



# Cost Benefit Analysis

**Macquarie Point Multipurpose Stadium**

5 September 2024

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# Executive summary

This report presents the findings of the CBA, providing an assessment of the extent to which the Stadium represents 'value for money', by identifying and quantifying its significant costs and benefits, relative to a base case scenario.<sup>1</sup> This report should be read in conjunction with the Economic Development and Social, Cultural and Community Wellbeing Introduction and attached disclaimers.

For the purposes of this analysis, the base case scenario assumes a continuation of the current status quo (no stadium is developed). For clarity, under the base case scenario, establishment of the Devils, and the associated investment into Tasmania, does not eventuate.

The analysis has assumed base and price years of \$2024 and a real discount rate of 7%.

## Stadium costs

Three types of costs have been captured within the CBA:

- Capital costs of \$715.9m<sup>2</sup> incurred across the construction period due for completion at the end of 2028;
- Operating subsidy of \$231.5m, incurred across an operating period of 30-years (January 2029 – December 2058);
- Incremental event attraction funding costs of \$48.2m, incurred across an operating period of 30-years; and
- The Tasmanian Government's subsidy to support establishment of the Devils, amounting to \$144.0m over a 12-year period.

**Please note that the costs presented within this report reflect those developed as part of the Financial Impact Report. In the most part, the Financial Impact Report utilises nominal figures (unless otherwise stated) while the CBA is based on real figures (excluding escalation) and applies a discount rate of 7% to generate a Net Present Value (NPV). In most cases undiscounted real and discounted real (NPV) figures are presented throughout this report. Please see the accompanying Financial Impact Report for further information including detailed methodologies and assumptions.**

Table 1: Stadium costs

| Cost                                                           | Description                                                                                                                                                                                                                                                                                                                                                                                                                        | Costs \$2024                         |
|----------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------|
| Capital costs<br>(Stadium related cost)                        | The construction costs associated with the Stadium. <sup>3</sup>                                                                                                                                                                                                                                                                                                                                                                   | Real: \$715.9m<br>NPV (7%): \$578.9m |
| Operating subsidy<br>(Stadium related cost)                    | The subsidy required to cover the Stadium's expected operating deficit, as its operating costs exceed revenue. <sup>4</sup> For the purposes of this CBA, the Stadium's operating costs accounted for the Stadium's estimated lifecycle costs, which represent the ongoing capital replacement costs associated with the Stadium over its lifetime. See the accompanying Financial Impact Report for further details. <sup>5</sup> | Real: \$231.5m<br>NPV (7%): \$62.4m  |
| Incremental event attraction funding<br>(Stadium related cost) | The incremental funding required to attract certain events to the Stadium given the competitive nature of the industry. <sup>6</sup>                                                                                                                                                                                                                                                                                               | Real: \$48.2m<br>NPV (7%): \$14.0m   |
| Tasmanian Government AFL                                       | The incremental funding provided by the Tasmanian Government to support the establishment of the new AFL team.                                                                                                                                                                                                                                                                                                                     | Real: \$144.0m<br>NPV (7%): \$98.6m  |

<sup>1</sup> Tasmania Planning Commission. "Macquarie Point Multipurpose Stadium Project of State Significance", 2024.

<sup>2</sup> Excluding escalation

<sup>3</sup> Macquarie Point Multi Purpose Stadium Concept Design Estimate No.1, WT Partnership 10 July 2024

<sup>4</sup> Reflects a range of sources including, but not limited to, workshops between MPDC, Stadiums Tasmania, DHW Ludus and KPMG, stakeholder consultation, and information made available to KPMG and DHW Ludus.

<sup>5</sup> Reflects inputs provided by MPDC's appointed quantity surveyor, WT Partnership.

<sup>6</sup> Reflects information collected through KPMG and DHW Ludus consultation with content owners and other stakeholders.

| Cost                        | Description | Costs \$2024 |
|-----------------------------|-------------|--------------|
| Subsidy (Team related cost) |             |              |

## Stadium benefits

To identify the benefits that are expected to flow from the Stadium, a Value Framework was first developed (refer to section 2.5). Following development of the Value Framework, impacts were explored in greater detail to assess the extent to which a sufficient evidence base exists for the purposes of quantification. Following this process, a shortlist of impacts (i.e. benefits for inclusion) were identified for inclusion within this CBA (see Table 2 below).

Table 2: Quantifiable benefits of the Stadium

| Impact                                                               | Benefit                                           | Definition                                                                                                                                                                               |
|----------------------------------------------------------------------|---------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Increased income for Tasmanian residents, businesses, and government | <b>Producer and labour surplus</b> <sup>7,8</sup> | Producer and labour surplus flowing from new visitors to Tasmania spending money on local goods and services                                                                             |
|                                                                      |                                                   | Producer and labour surplus flowing from new event operators from outside of Tasmania spending money on local goods and services                                                         |
|                                                                      |                                                   | Producer and labour surplus flowing from fewer Tasmanians leaving the State to attend an event in another Australian State or Territory                                                  |
|                                                                      |                                                   | Producer and labour surplus flowing from the establishment of the new AFL team and the associated investment in the State                                                                |
| Amenity impacts                                                      | <b>Consumer surplus</b>                           | Use-value accruing to Tasmanians who attend the new Stadium                                                                                                                              |
| Increased civic and community pride<br>Improved subjective wellbeing |                                                   | Non-use value accruing to Tasmanians as a result of the AFL team's establishment, independent of the Stadium's use                                                                       |
| Improved physical and mental health                                  | <b>Health and productivity</b>                    | Personal health benefit accruing to Tasmanians who start playing AFL as a result of the participation target and 'inspiration effect', who otherwise would have been physically inactive |
|                                                                      |                                                   | Health system benefit that flows from the personal health benefit above                                                                                                                  |
|                                                                      |                                                   | Productivity benefit that flows from the personal health benefit above                                                                                                                   |
| All quantifiable positive impacts                                    | <b>Terminal value</b>                             | The ongoing economic value of the project at the end of the evaluation period                                                                                                            |

## CBA outputs

With consideration of the quantified costs and benefits (discounted real figures), there is an estimated net benefit (negative) for the proposed Stadium of (\$237.0m), with a Benefit-Cost Ratio (BCR) of 0.69. While the quantifiable economic benefits are not projected to outweigh the quantifiable costs, it is acknowledged that this is not unusual for projects of this nature, where a large component of benefit is either not quantifiable or not able to be monetised (whereas most or all costs are able to be monetised). See the accompanying Social and Cultural Analysis Report for further detail on the full range of impacts – both quantified and unquantified. Further, given the inherent uncertainty and the intangible nature of a number of the benefits, a conservative approach has been taken to the demand projections, financial modelling, and the monetisation of benefits.

<sup>7</sup> Producer surplus represents the amount a producer benefits from producing and selling a particular good or service. It represents the difference between the market price and the lowest price a producer is willing to accept to produce a good. Simply put, the producer surplus is the additional profit accruing to producers resulting from the injection of expenditure into the economy.

<sup>8</sup> Labour surplus is the difference between the wages earned by a worker within the Tasmanian economy, and the opportunity cost of their time (the minimum amount they would be willing to accept in order to work). Simply put, labour surplus represents the additional income earned by the Tasmanian workforce as a result of the project.



Table 3: CBA Outputs

| \$m, \$2024                                       | Discount rate: | NPV 7% (central case) |
|---------------------------------------------------|----------------|-----------------------|
| Incremental costs – The Stadium                   |                |                       |
| Capital costs                                     |                | \$578.95m             |
| Operating subsidy (after Lifecycle costs)         |                | \$62.35m              |
| Event attraction costs                            |                | \$13.99m              |
| Incremental costs – The Devils                    |                |                       |
| AFL State Government subsidy                      |                | \$98.57m              |
| <b>Total costs</b>                                |                | <b>\$753.86m</b>      |
| Incremental benefits – The Stadium                |                |                       |
| Increased visitation – sports and cultural events |                | \$198.27m             |
| Increased visitation – business events            |                | \$13.17m              |
| Increased visitation - operators                  |                | \$1.44m               |
| Retained visitation                               |                | \$106.77m             |
| Use-value                                         |                | \$17.09m              |
| Incremental benefits – The Devils                 |                |                       |
| AFL Industry                                      |                | \$87.96m              |
| Non-use value                                     |                | \$20.30m              |
| Health and productivity                           |                | \$29.92m              |
| Incremental benefits – Other                      |                |                       |
| Terminal value                                    |                | \$41.87m              |
| <b>Total benefits</b>                             |                | <b>\$516.79m</b>      |
| Outputs                                           |                |                       |
| <b>Net benefit</b>                                |                | <b>(\$237.07m)</b>    |
| <b>Benefit cost ratio</b>                         |                | <b>0.69</b>           |
| <b>Economic internal rate of return</b>           |                | <b>3.51%</b>          |

# 1 Introduction

## 1.1 Purpose of this report

Cost benefit analysis (CBA) is an economic assessment technique that enables a systematic evaluation of the gains and losses associated with a particular proposal, with a proposal taking the form of a project, investment or program.<sup>9</sup> A CBA converts the gains and losses into a dollar value, before comparing the outcomes against alternative scenario(s), including a base case or 'business as usual' alternative.<sup>9</sup>

The purpose of this CBA is to assess the extent to which the Stadium represents 'value for money', by identifying and quantifying all significant benefits and costs over its useful life, relative to a base case alternative.<sup>9</sup>

This CBA has incorporated established methods and guidelines to support the estimation of costs and benefits resulting in an Economic Net Present Value (ENPV) and Benefit-Cost Ratio (BCR).

Sensitivity and scenario analysis have also been undertaken to test the impact of changes to key assumptions and provide insights into the feasible range of output indicators.

This report, and the analysis within, aligns to PoSS guidelines, with the table below documenting the alignment between the guidelines and the relevant sections of this report.

*Table 4: PoSS guidelines alignment*

| PoSS guidelines requirement                                                                                                                                                                                                                                                                                                            | Section of the report                                                                                                                |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------|
| <b>3.1 Cost benefit analysis (CBA)</b>                                                                                                                                                                                                                                                                                                 |                                                                                                                                      |
| A CBA assessing the net benefit of investing in the proposed project.                                                                                                                                                                                                                                                                  | Throughout                                                                                                                           |
| The CBA should identify and quantify to the fullest extent possible, all significant benefits and costs over the life of the project, discounted to current values.                                                                                                                                                                    | Section 2.4 (Cost inputs)<br>Section 2.5 (Identification and quantification of benefits)                                             |
| The CBA should present a base case in which all assumptions represent the best estimates at this time, with supporting evidence for the value of each key assumption.                                                                                                                                                                  | Section 2.1 includes a description of the Base Case and Project Case.<br>Section 2.2-2.3 outlines assumptions and key demand inputs. |
| Where community, environmental, social and cultural effects can be valued as costs and benefits with a reasonable degree of confidence, these should be included in the analysis. Where the CBA is assessing the effect of the project on intangible or cultural/social factors, these are to be valued or monetised in a similar way. | Throughout                                                                                                                           |
| If there are significant costs or benefits that are not able to be easily quantified, notional but plausible values should be used, which can be varied in sensitivity analysis (see below) where they are significant drivers of the results.                                                                                         | Sensitivity and scenario analysis is presented in Section 2.6                                                                        |
| If there are significant costs or benefits that cannot be valued or monetised with any degree of accuracy, these factors should be                                                                                                                                                                                                     | See Value Framework presented in Section 2.5 (and further explored in the Social and Cultural Analysis)                              |

<sup>9</sup> Tasmania Planning Commission. "Macquarie Point Multipurpose Stadium Project of State Significance", 2024.

|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| included in the CBA and quantified information provided that links to social welfare values.                                                                                                                                                                                                                                                                                                                                                                                                                                                                              |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| All significant costs and benefits used in the analysis should be separately and clearly identified, with supporting evidence provided for the values assumed for each item.                                                                                                                                                                                                                                                                                                                                                                                              | Section 2.4 onwards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| All the important assumptions for both costs and benefits should be clearly stated over the life of the project analysis, with supporting evidence for each of the key assumptions made.                                                                                                                                                                                                                                                                                                                                                                                  | Section 2.4 onwards                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |
| The CBA should include sensitivity analyses. For guidance, sensitivity analyses could include best and worst cases (i.e. “high” and “low” case scenarios that vary critical assumptions including the discount rate), partial sensitivity analysis (i.e. individually varying one critical assumption at a time), and scenarios that create plausible future alternative “states of the world” by reflecting collective changes in assumptions that are internally consistent with each other. Further information in relation to sensitivity analyses is provided below. | Sensitivity and scenario analysis is presented in Section 2.6                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                               |
| The choice of the discount rate is critical and it is expected the CBA base case would utilise a discount rate currently or commonly accepted by governments for assessing infrastructure proposals. For example, the Department of Prime Minister and Cabinet cost benefit analysis Guidance suggests a real discount rate of 7%, with alternative discount rates of 3% and 10% to be used for sensitivity analyses.                                                                                                                                                     | Section 2.2 (Key assumptions and parameters)                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                |
| <p>Except where required in these guidelines, the CBA:</p> <ul style="list-style-type: none"> <li>is to be prepared to align with the recommended principles and procedures outlined for a detailed CBA in the Guide to economic appraisal, Infrastructure Australia July 2021;</li> <li>is to be informed by the method for assessing/valuing greenhouse gas emissions and the information to be provided in reports on this matter being informed by the Guide to assessing greenhouse gas emissions (interim), Infrastructure Australia Feb 2023.</li> </ul>           | <p>Throughout</p> <p>KPMG’s approach has aligned to and drawn from a number of jurisdiction’s CBA guidelines, including (not limited to) Infrastructure Australia, NSW Treasury, Queensland Government.</p> <p>At the time of undertaking this CBA, the Stadium’s design, construction and operational requirements / attributes have not been developed to a sufficient level of detail to provide carbon / emissions estimates as an input into this analysis to then be monetised within the calculations. As such, greenhouse gas emissions and other environmental impacts of the proposed Stadium have been considered qualitatively within the accompanying Social and Cultural Analysis report.</p> |
| <b>3.5 Sensitivity and comparative analyses and information documentation</b>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                             |
| The above reports are to provide a consolidated balanced overview of effects based on data and information drawn from the specific assessment methods outlined above.                                                                                                                                                                                                                                                                                                                                                                                                     | Throughout                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
| The reports can use a variety of methodologies and indicators to provide evidence and information on economic development and qualities of people’s social, cultural and economic wellbeing.                                                                                                                                                                                                                                                                                                                                                                              | Section 2.5                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                 |
| The reports should aim to address all significant beneficial and detrimental effects. Where there is a lack of evidence or direct quantifiable information, the reports may use information from other places in a balanced manner.                                                                                                                                                                                                                                                                                                                                       | Throughout                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |



|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                       |                                                                                                                                                                                                                                                                                                                                                                                                                                           |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>The “Base Case” scenarios should clearly set out all relevant and material factors including:</p> <ul style="list-style-type: none"> <li>the type and frequency of events and activities;</li> <li>the composition and number of users/customers;</li> <li>forecast/estimated costs and revenue;</li> <li>organisations and associations that will use the facility; and</li> <li>forecast/estimated effects on interstate visitation.</li> </ul>                                                                                                                                                                                                                                  | <p>Building on the inclusions in the FIR, the CBA presents the composition and number of users / customers and forecasted / estimated effects on interstate visitation.</p>                                                                                                                                                                                                                                                               |
| <p>Sensitivity analysis is to be undertaken as part of the Cost-Benefit, Economic Impact and Financial Impact assessments, to understand how different assumptions around risk and uncertainty affect outcomes. Sensitivity analysis should ideally include the creation of probability distributions for key cost and revenue parameters that include P10, P50 and P90 values.</p>                                                                                                                                                                                                                                                                                                   | <p>Sensitivity and scenario analysis is presented in Section 2.6</p> <p>Note that cost planning inputs to this analysis do not include probabilistic cost estimates.</p> <p>Refer to FIR for further detail regarding probabilistic distributions.</p>                                                                                                                                                                                    |
| <p>Sensitivity analyses must include discount rate sensitivity for the CBA and variations on the key assumptions in relation to patronage of the facility.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                        | <p>Sensitivity and scenario analysis is presented in Section 2.6</p>                                                                                                                                                                                                                                                                                                                                                                      |
| <p>The CBA will be undertaken as an absolute assessment for the base case scenario and not in comparison to an alternate option.</p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  | <p>Section 2.1 and throughout</p>                                                                                                                                                                                                                                                                                                                                                                                                         |
| <p>For the purposes of comparative assessment of ‘no policy change scenarios’ and sensitivity analyses the reports are to refer to or include information relating to:</p> <ul style="list-style-type: none"> <li>the level of AFL, sporting and other events and activities and associated tourism activity, that have generally occurred in the state and region over the past decade (COVID-19 period excluded) over the forecast period; and</li> <li>changes in the level of activity of AFL, sporting and other events and activity as well as flow on activity at a state and regional level that is forecast to occur as a result of the operation of the stadium.</li> </ul> | <p>Section 2.5.1 provides an overview of holiday related tourist activity across the last decade, and the impact the Stadium and its associated attendance is expected to have in terms of an uplift.</p> <p>Section 2.3 presents the estimated new activity in terms of sports and cultural events and attendance. The proportion of this anticipated to be visitors from outside of Tasmania is described from Section 2.5 onwards.</p> |

## 2 Cost Benefit Analysis

This CBA has included the following steps:

- Confirmation of the community of interest, base case and project options;
- Confirmation of key analysis assumptions and parameters;
- Development of the event and attendance assumptions;
- Collection of cost inputs;
- Identification and quantification of benefits;
- Generation of economic performance measures (ENPV and BCR); and
- Sensitivity and scenario analysis of the results to changes in key parameters.

The following section provides detail on the steps outlined above and presents the results of the analysis.

### 2.1 Community of interest, base case and project case definitions

#### 2.1.1 Community of interest

The community of interest (COI) refers to the group of economic agents deemed by the decision maker to be relevant to the analysis, sometimes referred to as the referent group or the scope of the analysis. The first step in conducting a CBA is to define the COI, and to identify both those potential bearers or beneficiaries of the incremental costs and benefits that both lie within and outside the COI.

For this analysis, the COI is defined as the State of Tasmania. This includes residents, businesses and government within the COI. The approach to the identification of the COI is in line with better practice project appraisal approaches. It therefore follows that those economic agents outside of the COI that are the bearers of costs or beneficiaries of the project are excluded from the analysis.

#### 2.1.2 Base case

A CBA considers the incremental costs and benefits associated with a proposed investment, by measuring the costs and benefits relative to a base case scenario – that is, the costs and benefits that are expected to occur in the absence of the proposed project. For the purposes of this analysis, the base case scenario assumes a continuation of the current status quo, specifically:

- No Stadium is developed, and therefore the site remains vacant and undeveloped;
- Sports and cultural events currently hosted in Tasmania continue to be hosted in Tasmania. With this in mind, when considering the Stadium's anticipated event calendar (refer to Financial Impact Report), events that are expected to take place in the Stadium, and the associated attendance, have been separated as either 'transferred' or 'new'. Transferred events represent those that are currently being held in Tasmania (at exiting venues), and will transfer to the Stadium upon its completion. It follows that only the 'new' events and attendances are considered incremental to the base case for the purposes of this analysis; and
- The establishment of the Devils does not eventuate.

#### 2.1.3 Project case

The project case includes:

- The development of the Stadium, and the associated costs and benefits; and

- The Devils are established, unlocking associated investment by the AFL into Tasmania to support the industry, provide base funding for the Devils, and investment into both grassroots and community football. This includes a goal of doubling participation in both Auskick and community football leagues by 2028, and uplifting the participation of girls / women to be in line with boys / men by 2030. The AFL's commitment to uplifting participation will result in Tasmanians being more physically active, leading to a range of health benefits that have been captured in this analysis.

The project case does not include:

- The costs and benefits of the broader Macquarie Point precinct; and
- The costs and benefits associated with the centre for excellence project.

At the time of writing, the design of the Stadium has a number of items to be resolved at the detailed design phase. This includes a final breakdown of Stadium inventory, including the types of seats and hospitality products. To provide context for the financial modelling presented, the following represents a brief summary of the Stadium 'design' for the purpose of KPMG's / DHW Ludus' work (albeit the list is not necessarily exhaustive):

- Stadium capacity for patrons of 24,500 in 'sport' mode
- Stadium capacity of approximately 30,000 in 'concert' mode (including capacity / seating on the playing surface)
- For sport mode, a breakdown of seating by type as follows:
  - General admission capacity of 19,608 (inclusive of 1,500 standing)
  - Category 1 corporate capacity of 692 (higher yielding products such as corporate suites)
  - Category 2 corporate capacity of 700
  - Stadium membership capacity of 3,500
- The design provides a 'cold shell' for food and beverage infrastructure, signage and audio visual infrastructure, as well as office tenancies, however will require further investment to fund the fitout of these items
- The design includes function space for up to 1,500 people
- The design excludes external office tenancies
- Practice wickets will be on-site
- The design will be adequate to ensure the International Cricket Council (ICC) endorse its use for international cricket, noting there will likely be a requirement for a period of testing domestic cricket prior to test matches being hosted in the Stadium
- The design will be adequate for rectangular pitch sports to ensure reasonable sightlines for spectators

## 2.2 Key assumptions and parameters

Key parameters used in the CBA are provided in Table 5 below.

Table 5: CBA parameters

| Parameter                        | Value                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   | Basis                                                                                                                                                 |
|----------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------|
| Discount rate                    | 7% (real – central case) <sup>10</sup>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |                                                                                                                                                       |
| Evaluation period                | <p>The evaluation period includes:</p> <ul style="list-style-type: none"> <li>A construction period due for completion at the end of 2028</li> <li>A 30-year operating period from Jan 2029 – Dec 2058</li> </ul>                                                                                                                                                                                                                                                                                                                                                                       | Aligns to the Tasmanian Planning Commission Macquarie Point Multipurpose Stadium Guidelines as at 16 February 2024, section 2.1 Cost benefit analysis |
| Base year                        | 2024                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                    |                                                                                                                                                       |
| Price year                       |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                         |                                                                                                                                                       |
| Project programming              | <ul style="list-style-type: none"> <li>Mac Point Stadium construction end: Dec 2028</li> <li>Mac Point Stadium opening: Jan 2029</li> </ul>                                                                                                                                                                                                                                                                                                                                                                                                                                             | Reflects inputs provided by MPDC's appointed quantity surveyor, WT Partnership.                                                                       |
| Sensitivity and scenario testing | <p>Sensitivity testing on:</p> <ul style="list-style-type: none"> <li>Discount rate 3% (low) and 10% (high)</li> <li>Capex -20% (low) and +20% (high)</li> <li>Visitor spend -20% (low) and +20% (high)</li> <li>Demand (attendance) -20% (low) and +20% (high)</li> <li>AFL community participation -20% (low) and +20% (high)</li> </ul> <p>Scenario testing (at 7% discount rate):</p> <ul style="list-style-type: none"> <li>Pessimistic scenario</li> <li>Optimistic scenario</li> <li>Optimistic event calendar</li> <li>Delay scenario</li> <li>State investment only</li> </ul> | Aligns to the Tasmanian Planning Commission Macquarie Point Multipurpose Stadium Guidelines as at 16 February 2024, section 2.1 Cost benefit analysis |

## 2.3 Event and demand projections

An annual event calendar for the proposed Stadium, and associated attendance numbers, have been developed for the purposes of this project and are summarised below. [Detail on the approach taken to developing event and attendance numbers can be found in the accompanying Financial Impact Report.](#)

### Event categorisation

The event calendar estimates the Stadium to host between 36 and 38 event days per annum. For the purposes of this CBA, these events have been categorised as follows:

- Commercial events, consisting of national sporting events such as AFL games, Big Bash League (BBL) games, A-League games, and National Rugby League (NRL) games;
- One-off events, consisting of one-off international sporting events such as Cricket Australia Test Matches, ODIs and T20 games, Matildas / Socceroos games;

<sup>10</sup> It is noted that the discount rate (7%) used for the purposes of this CBA differs to the rate used for the financial impact assessment (4.87%).

- Entertainment events, consisting of concerts and festivals; and
- Community events, consisting of community based sports and entertainment events, such as local football grand finals and mass participation events.

Table 6 provides an overview of the four event categories and the individual events that sit within those categories.

*Table 6: Event categories*

| Category      | Event                                                                                                                                                                                   |
|---------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Commercial    | AFL (TFC), AFLW (TFC), AFL pre-season, AFLW pre-season, Big Bash League (BBL), Women's Big Bash League (WBBL), NRL Club Match                                                           |
| One-off       | Cricket Australia Test Match, Men's ODI / T20, Women's ODI / T20, Socceroos (Tier 2 friendly), Matildas (Tier 2 friendly), Youth International, Adhoc sport / entertainment             |
| Entertainment | Concerts (Full Stadium), Concerts (Arena Mode)                                                                                                                                          |
| Community     | Local Football Grand Final, VFL Tasmania Devils / VFLW Tasmania Devils (Double Header), Coates Talent League (Double Header), Existing Mass Participation Events, Existing Local Events |

### Transferred vs new events and attendance

The event calendar provides an estimate of the expected annual events by event type to take place within the Stadium, in addition to the associated attendance numbers.

With consideration of the total events and associated attendance, not all of this activity will be 'new' (or 'incremental') to the State of Tasmania. Instead, some of the events and the associated attendance are already taking place at an existing Tasmanian venue (such as Blundstone Arena or UTAS Stadium), and will transfer across to the Stadium upon its completion. It follows that transferred events and associated attendance are not considered as incremental to the State.

Table 7 below provides a breakdown of expected Stadium events and associated attendance, indicating the proportion that is expected to transfer from existing venues (based on existing Tasmanian events and associated attendance), and the proportion that are considered new.

Table 7: Event calendar and attendance – New versus transferred event days

| Category      | Event                                                      | Total event days   | Total attendance | Transferred events days | Transferred attendance | New event days     | New attendance |
|---------------|------------------------------------------------------------|--------------------|------------------|-------------------------|------------------------|--------------------|----------------|
| Commercial    | AFL (TFC)                                                  | 7                  | 145,775          | -                       | -                      | 7                  | 145,775        |
|               | AFLW (TFC)                                                 | 3                  | 14,700           | -                       | -                      | 3                  | 14,700         |
|               | AFL pre-season <sup>11</sup>                               | 1                  | 6,125            | 1                       | 6,125                  | -                  | -              |
|               | AFLW pre-season                                            | 1                  | 2,450            | 1                       | 2,450                  | -                  | -              |
|               | BBL                                                        | 4                  | 41,652           | 4                       | 41,652                 | -                  | -              |
|               | WBBL                                                       | 4                  | 9,800            | 4                       | 9,800                  | -                  | -              |
|               | NRL Club Match                                             | 1                  | 17,763           | -                       | -                      | 1                  | 17,763         |
| One-off       | Test Match                                                 | 4 (1 event)        | 56,352           | -                       | -                      | 4 (1 event)        | 56,352         |
|               | Men's ODI / T20                                            | 1                  | 15,313           | 1                       | 15,313                 | -                  | -              |
|               | Women's ODI / T20                                          | 1                  | 4,900            | 1                       | 4,900                  | -                  | -              |
|               | Socceroos (Tier 2 friendly)                                | 1 in every 4 years | 22,050           |                         |                        | 1 in every 4 years | 22,050         |
|               | Matildas (Tier 2 friendly)                                 | 1 in every 4 years | 22,050           |                         |                        | 1 in every 4 years | 22,050         |
|               | Youth International                                        | 1                  | 2,450            | -                       | -                      | 1                  | 2,450          |
|               | Adhoc sport / entertainment                                | 1 in every 2 years | 12,000           | -                       | -                      | 1 in every 2 years | 12,000         |
| Entertainment | Concerts (Full Stadium)                                    | 1                  | 30,000           | -                       | -                      | 1                  | 30,000         |
|               | Arena mode concerts                                        | 1                  | 10,000           | -                       | -                      | 1                  | 10,000         |
| Community     | Local Football Grand Final                                 | 1                  | 4,900            | 1                       | 4,900                  | -                  | -              |
|               | VFL Tasmania Devils / VFLW Tasmania Devils (Double Header) | 2                  | 4,900            | -                       | -                      | 2                  | 4,900          |
|               | Coates Talent League (Double Header)                       | 1                  | 613              | 1                       | 613                    | -                  | -              |

<sup>11</sup> AFL / AFLW pre-season fixtures have been treated as a transfer to remain conservative and reflect the fact that current teams that utilise Tasmania as an alternate home ground (i.e. Hawthorn, North Melbourne) may not continue to travel to Tasmania for pre-season fixtures. Regular season AFL / AFLW is treated as 'new' content, recognising there is some uncertainty with contractual arrangements, as well as noting that the four games assumed to be hosted at UTAS Stadium have not been captured as part of this CBA.



|              |                                    |              |                        |           |               |              |                                     |
|--------------|------------------------------------|--------------|------------------------|-----------|---------------|--------------|-------------------------------------|
|              | Existing Mass Participation Events | 1            | 1,500                  | 1         | 1,500         | -            | -                                   |
|              | Existing Local Events              | 1            | 1,500                  | 1         | 1,500         | -            | -                                   |
| <b>Total</b> |                                    | <b>36-38</b> | <b>370,693-404,743</b> | <b>16</b> | <b>88,753</b> | <b>20-22</b> | <b>281,940-315,990<sup>12</sup></b> |

<sup>12</sup> Total is dependent on the year in which some events (i.e. ad-hoc sport / entertainment) fall

## 2.4 Cost inputs

Table 8 summarises the cost types to be incurred as a result of the Stadium and included within the scope of this CBA, with further detail provided in the section below.

**Please note that the costs presented within this report reflect those developed as part of the Financial Impact Report. In the most part, the Financial Impact Report utilises nominal figures (unless otherwise stated) while the CBA is based on real figures (excluding escalation) and applies a discount rate of 7% to generate a Net Present Value (NPV). In most cases undiscounted real and discounted real (NPV) figures are presented throughout this report. Please see the accompanying Financial Impact Report for further information including detailed methodologies and assumptions.**

Table 8: Cost inputs

| Cost                                                        | Description                                                                                                                                                                                                                                                                                                                                                                                                                          | Source                                                                                                                                                                                                                                                                                                              |
|-------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Capital costs (Stadium related cost)                        | The construction costs associated with the Stadium. It is noted that the CBA utilises real capital costs (i.e. escalation removed), while the Financial Impact Report utilises nominal capital costs.                                                                                                                                                                                                                                | Reflects inputs provided by MPDC's appointed quantity surveyor, WT Partnership.                                                                                                                                                                                                                                     |
| Operating subsidy (Stadium related cost)                    | The subsidy required to cover the Stadium's expected operating deficit, as its operating costs exceed revenue. For the purposes of this CBA, the Stadium's operating costs account for the Stadium's estimated lifecycle costs, which represents the ongoing capital replacement costs associated with the Stadium over its lifetime. See <i>the accompanying Financial Impact Report for other Stadium cost and revenue items</i> . | Reflects a range of sources including, but not limited to, workshops between MPDC, Stadiums Tasmania, DHW Ludus and KPMG, stakeholder consultation, and information made available to KPMG and DHW Ludus.<br><br>The lifecycle costs reflect inputs provided by MPDC's appointed quantity surveyor, WT Partnership. |
| Incremental event attraction funding (Stadium related cost) | The incremental funding required to attract certain events to the Stadium given the competitive nature of the industry.                                                                                                                                                                                                                                                                                                              | Reflects information collected through KPMG and DHW Ludus consultation with content owners and other stakeholders.                                                                                                                                                                                                  |
| Tasmanian Government AFL Subsidy (Team related cost)        | The incremental funding provided by the Tasmanian Government to support the establishment of the new AFL team.                                                                                                                                                                                                                                                                                                                       | Reflects publicly available information. <sup>13</sup>                                                                                                                                                                                                                                                              |

### 2.4.1 Capital costs

In the context of infrastructure developments, capital costs are one-off costs typically incurred as a result of land acquisition and construction. The table below presents the real and present (without escalation) value of capital cost estimates for the Stadium over an anticipated construction period of approximately four years. It also presents the capital costs in nominal terms (\$774.9m) (with escalation), which is the cost presented within the Financial Impact Report.

Table 9: Capital costs

| \$2024                                           | Macquarie Point Stadium |
|--------------------------------------------------|-------------------------|
| Incremental capital cost (nominal) <sup>14</sup> | \$774.9m                |
| Incremental capital cost (real)                  | \$715.9m                |
| Incremental capital costs (NPV, 7%)              | \$578.9m                |

The capital costs included within the CBA capture all sources of funding, including funding from the Federal Government, the AFL, the Tasmanian Government and the proportion currently unallocated.

<sup>13</sup> <https://www.abc.net.au/news/2023-04-26/tasmania-19th-afl-team-as-stadium-gets-funding/102266608>.

<sup>14</sup> Macquarie Point Multi Purpose Stadium Concept Design Estimate No.1, WT Partnership 10 July 2024.

## 2.4.2 Operating subsidy

It is expected that an operating subsidy will be required to offset the annual operating deficit projected at the Stadium (as per the Financial Impact Report). This operating result includes lifecycle costs, incorporating the capital replacement costs over the Stadium's life required to ensure the asset reaches its economic useful life. The lifecycle costs reflect inputs provided by MPDC's appointed quantity surveyor, WT Partnership.

The table below presents the real and present value of the operating subsidy estimated for the Stadium over the 30-year evaluation period.

Table 10: Operating subsidy (after lifecycle costs)

| \$2024                      | Macquarie Point Stadium |
|-----------------------------|-------------------------|
| Operating subsidy (real)    | \$231.5m                |
| Operating subsidy (NPV, 7%) | \$62.4m                 |

## 2.4.3 Incremental event attraction funding

Local and State Governments across Australia are increasingly looking to events as a key pillar of their economic and social narrative, creating a competitive environment for event attraction. As such, it is anticipated that the Tasmanian Government will be required to allocate funding for the purposes of event attraction (in addition to what is already being funded). Table 11 presents the real and present value of the expected incremental event attraction funding over the 30-year evaluation period.

Table 11: Event attraction funding

| \$2024                                       | Macquarie Point Stadium |
|----------------------------------------------|-------------------------|
| Incremental event attraction costs (real)    | \$48.2m                 |
| Incremental event attraction costs (NPV, 7%) | \$14.0m                 |

## 2.4.4 AFL subsidy

In addition to the AFL investing in the establishment of the Devils (see section 2.5 for further information), the Tasmanian Government will also invest in the team's establishment, providing a \$144.0m subsidy over a 12-year period. While the AFL's investment into the team (and broader grassroots and community football) is considered an incremental benefit to Tasmania, the State's investment has been treated as a cost.

Table 12 presents the real and present value of the Tasmanian Government's team subsidy over the 30-year evaluation period.

Table 12: AFL subsidy

| \$2024                                  | Macquarie Point Stadium |
|-----------------------------------------|-------------------------|
| Incremental AFL subsidy costs (real)    | \$144.0m                |
| Incremental AFL subsidy costs (NPV, 7%) | \$98.6m                 |

## 2.5 Identification and quantification of benefits

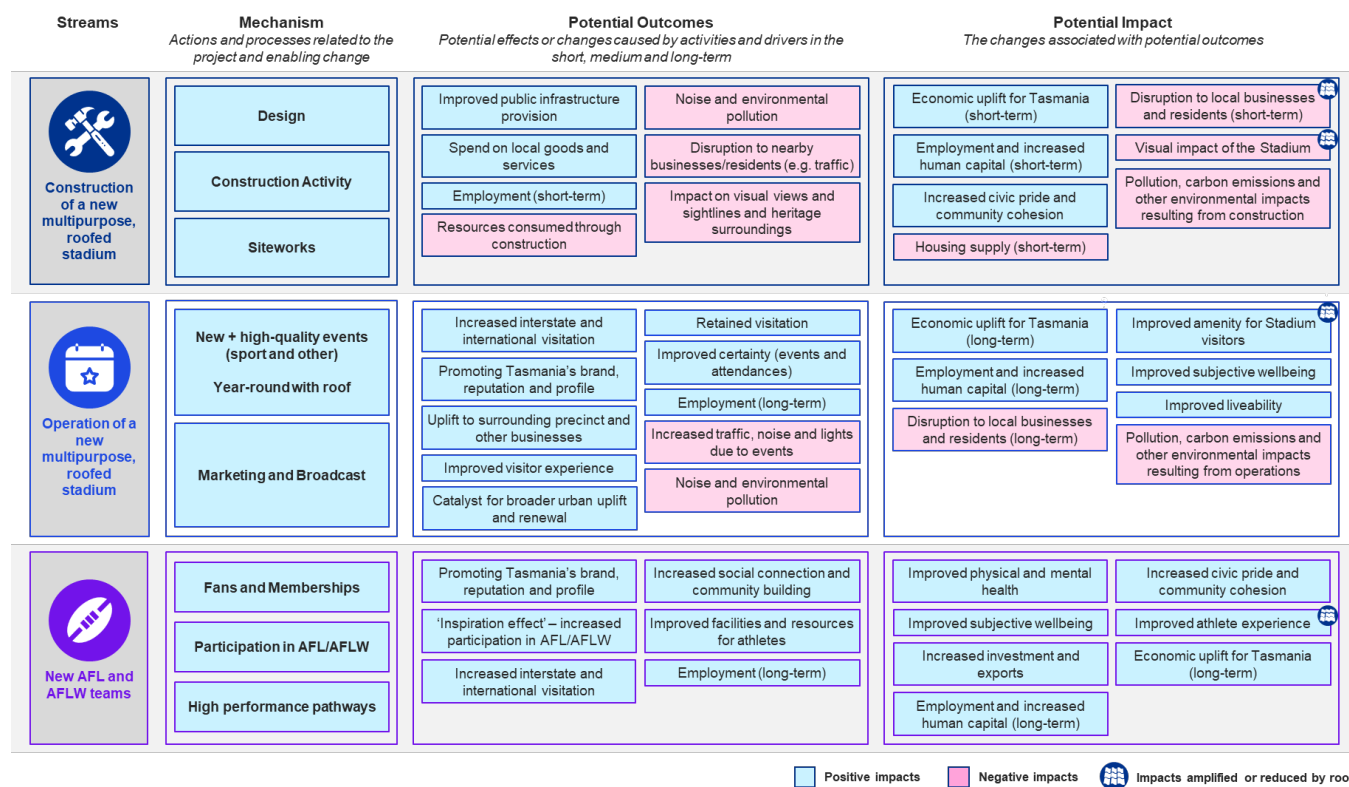
The proposed Stadium is expected to generate a range of benefits for the State of Tasmania, through three 'streams' of activity:

- Construction of the new Stadium, including its design, remediation works and siteworks;
- Operation of the new Stadium, and the provision and promotion of new and high-quality events; and
- The establishment of the new AFL team, the Devils, and the associated investment in grassroots football and high-performance pathways.

To identify the benefits that are expected to flow from the Stadium, a Value Framework was first developed. The Value Framework – similar to tools such as a theory of change or program logic – helps to establish the linkage between a project's change mechanisms or its activities, and the associated impacts. It follows that, if an impact cannot reasonably be linked back to an expected activity, it is unlikely to occur. Further information on the

development of the Value Framework, including the approach taken to its development and a detailed exploration of all identified impacts, can be found in the accompanying Social and Cultural Analysis report.

Figure 1: Value Framework



Following the development of the Value Framework, positive and negative impacts were explored in greater detail to assess the extent to which a sufficient evidence base exists for the purposes of quantification. Following this process, a short list of benefits was identified for inclusion within this CBA. Impacts unable to be quantified are discussed qualitatively within the accompanying Social and Cultural Analysis report. Table 13 summarises the quantifiable impacts (i.e. benefits) with further information provided in the section below.

Table 13: Quantifiable benefits of the stadium

| Impact                                                               | Benefit                                      | Definition                                                                                                   | Simplified approach to quantification                                                                                                                                                                                                                                                                                                                                                                                                                           |
|----------------------------------------------------------------------|----------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Increased income for Tasmanian residents, businesses, and government | Producer and labour surplus <sup>15,16</sup> | Producer and labour surplus flowing from new visitors to Tasmania spending money on local goods and services | Producer surplus (attendees) benefit is calculated as:<br><i>New visitors from outside Tasmania x average length of stay x spend per night (excluding in-stadium spend) x producer surplus %.</i><br><br>Labour surplus (attendees) benefit is calculated as:<br><i>New visitors from outside Tasmania x average length of stay x spend per night (excluding in-stadium spend) x labour surplus % (accounting for the opportunity cost of a worker's time).</i> |
|                                                                      |                                              | Producer and labour surplus flowing from new event operators from outside of                                 | Producer surplus (operators) benefit is calculated as:                                                                                                                                                                                                                                                                                                                                                                                                          |

<sup>15</sup> Producer surplus represents the amount a producer benefits from producing and selling a particular good or service. It represents the difference between the market price and the lowest price a producer is willing to accept to produce a good. Simply put, the producer surplus is the additional profit accruing to producers resulting from the injection of expenditure into the economy.

<sup>16</sup> Labour surplus is the difference between the wages earned by a worker within the Tasmanian economy, and the opportunity cost of their time (the minimum amount they would be willing to accept in order to work). Simply put, labour surplus represents the additional income earned by the Tasmanian workforce as a result of the project.

| Impact                                                               | Benefit                 | Definition                                                                                                                                                                               | Simplified approach to quantification                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
|----------------------------------------------------------------------|-------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                                                      |                         | Tasmania spending money on local goods and services                                                                                                                                      | <p><i>New event operators from outside Tasmania x the number of people who travel with each operator x average length of stay x spend per night x producer surplus %.</i></p> <p>Labour surplus (operators) benefit is calculated as:</p> <p><i>New event operators from outside Tasmania x the number of people who travel with each operator x average length of stay x spend per night x labour surplus % (accounting for the opportunity cost of a worker's time).</i></p>                                                                                                                                          |
|                                                                      |                         | Producer and labour surplus flowing from fewer Tasmanians leaving the State to attend an event in another Australian State or Territory                                                  | <p>Producer surplus (retained visitation) benefit is calculated as:</p> <p><i>Retained visitors x average length of stay in other jurisdiction x spend per night x producer surplus %.</i></p> <p>Labour surplus (retained visitation) benefit is calculated as:</p> <p><i>Retained visitors x average length of stay in other jurisdiction x spend per night x labour surplus % (accounting for the opportunity cost of a worker's time).</i></p>                                                                                                                                                                      |
|                                                                      |                         | Producer and labour surplus flowing from the establishment of the new AFL team and the associated investment in the State                                                                | <p>Producer surplus (AFL industry) benefit is calculated as:</p> <p><i>AFL investment into the State for the team's establishment and game development x producer surplus %.</i></p> <p>Labour surplus (AFL industry) benefit is calculated as:</p> <p><i>AFL investment into the State for the team's establishment and game development x labour surplus % (accounting for the opportunity cost of a worker's time).</i></p>                                                                                                                                                                                          |
| Amenity impacts                                                      | Consumer surplus        | Use-value accruing to Tasmanians who attend the new Stadium                                                                                                                              | <p>Use value is calculated as:</p> <p><i>Local Stadium attendees x average willingness to pay x consumer surplus % (accounting for new attendees receiving 50% of the consumer surplus benefit).</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                |
| Increased civic and community pride<br>Improved subjective wellbeing |                         | Non-use value accruing to Tasmanians as a result of the AFL team's establishment, independent of the Stadium's use                                                                       | <p>Non-use value is calculated as:</p> <p><i>Total number of greater Hobart residents x annual non-use value.</i></p>                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                   |
| Improved physical and mental health                                  | Health and productivity | Personal health benefit accruing to Tasmanians who start playing AFL as a result of the participation target and 'inspiration effect', who otherwise would have been physically inactive | <p>Personal physical health benefits are calculated as:</p> <p><i>Incremental (new) local participation in AFL resulting from the AFL's investment and participation targets x the proportion of participants who move from a physically inactive to active state x the number of prevented cases of chronic disease x the value of the prevented cases of chronic disease.</i></p> <p>Personal mental health benefits are calculated as:</p> <p><i>Incremental (new) local participation in AFL resulting from the AFL's investment and participation targets x the proportion of participants who move from a</i></p> |

| Impact                            | Benefit               | Definition                                                                    | Simplified approach to quantification                                                                                                                                                                                                                                                                                                                                        |
|-----------------------------------|-----------------------|-------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|                                   |                       |                                                                               | <i>physically inactive to active state x national prevalence rates for anxiety and depression (controlling for co-prevalence) x improved treatment effect x the value of the improved treatment.</i>                                                                                                                                                                         |
|                                   |                       | Health system benefit that flows from the personal health benefit above       | The health system benefit is calculated as:<br><i>Prevented cases of chronic disease and reduced mental illness symptoms (achieved through improved treatment effect) x annual health system saving per prevented case and reduced symptoms.</i>                                                                                                                             |
|                                   |                       | Productivity benefit that flows from the personal health benefit above        | The productivity benefit is calculated as:<br><i>Incremental (new) local participation in AFL resulting from the AFL's investment and participation targets x the proportion of participants who move from a physically inactive to active state x labour force participation rates (by age group) x uplift in productive output x average annual earnings in Australia.</i> |
| All quantifiable positive impacts | <b>Terminal value</b> | The ongoing economic value of the project at the end of the evaluation period | Terminal value is calculated as:<br><i>Net benefit accruing in operating year 30 x 20 terminal years assuming a 50 year useful life (discounted using the central discount value).</i>                                                                                                                                                                                       |



## 2.5.1 Producer and labour surplus

Producer surplus arises when a producer receives more than the minimum amount that they would be willing to accept for the delivery of goods and services. Similarly, labour surplus is the difference between a worker's actual wage and what they are willing to accept (reservation wage). While producer surplus can be viewed as a benefit to Tasmanian businesses, labour surplus can be viewed as a benefit to Tasmanian workers.

The Stadium is expected to facilitate both producer and labour surplus in the following categories:

- Increased visitation – attendees: the producer and labour surplus associated with new visitors to Tasmania who travel for the purposes of attending an event at the Stadium, and their associated expenditure on local goods and services;
- Increased visitation – operators: the producer and labour surplus gained when new event and sporting team operators travel to Tasmania for the purposes of putting on, or participating in, an event. These operators typically bring with them a team of people who spend money on local goods and services;
- Retained visitation: the producer and labour surplus retained within Tasmania as fewer residents leave each year to attend events in other Australian States and Territories as the event is not available to them at home. Retaining these individuals means that they spend money on local goods and services, instead of spending money in other Australian States and Territories; and
- Establishment of the Devils: the producer and labour surplus that will result from the investment made by the AFL in establishing the team, including funding for game development, grassroots and community football program development, and high-performance pathways.

To estimate producer and labour surplus values, value-added ratios have been used to calculate the percentage added per unit of input across a representative sample of goods and services a person travelling from interstate / overseas is expected to spend money on, as published by the Australian National Accounts: Input-Output Tables (FY22).<sup>17</sup> This bundle includes the following categories: retail trade, accommodation, food and beverage services, and transport services. Assuming an evenly split bucket of expenditure across all categories, the following has been calculated:

- Producer surplus is estimated as 16 percent of the average visitor (gross) expenditure. In other words, when you consider the total amount a visitor to Tasmania spends, 16 percent of this spend will benefit Tasmanian producers. The visitor's total expenditure is not captured as a benefit to producers, but rather the marginal operating profit achieved by producers as a result of the incremental expenditure. The estimate considers the 'Gross operating surplus' (GOS) and 'Taxes less subsidies on products' (Taxes less subsidies) per identified category. The GOS and Taxes less subsidies estimate for each category have then been divided by the corresponding total use value, providing an estimate of producer surplus for each category. The average across each category has then been used in this analysis; and
- Labour surplus is estimated as 31 percent of the average visitor (gross) expenditure, and is the difference between the wages earned by a worker, and the opportunity cost of their time (the minimum amount they would be willing to accept in order to work). Labour surplus benefits are driven by a number of factors, including supranormal salaries and wages, additional jobs within the economy that are not displacing other jobs elsewhere, additional hours worked or additional non-monetary benefits (such as job satisfaction) accruing to Tasmanian workers. The labour surplus estimate has considered the 'compensation to employees' per identified category, and then divided this by the corresponding total use value, providing an estimate of labour surplus for each category. The average across each category has then been used in this analysis. This value has been subsequently discounted by 40 percent to account for the opportunity cost of private time – that is, to account for the fact that, in the absence of individuals working and receiving a labour surplus benefit, they would have engaged in an alternative activity that too would have generated a level of benefit. This approach is reflective of guidance published within the Australian Transport Assessment and Planning (ATAP) Guidelines.<sup>18</sup>

The following section provides producer and labour surplus estimates for the four categories identified above.

<sup>17</sup> Australian Bureau of Statistics (2024). Australian National Accounts: Input-Output Tables. <https://www.abs.gov.au/statistics/economy/national-accounts/australian-national-accounts-input-output-tables/latest-release>

<sup>18</sup> <https://www.atap.gov.au/parameter-values/road-transport/3-travel-time>



## Increased visitation

The new events held at the Stadium will attract an increased number of visitors to Tasmania (inbound visitation).<sup>19</sup> These visitors will contribute to the Tasmanian economy as they spend money on local goods and services, resulting in both a producer and labour surplus.<sup>20,21,22</sup>

**It is estimated that the new Stadium will drive an uplift in annual visitor nights of 2.9 percent (302,000) when compared to the 10-year State average of 10.4m nights per annum (2011 – 2023 excl. COVID years 2020, 2021 and 2022).**

It is expected that the Stadium will host:

- Sports and cultural events that primarily attract individuals travelling for leisure purposes (presented in Table 7); and
- Business events, that primarily attract individuals travelling for businesses purposes (e.g. to attend a conference or workshop).

Inbound visitation estimates associated with both event types, and the associated economic benefit, are discussed further below.

### Sports and cultural events

As previously described, the new Stadium will host a range of new events each year, resulting in new attendance. A proportion of this attendance will be attributable to inbound visitation, that generates both producer and labour surplus as these visitors spend money on local goods and services.

In order to quantify this benefit, the following assumptions have been made:

- With consideration of the 'new' attendance to the Stadium across the evaluation period, between zero percent and 36 percent of this attendance is expected to be inbound visitation depending on the event category:
  - Of attendees to Commercial events, 25 percent are assumed to be visiting from outside of Tasmania. This figure has been benchmarked against the proportion of local vs inbound visitors to Hawthorn (AFL) games held at UTAS Stadium published by PwC in 2017;<sup>23</sup>
  - Of attendees to 'One-off' events, 20 percent are assumed to be non-local. This figure has been benchmarked against information provided by Cricket Australia on inbound attendance at test matches, one-day international matches and T20 matches across 2017-2024;
  - There are limited benchmarks available of attendees to Entertainment events within a Stadium in Tasmania. Other large-scale visitation experiences such as Dark Mofo and Mona Foma in 2023 have attracted inbound visitation that accounts 36 percent of total attendance. Due to the limited available benchmarks, it has been assumed that 20 percent of attendees will be inbound, in line with the 'one-off' events;<sup>24,25</sup> and
  - Of attendees to Community events, zero percent are assumed to be inbound visitors.

<sup>19</sup> Depken, Craig A., and E. Frank Stephenson. "HOTEL DEMAND BEFORE, DURING, and after SPORTS EVENTS: EVIDENCE from CHARLOTTE, NORTH CAROLINA." *Economic Inquiry*, vol. 56, no. 3, 9 Mar. 2018, pp. 1764–1776, <https://doi.org/10.1111/ecin.12572>.

<sup>20</sup> Abbasov, Timur, and Dmitry Sedov. "Do Local Businesses Benefit from Sports Facilities? The Case of Major League Sports Stadiums and Arenas." *Regional Science and Urban Economics*, vol. 98, Nov. 2022, p. 103853, <https://doi.org/10.1016/j.regsciurbeco.2022.103853>.

<sup>21</sup> Truysols, Marc. "The Economic Impact of Tourism: What You Need to Know." *Mize*, 4 July 2023, [mize.tech/blog/the-economic-impact-of-tourism-what-you-need-to-know/](https://mize.tech/blog/the-economic-impact-of-tourism-what-you-need-to-know/).

<sup>22</sup> Burgan, Barry, and Trevor Mules. "Economic Impact of Sporting Events." *Annals of Tourism Research*, vol. 19, no. 4, Jan. 1992, pp. 700–710, [https://doi.org/10.1016/0160-7383\(92\)90062-t](https://doi.org/10.1016/0160-7383(92)90062-t).

<sup>23</sup> Hawthorn Football Club. "Hawthorn's Tasmanian economic impact". 2018. <https://www.hawthornfc.com.au/news/463753/hawthorns-tasmanian-economic-impact>.

<sup>24</sup> Tasmanian Times. "Dark Mofo Sets New Attendance Records". (2023). <https://tasmaniantimes.com/2023/06/dark-mofo-sets-new-attendance-records/>

<sup>25</sup> Pulse Tasmania. "Mona Foma reveals 16th edition line-up complete with hundreds of artists". (2023). <https://pulsetasmania.com.au/news/mona-foma-reveals-16th-edition-line-up-complete-with-500-artists/#:~:text=Minister%20for%20Stadia%20and%20Events,2024%20from%20the%20state%20government.&text=%E2%80%9CThe%20figures%20don%27t%20lie,ticketed%20events%2C%E2%80%9D%20he%20said>.

**When considering the combination of new attendees and inbound visitation proportion, in an average operating year, it is estimated that the Stadium will result in Tasmania hosting an additional 66,700 people from outside of Tasmania, representing 17% of total attendees.**

- Each attendee from outside of Tasmania who attends a Stadium event is assumed to stay for an average of 3.1 nights with an average spend of \$304 per night.

These figures reflect the following:

- An average length of stay per visitor of 4.3 nights, reflecting the average stay of visitors to Tasmania who travel for the purposes of a 'holiday' as published by Tourism Research Australia (TRA) for the year ending March 2024.<sup>26</sup> A discount rate of 28 percent has subsequently been applied reducing the length of stay to 3.1 nights. This discount seeks to isolate a degree of attribution, and reflects data made available by Events Tasmania for the purposes of this project that indicates that, across a bucket of eight events in Tasmania across 2023-2024, of the total non-local attendees, 72 percent travelled for the purposes of attending the event; and
- The average spend per visitor is based on the average spend per 'holiday' visitor to Tasmania for the year ending March 2024 (\$326 per night) as published by the TRA less an average in-stadium spend of \$68 per person.<sup>27,28</sup> The average in-Stadium spend reflects a weighted average spend per person across event categories on a stadium ticket and food and beverage.

It is acknowledged that the analysis within this report has used average nights and spend data for visitors to Tasmania and has not considered average nights / spend of international visitors. Although international visitors are expected to visit Tasmania for the purposes of attending a Stadium event, this group of visitors is expected to be small in comparison to interstate visitors. Therefore, only interstate statistics have been used for modelling purposes.

- The producer and labour surplus components of the visitor spend have been applied in line with the methodology described above.

Table 14 presents the estimated producer and labour surplus benefit related to the increased visitation to Tasmania.

*Table 14: Producer and labour surplus - Increased visitation, sports and cultural events*

| <b>\$2024</b>                                                   | <b>Macquarie Point Stadium</b> |
|-----------------------------------------------------------------|--------------------------------|
| Incremental producer surplus (real)                             | \$304.4m                       |
| Incremental labour surplus (real)                               | \$353.9m                       |
| Incremental combined producer and labour surplus (real)         | \$658.3m                       |
| NPV incremental combined producer and labour surplus (7%, FY25) | \$198.3m                       |

### Business events

In addition to the events described above, the Stadium will host business, association and trade show events in its function and dining spaces.

As discussed within the Financial Impact Report, the event calendar estimates an additional 104 business events with an average attendance of 250 people. This corresponds to a total attendance of 26,000 per annum and it is assumed that these events, and the associated attendance, is new to Tasmania. This assumption reflects conversations with Business Events Tasmania, indicating that the Stadium's function and dining spaces will fill a gap in the market.

Consistent with sporting and cultural events attracting new visitors to Tasmania, the business events held at the Stadium will attract an increased number of visitors to Tasmania who spend money on local goods and services. This expenditure will result in both a producer and labour surplus.

<sup>26</sup> [www.tra.gov.au. \(n.d.\). Domestic tourism results - Tourism Research Australia. Available at: https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6.](https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6)

<sup>27</sup> [www.tra.gov.au. \(n.d.\). Domestic tourism results - Tourism Research Australia. Available at: https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6.](https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6)

<sup>28</sup> This expenditure includes expenditure on domestic airfares, travel packages, accommodation, food and beverages, and all other expenditure. See: [Regional expenditure methodology | Tourism Research Australia](#) for further details.

In order to quantify this benefit, the following assumptions have been made:

- Of the total business event attendance of 26,000 per annum, 20% of this is assumed to be attributed to inbound visitors from outside of Tasmania who travel to Tasmania for the purposes of attending the business event;
- Each inbound visitor who attends a Stadium business event is assumed to stay for an average of 3.6 nights reflecting the average stay of visitors to Tasmania who travel for the purposes of 'business' as published by TRA for year ending March 2024;<sup>29</sup>
- Each inbound visitor who attends a Stadium business event spends \$264 per night. The average spend of \$264 reflects the average spend of visitors to Tasmania who travel for the purposes of business events (less an assumed in-stadium spend)<sup>30</sup> as published by TRA;<sup>31,32</sup> and
- The producer and labour surplus components of the visitor spend have been applied in line with the methodology described above.

Table 15 presents the estimated producer and labour surplus benefit related to the increased visitation to Tasmania for business purposes.

*Table 15: Producer and labour surplus - Increased visitation, business events*

| <b>\$2024</b>                                                   | <b>Macquarie Point Stadium</b> |
|-----------------------------------------------------------------|--------------------------------|
| Incremental producer surplus (real)                             | \$20.0m                        |
| Incremental labour surplus (real)                               | \$23.2m                        |
| Incremental combined producer and labour surplus (real)         | \$43.2m                        |
| NPV incremental combined producer and labour surplus (7%, FY25) | \$13.2m                        |

### Increased visitation – operators

The Stadium will attract new event operators (i.e. event owners such as traveling teams and staff) to Tasmania for the purposes of putting on, or participating in, an event. These operators are expected to bring incremental expenditure into the State.

In order to quantify this benefit, the following assumptions have been made:

- All new 'Commercial', 'One-off' and 'Entertainment' events (Table 7) are assumed to attract one inbound operator to the State for the purposes of the event. This is considered to be a conservative estimate, as some events will attract two operators (i.e. if hosting a NRL fixture, there would be two teams).
- Each operator is assumed to bring an additional 30 people into the State, with:
  - Those travelling as part of a Commercial event staying for two nights and spending an average of \$326 per night.<sup>33</sup> This length of stay has given consideration to these events being domestic operators who are unlikely to stay for an extended period; and
  - Those travelling as part of a One-off or Entertainment event staying for five nights and spending an average of \$326 per night. This length of stay has given consideration to these events being a mix between domestic and international operators, with the international operators more likely to stay for an extended period.
- The producer and labour surplus components of the visitor spend have been applied in line with the methodology described above.

Table 16 presents the estimated producer and labour surplus benefit related to the increased visitation of operators.

<sup>29</sup> [www.tra.gov.au. \(n.d.\). Domestic tourism results - Tourism Research Australia. Available at: https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6.](https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6)

<sup>30</sup> \$150 in-stadium spend assumed for functions

<sup>31</sup> [www.tra.gov.au. \(n.d.\). Domestic tourism results - Tourism Research Australia. Available at: https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6.](https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6)

<sup>32</sup> This expenditure includes expenditure on domestic airfares, travel packages, accommodation, food and beverages, and all other expenditure. See: [Regional expenditure methodology | Tourism Research Australia](#) for further details.

<sup>33</sup> [www.tra.gov.au. \(n.d.\). Domestic tourism results - Tourism Research Australia. Available at: https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6.](https://www.tra.gov.au/en/domestic/domestic-tourism-results#ref6)

Table 16: Producer and labour surplus – Increased visitation, operators

| \$2024                                                          | Macquarie Point Stadium |
|-----------------------------------------------------------------|-------------------------|
| Incremental producer surplus (real)                             | \$2.2m                  |
| Incremental labour surplus (real)                               | \$2.6m                  |
| Incremental combined producer and labour surplus (real)         | \$4.8m                  |
| NPV incremental combined producer and labour surplus (7%, FY25) | \$1.4m                  |

### Retained visitation

The current venues offered in Tasmania, and the absence of an AFL team, means that the State misses out on a number of events held in interstate locations. It follows that Tasmanians who would like to attend these events are required to travel interstate to do so, and in the process, transfer economic activity out of Tasmania. The Stadium is however expected to retain a portion of this expenditure, as some of these interstate events will take place within Tasmania at the new venue.

In order to quantify this benefit, the following assumptions have been made:

- With consideration of the estimated 'new' attendance to the Stadium across the evaluation period, between 64 percent and 100 percent of this attendance is expected to be local attendance depending on the event category, representing the 'inverse' assumption used to estimate the inbound attendance for the benefit 'Increased visitation – attendees' described above:
  - Of attendees to Commercial events, 75 percent are assumed to be local;<sup>34</sup>
  - Of attendees to One-off events, 80 percent are assumed to be local;<sup>35</sup>
  - Of attendees to 'Entertainment' events, 80 percent are assumed to be local;<sup>36,37</sup> and
  - Of attendees to 'Community' events, 100 percent are assumed to be local.
- Of the new local attendance, retained attendees are assumed to represent 10 percent of Commercial events and 25 percent of One-off and Entertainment events. Retained attendance to One-off events is assumed to be higher than Commercial events, given the marquee nature of this event type and an increased proportion of people likely to travel.

***When considering the combination of new attendance, and the above stated assumptions regarding the proportion of local attendees expected to travel to attend an event outside of Tasmania, in an average operating year, it is estimated that the Stadium will retain 32,500 people.***

- The retained attendees are assumed to spend the equivalent of a non-local visitor to Tasmania (less the in-Stadium spend adjustment of \$68), but in another State – 2.9 nights with an average spend of \$326 per night; and
- The producer and labour surplus components of the visitor spend have been applied in line with the methodology described above.

Table 17 presents the estimated producer and labour surplus benefit related to retained visitation.

<sup>34</sup> Hawthorn Football Club. "Hawthorn's Tasmanian economic impact". 2018. <https://www.hawthornfc.com.au/news/463753/hawthorns-tasmanian-economic-impact>.

<sup>35</sup> Based on Cricket Australia data provided for the purposes of this engagement.

<sup>36</sup> Tasmanian Times. "Dark Mofo Sets New Attendance Records". (2023). <https://tasmaniantimes.com/2023/06/dark-mofo-sets-new-attendance-records/>.

<sup>37</sup> Pulse Tasmania. "Mona Foma reveals 16th edition line-up complete with hundreds of artists". (2023). <https://pulsetasmania.com.au/news/mona-foma-reveals-16th-edition-line-up-complete-with-500-artists/#:~:text=Minister%20for%20Stadia%20and%20Events,2024%20from%20the%20state%20government.&text=%E2%80%9CThe%20figures%20don%27t%20lie,ticketed%20events%2C%E2%80%9D%20he%20said.>

Table 17: Producer and labour surplus - Retained visitation

| \$2024                                                          | Macquarie Point Stadium |
|-----------------------------------------------------------------|-------------------------|
| Incremental producer surplus (real)                             | \$163.6m                |
| Incremental labour surplus (real)                               | \$190.2m                |
| Incremental combined producer and labour surplus (real)         | \$353.8m                |
| NPV incremental combined producer and labour surplus (7%, FY25) | \$106.8m                |

### Establishment of the AFL team

Establishment of the new AFL Team, the Devils, is dependent on the Stadium being built.<sup>38</sup> Establishment of the new team will result in increased investment into the State of Tasmania, as the AFL not only provides funding for the Stadium's development, but also invests in grassroots and community football. Statements made by the AFL suggest that the scale of this investment will be in the order of \$350m over a 10-year period (when excluding the \$10m committed for the development of the high performance centre).<sup>39</sup>

In order to quantify this benefit, the following assumptions have been made:

- Investment into Tasmania is estimated to be \$350m over a 10-year period; and
- The producer and labour surplus components of the visitor spend have been applied in line with the methodology described above.

Table 18 presents the estimated producer and labour surplus benefit relating to the establishment of the Devils.

Table 18: Producer and labour surplus - Establishment of the Tasmanian Devils

| \$2024                                                            | Macquarie Point Stadium |
|-------------------------------------------------------------------|-------------------------|
| Incremental producer surplus (real)                               | \$56.0m                 |
| Incremental labour surplus (real)                                 | \$65.1m                 |
| Incremental combined producer and labour surplus (real)           | \$121.1m                |
| NPV incremental combined producer and labour surplus (7%, \$2024) | \$88.0m                 |

## 2.5.2 Consumer surplus

Consumer surplus is the benefit captured by consumers from a good or service over and above the total economic cost of consuming the good or service. It can occur whether or not a person consumes the good / service, and arises in a number of different ways, including:

- Use value – the value a consumer attaches to consuming a good or service;
- Option value – the value a consumer attaches to the ability to consume a good or service. This value is over and above the value attributed to use value;
- Social use value – the value an individual attributes to the consumption of a good or service by another; and
- Non-use value – the value that an individual attributes to the existence of a good or service independent of any use value.

The Stadium is expected to facilitate consumer benefits in all of the above categories. For the purposes of this CBA, however, only the consumer surplus gained from use and non-use value has been quantified due to the uncertainty surrounding the other measures and their immaterial nature.

### Use value

Within the context of this CBA, the consumer surplus associated with use value is expected to accrue to Tasmanian residents who attend the Stadium, for the purposes of attending an event, such as a sporting event like

<sup>38</sup> <https://www.afl.com.au/news/876737/afls-360m-tasmanian-team-pledge-hinges-on-new-stadium-deal#:~:text=THE%20AFL%20has%20pledged%20to,three%20new%20%22talent%20academies%22.>

<sup>39</sup> <https://www.afl.com.au/news/876737/afls-360m-tasmanian-team-pledge-hinges-on-new-stadium-deal#:~:text=THE%20AFL%20has%20pledged%20to,three%20new%20%22talent%20academies%22.>



an AFL game, or a music performance. It is acknowledged that this is a conservative assumption, and does not capture the use value accruing to people who use the Stadium for other purposes (e.g. athletes who use the new facilities for training purposes).

The Stadium will generate use value as a result of factors such as its modern design and location. More specifically:

- While the Stadium is still progressing through detailed design, it will represent a considerable uplift in terms of quality when compared to existing venues, with potential features including:
  - A diverse range of food and beverage options;
  - High-quality technological systems including audio, visuals and Wi-Fi;
  - Contemporary safety and security measures; and
  - The building will be in alignment with modern accessibility requirements. This includes ensuring wheelchair accessible seating from a variety of viewing angles and price points, wheelchair accessible bathrooms, accommodation of service animals and ramps and power-assisted doors to ensure entrances and exits are accessible.
- The location of the Stadium, near the Hobart CBD, will allow for ease of access. The Macquarie Point Draft Precinct Plan, which considers access to the site on event and non-event days, notes walking and cycling, buses, coaches, ferries, and the wider road network as viable options for accessing the venue. The Stadium will also be situated in close proximity to a variety of restaurants, bars and cafés, offering attendees options to dine and socialise before or after an event, enhancing the event experience by facilitating seamless transitions from dining to entertainment. For those travelling from outside of Hobart, the Stadium's location (close to the CBD) will mean travellers have access to a range of accommodation options, as well as other nearby attractions, including the Salamanca Place, Battery Point and the waterfront, that they may engage with during their stay.

Further information on the drivers of use value can be found in the accompanying Social and Cultural Analysis report.

The best practice approach to estimating use value is through primary research, such as travel cost analysis (revealed preferences), or through contingent valuation approaches that solicit insights into the amount people would be willing to pay for a good or service, thereby providing an estimate of their assigned value. For the purposes of this analysis, given that revealed preference studies would require an already functional venue, and contingent valuation approaches are resource intensive and often lead to questionable results for experiences of this nature, a benefits transfer approach has been utilised. This approach relies on existing consumer surplus estimates of comparable venues / events available within publicly available literature. There are a number of limitations associated with this approach, namely the reliance on the quality of available literature. Estimates of consumer surplus should therefore be viewed in this context.

To calculate the use value, the following assumptions have been made:

- Total Stadium attendance across the evaluation period has been split out into 'new' and 'transferred' (Table 7);
- Across both new and transferred attendance, between 36 percent and 100 percent of this attendance is assumed to be local attendance depending on the event:
  - Of attendees to Commercial events, 75 percent are assumed to be local;<sup>40</sup>
  - Of attendees to One-off events, 80 percent are assumed to be local;<sup>41</sup>
  - Of attendees to Entertainment events, 80 percent are assumed to be local;<sup>42,43</sup> and
  - Of attendees to 'Community' events, 100 percent are assumed to be local.

***When considering the combination of new vs transferred attendance, and the above stated assumptions regarding the proportion of local attendees, in an average operating year, it is expected that the Stadium***

<sup>40</sup> Hawthorn Football Club. "Hawthorn's Tasmanian economic impact". 2018. <https://www.hawthornfc.com.au/news/463753/hawthorns-tasmanian-economic-impact>.

<sup>41</sup> Based on Cricket Australia data provided for the purposes of this engagement.

<sup>42</sup> Tasmanian Times. "Dark Mofo Sets New Attendance Records". (2023). <https://tasmaniantimes.com/2023/06/dark-mofo-sets-new-attendance-records/>.

<sup>43</sup> Pulse Tasmania. "Mona Foma reveals 16th edition line-up complete with hundreds of artists". (2023). <https://pulsetasmania.com.au/news/mona-foma-reveals-16th-edition-line-up-complete-with-500-artists/#:~:text=Minister%20for%20Stadia%20and%20Events,2024%20from%20the%20state%20government.&text=%E2%80%9CThe%20figures%20don%27t%20lie,ticketed%20events%2C%E2%80%9D%20he%20said.>

**will host 77,300 local transferred attendees (79% of total transferred attendance), and 21,700 (77% of total new attendance) local new attendees.**

Local attendance by new vs transferred, and by event category, has subsequently been broken down by admission type, in terms of general admission (GA), corporates, and memberships, and an average ticket price has been applied as a proxy for attendees' willingness to pay (WTP);

- Evidence suggests that the magnitude of the consumer surplus for attendees attending sports and entertainment venues is likely to be in the order of between 15 percent and 58 percent of the average ticket price.<sup>44,45,46,47,48</sup> Due to limitations in the benefits transfer approach, a conservative estimate of a 20 percent uplift in willingness-to-pay has been used;
- The consumer surplus of new local attendees has been discounted by 50 percent in order to account for the lack of clarity regarding their alternate use of their time and resources under the base case. This approach is reflective of guidance published by Transport for NSW and ATAP,<sup>49,50</sup> and
- Consumers of the types of events expected to occur at the Stadium are considered homogenous and, as such, the average consumer surplus is assumed as being the same for all attendees across all event categories (mathematically equivalent to assuming a linear demand curve for the events).

These assumptions result in the majority of assumed attendees (GA attendees at new events) being attributed a benefit of \$2.20 for attending an event.

Table 19 presents the consumer surplus use-benefit accruing to Tasmanians who attend an event at the proposed Stadium.

**Table 19: Consumer surplus – Use Value**

| <b>\$2024</b>                                 | <b>Macquarie Point Stadium</b> |
|-----------------------------------------------|--------------------------------|
| Incremental consumer surplus (real)           | \$56.6m                        |
| NPV incremental consumer surplus (7%, \$2024) | \$17.1m                        |

## Non-use value

A non-use benefit is also expected to accrue to Tasmanian residents as a result of:

- The new Stadium resulting in an uplift in civic pride and community cohesion. This uplift is expected to be amplified by the introduction of the Devils. Evidence of an uplift in civic pride and community cohesion among local populations resulting from the existence of high-quality infrastructure and events is reported in several studies.<sup>51,52</sup>
- The new Stadium is expected to result in an uplift in subjective wellbeing for Tasmanian residents who support the Devils. Linkage between subjective wellbeing and sporting team membership is well evidenced.<sup>53</sup>

Further information on the drivers of non-use value can be found in the accompanying Social and Cultural Analysis report.

<sup>44</sup> McHugh, Darren. (2006). "A Cost-Benefit Analysis of an Olympic Games". Queen's University, Department of Economics, Working Papers. 10.2139/ssrn.974724.

<sup>45</sup> Segerson, Kathleen. (2017). Valuing Environmental Goods and Services: An Economic Perspective. 10.1007/978-94-007-7104-8\_1.

<sup>46</sup> Feddersen, Arne & Maennig, Wolfgang & Borchering, Malte. (2006). The Novelty Effect of the New Football Stadia: The Case of Germany. International Journal of Sport Finance. 1. 174-188.

<sup>47</sup> Clapp, Christopher & Hakes, Jahn. (2005). How Long a Honeymoon? The Effect of New Stadiums on Attendance in Major League Baseball. Journal of Sports Economics. 6. 237-263. 10.1177/1527002504265957.

<sup>48</sup> A range of literature has been reviewed to determine an appropriate and conservative estimate of consumer surplus based on a new stadium. This has considered Olympic Games events, NHL matches for local teams for both a new and existing stadium, MLB, NFL and NBA matches for both popular and less popular events, and considered the 'honeymoon' effect to assume an appropriate consumer surplus to be sustained.

<sup>49</sup> Transport for NSW. Freight Benefit Guidelines.

Accessed:[https://www.transport.nsw.gov.au/system/files/media/documents/2022/TfNSW%20Freight%20Benefits%20Guidelines\\_Final\\_11082022.pdf](https://www.transport.nsw.gov.au/system/files/media/documents/2022/TfNSW%20Freight%20Benefits%20Guidelines_Final_11082022.pdf)

<sup>50</sup> Infrastructure Australia. Guide to economic appraisal 2021. Accessed: <https://www.infrastructureaustralia.gov.au/sites/default/files/2021-07/Assessment%20Framework%202021%20Guide%20to%20economic%20appraisal.pdf>.

<sup>51</sup> Groothuis, Peter A, et al. "Public Funding of Professional Sports Stadiums: Public Choice or Civic Pride?" Eastern Economic Journal, vol. 30, no. 4, 1 Jan. 2004, pp. 515–526. Accessed 15 May 2024.

<sup>52</sup> Infrastructure NSW. Western Sydney Stadium Design Excellence. 6 Mar. 2017.

<sup>53</sup> Staff writer, with the AAP. "150,000 Members and Counting: Tassie Rides Huge Wave of Support." AFL, 22 Mar. 2024, [www.afl.com.au/news/1091555/150000-members-and-counting-tasmania-devils-ride-huge-wave-of-afl-support](http://www.afl.com.au/news/1091555/150000-members-and-counting-tasmania-devils-ride-huge-wave-of-afl-support).



Despite there being different types of non-use value associated with the new Stadium, non-use value has been quantified in aggregate, without identifying the specific nature of that non-use value (civic pride, community cohesion, subjective wellbeing). There are a number of barriers to quantifying the consumer benefits from non-use sources, particularly regarding isolating these benefits from others included in the analysis.

Similar to the estimation of use-value, the best practice approach to estimating non-use value is through primary research, such as a stated preference survey. For the purposes of this analysis, however, a benefits transfer approach has been undertaken, and the limitations noted above in regard to this approach apply here.

To calculate the non-use value, the following assumptions have been made:

- To ensure a conservative estimate, the population that the non-use value benefit is expected to accrue to has been restricted to residents of Greater Hobart aged 15 years and over (205,505 as reported by the 2021 ABS Census);<sup>54</sup> and
- On average, Hobart residents aged 15 years and over are assumed to receive a \$10.85 non-use benefit as a result of the Stadium's existence. This benefit is considered to be received annually, and is independent of any use benefit. This benefit represents the value found by Johnson et al.<sup>55</sup> in \$2024 Australian dollar terms, who measure the value of public goods generated by a professional sports team.

Table 20 presents the consumer surplus non-use benefit accruing to Hobart residents aged 15 years and over.

*Table 20: Estimated Non-Use Value*

| <b>\$2024</b>                                 | <b>Macquarie Point Stadium</b> |
|-----------------------------------------------|--------------------------------|
| Incremental consumer surplus (real)           | \$66.6m                        |
| NPV incremental consumer surplus (7%, \$2024) | \$20.3m                        |

## 2.5.3 Health and productivity

### Health effective participants

The proposed Stadium and the associated establishment of the Devils is expected to result in an increased number of Tasmanians participating in AFL at all levels (community and professional).

This increase will be driven by two factors:

- Active investment by the AFL into both grassroots and community football. This includes initiatives such as installing goal posts in all primary schools; and
- An 'inspiration effect' that sees an increased number of Tasmanians 'inspired' to start playing AFL.<sup>56</sup> [See the accompanying Social and Cultural Analysis Report for further details.](#)

The AFL has set a target to double participation in Tasmania across both Auskick and community football leagues by 2028 (to reach 28,000 participants), along with setting a goal to uplift the participation of girls / women to be in line with boys / men by 2030. Table 21 presents the AFL participation targets, highlighting the proportion of the total target that can be considered incremental and attributable to the establishment of the Devils.

*Table 21: AFL Participation Targets<sup>57</sup>*

| <b>Segment</b>                           | <b>Community League</b> | <b>Auskick</b> |
|------------------------------------------|-------------------------|----------------|
| Current participation                    | 11,500                  | 2,500          |
| Target participation by 2028             | 23,000                  | 5,000          |
| Incremental participation target by 2028 | 11,500                  | 2,500          |

<sup>54</sup> 2021 Greater Hobart, Census All persons QuickStats | Australian Bureau of Statistics (abs.gov.au).

<sup>55</sup> "Johnson, B.K., Groothuis, P.A., and Whitehead, J.C. (2001), The Value of Public Goods Generated by a Major League Sports Team: The CVM Approach. Journal of Sports Economics, 2(1): 6-21 (Feb 2001). Published by SAGE. doi:10.1177/152700250100200102".

<sup>56</sup> Ramchandani, Girish, et al. "Factors Influencing the Inspirational Effect of Major Sports Events on Audience Sport Participation Behaviour." World Leisure Journal, vol. 56, no. 3, 3 July 2014, pp. 220-235, <https://doi.org/10.1080/16078055.2014.938296>.

<sup>57</sup> Estimates of current participation have been estimated based on the AFLs target of 'doubling' participation.

|                                   |       |       |
|-----------------------------------|-------|-------|
| Incremental – girls / women (50%) | 5,750 | 1,250 |
| Incremental – boys / men (50%)    | 5,750 | 1,250 |

With consideration of the incremental participation targets presented in the table above, a proportion of these people can be considered to be physically active because of the introduction of the new AFL team, which is reliant on the establishment of the Stadium. Assuming that this group of people are physically active to the point of meeting minimum physical activity guidelines, they will subsequently generate associated physical and mental health benefits. This proportion of participants can be referred to as 'health effective participants', and has been estimated by:

- Allocating:
  - 100 percent of incremental Auskick participants to the 0-14 year age group;
  - 65.6 percent of incremental community participants to the 15-24 year age group; and
  - 34.4 percent of incremental community participants to the 25-44 year age group.

The breakdown of community participants reflects AusPlay data on the number of Australian males who play AFL by age group noting equivalent data is unavailable for female participants.<sup>58</sup>

- For each age group, the proportion of people expected to only play AFL has been estimated as 36.87% based on AusPlay data for Tasmania showing the average percentage of adult participants that partake in one sport activity.<sup>59</sup> It follows that, in the absence of playing AFL, these participants would not engage in any other form of physical activity and therefore wouldn't be physically active.

Table 22 presents the incremental health effective participants by gender and age in 2030 following the investment and development period. It has been assumed that, beyond 2030, 20% of this total represents incremental participants. This estimate, and subsequent assumption, goes on to inform the personal health benefit presented below.

Table 22: Health effective participants

| Segment      | Incremental target | % of people who participate in one sport | Health effective participants 2030 |
|--------------|--------------------|------------------------------------------|------------------------------------|
| Male         |                    |                                          |                                    |
| 0-14         | 1,250              | 36.87%                                   | 461                                |
| 15 - 24      | 3,771              |                                          | 1,390                              |
| 25 - 44      | 1,979              |                                          | 730                                |
| Sub-total    | 7,000              |                                          | 2,581                              |
| Female       |                    |                                          |                                    |
| 0-14         | 1,250              | 36.87%                                   | 461                                |
| 15 - 24      | 3,771              |                                          | 1,390                              |
| 25 - 44      | 1,979              |                                          | 730                                |
| Sub-total    | 7,000              |                                          | 2,581                              |
| <b>Total</b> | <b>14,000</b>      |                                          | <b>5,162</b>                       |

<sup>58</sup> Women have been excluded in the proportions due to insufficient data and therefore a high margin of error as noted by AusPlay.

<sup>59</sup> AusPlay. (2023). Focus on State and Territory Participation.

<https://app.powerbi.com/view?e=eyJrIjoieMzlmNjZlOTYtYTYvNCO0MzUwLk2OWMtZTEwMDJlZTBjYzI0IiwidCI6IjhhkMmUwZjRjLU1ZjltNGNiMS04ZWU3LWRhNWRkM2ZmZmYwMCJ9>

## Personal health benefit

### Physical Health

Physical activity has been linked to a reduction in the risk of several chronic diseases. For those health effective participants identified above, the benefit of the expected improvement in their quality of life as a result of the lower risk of chronic disease has been calculated for the following:

- Cardiovascular disease;<sup>60</sup>
- Breast cancer and bowel (colorectal) cancer;<sup>61</sup>
- Type-2 diabetes;<sup>62</sup> and
- Dementia.<sup>63</sup>

Chronic disease leads to people having both a lower quality of life and to having a reduced length of life. It follows that the prevention of disease therefore reduces this burden, improving the expected quality and length of life. It is the personal benefit of these impacts that is valued within this CBA using a Disability Adjusted Life Year (DALY) methodology that aligns with that used by the Australian Institute of Health and Welfare (AIHW) for their Burden of Disease estimates.<sup>64</sup>

This methodology estimates:

- The number of 'prevented cases' of a chronic disease. This is determined by multiplying a risk reduction factor by the incidence rates (i.e. annual risk) for each disease. Risk reduction factors of between 20 percent and 30 percent have been applied (depending on the disease), based on research indicating that regular participation in physical activity reduces the risk of developing these diseases;<sup>65,66,67,68,69</sup>
- The DALYs associated with each prevented case of disease. This is calculated by applying disability weights to the number of years that a person is expected to not be diseased when a case is prevented.<sup>70</sup> The disability weights represent the amount that each chronic disease impacts a person's quality of life (with 1 representing a year of full health); and
- The value of a reduced DALY. This is found by escalating the Value of Statistical Life Year (VSLY) (\$272,310, \$2024) sourced from the Office of Better Practice Regulation (OBPR).<sup>71</sup>

By multiplying each of these components, the monetary value of this reduced risk can be estimated per health effective participant. This is then applied to the pool of incremental health effective participants to estimate the total reduced risk of chronic disease benefit as a result of the investment made by the AFL.

### Mental Health

Participation in physical activity has been shown to both reduce the risk of developing, and improve the treatment for, a number of mental illnesses, including both anxiety and depression. This CBA estimates benefits of improved

<sup>60</sup> Australian Institute of Health and Welfare. (2019). Australian Burden of Disease Study: Impact and causes of illness and death in Australia 2015.

<sup>61</sup> Australian Institute of Health and Welfare. (2016). Australian Cancer Incidence and Mortality (ACIM) books. Canberra: AIHW.

<sup>62</sup> Al Tunaiji, H., Davis, J.C., Mackey, D.C., & Khan, K.M. (2014). Population attributable fraction of type 2 diabetes due to physical inactivity in adults: a systematic review. *BMC Public Health*, 14(469).

<sup>63</sup> Blondell, S., Hammersley-Mather, R., Veerman, J., (2014) Does physical activity prevent cognitive decline and dementia?: A systematic review and meta-analysis of longitudinal studies. *BMC Public Health*, 14, 510.

<sup>64</sup> A DALY is a measure of healthy life lost, either through premature death or living with disability due to illness or injury.

<sup>65</sup> Australian Institute of Health and Welfare. (2014). Cardiovascular disease, diabetes and chronic kidney disease — Australian facts: Prevalence and incidence. Cardiovascular, diabetes and chronic kidney disease series no. 2. Cat. no. CDK 2. Canberra: AIHW. Retrieved from <https://www.aihw.gov.au/reports/heart-stroke-vascular-disease/cardiovascular-diabetes-chronic-kidney-prevalence/contents/table-of-contents>.

<sup>66</sup> Brenner, D.R. (2014). Cancer incidence due to excess body weight and leisure-time physical inactivity in Canada: implications for prevention. *Preventative Medicine*, 66, 131-139.

<sup>67</sup> Ballard-Barbash, R., Schatzkin, A., Albanes, D., Schiffman, M.H., Kreger, B.E., Kannel, W.B., Anderson, K.M. & Helsel, W.E. (1990). Physical activity and risk of large bowel cancer in the Framingham Study. *Cancer Research*, 50(12), 3610-3613.

<sup>68</sup> Al Tunaiji, H., Davis, J.C., Mackey, D.C., & Khan, K.M. (2014). Population attributable fraction of type 2 diabetes due to physical inactivity in adults: a systematic review. *BMC Public Health*, 14(469).

<sup>69</sup> Blondell, S., Hammersley-Mather, R., Veerman, J., (2014) Does physical activity prevent cognitive decline and dementia?: A systematic review and meta-analysis of longitudinal studies. *BMC Public Health*, 14, 510.

<sup>70</sup> Disability weights are sourced from the Global Burden of Disease study.

<sup>71</sup> VSLY = \$182k in 2014 dollars. This value has been escalated to estimate FY2024 dollars.

treatment effects for these illnesses, including the personal benefits received by incremental health effective participants. These calculations are similar to those outlined above for chronic disease, however instead of a prevention of disease, these benefits focus on a greater treatment effect.

This method takes the number of health effective participants considered to be in a physically active state as a result of the AFL's investment and the associated increase in participation, and applies national prevalence rates for anxiety and depression to estimate the number of people with improved mental health treatment effects. In doing so, it reduces the applied prevalence rate of anxiety by the co-prevalence rate for the two illnesses so that those who would be expected to have both illnesses only generate the treatment effect once (avoiding double counting).

For each expected unit of 'treated illness', a disability weight for that illness is reduced by a treatment effect. In other words, having anxiety or depression is associated with a reduction in quality of life (using general non-episodic disability weights), and this calculation estimates the improvement in quality of life based upon research into the improvement in symptoms as a result of participation in physical activity.

These disability weights are summed to develop an estimate of the total DALYs prevented, which is then multiplied by the VSLY (\$272,310, \$2024) to develop a dollar value estimate of the personal benefits. The net present DALY benefit per health effective participant is then applied to the incremental health effective participant pool to determine the total improved mental health benefit.

Table 23 presents the personal health benefits of the proposed Stadium, as the new Stadium results in the establishment of the Devils, which subsequently results in an increased number of Tasmanians engaging in physical activity.

Table 23: Health and productivity benefit - Personal health

| <b>\$2024</b>                                     | <b>Macquarie Point Stadium</b> |
|---------------------------------------------------|--------------------------------|
| Incremental physical health benefit (real)        | \$2.3m                         |
| Incremental mental health benefit (real)          | \$61.7m                        |
| Incremental personal benefit <sup>72</sup> (real) | \$64.1m                        |
| NPV incremental personal benefit (7%, \$2024)     | \$22.4m                        |

## Health system benefit

There is a burden on the health system resulting from chronic disease and mental illness. For each 'prevented case' of chronic disease, and for each case of reduced mental illness symptoms, an estimated annual health system cost has been applied, as an expected financial saving within the health system (this impact will vary based on the disease, age and gender of health effective participants). When interpreting this benefit, it is important to note that the benefit may accrue to either the government in direct health system savings, or to the individuals depending on where the cost burden lies for each disease or illness.

The average annual health system costs for each disease or condition are modelled over time (to reflect differentiated impacts between age groups) and applied to the pool of health effective participants to calculate a total estimated health system savings.

Table 24 presents the health system benefit associated with an increased number of Tasmanians engaging in physical activity.

Table 24: Health and productivity - Health system

| <b>\$2024</b>                                      | <b>Macquarie Point Stadium</b> |
|----------------------------------------------------|--------------------------------|
| Incremental health system benefit (real)           | \$6.8m                         |
| NPV incremental health system benefit (7%, \$2024) | \$2.4m                         |

## Productivity benefit

By participating in physical activity, individuals are found to be mentally and physically healthier, and have enhanced cognitive performance. As a result, those physically active persons are, on average, more productive

<sup>72</sup> Sum of prior two rows.

economic agents. This is delivered through a number of mechanisms, including lower absenteeism from work, greater personal productivity and increases in human capital (personal skills and ability).

This CBA calculates the productivity benefits by estimating the value of a reduction in presenteeism and absenteeism for each physically active participant in a year. The productivity benefits for those who are in a physically active state because of the proposed Stadium have been calculated as follows:

- The health effective participant pool is reduced to those participants expected to be within the workforce based upon the labour force participation rates;
- It is assumed that each health effective participant (who is also participating in the workforce) will have an improved effective output of 1.8 days (combination of the prevention of both absenteeism and presenteeism) based upon a meta-study undertaken by Econtech for Medibank;<sup>73</sup>
- This has then been applied to an average work year of 240 days (48 weeks), to estimate the percentage uplift improvement in output per participant (0.75 percent); and
- This uplift has been applied to average annual earnings in Tasmania (\$87,981) to calculate the dollar benefit of the estimated uplift in productivity.<sup>74</sup>

Table 25 presents the productivity benefit associated with an increased number of Tasmanians engaging in physical activity.

Table 25: Health and productivity - Productivity

| \$2024                                            | Macquarie Point Stadium |
|---------------------------------------------------|-------------------------|
| Incremental productivity benefit (real)           | \$14.6m                 |
| NPV incremental productivity benefit (7%, \$2024) | \$5.1m                  |

## 2.5.4 Terminal value

The terminal value benefit represents the economic value of the project at the end of the evaluation period. To calculate the terminal value, an estimate of the economic life of the asset in the post-evaluation period is required. The calculated value is then included in the final year of valuation as a benefit.

The economic useful life of the proposed Stadium is estimated to be approximately 50 years, which equates to 20 years post evaluation period. The effect of discounting significantly reduces the net benefit incurred in these years and is further offset by the lifecycle maintenance expenditure and operating subsidy that are required to ensure the facility reaches its useful life.

Table 26: Terminal value

| \$2024                          | Macquarie Point Stadium |
|---------------------------------|-------------------------|
| Terminal Value                  | \$432.8m                |
| NPV terminal value (7%, \$2024) | \$41.9m                 |

<sup>73</sup> Medibank Private. (2008). The cost of physical inactivity.

<sup>74</sup> Australian Bureau of Statistics 2023, Employee earnings as of November 2022, released 14 December 2022.

## 2.6 CBA outputs

The outputs of the CBA are summarised in Table 27. The outputs are shown in \$2024 net present values and are incremental to the base case.<sup>75</sup>

Table 27: CBA Outputs

| \$m, \$2024                                       | Discount rate: | NPV 7% (central case) |
|---------------------------------------------------|----------------|-----------------------|
| <b>Incremental costs – The Stadium</b>            |                |                       |
| Capital costs                                     |                | \$578.95m             |
| Operating subsidy (after Lifecycle costs)         |                | \$62.35m              |
| Event attraction costs                            |                | \$13.99m              |
| <b>Incremental costs – The Devils</b>             |                |                       |
| AFL State Government subsidy                      |                | \$98.57m              |
| <b>Total costs</b>                                |                | <b>\$753.86m</b>      |
| <b>Incremental benefits – The Stadium</b>         |                |                       |
| Increased visitation – sports and cultural events |                | \$198.27m             |
| Increased visitation – business events            |                | \$13.17m              |
| Increased visitation - operators                  |                | \$1.44m               |
| Retained visitation                               |                | \$106.77m             |
| Use-value                                         |                | \$17.09m              |
| <b>Incremental benefits – The Devils</b>          |                |                       |
| AFL Industry                                      |                | \$87.96m              |
| Non-use value                                     |                | \$20.30m              |
| Health and productivity                           |                | \$29.92m              |
| <b>Incremental benefits – Other</b>               |                |                       |
| Terminal value                                    |                | \$41.87m              |
| <b>Total benefits</b>                             |                | <b>\$516.79m</b>      |
| <b>Outputs</b>                                    |                |                       |
| <b>Net benefit</b>                                |                | <b>-\$237.07m</b>     |
| <b>Benefit cost ratio</b>                         |                | <b>0.69</b>           |
| <b>Economic internal rate of return</b>           |                | <b>3.51%</b>          |

With consideration of the quantified costs and benefits (discounted real figures), there is an estimated net benefit (negative) for the proposed Stadium of (\$237.0m), with a BCR of 0.69. While the quantifiable economic benefits are not projected to outweigh the quantifiable costs, it should be noted this is not unusual for projects of this nature, where a large component of benefit is either not quantifiable or not able to be monetised (whereas most or all costs are able to be monetised). Benefits that have been unable to be quantified have been discussed in the accompanying Social and Cultural Analysis Report. It is also noted that, given the inherent uncertainty and the intangible nature of a number of the benefits, a conservative approach has been taken to the demand projections, financial modelling, and the monetisation of benefits.

<sup>75</sup> As previously noted, the costs presented within this report reflect those developed as part of the Financial Impact Report. In the most part, the Financial Impact Report utilises nominal figures (unless otherwise stated) while the CBA is based on real figures (excluding escalation) and applies a discount rate of 7% to generate a Net Present Value (NPV). In most cases undiscounted real and discounted real (NPV) figures are presented throughout this report. Please see the accompanying Financial Impact Report for further information including detailed methodologies and assumptions.



## Sensitivity and scenario analysis

Partial sensitivity and scenario analysis of the CBA is presented below.

As shown in Table 28, the NPV and BCRs are expected to range from (\$363.2m) to (\$6.5m) and 0.50 to 0.99 respectively when considering the sensitivity testing on the:

- Discount rate at low and high scenarios of 3% and 10%;
- Capital expenditure at low and high scenarios of +20% and -20%. To reach a BCR of 1.0 driven by capital expenditure alone, capital expenditure would need to decrease by approximately 37.6%;
- Visitor spend at low and high scenarios of -20% and +20%. To reach a BCR of 1.0 driven by visitor spend alone, visitor spend would need to increase by approximately 63.0%;
- Stadium attendance (demand) at low and high scenarios of -20% and +20%. To reach a BCR of 1.0 driven by attendance alone, stadium attendance would need to increase by approximately 65.4%; and
- AFL incremental participation at low and high scenarios of -20% and +20%. To reach a BCR of 1.0 driven by participation alone, participation would need to increase considerably by approximately 715.7%.

'Best case' assumptions across the tested variables are highlighted in blue within the table.

*Table 28: Sensitivity testing at a 7% discount rate unless otherwise specified, \$m*

| Sensitivity                                     | NPV (low) | NPV (high) | BCR (low) | BCR (high) |
|-------------------------------------------------|-----------|------------|-----------|------------|
| Discount rate 10% (low) and <b>3% (high)</b>    | (331.5)   | (6.5)      | 0.50      | 0.99       |
| Capex <b>-20% (low)</b> and +20% (high)         | (110.9)   | (363.2)    | 0.82      | 0.59       |
| Visitor spend -20% (low) and <b>+20% (high)</b> | (312.4)   | (161.8)    | 0.59      | 0.79       |
| Demand -20% (low) and <b>+20% (high)</b>        | (309.5)   | (164.6)    | 0.59      | 0.78       |
| Participation -20% (low) and <b>+20% (high)</b> | (238.2)   | (230.4)    | 0.68      | 0.69       |

As shown in Table 29, the NPV and BCRs are expected to range from (\$497.7m) to \$57.8m and 0.43 to 1.09 respectively when considering the following alternative scenarios:

- Core pessimistic scenario that assumes a combination of the low variables from the sensitivity testing above (excluding discount rate);
- Core optimistic scenario that assumes a combination of the high variables from the sensitivity testing above (excluding discount rate);
- Optimistic event calendar scenario that assumes the upper limit of the identified potential events that could be hosted on a regular basis;
- Delayed scenario that assumes a two-year delay in stadium development; and
- The State Investment Only scenario that reflects only the Tasmanian State Government capital expenditure investment of \$375m in nominal terms. This differs from the core capital expenditure scenario considered within this CBA, which includes funding from the Federal Government, State Government, and a proportion of cost that is currently unfunded.

Table 29: Scenario testing at a 7% discount rate unless otherwise specified, \$m

| Scenario                  | NPV     | BCR  |
|---------------------------|---------|------|
| Core pessimistic          | (497.7) | 0.43 |
| Core optimistic           | 57.8    | 1.09 |
| Optimistic event calendar | (50.3)  | 0.93 |
| Delayed scenario          | (247.2) | 0.65 |
| State investment only     | (22.0)  | 0.96 |

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