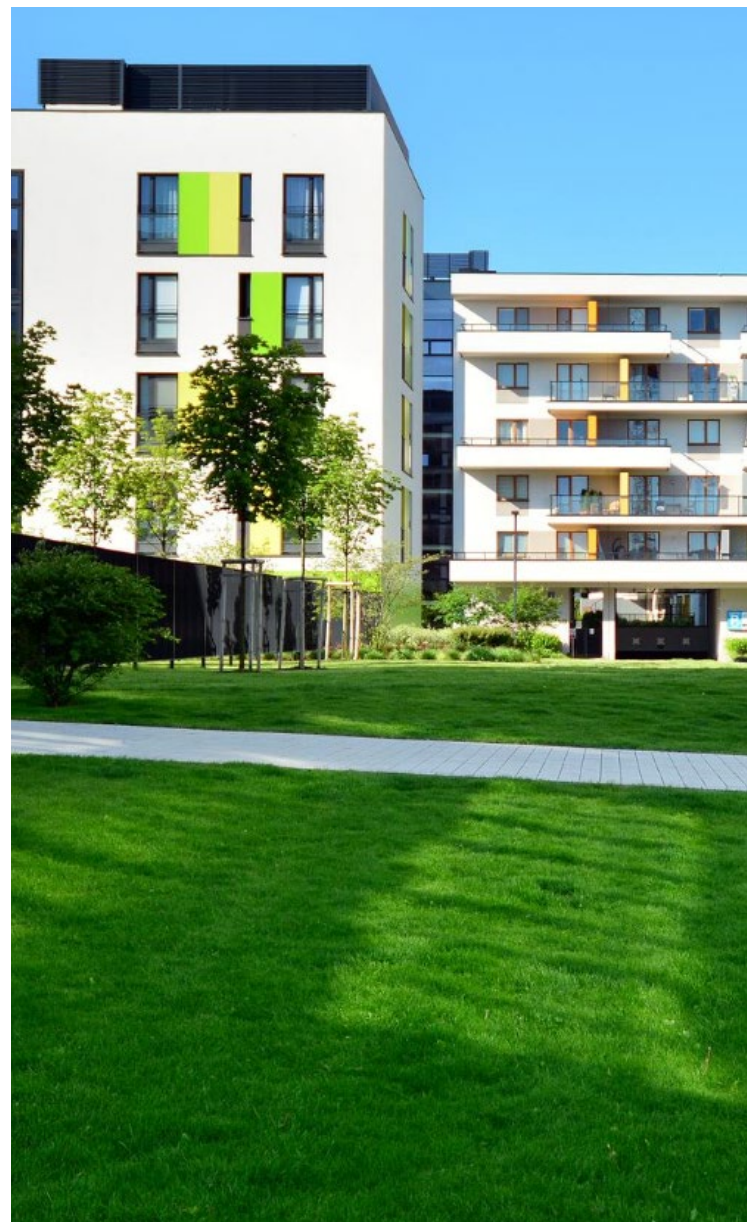
Studies of urban vegetation systems indicate that turfgrass can remove approximately 5–20 grams of particulate matter per square metre per year under typical urban conditions, with higher removal rates observed near traffic corridors and heavily used open spaces.³⁰ At scale, this equates to thousands of kilograms of particulates removed annually across parks, sports fields and roadside turf areas.

While trees provide higher pollutant removal per unit area due to greater leaf area, turf delivers continuous ground-level coverage, particularly in locations where canopy cover is limited or impractical. Turf is also highly effective at suppressing dust, reducing emissions by approximately 50–90 per cent compared with bare or compacted soil. This is particularly important in construction zones, road verges and peri-urban environments.

Air quality and urban heat are closely linked. Higher temperatures accelerate the formation of ground-level ozone, a pollutant associated with respiratory stress. By lowering surface and near-surface air temperatures, turf indirectly reduces conditions that promote secondary air pollution, delivering compounding public-health benefits.

Synthetic turf and hard surfaces provide none of these functions. They do not capture particulates, do not suppress dust and may exacerbate heat-driven air-quality impacts. In contrast, natural turf functions as a passive, low-maintenance air-quality buffer embedded within everyday urban environments.

Further metrics and references are provided in Appendix B.1.4





4.2.5 Bushfire Risk Reduction

Maintained turf is classified as **low-threat vegetation** under Australian Standard AS3959.¹⁹

Bushfire risk is one of the most significant and escalating environmental and safety challenges facing Australia. Natural turf contributes to bushfire mitigation by functioning as a low-flammability, managed groundcover that limits ignition, fire spread and intensity around assets and settlements.

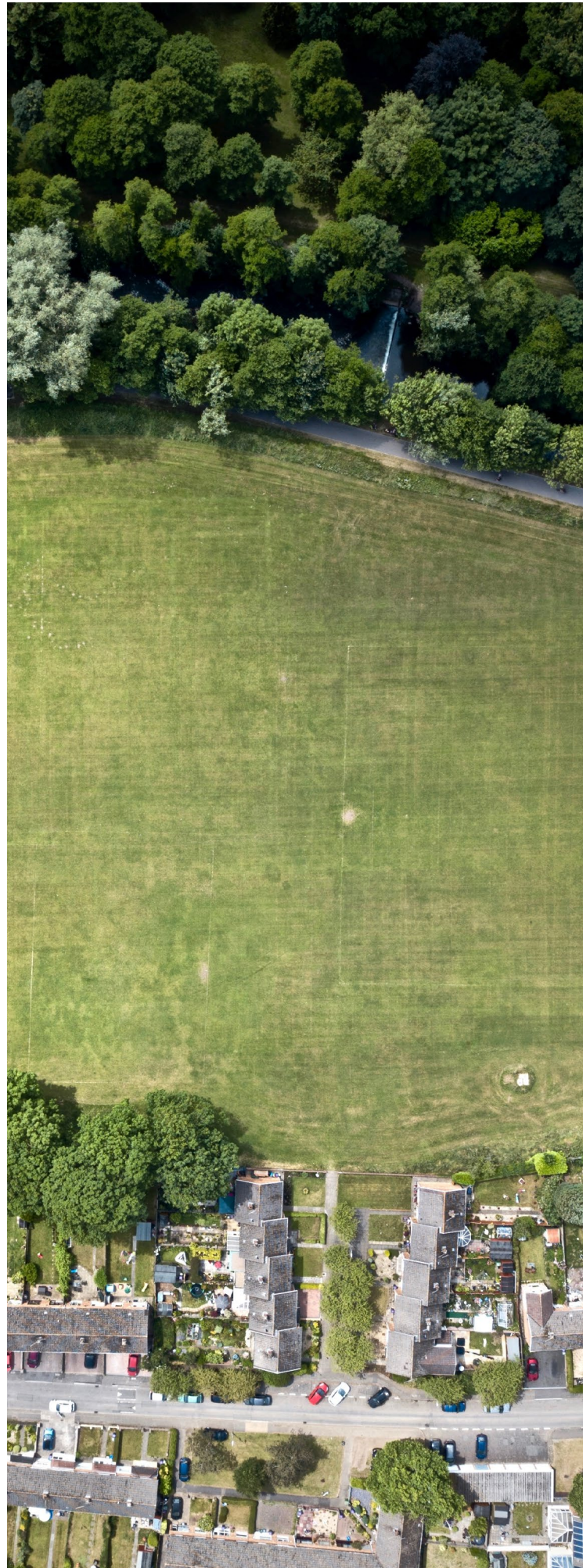
Australian experimental testing and field observations show that healthy, living turf is highly resistant to ignition, even under extreme heat, wind and ember exposure. Fire spread across turf is minimal unless vegetation is completely dry and unmanaged, and turf frequently self-extinguishes once ignition sources are removed.

These properties are formally recognised in Australian planning and building standards. Under AS3959 (Construction of buildings in bushfire-prone areas), managed lawns and turf are classified as low-threat vegetation.¹⁹ This classification underpins their use within Asset Protection Zones, defendable space requirements and landscaping treatments designed to reduce radiant heat and ember exposure.

Turf reduces fire risk by maintaining low fuel loads, breaking horizontal and vertical fuel continuity, and retaining moisture. In contrast, synthetic turf offers no fire-mitigation benefit and may melt, ignite or emit toxic smoke under high heat, introducing additional hazards in fire-prone environments.

As bushfire risk expands into peri-urban areas, natural turf provides a scalable, passive adaptation measure that integrates easily into residential developments, public open space and infrastructure corridors without reliance on mechanical systems or emergency intervention.

Supporting studies and standards references are provided in Appendix B.1.5





4.2.6 Erosion Control

Natural turf can reduce sediment loss by **50–90 per cent** compared with bare soil.²⁰

Soil erosion and sediment runoff are major environmental management challenges in urban and peri-urban Australia. Disturbed soils associated with construction, infrastructure corridors, sporting fields and public open space are significant sources of sediment and pollutants entering waterways. Natural turf provides a proven and cost-effective erosion-control solution.

Turf stabilises soil through its dense root mat and continuous surface cover. Roots bind soil particles, surface roughness slows overland flow, and infiltration is increased. Field trials show turf remains effective on slopes of up to approximately 33 per cent, making it suitable for embankments, road verges, drainage corridors and sporting fields.

Beyond erosion control, turf improves water quality by trapping sediments and associated nutrients before they enter drainage systems and waterways. These functions reduce downstream treatment costs and support compliance with water-quality objectives.

Compared with temporary controls such as silt fencing or geotextiles, turf provides ongoing protection with lower lifecycle costs. Synthetic turf and hard surfaces do not stabilise soils and often increase downstream erosion risk by accelerating runoff.

Further technical detail is provided in Appendix B.1.6





4.2.7 Stormwater Management

Well-maintained natural turf can infiltrate approximately **150–300 mm** of rainfall per hour under typical soil conditions, significantly reducing runoff compared with synthetic or impervious surfaces.²¹

Stormwater management is a critical and growing infrastructure challenge for Australian cities. Increasing urban density, widespread hard surfacing and more intense rainfall events are placing pressure on drainage systems and contributing to localised flooding, waterway degradation and downstream pollution. Ground-surface material plays a direct role in determining whether rainfall infiltrates into soils or becomes rapid surface runoff.

Natural turf functions as a permeable, biologically active surface that absorbs, filters and slows stormwater. Rainfall infiltrates through the turf canopy and soil profile, where it is temporarily stored, taken up by plant roots or gradually released into groundwater systems. The dense root matrix improves soil structure and porosity over time, increasing infiltration capacity and reducing compaction relative to bare or heavily trafficked soils.

Field measurements indicate that well-established turf systems can infiltrate approximately 150–300 mm of rainfall per hour under typical loam soil conditions, depending on maintenance and soil composition.²¹ In contrast, synthetic turf systems — particularly those installed over compacted aggregate bases and impermeable shock pads — often exhibit substantially lower effective infiltration once clogged by sediment and organic debris. Hard surfaces such as concrete and asphalt generate near-total runoff.

These differences materially affect peak flow volumes during storm events. By reducing immediate runoff, turf lowers pressure on municipal drainage networks, decreases erosion in downstream channels and reduces the transport of sediments, nutrients and pollutants into waterways. In catchment-scale modelling, increased vegetative ground cover is consistently associated with lower peak discharge rates and improved water-quality outcomes.

Natural turf also contributes to stormwater resilience over time. Living root systems continually regenerate soil structure, while organic matter accumulation improves water-holding capacity. Synthetic systems do not provide these regenerative benefits and may require engineered drainage infrastructure to manage runoff effectively.

From an infrastructure and urban-planning perspective, the distinction is significant. Natural turf operates as distributed green infrastructure embedded within parks, sports fields, residential landscapes and institutional land. It reduces reliance on hard-engineered drainage solutions and supports integrated water-sensitive urban design objectives.

Further technical detail and supporting references are provided in Appendix B.1.7



In Summary

Across heat mitigation, avoidance of microplastics and end-of-life impacts, carbon storage, air quality, bushfire risk and erosion control,

natural turf delivers a suite of embedded environmental benefits that are absent from synthetic alternatives.

While each benefit is modest in isolation, together they provide a durable, scalable contribution to climate resilience, public safety and environmental protection in Australian cities.



4.3 Enabling Iconic Sporting Moments

Major sporting events staged on natural turf are not only competitions; they are shared civic rituals and cultural touchstones that resonate across Australian society. Australia's hallowed turf venues — particularly the Melbourne Cricket Ground (MCG) — are often described in reverential terms by athletes, commentators and fans alike, reflecting the way the playing surface itself is woven into the narrative and identity of our sports.

These iconic moments draw large crowds and national audiences. At the **2025 AFL Grand Final**, held at the MCG, an attendance of **100,022 spectators** witnessed the premiership decider in person, and it was one of the most-watched programs in Australia, reaching an average television audience of about **4.08 million viewers** and a total reach of approximately **6.1 million across free-to-air and digital platforms**.²⁵

Cricket's enduring cultural significance was again evident at the 2025 Boxing Day Test, where the Melbourne Cricket Ground recorded a crowd of around 94,199 spectators on the opening day, marking a new single-day attendance record for the venue.²⁵

While these attendance and audience numbers do not directly translate to a monetary valuation of cultural value, they provide clear evidence that turf-based events generate widespread participation and attention. The language used by participants and supporters — referring to the “hallowed turf” of iconic grounds — reflects the deep emotional and cultural connection many Australians have with these surfaces, and the iconic memories that accompany them.

One of the most widely cited iconic moments occurred when Shane Warne achieved his 700th Test wicket on Boxing Day, December 26, 2006, at the Melbourne Cricket Ground (MCG) by bowling England's Andrew Strauss for 50. This milestone wicket occurred during the 4th Ashes Test, making him the first bowler to reach 700 Test wickets in history.

Unlike standard economic indicators, this cultural value cannot be fully captured by market data alone, but its importance is supported by broad public engagement and iconic event traditions that have persisted across generations.

Given the methodological challenges of monetising cultural value, this report treats the cultural value associated with hallowed turf as a qualitative component of Economic, Environmental and Social Value, supported by participation and audience evidence rather than a dollar figure.





4.4 Sporting Utility

The sporting utility of natural turf in 2026 is estimated at **\$20.2 billion per year**.¹⁰ This figure represents the aggregate social and wellbeing value Australians derive from participating in organised sport played on natural turf. It reflects enjoyment, physical activity, social connection and community engagement associated with regular participation, rather than spending, production or employment.

The estimate has been derived using benchmark participation and valuation data compiled through this project's nationally representative surveys, combined with population benchmarks. Sporting utility is conceptually distinct from economic contribution measures and is not intended to represent output, value added or employment.

To estimate the 2026 sporting utility value, a participation-based valuation framework was applied involving the following steps:

- estimating the number of Australians participating in organised sport on natural turf using survey-derived incidence rates applied to the national population
- estimating average annual participation frequency based on reported regularity of organised sport participation
- calculating total annual organised sport participation sessions conducted on natural turf
- applying a **conservative net willingness-to-pay value per participation session**, derived from survey responses over and above estimated out-of-pocket participation costs.

The resulting estimate sits comfortably within ranges suggested by independent evidence on the scale and frequency of organised sport participation in Australia. National participation statistics indicate that organised sport remains a core and recurring activity for millions of Australians, with many participants engaging weekly or more frequently across much of the year.

The magnitude of the estimate is driven primarily by:

- the large number of Australians participating in organised sport
- the regular, repeat nature of participation across the year
- the cumulative wellbeing benefits captured through per-session willingness-to-pay values.

Importantly, the estimate excludes:

- informal recreation on turf
- spectator enjoyment and cultural value associated with major sporting events
- downstream health-system savings.

As a result, the estimate should be interpreted as **conservative relative to the full social value associated with turf-based sport**.

Sensitivity analysis

Sensitivity analysis was undertaken on the two key drivers of sporting utility:

- participation volume (number of annual participation sessions)
- net willingness-to-pay per participation session.

Sensitivity testing indicates a plausible range of approximately **\$15–27 billion per year**, with the adopted estimate of **\$20.4 billion** representing a conservative-to-central, policy-relevant position within this range.

Even under lower-bound assumptions, sporting utility remains substantial, indicating that the estimate is robust to reasonable variation in participation rates or per-session valuation.

Note: Willingness-to-pay estimates were conservatively adjusted to account for known upward bias in stated-preference responses and benchmarked against participation-cost data and comparable non-market valuation studies.



4.5 Community Wellbeing

The community wellbeing value of natural turf in 2026 is estimated at **\$14.4 billion per year**.¹⁰ This figure represents the aggregate social and wellbeing value Australians derive from everyday access to, and use of, turf-based community spaces such as parks, school grounds, shared green areas and neighbourhood open space. It reflects mental wellbeing, informal physical activity, social connection and community interaction, rather than spending, production or employment.

The estimate has been derived using participation and valuation data collected through this project's nationally representative surveys, combined with population benchmarks. Community wellbeing is conceptually distinct from sporting utility and economic contribution measures and is not intended to represent output, value added or employment.

To estimate the 2026 community wellbeing value, a participation-based valuation framework was applied involving the following steps:

- estimating the number of Australians who regularly use turf-based community spaces using survey-derived incidence rates applied to the national population
- estimating the average frequency of informal and community use (such as walking, play, relaxation, socialising and community events)
- calculating total annual community-use sessions occurring on natural turf
- applying a **conservative net willingness-to-pay value per use**, reflecting the average wellbeing benefit associated with mental health, amenity and social connection, net of any direct costs.

The resulting estimate reflects the very high incidence and frequency of everyday interactions with turf-based spaces. Survey evidence indicates that community use of turf occurs far more frequently than organised sport for many Australians, often multiple times per week across much of the year.

The magnitude of the estimate is driven primarily by:

- the ubiquity of turf-based community spaces
- the regular, repeat nature of everyday use
- the cumulative wellbeing benefits associated with frequent low-intensity interactions with green space.

Importantly, the estimate excludes:

- avoided health-system costs associated with improved physical and mental health
- crime reduction and social cohesion benefits
- longer-term educational and developmental outcomes for children.

As a result, the estimate should be interpreted as **conservative relative to the full community value associated with access to turf-based environments**.

Sensitivity analysis

Sensitivity analysis was undertaken on the two key drivers of community wellbeing:

- frequency of community use; and
- net willingness-to-pay per use.

Sensitivity testing indicates a plausible range of approximately **\$10–19 billion per year**, with the adopted estimate of **\$14.4 billion** representing a conservative-to-central position within this range.

Even under lower-bound assumptions, community wellbeing remains substantial, reflecting the scale and regularity of everyday engagement with turf-based spaces across Australia.



4.6 Avoided Life-cycle Costs

The **avoided cost of replacing natural turf with synthetic playing fields** in 2026 is estimated at approximately **\$4.9 billion per year**¹⁰, expressed as an equivalent annual value. This figure represents long-term infrastructure and budget costs avoided by councils and facility owners through retaining natural turf rather than converting to synthetic surfaces.

Evidence from Australian lifecycle cost studies and local government experience indicates that synthetic fields impose materially higher long-term costs than well-designed and properly maintained natural turf fields.

These higher costs are driven primarily by:

- significantly higher installation costs
- the need for full surface replacement at regular intervals, typically every 10–12 years.

To ensure consistency with the other annualised values reported in Section 4, avoided costs are expressed as an equivalent annual value rather than a multi-decade total.

The estimate is derived by:

- conservatively estimating the number of unique community playing fields nationally
- applying a conservative per-field avoided lifecycle cost, expressed in present value terms; and
- converting this present value into an equivalent annual cost using a standard annuity approach and a conservative discount rate.

Using conservative assumptions:

- Australia is estimated to have approximately **16,100 unique community playing fields**, after allowing for shared use across sports¹⁰
- the avoided lifecycle cost of retaining natural turf rather than converting to synthetic is estimated at **\$3.0 million per field (present value)**¹⁰
- annualising this value over a 50-year planning horizon at a 10 per cent discount rate yields an avoided cost of approximately **\$4.9 billion per year**.¹⁰

This estimate represents an annual fiscal benefit, not economic output. It is conceptually distinct from economic contribution and social value measures and should be interpreted as avoided public and organisational expenditure.

Importantly, the estimate excludes:

- end-of-life disposal and waste management costs
- environmental remediation costs
- broader externalities associated with heat, pollution and health impacts.

As a result, the adopted value should be interpreted as a lower-bound estimate of the long-term budgetary advantage of natural turf.

Sensitivity analysis

Sensitivity testing indicates a plausible range of approximately **\$4.2–5.9 billion per year**, with the adopted estimate of **\$4.9 billion** representing a conservative-to-central position within this range. Even under restrictive assumptions, avoided costs remain material, reflecting the scale of community sports infrastructure nationally and the magnitude of lifecycle cost differentials between natural and synthetic surfaces.

Note: All inputs are deliberately conservative and aligned with published Australian local government benchmarks, with sensitivity testing demonstrating robustness across plausible parameter ranges.



4.7 Residential Amenity Value

This section estimates the implied residential amenity value associated with natural turf, using observed household expenditure as a proxy.

The residential amenity value of lawns in 2026 is estimated at approximately **\$2.8 billion per year**.¹⁰ This estimate reflects the **value households derive from having lawns** as part of their residential environment and is inferred from observed spending behaviour, rather than assumed impacts on property sale prices.

Directly attributing a specific percentage uplift to residential property values is difficult, as lawn presence is bundled with other dwelling and neighbourhood attributes such as location, housing quality, trees and streetscape appeal. To avoid speculative assumptions, this report adopts a revealed-preference approach, based on what households actually spend each year to establish and maintain lawns.

The estimate has been derived using annual lawn-related expenditure identified in the indirect contribution analysis (Section 3.4). That analysis estimates total annual expenditure on lawn-related products and services in Australia of **\$4.74 billion** in 2026, comprising lawn care products and lawn maintenance services.¹⁰

To isolate the residential component of this expenditure, a **60 per cent residential share** was applied. This reflects the widespread prevalence of lawns in residential settings, survey evidence indicating that households account for a substantial share of lawn maintenance activity, and the fact that residential lawns are typically maintained continuously over long periods.

Applying this approach yields an estimated **annual residential lawn amenity value of \$2.8 billion** in 2026.

This estimate represents an annual flow of amenity value, consistent with the other annual values reported in Section 4. It should be interpreted as a conservative, lower-bound proxy for the residential amenity value of lawns, rather than a direct measure of property price uplift.

The estimate excludes broader neighbourhood and streetscape spillovers, non-residential property impacts, and other indirect effects, reinforcing its conservative nature.

Sensitivity analysis

Sensitivity analysis indicates that the estimate is not highly sensitive to reasonable variation in the residential share assumption. Under a lower residential share of 50 per cent, the implied annual amenity value remains above **\$2.2 billion per year**, while higher residential attribution would increase the estimate proportionally.

Accordingly, the adopted estimate of **\$2.8 billion per year** should be interpreted as a conservative, policy-relevant measure of the residential amenity value delivered by lawns in Australia.



4.8



Why this Economic, Environmental and Social Value matters

Section 4 demonstrates that

| the greatest value delivered by natural turf arises outside conventional markets.

Its economic, environmental and social value is generated through widespread everyday use and long-term service provision, rather than through commercial transactions captured in GDP.

Natural turf provides a bundle of environmental services — including heat mitigation, avoided use of microplastics, erosion control, air-quality improvement and bushfire risk reduction — that reduce exposure to climate and safety risks and help limit future public costs. These benefits accrue continuously over time and at scale, making turf a low-cost, passive contributor to urban resilience.

Equally important are the wellbeing benefits associated with sport participation, informal recreation and community use of turf-based spaces. These benefits are driven by frequency and accessibility, not by isolated events, and align closely with public objectives in health, social connection and community cohesion.

The analysis also shows that households reveal a sustained preference for lawns through ongoing expenditure, indicating that turf contributes materially to residential amenity even where this value is not directly observable in property prices.

Taken together, these findings support

| treating natural turf as a long-lived public asset.

Explicitly recognising its broader value helps ensure that planning and investment decisions reflect whole-of-life outcomes, rather than short-term or partial cost considerations.

Acronyms

Acronym Definition	
ABS	Australian Bureau of Statistics
AFL	Australian Football League
ANZSIC	Australian and New Zealand Standard Industrial Classification
ARR	Australian Rainfall and Runoff
AS3959	Australian Standard for Construction of Buildings in Bushfire-Prone Areas
ATO	Australian Taxation Office
CIE	Centre for International Economics
CO₂	Carbon dioxide
CO₂-e	Carbon dioxide equivalent
FTE	Full-time equivalent
GDP	Gross Domestic Product
GVP	Gross Value of Production
NRCS	Natural Resources Conservation Service (United States Department of Agriculture)
PM	Particulate matter
RBA	Reserve Bank of Australia
SIAP	Strategic Industry Advisory Panel
WSUD	Water Sensitive Urban Design

Glossary

Term	Definition
Avoided costs	Costs that are not incurred as a result of choosing one option over another. In this report, avoided costs refer primarily to long-term capital, replacement and disposal costs avoided by retaining natural turf instead of synthetic surfaces.
Carbon sequestration	The process by which carbon dioxide is absorbed from the atmosphere and stored in plant biomass and soils.
Community wellbeing	The social and health-related benefits derived from access to and use of shared spaces, including mental health, social connection, informal recreation and quality of life.
Direct contribution	The value of production and employment directly generated by turf growing activities at the farm gate.
Economic contribution	A descriptive measure of the scale of economic activity associated with an industry, including production, value added and employment.
Evapotranspiration	The combined process of evaporation from soil and plant surfaces and transpiration from vegetation, which contributes to surface cooling.
Full-time equivalent (FTE)	A measure of employment that standardises hours worked into full-time job equivalents.
Gross Domestic Product (GDP)	The total value of goods and services produced within an economy over a specified period.
Gross Value of Production (GVP)	The total value of goods produced, measured at basic prices, before deducting intermediate inputs.
Impervious surface	A surface that does not allow water infiltration, such as concrete, asphalt or compacted synthetic systems, resulting in high levels of surface runoff.
Indirect contribution	Economic activity generated beyond direct production, including induced household spending and adjacent product and service markets enabled by an industry.
Induced effects	Flow-on economic activity generated by household spending supported by income earned in an industry.

Glossary cont.

Term	Definition
Infiltration	The process by which water enters the soil surface and moves downward through the soil profile, reducing runoff and supporting groundwater recharge.
Microplastics	Small plastic particles typically less than 5 millimetres in size, generated through the breakdown of larger plastic materials such as synthetic turf fibres and infill. Microplastics are persistent in the environment and can accumulate in soils, waterways and biological systems.
Particulate matter (PM)	A mixture of solid particles and liquid droplets suspended in the air, including dust, dirt and pollutants. Fine particulate matter (PM _{2.5} and PM ₁₀) is associated with respiratory and cardiovascular health impacts.
Peak flow	The maximum rate of water flow during a rainfall or storm event, which is a key determinant of flood risk and drainage system performance.
Permeable surface	A surface that allows water to pass through it into the underlying soil, such as natural turf or vegetated areas.
Soil organic carbon	Carbon stored within soil organic matter, derived from plant and microbial material. It is a key component of long-term carbon sequestration.
Sporting utility	The social and wellbeing value derived from participation in organised sport, including enjoyment, physical activity and social connection.
Surface runoff	Water that flows over the ground surface when rainfall exceeds the infiltration capacity of the soil, often transporting sediments and pollutants into waterways.
Urban green infrastructure	A network of natural and semi-natural systems, including vegetation and soils, that provide environmental services such as cooling, water management and air-quality improvement.
Urban heat island effect	The tendency for built-up areas to experience higher temperatures than surrounding rural areas due to heat absorption and retention by hard surfaces.
Value added	The net contribution of an industry to the economy, measured as payments to labour, capital and land after deducting intermediate inputs.

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Evidence has been triangulated across peer-reviewed literature, government sources and industry-supported studies to ensure balance and robustness.

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Appendix A: Economic Contribution

This appendix sets out the data sources and methods used to estimate the direct, value-added and indirect economic contribution of natural turf in Australia in 2026. A consistent interpolation-based approach is applied across all components to ensure transparency and comparability, while conservative assumptions are used throughout to avoid overstatement.

A.1 Direct Contribution

Estimates of direct turf production value and employment draw on:

- Centre for International Economics (CIE), The Contribution of the Australian Horticulture Industry (July 2023), providing benchmark estimates of turf industry gross value of production (GVP) and direct employment for 2021, with forward projections to 2030.
- Hort Innovation / Freshlogic, Australian Horticulture Statistics Handbook 2023/24, providing observed production values for turf from 2022 to 2024.
- IBISWorld, Turf Growing in Australia, used as a qualitative cross-check on medium-term industry growth and employment trends.
- CIE benchmarks are treated as the primary reference source due to their consistency with national economic accounting frameworks.

Interpolation of production value

CIE reports turf production values of:

- \$308.0 million in 2021, and
- \$352.7 million in 2030.

The nine-year interval implies a total nominal increase of \$44.7 million, equivalent to an average annual increase of:

$$(352.7-308.0)/9 = 4.97 \text{ million per annum}$$

Applying five years of this annual increment to the 2021 base yields the 2026 estimate:

$$308.0+(5 \times 4.97) = 332.85 \text{ million}$$

Rounded, the estimated for direct production value in 2026 is \$332.8 million.

Validating reference: The Australian Horticulture Statistics Handbook 2023/24 reports turf production of \$301.4 million for the year ending June 2024. An estimate of \$332.8 million in 2026 implies average annual growth of approximately 5% over two years, consistent with the recent positive production trend reported in the Handbook (+2% in 2024). This supports the reasonableness of the 2026 estimate.

Interpolation of direct employment (FTEs)

CIE reports direct employment in turf growing of:

- 1,333 FTEs in 2021, and
- 1,354 FTEs in 2030.

This represents an increase of 21 FTEs over nine years, or:

$$(1,354-1,333)/9=2.33 \text{ FTEs per annum}$$

Applying five years of growth to the 2021 base yields:

$$1,333+(5 \times 2.33) = 1,344.65$$

Rounded, the estimated direct employment in 2026 is 1,345 FTEs.

Sensitivity and validation

Observed industry data show turf production values of:

- \$281.9 million (2022)
- \$296.1 million (2023)
- \$301.4 million (2024)

These imply nominal growth of approximately 3–4 per cent per annum post-2022. Projecting forward suggests a plausible 2026 range of approximately \$320–335 million, consistent with the interpolated estimate.

Employment data indicate low volatility over time, consistent with a land-intensive production model. Independent sources suggest a plausible 2026 range of 1,340–1,350 FTEs, within which the adopted estimate sits centrally.

A.2 Value Added

Estimates of value added draw on:

- CIE, The Contribution of the Australian Horticulture Industry (July 2023; MT21010), providing benchmark value-added estimates for 2021 and projections to 2030.
- ABS National Accounts, as reconciled within the CIE framework.
- Hort Innovation / Freshlogic, supporting alignment with observed horticultural trends.
- IBISWorld, used for qualitative validation.

Definition

Value added represents the net economic contribution of turf production, defined as income to labour, capital and land after deducting intermediate inputs. Consistent with ABS standards, value added is the component that contributes directly to Gross Domestic Product (GDP).

Interpolation of 2026 value added

CIE reports:

- \$216.5 million value added in 2021, and
- \$247.9 million projected for 2030.

This implies a total increase of \$31.4 million over nine years, or:

$$31.4/9=3.49 \text{ million per annum}$$

Applying five years of growth yields:

$$216.5+(5 \times 3.49) = 233.95 \text{ million}$$

Rounded, the estimated value-added contribution in 2026 is \$233.9 million.

Sensitivity analysis suggests a plausible range of \$230–240 million, with the adopted estimate representing a conservative-to-central position.

A.3 Indirect Contribution

Indirect contribution estimates draw on:

- CIE (MT21010), for induced value-added and employment relationships.
- ABS Counts of Australian Businesses, for Gardening Services (ANZSIC 7313).
- ABS ANZSIC classifications, to define scope boundaries.

- Next Move Strategy Consulting (NMSC), for lawn care product market benchmarks.
- Reserve Bank of Australia (RBA) historical exchange-rate data.
- IBISWorld, for qualitative validation of industry structure and scale.

Indirect contribution comprises:

- **Adjacent lawn economy markets** enabled by the existence of turf, including products and services used to maintain lawns; and
- **Induced contribution** arising from household spending supported by turf industry incomes

A.3.1 Lawn care products

Estimates of the lawn care products component of indirect contribution draw on:

- Next Move Strategy Consulting (NMSC), Australia Lawn Care Products Market, providing benchmark estimates of the Australian lawn care products market size for 2023 and forward projections to 2030.
- Reserve Bank of Australia (RBA), Historical Exchange Rate Statistics, used to derive a conservative long-run average AUD/USD exchange rate.
- Australian Bureau of Statistics (ABS), National Accounts and industry employment statistics, used to inform employment-to-turnover relationships for manufacturing, wholesale and retail trade.
- IBISWorld, manufacturing and retail industry reports, used as qualitative cross-checks on employment intensity across the lawn care supply chain.

NMSC is treated as the primary reference source, as it provides a clearly defined, lawn-specific market scope and transparent forecast horizon.

Interpolation of lawn care products market value

NMSC reports the Australian lawn care products market at:

- USD 1.43 billion in 2023, and
- USD 2.43 billion projected by 2030.

The seven-year interval implies a total nominal increase of USD 1.00 billion, equivalent to an average annual increase of:

$$(2.43 - 1.43) / 7 = \text{USD } 0.143 \text{ billion per annum}$$

Applying three years of this annual increment to the 2023 base yields the 2026 estimate:

1.43 + (3 × 0.143) = USD 1.86 billion

Currency conversion and attribution

The interpolated 2026 estimate is converted to Australian dollars using a **long-run average exchange rate of 1.34 AUD/USD**, based on RBA historical annual averages. This approach avoids short-term exchange-rate volatility and is consistent with conservative public-sector appraisal practice.

USD 1.86 × 1.34 = AUD 2.49 billion

As the market definition is explicitly lawn-care specific (including mowers, trimmers, irrigation equipment, fertilisers and related inputs), **100 per cent attribution** to lawn and turf activity is applied.

Rounded, the estimated lawn care products market value in 2026 is **\$2.49 billion**.

Estimation of employment (FTEs)

Employment associated with lawn care products reflects jobs supported across the manufacturing, wholesale and retail supply chain supplying lawn and turf maintenance activity.

Total lawn care product turnover is allocated across supply-chain segments based on industry structure and ABS/IBISWorld guidance:

- Manufacturing: 25 per cent of turnover
- Wholesale: 25 per cent of turnover
- Retail: 50 per cent of turnover

ABS-consistent employment-to-turnover ratios are applied to each segment:

- Manufacturing: approximately 1.35 FTEs per \$1 million of turnover
- Wholesale: approximately 0.74 FTEs per \$1 million of turnover
- Retail: approximately 2.25 FTEs per \$1 million of turnover

Applying these ratios to the allocated turnover yields an estimated approximate **4,100 full-time equivalent (FTE) jobs** supported by the lawn care products market in 2026.

Sensitivity and validation

The market size estimate is anchored to published forecasts rather than discretionary assumptions, limiting sensitivity to parameter choice. Employment estimates were validated against:

- ABS employment densities in manufacturing, wholesale and retail trade
- IBISWorld benchmarks for consumer equipment and garden retail industries
- The observed labour intensity of the Australian home and garden supply sector.

Reasonable variation in turnover allocation or employment ratios does not materially alter the order of magnitude of the estimate, indicating that the adopted figures represent conservative, lower-bound values.

A.3.2 Lawn maintenance services

Estimates of the lawn maintenance services component of indirect contribution draw on:

- Australian Bureau of Statistics (ABS), Counts of Australian Businesses, including Entries and Exits, providing business counts by ANZSIC industry class and annual turnover size band.
- Australian Bureau of Statistics (ABS), Australian and New Zealand Standard Industrial Classification (ANZSIC 2006), confirming the scope of Gardening Services (ANZSIC 7313), which explicitly includes lawn mowing and lawn maintenance and excludes landscape construction.
- IBISWorld, Gardening Services in Australia, used as a qualitative cross-check on industry structure, service mix and labour intensity.
- Greenfields Consulting, stakeholder interviews and industry consultation undertaken as part of Project TU24004, used to inform attribution assumptions.

ABS ANZSIC 7313 is treated as the primary reference source, as it provides the closest statistical alignment with lawn and turf maintenance activity while avoiding overlap with landscape construction or capital works.

Estimation of total Gardening Services turnover

ABS Counts of Australian Businesses report **17,566 Gardening Services businesses nationally**, classified by annual turnover size band.

To estimate total industry turnover, conservative turnover-point assumptions were applied to each turnover band. In each case, lower-quartile turnover values were used rather than midpoints to bias estimates downward and avoid overstating industry scale. Applying these conservative turnover points across all bands yields an estimated total Gardening Services industry turnover of approximately:

\$5.63 billion per year (2026 equivalent)

This estimate is consistent with the fragmented, small-business-dominated structure of the sector and aligns with independent industry benchmarks.

Attribution to lawn and turf maintenance

While Gardening Services includes a range of activities (e.g. pruning, planting, general garden care), both ABS classification material and industry evidence indicate that lawn mowing, and lawn maintenance are the most common and recurrent services within the industry.

On this basis, a **40 per cent attribution** of total Gardening Services turnover is applied to lawn and turf maintenance activity. This reflects:

- the routine and repeat nature of lawn mowing relative to other gardening tasks
- the prevalence of lawns across residential, commercial and public settings
- consistent industry descriptions of lawn mowing as a core service offering.

Applying this attribution:

$\$5.63 \text{ billion} \times 0.40 = \text{\$2.25 billion}$

Accordingly, the estimated contribution of lawn and turf maintenance services in 2026 is **approximately \$2.25 billion**.

Estimation of employment (FTEs)

Employment associated with lawn maintenance services reflects the highly labour-intensive nature of routine mowing and turf care.

ABS and IBISWorld data indicate that Gardening Services exhibits high employment intensity, driven by:

- low capital requirements
- reliance on manual labour
- limited scope for mechanisation or automation

Based on observed employment densities in ANZSIC 7313 and comparable personal and property services industries, a conservative employment intensity of approximately:

4.3–4.5 FTEs per \$1 million of turnover

is applied to the estimated lawn maintenance turnover.

Applying this relationship:

$\$2.25 \text{ billion} \times \text{approximately } 4.35 \text{ FTEs per } \1m
 $\approx \text{9,800 FTEs}$

Rounded, lawn maintenance services are estimated to support **approximately 9,800 full-time equivalent jobs** in 2026.

Sensitivity and validation

Scenario testing indicates that alternative attribution assumptions would materially increase the estimated contribution:

- 30% attribution: approximately \$1.7 billion
- 40% attribution (adopted): approximately \$2.25 billion
- 50% attribution: approximately \$2.8 billion

Employment scales proportionally under these scenarios.

The resulting turnover and employment estimates are consistent with ABS industry structure, IBISWorld labour intensity benchmarks and qualitative evidence gathered through stakeholder consultation.

A.3.3. Induced contribution

CIE benchmarks indicate:

- \$59.77 million induced value added in 2021, and
- \$68.0 million projected for 2030.

Linear interpolation yields an estimated \$64.3 million in induced value added in 2026.

CIE employment benchmarks indicate:

- 284 FTEs in 2021, and
- 318 FTEs in 2030.

Interpolation yields approximately 303 induced FTEs in 2026.

Induced contribution is interpreted cautiously to avoid double counting.

Appendix B: Economic, Environmental and Social Value

This appendix summarises the data sources, valuation logic and calculation steps used to estimate the Economic, Environmental and Social Value of natural turf reported in Section 4. Values are expressed as annual flows, unless otherwise stated, and are conceptually distinct from economic contribution measures (GDP, value added and employment).

B.1 Environmental Impact

Methodological note

The environmental metrics presented in this appendix are derived from a combination of peer-reviewed literature, Australian standards, government guidance and applied field studies. Values are reported as indicative ranges to reflect variability across climate, soil conditions, management practices and site characteristics.

These metrics are used to illustrate relative environmental performance and policy relevance rather than to derive monetised values.

B.1.1 Urban Heat Mitigation

Key metric cited in Section 4.2.1

Natural turf can be approximately **10–30°C cooler** than synthetic turf under peak summer conditions.

Primary reference sources

- Siebentritt, M. (2020)
Conveying the benefits of living turf – Mitigation of the urban heat island effect
Turf Australia / Hort Innovation
- Reports surface temperature differences of approximately 11°C between natural and synthetic turf under summer conditions.

- Pfautsch, S. et al. (2022)
Cooling and contact injury risks of playground and surface materials under extreme heat.
Western Sydney University
- Field measurements in Sydney show synthetic and rubberised surfaces exceeding 70–85°C, while natural turf tracked close to ambient air temperature.

Supporting evidence

- Urban microclimate literature linking surface temperature reductions of approximately 10°C to 2–4°C reductions in near-surface air temperature.
- Public-health research identifying burn injury thresholds above approximately 70°C, particularly relevant for children.

B.1.2 Microplastics and End-of-Life Impacts (Natural vs Synthetic Turf)

Key metric cited in Section 4.2.2

Microplastic fibre concentrations exceeding **100,000–200,000 fibres per square kilometre** have been detected near urban synthetic turf installations.

Primary reference sources

- FIFA (2021)
Artificial Turf Recycling and Environmental Impact Report
- Identifies synthetic turf systems as sources of plastic fibre and infill loss and highlights recycling limitations.
- Browne et al. (2011); Kole et al. (2017)
Peer-reviewed studies on microplastic pathways, persistence and environmental accumulation
- European Chemicals Agency (ECHA) (2023)
Microplastics in sports and playground surfaces – regulatory briefing papers.

Supporting evidence

- Synthetic turf operational lifespans of approximately 10–12 years.
- Limited recycling pathways for composite turf systems; most end-of-life material disposed to landfill or incineration.

B.1.3 Carbon Sequestration

Key metric cited in Section 4.2.3

Managed turf can sequester approximately **1.7–4.7 tonnes of CO₂-equivalent per hectare per year**.

Primary reference sources

- Qian, Y. & Follett, R. (2002)
Assessing soil carbon sequestration in turfgrass systems
- Raciti, S.M. et al. (2011)
Carbon storage of urban lawns
- Gu, C. et al. (2015)
Soil carbon dynamics in turfgrass systems

Data interpretation

- Reported sequestration rates of 46–127 g C/m²/year converted to CO₂-equivalent using standard conversion factors.
- Emphasis placed on soil organic carbon, which is more stable than above-ground biomass.

Comparison reference

- Lifecycle assessments of synthetic turf showing net positive emissions profiles due to fossil-derived materials.

B.1.4 Air Quality and Local Environmental Health

Key metric cited in Section 4.2.4

Natural turf can remove approximately **5–20 g of particulate matter per m² per year**.

Primary reference sources

- Nowak et al. (2014)
Urban vegetation air-pollution removal modelling
- Speak et al. (2012)
Vegetated surfaces and particulate capture

Supporting evidence

- Studies showing 50–90% reductions in dust emissions from vegetated surfaces compared with bare soil.
- Research linking urban heat reduction with lower ozone formation rates.

B.1.5 Bushfire Risk Reduction and Asset Protection

Key metric cited in Section 4.2.5

Maintained turf is classified as **low-threat vegetation** under Australian Standard **AS3959**.

Primary reference sources

- Australian Standard AS3959
Construction of buildings in bushfire-prone areas
- Hort Innovation / CSIRO / GHD (2019–2022)
Living turf fire-retardant performance studies

Supporting evidence

- Experimental testing showing turf's high ignition resistance and limited fire spread.
- Operational observations of irrigated lawns acting as effective fire breaks.

B.1.6 Erosion Control and Water Quality

Key metric cited in Section 4.2.6

Natural turf can reduce sediment loss by **50–90%** compared with bare soil.

Primary reference sources

- Austroads / State road authority trials
Vegetated erosion control on embankments and verges
- Hort Innovation (TU series reports)
Turf performance in erosion and sediment control applications

Supporting evidence

- Field trials demonstrating turf stability on slopes up to approximately 33%.
- Studies showing sediment and nutrient trapping in turf strips and swales.

B.1.7 Stormwater Management

Key metric cited in Section 4.2.7

Well-maintained natural turf can infiltrate approximately 150–300 mm of rainfall per hour under typical loam soil conditions, substantially reducing surface runoff compared with synthetic or impervious surfaces.

Primary reference sources

- Engineers Australia
Australian Rainfall and Runoff (ARR 2019)
- USDA Natural Resources Conservation Service (NRCS)
Urban Hydrology for Small Watersheds (Technical Release 55)
- Beard, J.B. & Green, R.L. (1994)
The role of turfgrasses in environmental protection
- Gross, C.M., Angle, J.S., & Welterlen, M.S. (1990)
Nutrient and sediment losses from turfgrass.

Supporting evidence

- Hydrological modelling frameworks assign substantially lower runoff coefficients to turf and vegetated surfaces compared with impervious surfaces.
- Field studies demonstrate that established turf systems can maintain high infiltration capacity under well-managed conditions, reducing peak flow during rainfall events.
- Urban catchment studies link vegetated ground cover with reduced runoff, lower sediment transport and improved downstream water quality.
- Water Sensitive Urban Design (WSUD) frameworks in Australia recognise vegetated surfaces as distributed green infrastructure supporting stormwater attenuation and groundwater recharge.

In Summary

The environmental impact assessment in Section 4.2 draws on a broad and credible evidence base including:

- peer-reviewed academic research,
- Australian standards and regulatory frameworks,
- government-commissioned and industry-supported studies, and

- applied infrastructure and urban-environment research.

Quantitative metrics are presented as indicative magnitudes to illustrate relative performance and policy relevance, rather than as inputs to monetised valuation. Collectively, the evidence demonstrates that natural turf delivers a suite of environmental benefits — including heat mitigation, avoided use of microplastics, carbon sequestration, air-quality improvement, bushfire risk reduction and erosion control — that are absent or materially weaker in synthetic surfaces.

B.2. Enabling Iconic Sporting Moments

This appendix supports Section 4.3, which treats the cultural value of iconic sporting moments enabled by natural turf qualitatively and not monetised. The purpose of this appendix is to document the publicly available evidence used to demonstrate scale, reach and continuity.

Attendance (in-person)

- 2025 AFL Grand Final (MCG)
Attendance: 100,022 spectators
Source: Australian Football League (AFL), official attendance statistics
- 2025 Boxing Day Test – Day 1 (MCG)
Attendance: approximately 94,199 spectators (single-day record)
Source: Cricket Australia / Melbourne Cricket Club (MCC)

Broadcast reach

- 2025 AFL Grand Final
 - Average television audience: approximately 4.08 million
 - Total reach across free-to-air and digital platforms: approximately 6.1 million Australians*Source: OzTAM television ratings; AFL broadcast summaries*

Cultural continuity and significance

- Boxing Day Test at the MCG
 - Staged annually since 1950*Source: Melbourne Cricket Club historical records; Cricket Australia*
- AFL Grand Finals at the MCG
 - Played on natural turf for multiple generations*Source: AFL historical records; MCG venue history*

- Iconic sporting moments on natural turf
 - Shane Warne's 700th Test wicket, Boxing Day Test, 26 December 2006
- Source: *Cricket Australia match archives; MCC historical summaries*

B.3 Sporting Utility

Estimates of sporting utility draw on the following sources:

- Greenfields Consulting (2026), Usage, Attitudes and Contribution of Natural Turf (Project TU24004), providing nationally representative survey data on organised sport participation, surface type and participation frequency.
- Australian Bureau of Statistics (ABS) population benchmarks, used to scale survey incidence rates to the national population.
- Survey-derived willingness-to-pay (WTP) responses, capturing the value participants place on organised sport participation, net of average out-of-pocket costs.

Survey data are treated as the primary source, as they directly observe participation behaviour and stated valuation specific to turf-based sport.

Valuation framework

The estimation proceeds in four steps:

- 1. Participation incidence** - Survey incidence rates for organised sport played on natural turf are applied to ABS population benchmarks to estimate the total number of participants nationally.
- 2. Participation frequency** - Survey responses on participation regularity are used to estimate average annual participation frequency per participant.
- 3. Total participation sessions** - Annual participation sessions are calculated as the product of participant numbers and average participation frequency.
- 4. Wellbeing valuation** - A conservative net willingness-to-pay per participation session is applied. This value is derived from survey responses and adjusted to subtract average out-of-pocket participation costs, ensuring the estimate reflects net wellbeing benefit rather than expenditure.

Calculation

Sporting utility is calculated as:

Sporting utility = Annual participation sessions × Net WTP per session

Applying this framework for individuals and kids yields an estimated sporting utility value as outlined below:

Individuals:

Approximately 740m annual participation session x **\$15** Net Willingness to Pay per session = **\$13.1 billion per year (2026)**

Children:

Approximately 390m annual participation session x **\$16** Net Willingness to Pay per session = **\$7.3 billion per year (2026)**

Combined Sporting Utility:

\$13.1 billion per year (2026) + \$7.3 billion per year (2026) = \$20.4 billion per year (2026)

The magnitude of the estimate is driven primarily by the scale and regularity of organised sport participation in Australia, rather than optimistic valuation parameters. Independent national participation statistics indicate that organised sport remains a frequent and recurring activity for millions of Australians, supporting the plausibility of the estimated participation volumes.

Sensitivity testing indicates a plausible range of approximately **\$15–27 billion per year**, with the adopted estimate of **\$20.4 billion** representing a conservative-to-central position within this range.

Sporting willingness to pay calculation

Per-session values were derived from survey questions asking respondents the additional amount they would be willing to pay per hour of organised sport participation on natural turf, accounting for the amount they likely paid. This produced gross stated willingness-to-pay estimates of approximately \$30 per hour for adult participants and \$32 per hour for child participation.

These gross values were not adopted directly. Consistent with standard non-market valuation practice, stated-preference responses were conservatively adjusted downward to account for hypothetical bias and the risk that survey respondents

overstate realised payment behaviour. In the absence of directly comparable revealed-preference benchmarks for per-hour organised sport utility on natural turf, a 50 per cent discount was applied as a prudent calibration.

This resulted in adopted per-hour values of approximately \$15 for adults and \$16 for children. These adjusted values were then used in the sporting utility model as conservative per-session proxies for the wellbeing value associated with organised sport participation on natural turf.

B.4 Community Wellbeing

Estimates of community wellbeing draw on the following sources:

- Greenfields Consulting (2026), Usage, Attitudes and Contribution of Natural Turf (Project TU24004), providing nationally representative survey data on frequency and type of community and informal use of turf-based spaces.
- Australian Bureau of Statistics (ABS) population benchmarks, used to scale survey incidence rates to the national population.
- Survey-derived willingness-to-pay (WTP) responses, capturing the value to people of time spent in Community spaces on natural turf.

Survey data are treated as the primary source, as they directly observe patterns of everyday use rather than relying on inferred behaviour.

Valuation framework

The estimation proceeds in four steps:

- 1. Incidence of community use** - Survey incidence rates are applied to ABS population benchmarks to estimate the number of Australians who regularly use turf-based community spaces.
- 2. Frequency of use** - Survey responses are used to estimate average annual frequency of informal use, including activities such as walking, play, relaxation, socialising and community events.
- 3. Total community-use sessions** - Annual community-use sessions are calculated as the product of user numbers and average use frequency.

- 4. Wellbeing valuation** - A conservative wellbeing value per use is applied, reflecting mental health, social connection and amenity benefits associated with access to green space. Values are consistent with public-sector appraisal practice for non-market wellbeing benefits.

Calculation

Community wellbeing is calculated as:

Community wellbeing = Annual community-use hour × Wellbeing value per hour

Applying this framework yields an estimated community wellbeing value as outlined below:

Approximately 570m annual community-use hours × **\$25** Wellbeing value per hour =

\$14.4 billion per year (2026)

The magnitude of the estimate is driven by the **high incidence and frequency of everyday use** of turf-based spaces across Australia. Sensitivity testing indicates a plausible range of approximately **\$10–19 billion per year**, with the adopted estimate of **\$14.4 billion** representing a conservative-to-central position within this range.

Community willingness to pay calculation

Per-hour values for community use were derived from survey questions asking respondents the additional amount they would be willing to pay for access to and use of community spaces containing natural turf, such as parks, playgrounds, school grounds and informal recreational areas. This produced a gross stated willingness-to-pay estimate of approximately **\$38 per hour**.

These gross values were not adopted directly. Consistent with standard non-market valuation practice, stated-preference responses may overstate realised economic value due to hypothetical bias and the absence of real payment constraints. However, unlike organised sport participation, community use of turf-based spaces is typically free or subject to minimal direct charges, meaning responses are not anchored to an existing market price.

In the absence of a direct comparable revealed-preference benchmark for per-hour community use, a **one-third downward adjustment** was applied as a prudent calibration. This reflects the need to account for potential overstatement while retaining a larger share of the expressed value, given the lack of existing user pricing in most community settings.

This results in an adopted value of approximately **\$25 per hour**, which is used as the core input in the community wellbeing model. This value should be interpreted as a **conservative, lower-bound proxy** for the social and wellbeing benefits associated with everyday use of natural turf in community and public spaces.

B.5 Avoided Life-cycle Costs (Natural vs Synthetic Turf)

Avoided costs represent the long-term infrastructure savings achieved by retaining natural turf rather than converting community playing fields to synthetic surfaces. This measure reflects avoided capital and replacement expenditure over time and does not represent economic output or social wellbeing value

Estimates draw on:

- Australian local government lifecycle cost studies comparing natural and synthetic fields
- Public sporting infrastructure audits and technical guidance documents
- Council interviews undertaken for this project (installation, maintenance and replacement experience)
- Publicly available national estimates of community playing field numbers

Lifecycle Cost Framework

The avoided-cost estimate proceeds in three stages:

1. National Field Count

A national estimate of approximately **16,100 unique community playing fields** is adopted for scaling purposes.

This estimate is derived using a triangulated approach:

- The Australian Local Government Association (ALGA) represents **537 councils** nationally.
- A conservative provision rate of approximately **30 community sporting fields per council** implies around **16,110 fields (537 × 30)**.

- Larger metropolitan councils operate substantially more than 30 fields, while smaller rural councils operate fewer.
- National sport facility audits indicate that:
 - Football (soccer) accounts for approximately **4,350 fields** nationally.
 - Cricket identifies approximately **7,200 ovals**.
 - Additional fields are required for Australian Rules, rugby codes, hockey and multi-field sporting precincts.

To avoid double counting, multi-use ovals are counted once. On this basis, an estimate of approximately **16,100 fields** represents a defensible and conservative national scaling assumption suitable for lifecycle modelling.

This figure should be interpreted as an order-of-magnitude national estimate rather than a precise inventory.

2. Per-Field Avoided Lifecycle Cost (Present Value)

Consistent evidence from Australian councils indicates that synthetic fields impose materially higher whole-of-life costs relative to natural turf due to:

- Higher initial installation costs
- Full surface replacement approximately every 10–12 years
- Specialised maintenance requirements
- End-of-life disposal of synthetic materials

The per-field avoided lifecycle cost is estimated over a **50-year planning horizon** using a **10% discount rate**, consistent with conservative public-sector appraisal practice.

The estimate is derived as follows:

Step 1 – Initial capital differential

Indicative additional upfront cost of synthetic relative to natural turf:

≈ \$2.0 million per field

Step 2 – Replacement cycles (discounted)

Synthetic fields typically require four full surface replacements over 50 years (approximately every 12 years).

Indicative replacement cost per cycle: **≈ \$2.5 million**.

Present value is calculated using:

$$PV = \text{Future Cost} \div (1 + r)^t$$

Discounting four replacement cycles at 10% yields a combined present value of approximately:

≈ \$1.1 million per field

Step 3 – Total avoided present value

Initial capital differential: ≈ \$2.0m

- Discounted replacement cycles: ≈ \$1.1m

≈ \$3.0 million per field (present value)

Natural turf maintenance costs are assumed to continue under both scenarios and are therefore not treated as avoided.

The \$3.0 million figure represents a central estimate of the additional lifecycle cost burden associated with synthetic conversion.

3. National Scaling and Annualisation

Scaling the per-field avoided cost nationally:

$$\$3.0\text{m} \times 16,100 \text{ fields}$$

= \$48.3 billion total present value

To ensure comparability with other annual values presented in Section 4, the present value is converted to an equivalent annual value (EAV) using standard annuity conversion:

$$EAV = PV \times r \div [1 - (1 + r)^{-n}]$$

Where:

- $r = 10\%$
- $n = 50 \text{ years}$

Applying this methodology yields an estimated avoided cost of approximately:

\$4.9 billion per year

The estimate:

- represents avoided public expenditure, not economic contribution
- is distinct from wellbeing and participation values
- is conservative, as it excludes:
 - end-of-life disposal costs
 - environmental remediation
 - heat-related mitigation and health externalities

B.6 Residential Amenity Value (Implied Lawn Amenity Value)

Estimates draw on the following sources:

- Lawn care products expenditure (Section 3.4), derived from published market data.
- Lawn maintenance services expenditure (Section 3.4), derived from ABS ANZSIC 7313 Gardening Services data.
- ABS household expenditure patterns, used to inform residential attribution.
- Survey evidence from this project, confirming the prevalence and persistence of household lawn ownership and maintenance.

Valuation framework

The valuation proceeds in two steps:

1. Total lawn-related expenditure

Annual expenditure on lawn-related products and services is estimated as:

- Lawn care products: **\$2.49 billion**
- Lawn maintenance services: **\$2.25 billion**

Total lawn-related expenditure: **\$4.74 billion per year**

2. Residential attribution

A **60 per cent residential share** is applied to isolate household-related expenditure. This reflects:

- the widespread presence of lawns in residential settings
- continuous household maintenance over long periods
- survey evidence indicating that households are the dominant end users of lawn products and services.

Residential lawn-related expenditure:

$$\$4.74 \times 0.60 = \$2.84 \text{ billion per year}$$

Using this approach, the **implied residential lawn amenity value** is estimated at:

\$2.8 billion per year

This estimate:

- represents the minimum annual value households reveal through actual spending on lawns
- does not assume a causal uplift in property sale prices
- provides a lower-bound proxy for residential amenity value
- is conceptually distinct from economic contribution and wellbeing values.

The estimate excludes:

- broader neighbourhood and streetscape spillovers
- non-residential property impacts
- longer-term capitalisation effects in property markets.

As such, it should be interpreted as a **conservative, policy-relevant measure of residential lawn amenity**, grounded in observed behaviour rather than inferred market impacts.



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