

Werribee Park Tourism Precinct

Economic Contribution Study

December 2015



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working world

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23 December 2015

Independent economic analysis of the Werribee Park Tourism Precinct

Dear Rocky

Thank you for the opportunity to prepare an independent economic analysis of the Werribee Park Tourism Precinct ("Study" or "Report") for Parks Victoria ("Client"). In accordance with our engagement agreement dated 2 July 2015, we are pleased to present you with the findings from this Study.

The report has been constructed based on information current as of 16 November 2015 (being the date of completion of the economic modelling), and which has been provided by the Client and other stakeholders. Since this date, material events may have occurred since completion which is not reflected in the report.

This report may be relied upon by Parks Victoria for the purpose of understanding the economic contribution and other benefits of the Werribee Park Tourism Precinct to Victoria (the "Purpose"). It should not be relied upon for any other purpose. Other persons accessing this report should do so for their general information only as Ernst & Young ("EY") has only acted for, and advised the Client, and has not acted for or advised anyone else in respect of the contents of this report. EY disclaims all liability to any party for all costs, loss, damage and liability that the third party may suffer or incur arising from or relating to or in any way connected with the provision of the deliverables to the third party without our prior written consent. Any commercial decisions taken by Parks Victoria are not within the scope of our duty of care and in making such decisions you should take into account the limitations of the scope of our work and other factors, commercial and otherwise, of which you should be aware of from sources other than our work.

EY has prepared this independent economic analysis and has relied on information provided by the Client and other stakeholders. We do not imply, and it should not be construed that we have performed audit or due diligence procedures on any of the information provided to us. We have not independently verified, or accept any responsibility or liability for independently verifying, any such information nor do we make any representation as to the accuracy or completeness of the information. We accept no liability for any loss or damage, which may result from your reliance on any research, analyses or information so supplied.

It should also be noted that this work does not constitute a Cost Benefit Analysis. Further, it is important to note that the identification of economic impact and contribution is not a precise science.

Yours sincerely



John Matthews
Partner
Ernst & Young



Dr David A Cochrane
Executive Consultant

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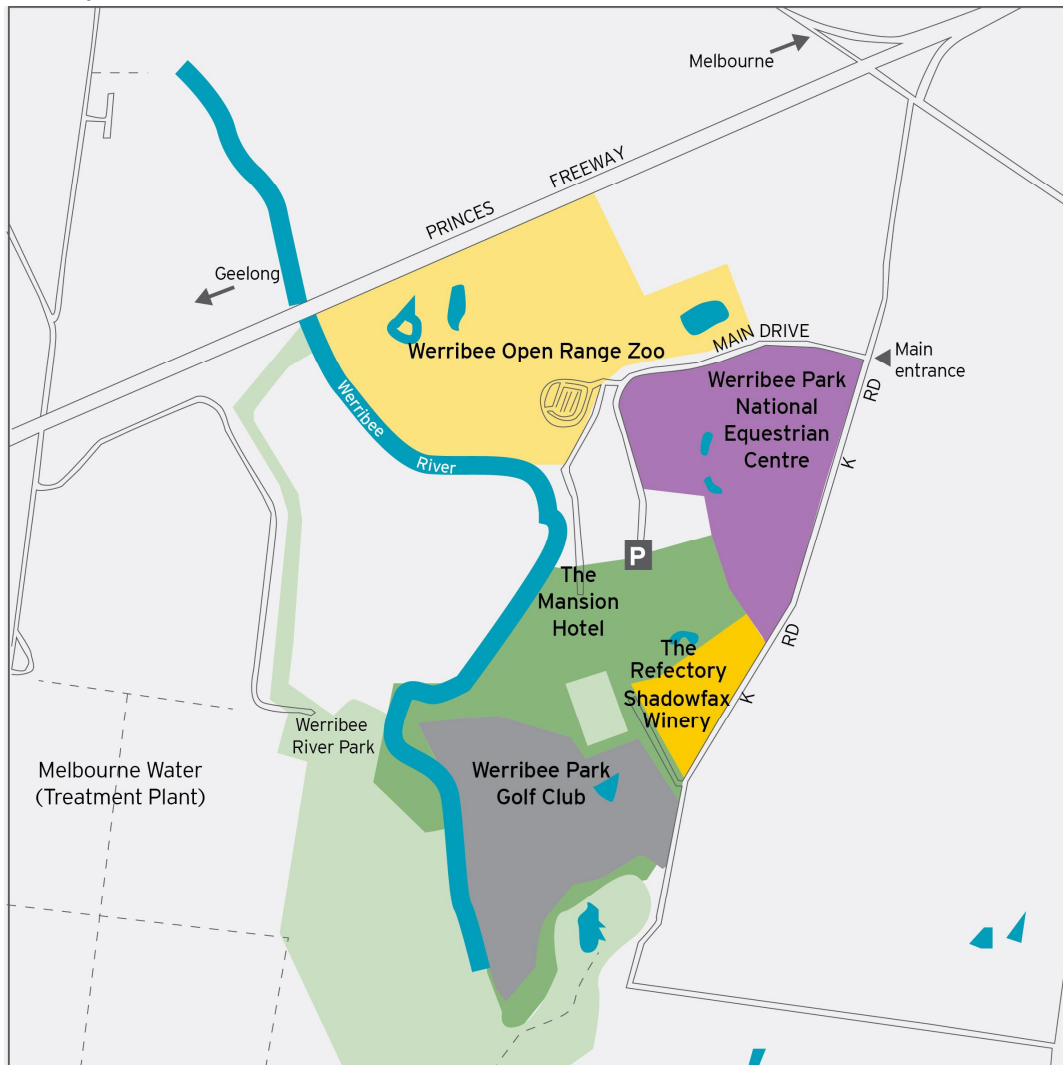
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Executive summary

The Werribee Park Tourism Precinct

Located in the City of Wyndham local government area (LGA), the Werribee Park Tourism Precinct is one of the region's iconic attractions, and a major tourism draw card for the area. In 2014/15, it is estimated that the Precinct attracted over 1.1 million visitors to the region, to a range of attractions and facilities.

ES1: Map of Werribee Park Tourism Precinct



Attractions and visitation



Werribee Park and Mansion

- Built by Thomas and Andrew Chirnside in the 1870s
- Mansion surrounded by 10ha of open parkland and manicured gardens
- Hosts a wide range of events
- Approx. 500,000 visitors/year



Werribee Open Range Zoo

- African themed zoo and home some of Africa's most iconic animals
- Engaged in a number of conservation activities and provides variety of educational opportunities
- The Precinct's most popular attraction (approx. 560,000 visitors/year)



Werribee Park National Equestrian Centre

- International standard facility and State Centre for equestrian activity
- Focus on hosting major events and elite training
- Approx. 53,000 visitors/year



Mansion Hotel and Spa

- Offers 91 deluxe guest rooms, with additional facilities to cater for conferences and weddings
- Guests receive free entry to Werribee Mansion and complimentary wine tasting at Shadowfax Winery
- Approx. 28,000 visitors/year



Shadowfax Winery

- Established in 1998
- Melbourne's closest winery, just 30 minutes from the city
- Produces around 11,000 cases of premium wine a year
- Approx. 26,000 visitors/year



Werribee Park Golf Course

- Championship length 18 hole public access golf course
- Popular among locals, and hosts a number of golfing events
- Approx. 13,500 visitors/year



Western Treatment Plant

- 10,500ha plant is a world leader in technical and environmental innovation
- Processes around half of Melbourne's sewage and produces 40 billion L of recycled water a year
- Approx. 7,000 visitors/year



The Refectory

- 'The Refectory' meaning communal dining hall, has been recently restored to showcase the original period features
- Now a unique venue for functions and events, from wedding celebrations to corporate conferencing
- As a new comer to the park we anticipate approx. 15,000 visitors/year

Facilities in the Werribee Park Tourism Precinct have continued to attract individuals and families from Victoria, interstate and overseas with visitor growth numbers increasing by approximately 10% over the past ten years.

Economic contribution measures

It is estimated that in 2014/15, the Precinct contributed \$116.2 million to the Wyndham LGA in direct and indirect impacts, and 466 jobs directly through employment by attractions, events and facilities within the Precinct. The economic contribution of the Werribee Park Tourism Precinct has been calculated by analysing the spend of visitors to each facility (including transportation, admission, food and beverage, and retail) and the revenue generated from business operations.

The table below shows a breakdown of the Precinct's economic contribution by each regional area.

ES2: Economic contribution of the Werribee Park Tourism Precinct

Wyndham LGA		Melbourne's West		Victoria	
Output \$116.2m	Direct \$68.4 Indirect \$47.8	Output \$128.5m	Direct \$70.3m Indirect \$58.2	Output \$224.0m	Direct \$88.2 Indirect \$135.8m
Value add \$56.1m	Direct \$33.4m Indirect \$22.7m	Value add \$61.0m	Direct \$33.9 Indirect \$27.1	Value add \$106.8m	Direct \$42.1m Indirect \$64.7m
Jobs 640	Direct 466 Indirect 174	Jobs 679	Direct 471 Indirect 208	Jobs 1,023	Direct 560 Indirect 463

Broader social and cultural value to Victoria

The economic contribution estimates do not fully capture the benefit that Victoria receives from the Precinct's operations. Separate from the economic contribution estimates presented in the tables above, additional social and community benefits have been identified, discussed and where possible quantified.

The additional social and community benefits for users of the precinct that have been quantified include consumer surplus placed on the precinct by users, benefits associated with recreation (including health impacts), and volunteering. The social and community benefit for non-users of the Precinct includes the existence value and bequests and donations.

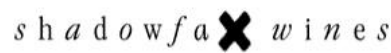
The quantified social and community benefit for 2014/15 is estimated at \$78.7 million and consists of:

- ▶ \$75.7 million in use-value; including
 - ▶ \$12.4 million in costs incurred in order to make a visit to the Precinct
 - ▶ \$1.0 million in value attributable to volunteerism
 - ▶ \$62.3 million in avoided health costs from recreational activities.
- ▶ \$3.0 million in non-use value; including
 - ▶ \$1.9 million in existence value
 - ▶ \$1.1 million in bequests and donations.

The additional benefits that have not been quantified but are equally important to the Precinct include:

- ▶ Cultural heritage preservation – Werribee Park and Mansion plays a critical role in conserving the important heritage of the region
- ▶ Education – the Precinct provides a range of education programs that are strongly aligned to the objectives of Victorian school curriculum through the Werribee Open Range Zoo, Werribee Park and Mansion, and Western Treatment Plant
- ▶ Environmental and greenspace – the Precinct undertakes a number of environmental conservation activities, primarily through the Werribee Open Range Zoo and Western Treatment Plant.

Werribee Park Tourism Precinct Partners



Other contributors to this report



1. Introduction

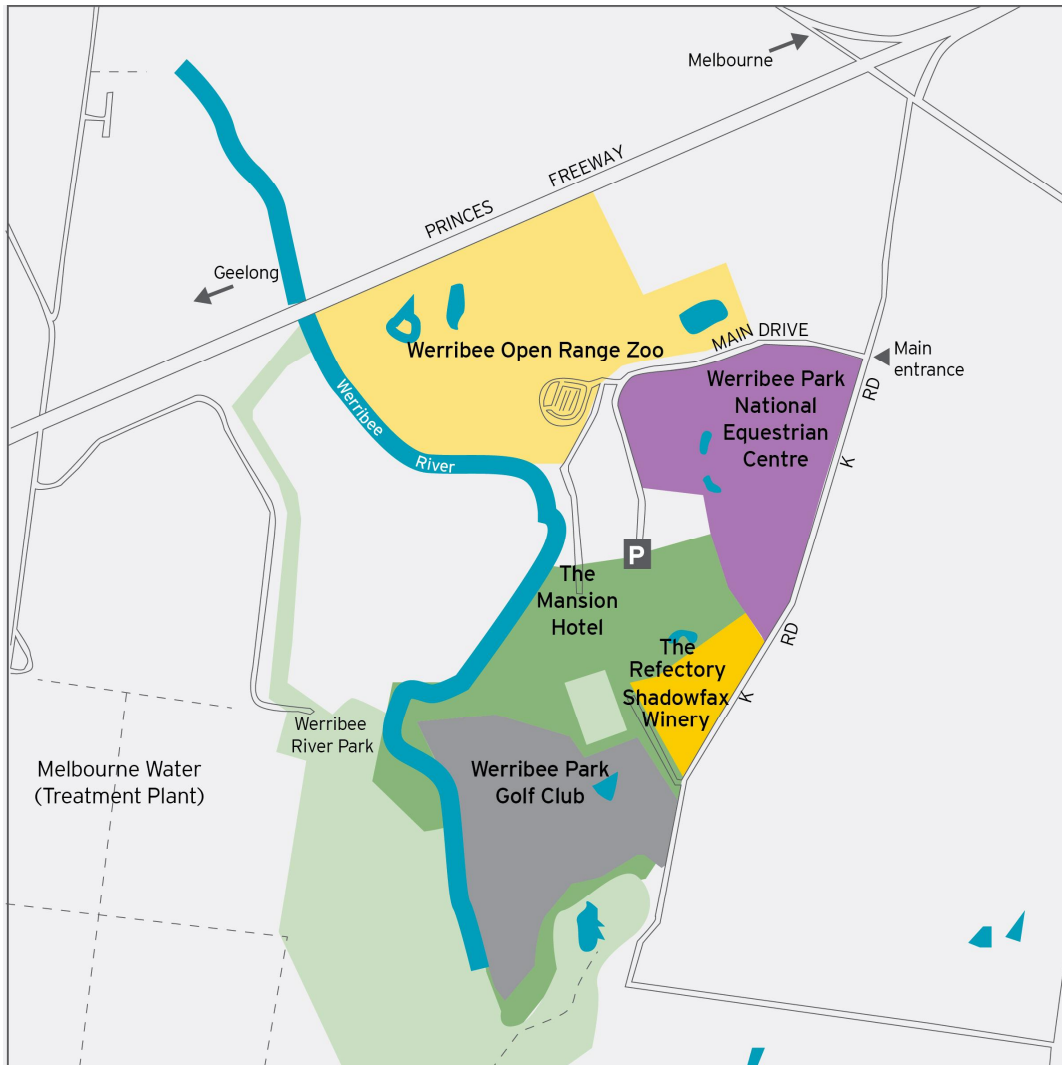
1.1 Background

This study highlights the importance of the Werribee Park Tourism Precinct (“the Precinct”) to the Wyndham LGA, Melbourne West and Victoria, by estimating its economic contribution to each of these regions, as well as the broader social and culture value of the Precinct (including value associated with recreation, cultural heritage preservation, education, the environment, and community cohesion generated by the Precinct).

1.2 Werribee Park Tourism Precinct

Located in the City of Wyndham Local Government Area (LGA), the Werribee Park Tourism Precinct is home to a number of the region’s iconic attractions, and major tourism draw cards for the area. The Precinct is home to a number of significant tourist attractions including the Werribee Park and Mansion, Werribee Open Range Zoo, National Equestrian Centre, Mansion Hotel and Spa, Shadowfax Winery, Werribee Park Golf Course, Western Treatment Plant and the Refectory¹.

Figure 1 Map of Werribee Park Tourism Precinct



¹ Note: The Refectory was not included in the economic contribution study as it was not in operation during the year of analysis

1.2.1 Key attractions

Seven key attractions have been included in the economic contribution study. These key attractions are responsible for attracting a range of visitors to the region to enjoy tourism and recreational facilities. Details of the seven key attractions are set out in Figure 2 below.

Figure 2: Attractions in the Werribee Park Tourism Precinct



Werribee Park and Mansion

- Werribee Mansion was built by Thomas and Andrew Chirnside in the 1870s
- Built in the Italianate architecture style, Werribee Mansion boasts 60 rooms in several wings
- Following extensive restoration, many of the Chirnside family's items, including clothing, furniture remain on display
- Surrounding the mansion is 10 hectares of open parkland and manicured gardens
- Attracts approximately 500,000 visitors annually
- Werribee Park also plays host to a wide range of events including the Wyndham Children's Week Picnic, One Electric Day Festival, Carols by Candlelight and Werribee Mansion Run



Werribee Open Range Zoo

- The Zoo is situated on approximately 225 hectares of land and is home to some of Africa's most iconic animals, as well as wildlife from the grasslands of Asia, North America and Australia
- The Zoo is the Precinct's most popular attraction, with approximately 560,000 visitors annually
- In addition to being a popular destination for tourists, the Werribee Open Range Zoo also offers a wide range of educational opportunities for all ages
- The Zoo is also engaged in a number of environmental conservation activities with a focus on protecting threatened species



Werribee Park National Equestrian Centre

- The Werribee Park National Equestrian Centre is an international standard sporting facility for equestrian events
- The Centre is the designated State Centre for equestrian activity, and primarily as a focus for major equestrian events and elite training in Victoria
- The facility attracts approximately 53,000 visitors annually and hosts a significant number of events throughout the year
- The National Equestrian Centre consists of two indoor arenas, two polo fields, two show jumping arenas, three stable blocks, five sand dressage arena and a cross country course making the facility well equipped to host a wide variety of events while also being used as an elite training facility for local riders



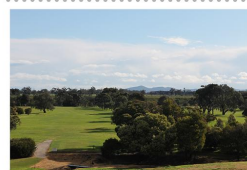
Mansion Hotel and Spa

- The Mansion Hotel and Spa is located behind the original mansion and offers 91 deluxe guest rooms, residing upon ten hectares of formal gardens, a unique riverine area, and historical farm outbuildings
- Built in the 1870s, this Italianate mansion-turned-hotel is a popular attraction with facilities catering for tourist accommodation, conferences and weddings
- All guests receive free entry to the historic Werribee Mansion & Gardens of Werribee Park, use of the indoor swimming pool & steam room, and complimentary wine tasting at the resident Shadowfax Winery & Vineyard
- The Mansion Hotel and Spa attracts approximately 28,000 visitors annually



Shadowfax Winery

- Established in 1998, Shadowfax Vineyard and Winery is Werribee's own boutique winery
- Located just 30 minutes from Melbourne, Shadowfax is Melbourne's closest winery and a popular tourist attraction
- Dedicated to creating quality, handcrafted wines that express the characteristics of the vineyards in which they were grown, Shadowfax produces around 11,000 cases of premium wines each year
- The winery has a strong focus on regionality with the majority of fruit sourced and hand-harvested from vineyards from the vineyard at Werribee and small growers in the Adelaide Hills, Macedon and Geelong
- The Shadowfax Winery attracts approximately 26,000 visitors each year



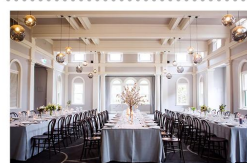
Werribee Park Golf Course

- Founded in 1976, Werribee Park Golf Course is a championship length 18 hole golf course with views of the Werribee River and K Road Cliffs
- This public access golf course is popular among locals, and plays host to a number of golfing events including the Victorian Golf League Pennant Finals, and Werribee Park Golf Club Junior Open
- Attracts approximately 13,500 visitors annually



Western Treatment Plant

- The 10,500 hectare Western Treatment Plant is a world leader in technical and environmental innovation
- The Western Treatment Plant processes around half of Melbourne's sewage and produces almost 40 billion litres of recycled water a year
- Using a series of lagoons, the Western Treatment Plant treats sewage to either a Class A or Class C recycled water standard
- The Plant's educational programs attract approximately 7,000 visitors each year, primarily from schools



The Refectory

- The Refectory, a new addition to the Werribee Park Precinct is located in the left wing of the historic Mansion overlooking the beautiful gardens and rolling lawns of the park
- Recently restored, 'The Refectory' showcases classic architectural features, designer lighting and luxury contemporary furnishings
- The perfect venue for all functions and events from wedding celebrations to corporate conferencing
- Bursaria is the team behind 'The Refectory' creating fresh, seasonal menus using the best local ingredients

1.2.2 Werribee Park Tourism Precinct 2014/15 Events Calendar

The Precinct holds a number of events at the identified attractions boosting the visitation to the region. The Precinct hosts a wide range of major events throughout the year across a number of facilities (highlighted in Figure 3). In 2014/15, it is estimated that the Precinct attracted over 1.1 million visitors to the region, to a range of attractions and facilities including major events held across the Precinct.

Figure 3: Calendar of major events in the Werribee Park Tourism Precinct

2014/15	Week 1	Week 2	Week 3	Week 4
July	<ul style="list-style-type: none"> Wild Nights (WORZ) VIC Interschools (WPNEC) 	<ul style="list-style-type: none"> Wild Nights (WORZ) EV Showhorse Clinic (WPNEC) JV Young Rider Squad (WPNEC) 		<ul style="list-style-type: none"> VDC Championships (WPNEC)
August	<ul style="list-style-type: none"> VEIS Grand Final (WPNEC) 	<ul style="list-style-type: none"> Geelong Show Jumping Club (WPNEC) 	<ul style="list-style-type: none"> VRHA Reining Show (WPNEC) SHCV Winter Clinic (WPNEC) 	<ul style="list-style-type: none"> Friends of Werribee Horse Trials (WPNEC) Showjumping Young Riders (WPNEC)
September	<ul style="list-style-type: none"> Dressage fundraiser (WPNEC) 	<ul style="list-style-type: none"> Victorian Dressage Club (WPNEC) 	<ul style="list-style-type: none"> Australian Show Jump Championships (WPNEC) 	<ul style="list-style-type: none"> Werribee Pony Club Horse Trials (WPNEC) Ride With Elegance, Werribee Pony Club (WPNEC) WPGC Junior Open (WPGC)
October	<ul style="list-style-type: none"> Dressage fundraiser (WPNEC) Westernport Dressage Club 	<ul style="list-style-type: none"> VRHA Training & Reining Show (WPNEC) Yarra Valley Dressage Club 	<ul style="list-style-type: none"> Children's Week Activities (WORZ) NADAC Dog Agility Nationals (WPNEC) Australian Sports Pony Registry Open EA Dressage (WPNEC) 	<ul style="list-style-type: none"> Wyndham Children's Week Picnic (WP) Victorian Pinto Society State Championships (WPNEC) Arabian Extravaganza Show (WPNEC)
November	<ul style="list-style-type: none"> One Electric Day Festival (WP) Wandin Park Riding Club For Adults (WPNEC) 	<ul style="list-style-type: none"> Victorian Reining Horse Association Show (WPNEC) Parelli Natural Horsemanship (WPNEC) The Ultimate Victorian Dressage Expo (WPNEC) 	<ul style="list-style-type: none"> Wyndham State Rose & Garden Festival (WP) ASPB (WPNEC) 	<ul style="list-style-type: none"> All States Showdown & Show Horse Council of Victoria Classic (WPNEC)
December	<ul style="list-style-type: none"> National Show Horse (WPNEC) 	<ul style="list-style-type: none"> Dressage Festival (WPNEC) 	<ul style="list-style-type: none"> WORZ Christmas Concert 	
January	<ul style="list-style-type: none"> Let Them Eat Cake festival 	<ul style="list-style-type: none"> So Frenchy So Chic Rhythm of Africa (WORZ) 	<ul style="list-style-type: none"> Rhythm of Africa (WORZ) 	<ul style="list-style-type: none"> Rhythm of Africa (WORZ)
February	<ul style="list-style-type: none"> Rhythm of Africa (WORZ) 	<ul style="list-style-type: none"> Werribee Park Heritage Orchard (WP) Rhythm of Africa (WORZ) Hippo Beach Members Party (WORZ) 	<ul style="list-style-type: none"> Rhythm of Africa (WORZ) 	<ul style="list-style-type: none"> Rhythm of Africa (WORZ) Wyndham Annual Yoga Trail (WORZ)
March	<ul style="list-style-type: none"> Arab Nationals (WPNEC) Australia Halter Show Case (WPNEC) 	<ul style="list-style-type: none"> VRHA Championships Equissage Amateur Show 	<ul style="list-style-type: none"> Wyndham Live on the Lawn Dressage and Jumping with the Stars (WPNEC) Cultural Diversity Week Celebrations (WORZ) SportingHorse VIC (WPNEC) 	<ul style="list-style-type: none"> Multicultural Fiesta (WP) Ready Set Trot (WPNEC) Eventing Squad (WPNEC)
April	<ul style="list-style-type: none"> Good Friday Appeal Easter Egg Hunt (WP) 	<ul style="list-style-type: none"> EV Young Rider (WPNEC) 	<ul style="list-style-type: none"> Victorian Police & Emergency Services Games (WPNEC) EV Dressage Senior Squad (WPNEC) 	<ul style="list-style-type: none"> Goilla Rangers Member Party (WORZ) Masters Games (WPNEC) Plenty Valley Quarter Horse (WPNEC) NCAS Fast Track Day (WPNEC)
May	<ul style="list-style-type: none"> Werribee Mansion Run (WP) NCAS Intro Coach Workshop (WPNEC) 	<ul style="list-style-type: none"> HRCav Judge Training Day (WPNEC) 	<ul style="list-style-type: none"> VDC Dressage (WPNEC) EV Eventing Squad (WPNEC) VGL Pennant Finals (WPGC) 	<ul style="list-style-type: none"> EV Show Jumping Y/R (WPNEC) Arab Foal Show (WPNEC) VRHA Reining Show/Clinic (WPNEC)
June	<ul style="list-style-type: none"> Melbourne International 3 Day Event 	<ul style="list-style-type: none"> HRCav Dressage Judge Training Day (WPNEC) 	<ul style="list-style-type: none"> EV Volunteering Training (WPNEC) 	<ul style="list-style-type: none"> Wild Nights (WORZ) VDC Dressage (WPNEC) WCEC Rally (WPNEC) Will Enzinger Clinic (WPNEC)
Legend: WP = Werribee Park and Mansion, WPNEC = Werribee Park National Equestrian Centre, WORZ = Werribee Open Range Zoo, WPGC = Werribee Park Golf Course				

1.3 Structure of the report

The Werribee Park Tourism Precinct is important to the growth of Melbourne's West with a range of world class facilities. These facilities attract visitors from across Victoria, interstate and overseas and include cultural and historically significant assets, large amounts of open green space for events and recreation, wide ranging education and conservation activities and facilities that focus on environmental outcomes.

To capture and articulate the economic, social and community benefits from the Werribee Park Tourism Precinct, this report is structured in the following manner.

- ▶ Chapter 2 – Approach in capturing and assessing the economic, social and community benefits
- ▶ Chapter 3 - Economic contribution and employment from visitation and business activities in the region
- ▶ Chapter 4 – The broader social and culture benefits of the Precinct.

2. Approach

The approach for this economic contribution and benefit study is presented below.

Figure 4 Methodology



2.1 Define key measures

Economic contribution is a measure comprising all market-related expenditure generated by a specified industry or an activity. Economic contribution studies do not consider the substitution impacts to other industries (i.e. what might happen to expenditures if the specific industry or activity were lost). As such economic contribution is a gross measure rather than a net measure.

Three common indicators of an industry or economic size or value are:

- ▶ **Gross output** –Market value of goods and services produced, often measured by turnover/revenue. Gross output is also referred to as ‘gross economic contribution’
- ▶ **Value added** – Market value of goods and services produced, after deducting the cost of goods and services used
- ▶ **Jobs** – Number of jobs generated by an industry or attraction.

All three measures are valuable in their own right. Industry output is a measure of production, value add is a measure of wealth generation, and arguably, employment is a measure of the distribution of income.

In comparing an industry’s size against others, it is generally accepted to discuss this in terms of its industry value add. Industry value add measures economic activities net of the costs of production (that is, inputs sourced from other sectors), from the industry’s outputs. This avoids the inclusion of revenues to other industries and any associated double counting. In practice, industry value add largely comprises wages, salaries and the operating surplus of an industry (i.e. the industry’s income). The Study looks at all three measures, but attention should be placed on industry value add measures when making comparisons to other industries. The value add measure is commonly put forward as the most appropriate measure of an industry’s contribution to the national economy.

2.2 Define assumptions and collect data

Our assessment of the economic contribution of Werribee Park Tourism Precinct is primarily based on:

- ▶ Information provided by venue operators, including financial statements and visitation history
- ▶ Supplementary desktop research of publicly available information, including:
- ▶ Domestic and international tourism data on Victoria, Melbourne West and the Wyndham LGA, released by Tourism Research Australia
- ▶ Existing studies and research on the broader social and culture value associated with preserving cultural heritage
- ▶ EY’s existing industry knowledge and experience.

The approach adopted in this Study, including assumptions, is presented in Appendix B to F.

2.3 Estimate the economic contribution to Wyndham LGA, Melbourne West and Victoria

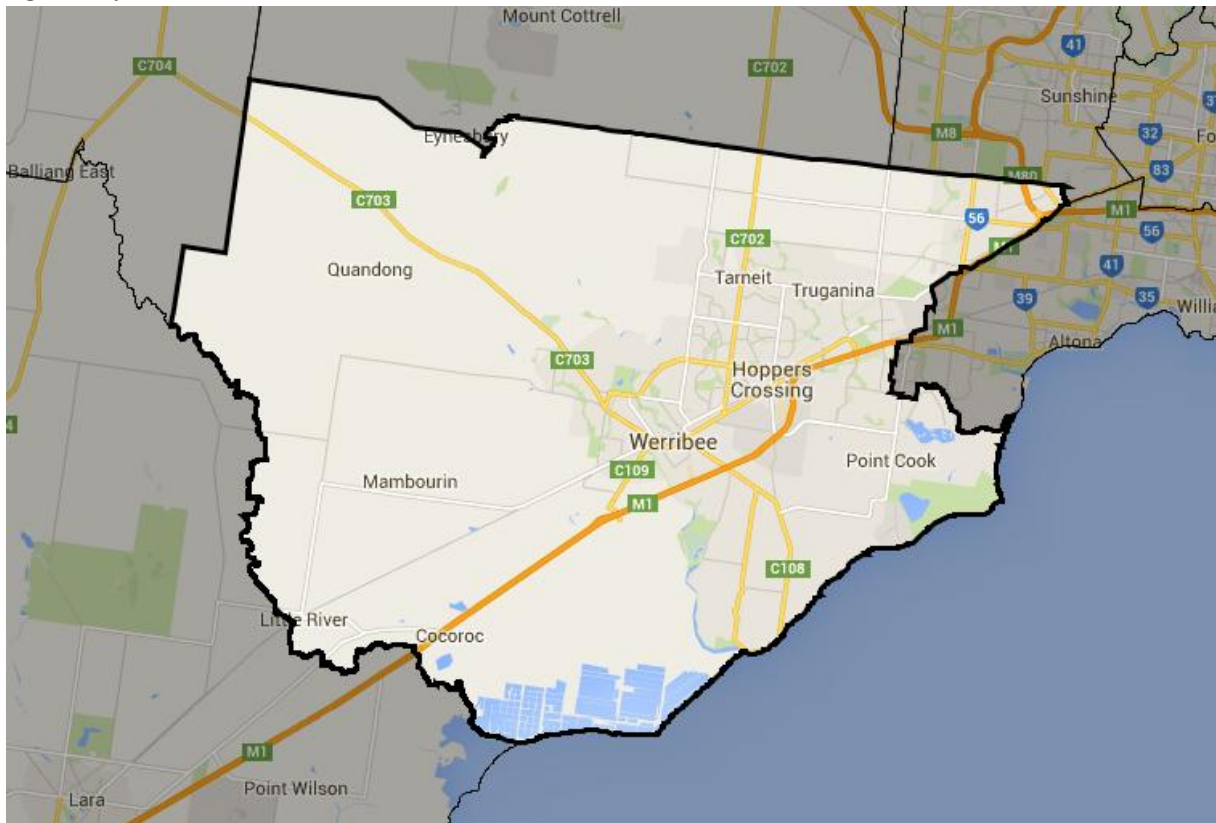
The direct and indirect economic contribution (defined in Section 2.1) of the Precinct to Wyndham, Melbourne West and the Victorian economy has been calculated by estimating the direct contribution associated with:

- ▶ Werribee Park Tourism Precinct's operations - Economic contribution and employment generated by the Precinct's operations
- ▶ Tourism - Contribution from visitors specifically coming to, or extending their stay in, Wyndham/Melbourne West/Victoria to visit the Precinct.

For the purposes of this study, three regions have been defined for which the economic contribution of the Precinct will be calculated, namely Wyndham LGA, Melbourne West and Victoria.

The Wyndham LGA refers to the City of Wyndham local government area. Located just south west of Melbourne CBD, the Wyndham LGA includes suburbs such as of Werribee, Wyndham Vale, Hoppers Crossing and Point Cook.

Figure 5 Wyndham LGA



Melbourne West refers to the western sub-region of Greater Melbourne. Melbourne West is made up of six local government areas, Wyndham, Melton, Brimbank, Moonee Valley, Maribyrnong and Hobsons Bay.

A map of the Melton Shire Council area, outlined in black. The area includes towns such as Toolern Vale, Sunbury, Melton, Brookfield, Caroline Springs, Eynesbury, Werribee, and Point Cook. Major roads like the M1, M8, M31, and M80 are shown. The map also shows surrounding areas like Greendale, Ballan, Ingliston, Fiskville, Glenmore, Beremboke, Ballan, East, Staughton Vale, Anakie, Little River, Moorabbin, and St. Kilda. The city of Melbourne is visible to the east, and the coastline is shown to the south.

2.4 Define and present broader social and cultural benefits

- ▶ **Use value** – Value, in addition to the value represented by the price paid for admission to attractions within the Precinct, obtained from the direct use of Precinct (see box 1 below for a description of what has been included in use value)
- ▶ **Non-use values** – Value that the Victorian community assigns to the Precinct, even if they are not regular visitors (see box 2 below for a description of what has been included in non-use value).

4 These complex models are based on theoretical concepts and account for profit maximisation, household consumption functions, terms of trade effects, labour market adjustments etc. These models take into account changes in prices and wages with increases in demand. As such, their economic impact results are generally much more conservative relative to input-output analysis as capacity constraints are taken into account by increases in prices and wages.

Box 1: Use value

Use values can be identified using stated or revealed preferences⁵. Using these methods, the following benefits associated with the Precinct's operations were calculated:

- ▶ Recreational benefit, assumed to approximate the sum of:
 - ▶ Travel costs (reflecting consumer surplus) - Costs that visitors incur in order to make a visit to the Precinct is an indication of the additional value individuals or families place on the precinct
 - ▶ Value of volunteerism – the value people ascribe to the Precinct indicated by the amount of free time they are willing to give up
 - ▶ Health benefits (the avoided cost of health expenditure resulting from activities in green spaces and parks.

Not all social and community benefits can be quantified. The additional benefits that have not been quantified but are equally important to the Precinct include:

- ▶ Cultural heritage preservation – Werribee Park and Mansion plays a critical role in conserving the important heritage of the region
- ▶ Education – the Precinct provides a range of education programs that are strongly aligned to the objectives of Victorian school curriculum through the Werribee Open Range Zoo, Werribee Park and Mansion, and Western Treatment Plant
- ▶ Environmental and greenspace – the Precinct undertakes a number of environmental conservation activities, primarily through the Werribee Open Range Zoo and Western Treatment Plant.

Box 2: Non-use value

Non-use value is the value that the Victorian community assigns to the Precinct, even if they are not regular visitors. For the purpose of this analysis, non-use value is estimated by:

- ▶ Existence value - The key approach adopted to quantify the non-use value of the Precinct in Victoria is contingent valuation modelling⁶. This is a form of stated preference economic valuation which assesses people's willingness to pay for an unpriced asset such as the Precinct. The value placed on the Precinct represents the non-use value of the asset to the Victorian community
- ▶ Bequests and donations – This captures the revealed preferences of Victorians who provide money (or items) to attractions within the Precinct via bequest and donations.

⁵ Stated preferences refer to explicit preferences, as indicated for instance through a survey. Revealed preferences refer to those that are identified through actions, such as travel to a destination to use or see something, or through paying an entry to a Werribee Park Tourism Precinct facilities

⁶ Contingent valuation is a technique which asks respondents to put a value on a good as a whole, without consideration of different scenarios.

3. Economic contribution and employment

Economic contribution

The Precinct contributed \$116.2 million to the Wyndham economy in 2014/15, including \$56.1 million in value added. The Precinct also contributes to the Melbourne West and Victorian economies. The total economic contribution of the Precinct to:

- ▶ Melbourne West was \$128.5 million, including \$61.0 million value added
- ▶ Victoria was \$224.0 million, including \$106.8 million value added.

Employment

The Precinct generated 640 jobs (combination of part time and casual and full time direct and indirect jobs) in Wyndham, including:

- ▶ 466 jobs at the Precinct (direct contribution)
- ▶ 174 indirect jobs (indirect contribution).

3.1 Contribution to Wyndham LGA

The Precinct's total gross contribution (from operations and tourism) to the Wyndham economy in 2014-15 was \$116.2 (\$68.4 million in direct contribution and \$47.8 million in indirect contribution). The Precinct also contributed \$56.1 million in terms of value added, and 640 jobs to the Wyndham LGA.

Table 1 Economic contribution to Wyndham LGA

Economic Contribution	Direct impact	Indirect impact	Total impact
to Wyndham LGA			
Output (\$m)	\$ 68.4	\$ 47.8	\$ 116.2
Value added (\$m)	\$ 33.4	\$ 22.7	\$ 56.1
Jobs (no.)	466	174	640

3.2 Contribution to Melbourne West

The Precinct's total gross contribution (from operations and tourism) to the Melbourne West economy in 2014-15 was \$128.5 (\$70.3 million in direct contribution and \$58.2 million in indirect contribution). The Precinct also contributed \$61.0 million in terms of value added, and 679 jobs.

Table 2 Economic contribution to Melbourne West

Economic Contribution	Direct impact	Indirect impact	Total impact
to Melbourne West			
Output (\$m)	\$ 70.3	\$ 58.2	\$ 128.5
Value added (\$m)	\$ 33.9	\$ 27.1	\$ 61.0
Jobs (no.)	471	208	679

3.3 Contribution to Victoria

The Precinct's total gross contribution (from operations and tourism) to the Victorian economy in 2014-15 was \$224.0 (\$88.2 million in direct contribution and \$135.8 million in indirect contribution). The Precinct also contributed \$106.8 million in terms of value added, and 1,023 jobs.

Table 3 Economic contribution to Victoria

Economic Contribution to Victoria	Direct impact	Indirect impact	Total impact
Output (\$m)	\$ 88.2	\$ 135.8	\$ 224.0
Value added (\$m)	\$ 42.1	\$ 64.7	\$ 106.8
Jobs (no.)	560	463	1,023



4. Broader social and cultural value

Social and cultural value

In addition to the economic contribution, the Werribee Park Tourism Precinct also provides social and community benefits for users of the precinct. These additional benefits that have been quantified include consumer surplus placed on the precinct by users, benefits associated with recreation (including health impacts), and volunteering. The social and community benefit for non-users of the Precinct includes the existence value and bequests and donations.

The quantified social and community benefit for 2014/15 is estimated at \$78.5 million and consists of:

- ▶ \$75.7 million in use-value; including
 - ▶ \$12.4 million in costs incurred in order to make a visit to the Precinct
 - ▶ \$1.0 million in value attributable to volunteerism
 - ▶ \$62.3 million in avoided health costs from recreational activities.
- ▶ \$3.0 million in non-use value; including
 - ▶ \$1.9 million in existence value
 - ▶ \$1.1 million in bequests and donations.

The additional benefits that have not been quantified but are equally important to the Precinct include:

- ▶ Cultural heritage preservation – Werribee Park and Mansion plays a critical role in conserving the important heritage of the region
- ▶ Education – the Precinct provides a range of education programs that are strongly aligned to the objectives of Victorian school curriculum through the Werribee Open Range Zoo, Werribee Park and Mansion, and Western Treatment Plant
- ▶ Environmental and greenspace – the Precinct undertakes a number of environmental conservation activities, primarily through the Werribee Open Range Zoo and Western Treatment Plant.

Economic contribution studies do not fully capture the value that Victoria receives from the Precinct's operations. This section presents the broader social and cultural value generated by the Precinct for the Victorian community that have not been captured the economic contribution analysis. These benefits consist of:

- ▶ **Use value** – In addition to the value represented by the price paid for admission, obtained from the direct use of the Precinct (i.e. value associated with recreation, cultural heritage preservation, education, the environment, tourism, productivity improvements and community cohesion)
- ▶ **Non-use values** – Value that the Victorian community assign to the Precinct, even if they do not use the Precinct's facilities (i.e. existence value and bequests and donations).

4.1 Use value

Use value

The quantified annual use-value benefit of the Precinct is \$75.7 million. This represents the estimated recreation, volunteerism and health value attributable to the Precinct.

Additional benefits not quantified in this study include:

- ▶ Cultural heritage preservation
- ▶ Education and conservation
- ▶ Green space

4.1.1 Recreation and health (Quantified)

The annual recreation and health use benefit of the Precinct's is \$75.7 million, consisting of:

- ▶ \$12.4 million in costs incurred in order to make a visit to the Precinct
- ▶ \$1.0 million in value attributable to volunteerism
- ▶ \$62.3 million in avoided health costs

The price paid for admission into the Precinct (captured in Section 3) only represents a portion of the value that visitors received from attending the Precinct. This section estimates the broader social and culture value (over and above the admission price) that visitors receive from making a visit to the Precinct. EY approximates this additional value by aggregating the value associated with:

- ▶ Travel and time costs – Non-admission costs that visitors incur in order to make a visit to the Precinct. EY estimates transport related costs and foregone wages (i.e. time costs and vehicle operating costs). Note that this represents a conservative estimate of overall consumer surplus⁷. Additional value, over and above admission price and travel and time costs is likely for some visitors (see Appendix C). This additional value has not been captured, as detailed market research is not included in the scope of this study.
- ▶ Volunteerism: The value of the time that people donate to volunteer at the Precinct
- ▶ Health: The avoided health costs associated with physical and mental health benefits from Parks

The sum of these two estimates is assumed to equate to the additional use value (above the price of admission) attributable to the Precinct.

Travel and time costs

This method assumes that the value of the Precinct is reflected in how much people are willing to travel to visit each site (i.e. representative of the “price” of getting to the Precinct). EY applied the travel cost method to estimate the cost that visitors incurred to make a visit to the Precinct. These costs are assumed to consist of:

- ▶ Wage/time costs (i.e. assumed travel time (adult visits only) x minimum hourly wage).

⁷ Consumer surplus is a net benefit that can be defined as the difference between what a consumer is willing to pay and the actual price paid.

EY estimates that the value attributable to the Precinct was **\$12.4 million** in 2014/15 based on the assumptions presented in Appendix C (see Table 10).

Table 10: Travel cost estimate

	\$millions
Walking	
Time/wage costs	0.03
Car	
Time/wage costs	10.96
Public Transport	
Time/wage costs	1.4
TOTAL	12.4

Source: EY

Volunteerism

The number and dedication of volunteers is also an indication of the value the Victorian community attributes to the Precinct. In 2014/15 there were approximately 523 volunteers that provided their services across different attraction within the Precinct. EY has estimated the value of volunteer time at the Precinct to be **\$1.0 million** in 2014/15, based on the assumptions presented in Appendix C.

Health benefits

There is a large and increasing body of evidence showing that contact with nature and parks provide a wide range of physical and mental health benefits⁸. Other recent research suggests that access to parks can help people increase their level of physical activity⁹ and being close to green space is associated with reduced depression, anxiety and other related conditions. Thus, recreation and amenity services that Victoria's parks provide can contribute to the prevention of some physical and mental health costs or the improvement of health outcomes that can be influenced by lifestyle.

Based on the estimate of health costs from physical inactivity of \$1,660 per person¹⁰, indicative high-level estimates show that approximately **\$62.3 million** in avoided costs can be associated with physical activity within the Precinct. This figure has been derived based on the assumptions presented in Appendix E.

4.1.2 Cultural heritage preservation

The Victorian Government acquired Werribee Park from the Catholic Church in 1973 and commenced work to progressively restore the Mansion and remaining 400 hectares of land to its former glory. Now managed by Parks Victoria, the park has managed to preserve much of the cultural heritage of the region and offers visitors a rich array of history, culture and stories to explore.

⁸ Townsend M and Weerasuriya, R 2010 Beyond Blue to Green, The benefits of contact with nature for mental health and well-being. Melbourne, Australia. Maller, C., Townsend, M., Brown, P. and St Leger, L., Henderson-Wilson, C., Pryor, A., Prosser, L., Moore, M. 2008. 'Literature Review: Healthy Parks Healthy People: The Health Benefits of Contact with Nature in a Park Context - A Review of Current Literature'. 2nd Edition. Deakin University. Melbourne, Australia.

⁹ Harnik. P.H. and Welle. B, 2009 Measuring the Economic Value of a City Park System, Trust for Public Land

¹⁰ Harnik. P.H. and Welle. B, 2009 Measuring the Economic Value of a City Park System, Trust for Public Land.

¹⁰ Medibank Private, 2008, The Cost of Physical Inactivity

Box 3: Werribee Park and Mansion

Werribee Park is a truly unique property with many stories to share. From Aboriginal communities that are known to have wandered the area, the arrival of Scottish immigrants making their fortune in the 19th century and subsequent use as a seminary by the Catholic Church, Werribee Park offers an authentic insight into the history of the region.

Wurundjeri history along Wirribi Yaluk, known today as Werribee River, dates back over 40,000 years. Acknowledged cultural heritage sites with the riverine area along the boundary of Werribee Park provide an insight into the Kurung Jang Balluk clan and their harmonious relationship with mother earth.

Thomas and Andrew Chirnside, leaders of the Victorian squattocracy, arrived in Australia in 1838 and 1841 respectively. Armed with determination and motivated by their family motto 'Do or die', the brothers set about creating a vast pastoral empire. Werribee Park Mansion is testament to their successful business venture while offering visitors of today an insight into a bygone era.

Initially purchased by Philip Lock, a self-made wealth grazier from Warrnambool, Werribee Mansion was sold again a year later to the Roman Catholic Bishops of Australia for development as a seminary.

Werribee Park became home to Corpus Christi College, a training ground for young men seeking to enter the priesthood in the Dioceses of Melbourne, Ballarat, Sandhurst, Sale and Hobart, for fifty years.

During its occupation Werribee Park the Catholic Church added several wings, two of which have been converted into the Mansion Hotel.

Source: Parks Victoria

4.1.3 Education and conservation

The Precinct provides a number of education activities, ranging from formal school programs to publicly available online resources. The educational experiences offered within the Precinct emphasise student centered, experiential learning and are designed to provoke higher order thinking for students from Foundation to Tertiary studies (see boxes 4, 5 and 6). The programs are cross-curricular and link strongly to outcomes from school curriculum standards (e.g. AusVELS).



Box 4: Education Programs at Werribee Open Range Zoo

The Werribee Open Range Zoo is a marquee attraction for the Precinct, and provides a range of different learning experiences for students. These education programs provide students with opportunities to connect with wildlife, build their understandings of real life conservation issues, and be empowered to take action and help save wildlife.

Each of the zoo's learning programs are facilitated by Zoo Education officers, are cross-curricular and link strongly to outcomes from Victorian Early Years Learning and Development Framework (VEYLDF), AusVELS, and VCE study designs. These programs include:

- Nature's Calling (Early Childhood) – provides children an opportunity to connect with the amazing animals at the Zoo through guided and child-directed play and be encouraged to discover and explore nature with parallel-play and dramatic play elements.
- Habitat Detectives (Years Foundation to 2) – through a facilitated workshop, students investigate what animals need to survive and consider the features they have, to be able to get all of those things
- The Endangered Race (Years 3 to 10) - introduces students to animals facing extinction and challenges them to consider which animal they would choose to save from extinction and why
- Investigating the Grassland Ecosystem (VCE Biology) - sees VCE students explore the diversity that exists between animals, plants and other organisms within a grassland ecosystem
- Herbivores and Carnivores (VCE Biology) - challenges VCE students to apply their ideas about physical and behavioural adaptations to do with food and examine a variety of skulls and scats to unravel the importance of the diversity of what animals eat, methods of digestion and how they may avoid being eaten themselves
- Reproduction (VCE Biology) - VCE students investigating the reproductive strategies of endangered species in captivity

Other programs include:

- Keeper for a Day - An all-day careers based program for students aged 13 to 18 years that provides opportunities to be immersed into the role of a zoo keeper. Programs are offered during the school holidays
- Teach professional learning - a range of teacher previews and professional development programs that can enrich your teaching skills around wildlife and be used to fulfil the Victorian Institute of Teaching requirements
- Student web conferences - run by Zoo educators, these are closely linked to our Community Conservation Campaigns and feature live crosses to our Zookeepers and animal experts, with opportunities for students to ask questions.

Source: Zoos Victoria

Box 5: Western Treatment Plant

MWC provides education services for schools and other community groups. Excursions to the Western Treatment Plant are an opportunity for students and community groups to learn about aspects of the water cycle.

During a bus tour of the plant, students can learn about:

- The sewage treatment process
- Collecting methane gas to generate electricity
- Conservation in the Ramsar-listed wetlands

Tertiary and school students from Grade 3 to Year 12 can complement their tour with a range of education activities on:

- Animal food chains
- Urban cycle
- Stormwater system
- Catchments
- Waste

The Western Treatment Plant also runs a yearly community open day for the public to visit the plant. Typical

visitation for these programs is around 7000 visitors annually. Additionally, a small number of researchers associated with Universities use the facilities at the Western Treatment Plant from time to time, with their focus primarily on biodiversity conservation activities.

Source: Melbourne Water

Box 6: Werribee Park Mansion

Werribee Park offers an extensive education program designed for students of all year levels. Based on the history of the 1800s, the program provides students with an opportunity to explore the fascinating lifestyle of the Chirnside family and their servants, whilst meeting the requirements of the Victorian Essential Learning Standards (VELS).

Werribee Park's curriculum-based school programs will help students discover what life was like living and working in a Victorian-era mansion with a range of hands-on programs. These programs provide:

- A range of curriculum based programs catering for all Levels from Prep to Year 10 that meet VELS guidelines.
- Pre / Post visit material and support.
- Itinerary provided for the day
- A range of curriculum material available on Parks Victoria's website (www.parkweb.vic.gov.au).

Source: Parks Victoria

4.1.4 Environmental and green space

The forests, woodlands and wetlands of Victoria's parks improve water quality by naturally purifying and filtering water and reducing the release of soil sediment, pollutants and organic matter that would otherwise reach our waterways.

Werribee Park helps play an important role in reducing the level of nutrients and toxicants that affect water quality and ecosystem health in our urban waterways and bays. It is estimated that the benefits of water filtration in Melbourne's metropolitan parks network equates to approximately \$2,150 per hectare per year¹¹, which equates to a benefit of \$860,000 per year in water purification and filtration benefits from Werribee Park.

The Precinct resides in what is known as a "green space" which refers to an area of land set apart for recreational or aesthetic purposes in an otherwise urban environment. Green spaces provide three key forms of benefits, namely recreational, ecological and aesthetic.

The Precinct provides a number of recreational opportunities which provide value to the community, including active recreation (through the Werribee Park Golf Course, National Equestrian Centre and individual exercise), and passive recreation, which refers to simply being in green space.

The ecological benefits refer to the opportunities afforded to visitors to be within an urban green space environment, which often leads to visitors gaining a greater appreciation of the natural environment, however this is difficult to quantify and has not been included in this study.

The aesthetic value of the Precinct lies primarily with the Werribee Park Mansion and Rose Garden, which provide visitors with a unique viewing experience, and the enjoyment visitors derive from viewing nature, particularly in contrast to other urban environments.

The Precinct also undertakes a number of environmental conservation activities, primarily through the Werribee Open Range Zoo, and Western Treatment Plant.

¹¹ Marsden Jacobs Associates 2014, Valuing the Water Services provided by Victoria's Parks, Report prepared for Parks Victoria

Box 7: Werribee Open Range Zoo

The Werribee Open Range Zoo (as part of Zoos Victoria) is the world's first zoo to achieve carbon neutral certification, and has joined Carbon Neutral Network through sound carbon reduction onsite and securing habitat to protect biodiversity through the purchase of carbon offsets. The Zoo is the only zoo in Australia, and one of a handful of zoos in the world, to achieve ISO14001 certification.

Zoos Victoria is committed to improving the habitat for local fauna along the Werribee River and its floodplain, within the Werribee Open Range Zoo. The Zoo's efforts are particularly focused on threatened species.

Over the past 12 years, Zoo staff has been revegetating along the river, creating a wildlife corridor that contains significant riparian, wetland and woodland environments. The corridor provides habitat for several threatened species (including the Growling Grass Frog) and a diverse range of wetland birds and raptors. It also provides connectivity for wildlife, in a cleared and increasingly developed landscape.

The Werribee Open Range Zoo has developed a detailed management plan for the wildlife corridor; which is now being implemented. Current activities include weed control and revegetation works.

The Zoo's focus in terms of environmental sustainability is on:

- Waste management
- Carbon management
- Energy efficiency
- Water saving measures
- Environmental management
- ISO 14001 certification

Source: Werribee Open Range Zoo

Box 8: Western Treatment Plant

The Western Treatment Plant continues to actively improve its operations to benefit the community and environment. In 2004 a \$160 million upgrade to improve the sewage treatment process was undertaken – the largest upgrade in the plant's history. This was in response to findings of a four-year CSIRO environment study, which looked at how to protect the long-term health of Port Phillip Bay.

In recent years the Western Treatment plant has improved its renewable energy and recycled water production, further reduced odour and emissions, and boosted capacity of the plant.

Western Treatment Plant also provides a haven for tens of thousands of birds and encompasses a diverse and complex array of habitats, vegetation and wildlife. It is one of Australia's most important wetlands for waterbirds, and is listed under the international Ramsar Convention.

The plant supports diverse vegetation communities and species and is home to many animals and reptiles. For example, the critically endangered plains Spiny rice-flower (*Pimelea spinescens*) is found at the plant, as well as the endangered Growling Grass Frog (*Litoria raniformis*), and the threatened Fat-tailed Dunnart (*Sminthopsis crassicaudata*).

The Biodiversity Conservation Advisory Committee provides the Plant with specialist advice on conserving and managing the Western Treatment Plant's unique native biodiversity values

Source: Melbourne Water



4.2 Non-use value

The aggregate quantified non-use benefit of the Precinct was \$3.0 million in 2014/15, consisting of:

- ▶ \$1.9 million in existence value
- ▶ \$1.1 million in bequests and donations.

Non-use value is the value that the Victorian community assigns to the Precinct, even if they do not visit the attractions. People can value a facility, service or event even if they do not attend the offering in person. This is often known as the existence (non-use) value one obtains as a result of the presence of a facility, service or event within one's locality.

4.2.1 Existence value

Placing a value on civic pride associated with the Precinct is problematic. This would ideally involve contingent valuation and surveys of the Victorian population to understand how much Victorians would be willing to pay to maintain the Precinct's operations in Victoria, even if they do not attend the site. This level of primary research is outside the scope of this engagement. As such, EY has relied on existing publicly available studies to develop a proxy measure (see Appendix F).

EY estimates the annual existence value of the Precinct's operations to the Victorian non-visiting community to be **\$1.9 million**. This estimate is based on the following:

- ▶ Existence value – Based on the estimated values presented in previous relevant studies (see Appendix F). For this study, an estimate of **\$21.91** per adult has been adopted
- ▶ Number of non-use adults – In 2014/15, the assumed number of non-use adults in the vicinity of the Precinct (i.e. the Wyndham LGA) is assumed to be **86, 419 adults** (around 57% of the adult population of the Wyndham LGA).

EY recognizes that a limitation of this analysis is the use of secondary information from studies conducted in other jurisdictions as well as on facilities that are of a different nature to the Precinct.

4.2.2 Bequests and donations

Additional non-use value was estimated by considering the level of bequests and donations received by the Precinct from the Victorian community. In 2014/15, the Precinct received \$1.1 million (excluding government grants) in bequests and donations. For the purpose of this analysis, EY assumes that this is all sourced from the Victorian community (i.e. no interstate or international donations).

Appendix A Detailed estimation methodology

EY has used actual expenditure, turnover and activity profiles to estimate the Precinct's contribution to the Wyndham LGA, Melbourne West and Victorian economies, where possible. However, the scope of this study does not allow for primary data to be used in all instances. Given this, EY has extrapolated and interpolated available data to estimate the full value of the Precinct's operations.

Financials

The financial summary for the Precinct is presented below. The summary below was calculated using data provided by each of the venues listed in section 1.2. This provides the starting point for determining industry output and industry value-add presented in Chapter 3.

	Total (\$ millions)
Revenues	\$ 31.4
Expenses	\$ 24.7
Operating profit	\$7.8
Bequests & Donations	\$1.1
Total Profit	\$8.8

Visitation

Estimating total visitation by summing the attendance at each individual facility can be misleading as people often visit more than one facility during their trip. For the purpose of this study, the spend of each individual visitor should be captured, however visitors to the Precinct will occasionally visit more than one attraction during their stay.

To account for this, unique visitation is estimated by developing assumptions on the number of total visitors that visit other sites and facilities.

In order to account for this in our analysis, an assumption on the level of unique visitation at each attraction was made based on data provided by the various attractions, and knowledge gained from previous studies.

Based on these assumptions it was estimated that Precinct attracted a total of 860,847 unique visitors in 2014/15.

Attraction	Assumed unique visitation	Source
Werribee Open Range Zoo	100%	EY assumption – for the purposes of this study it is assumed all visitors to WORZ are unique.
Werribee Park National Equestrian Centre	100%	EY assumption- for the purposes of this study it is assumed all visitors to the equestrian centre are unique.
Mansion Hotel & Spa	80%	EY assumption – it is assumed that 80% of visitors to the Mansion Hotel and Spa are unique while 20% visitor another facility in the Precinct
Shadowfax Winery	80%	EY assumption – it is assumed that 80% of visitors to the winery are unique while 20% visitor another facility in the Precinct
Werribee Park Golf Club	100%	EY assumption – all visitors to the golf club are assumed to be unique
Western Treatment Plant	100%	EY assumption – all visitors to the treatment plan are assumed to be unique

Attraction	Assumed unique visitation	Source
Werribee Park and Werribee Mansion	38%	EY assumption - it is assumed that 38% of visitors to the Mansion and park are unique while 62% visitor another facility in the Precinct. Data provided by Parks Victoria showed 12% of visitors came from the Mansion Hotel and Spa, and a significant number of visitors also visited the Werribee Open Range Zoo

Visitor origins

The origin of visitors to the Precinct was estimated based on postcode information received from a number of facilities.

Visitor origin	Number of unique visitors
Wyndham LGA	65,440
Melbourne West	196,108
Rest of Victoria	469,262
Interstate	93,556
Overseas	36,481
Total visitors	860,847

Specific stay in the region

Based on our understanding of typical visitation to the types of attractions located within the Precinct, it was estimated that the level of specific visitation ranged between 0% and 8% depending on the attractions.

Average length of stay and daily expenditure

It was estimated that on average, approximately 80% of visitors to the Precinct were day trippers. For overnight visitors, we based our assumptions on research from Tourism Research Australia – Regional Tourism Profiles when attraction specific data were not available.

Similarly, the assumed daily expenditure for visitors was based on research from Tourism Research Australia – Regional Tourism Profiles when attraction specific data were not available.

A previous EY study was used to determine the average daily spend for visitors to WORZ.

Visitor Profile	Domestic Day	Domestic Overnight	International
Average stay (nights)	-	3	21
Average spend per day / night (\$)	\$ 80	\$ 209	\$ 70

Source: Average daily spend sourced from Tourism Research Australia (TRA), Regional Tourism Profile 2013-14; Wyndham (C) minus the average transportation costs associated with daily spend (estimated at 30%)

Transportation costs included in economic contribution estimate

The formulas used to calculate the total travel cost for the economic contribution estimate are presented below. EY assumes that all Precinct visitors commute by walking/riding, car or public transport. No other modes of transport have been modelled.

Table 4 Travel cost formulas, by cost item

Travel cost item	Formula	Price (\$)
Walk / ride		

Travel cost item	Formula	Price (\$)
Transport cost	<i>Nil</i>	
Car		
Wage/time cost	Return trip travel time (hrs) x Population (Car, adult only)	Minimum wage (\$/hr)
Public Transport		
Wage/time cost	Return trip travel time (hrs) x Population (Public transport, adult only)	Minimum wage (\$/hr)
	<i>plus</i>	
	Population (Public transport, child only)	Ticket price (concession)

Source: EY

Transport costs

Walk/ride

Visitors are assumed not to incur any transport related costs for this mode of transport. Wage/time costs are presented in the next section.

Car

EY assumes that:

- ▶ The average cost per kilometer of travel by car is \$0.74. This is based on RACV's 2013 average vehicle operating costs for the following segments: small car, medium car, large car and people movers.
- ▶ There are, on average, 2.5 passengers per car
- ▶ No car parking costs are incurred (free parking is provided in the region).

Public transport

Public transport ticket prices are assumed to be:

- ▶ Visitors from Wyndham and Melbourne West are assumed to pay \$2 for a concession ticket and \$4 for an adult ticket.
- ▶ Visitors from the rest of the State are assumed to pay \$5 for a concession ticket and \$10 for an adult ticket.

Appendix B Travel cost assumptions

This study uses estimated travel costs (i.e. foregone wages or cost of leisure time) as a conservative proxy for consumer surplus, given willingness-to-pay market research is not included in the scope of this study.

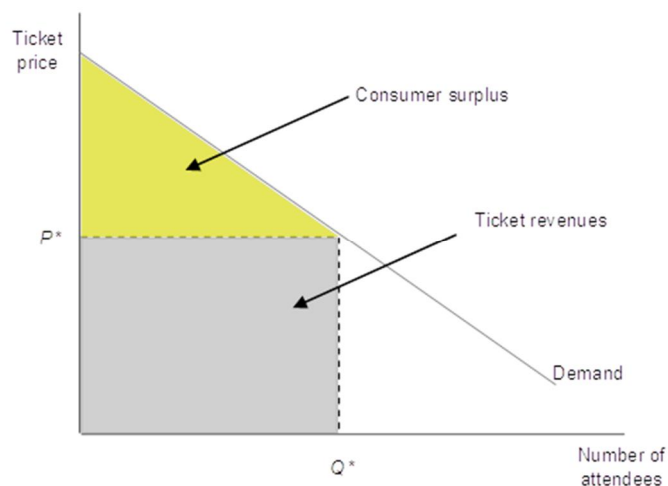
The consumer surplus of visitors is the difference between the maximum entry price a visitor is willing to pay and the actual price paid for their admission. If a visitor would be willing to pay more than the ticket price, then they are getting more benefit from their visit than is captured in the ticket price (see below). This represents a broader social and cultural value in addition to the price paid for admission (as captured in the economic contribution estimate) and travel costs incurred making a visit to the Werribee Park Tourism Precinct.

Box A1 - What is consumer surplus?

Consumer surplus is a net benefit that can be defined as the difference between what a consumer is willing to pay and the actual price paid.

A graphical representation of consumer surplus is presented in Figure B1. It shows a downward sloping demand curve which indicates different levels of demand at different ticket prices. The amount that people are willing to pay for the event is the area underneath the demand curve. At the price point P^* , the amount of people that would purchase tickets would be Q^* , and revenues to the event organiser would be the shaded box $P^* \times Q^*$. The consumer surplus benefit to the consumer is therefore the amount they were willing to pay (the area underneath the demand curve up to Q^*) less the amount they actually paid ($P^* \times Q^*$) – this is represented by the triangle above the price point.

Figure F1: Consumer surplus



This section presents an overview of the data inputs and assumptions used to in the travel cost method, specifically:

- ▶ Summary of formulas used
- ▶ Mode of transport, by region and site
- ▶ Victorian visitation, by region and site
- ▶ Foregone wages (adult visitors)
- ▶ Distance from the Precinct by region

Summary of formulas

The formulas used to calculate the total travel cost are presented below. EY assumes that all Precinct visitors commute by walking/riding, car or public transport. No other modes of transport have been modelled.

Table 5 Travel cost formulas, by cost item

Travel cost item	Formula	Price (\$)
Walk / ride		
Wage/time cost	Return trip travel time (hrs) x population (Walk/ride, adult only)	Minimum adult wage (\$/hr)
Transport cost	<i>Nil</i>	
Car		
Wage/time cost	Return trip travel time (hrs) x Population (Car, adult only)	Minimum wage (\$/hr)
Transport cost	((Total visitors ÷ pax per car) x average kms per car)	\$ per km
Public Transport		
Wage/time cost	Return trip travel time (hrs) x Population (Public transport, adult only)	Minimum wage (\$/hr)
Transport cost	Population (Public transport, adult only)	Ticket price (adult)
	<i>plus</i>	
	Population (Public transport, child only)	Ticket price (concession)

Source: EY

The data inputs outlined above are presented in the proceeding sections.

Victorian visitation, by region

The following table present the 2014/15 unique visitors to the Precinct, by region. Only Victorian visitors are captured in the travel cost estimate because the scope of this study is limited to the economic contribution of the Precinct to Victoria.

Table 6 Unique visitors by region

Visitor origin	Number of unique visitors
Wyndham LGA	65,440
Melbourne West	196,108
Rest of Victoria	469,262
Interstate	93,556
Overseas	36,481
Total unique visitors	860,847

It is assumed that the proportion of adults ranged from 10% (Western Treatment Plant) to 90% (Werribee Park Golf Course) depending on the attraction. This is based on the age profile of visitors provided, in 2014/15.

Distance from site

The assumed distance (kms) to the Precinct was required to estimate the return trip travel time (for all modes of transport). EY estimated these distances using the Google Maps¹² distance function, based on an assumed visitor origin for each region. The assumed distance (kms) per round trip is presented below.

Table 7 Distance from the Precinct

Region	Distance (km)
Wyndham LGA	10.00
Melbourne West	15.00
Rest of Victoria (estimated based on a return trip)	200.00

Source: EY estimate

Mode of transport

The assumed mode of transport profile used by visitors to commute to the Precinct was required to estimate travel time and transport costs. The following table presents the assumed mode of transport (% of total visitors), by region and site. EY assumes that all Precinct visitors commute by walking/riding, car or public transport. No other modes of transport have been modelled.

Table 8 Mode of transport (% of total visitors) by visitor origin

Region	Walk	Car	Public Transport
Wyndham LGA	2%	90%	8%
Melbourne West	0%	90%	10%
Rest of Victoria	0%	90%	10%

Source: EY estimate

The following table presents the assumed travel speeds, by region and mode of transport. This information was used as part of the formula to estimate return trip travel times.

Table 9 Average travel speeds (km/h) by region and mode of transport

Region	Walk	Car	Public Transport
Wyndham LGA	2%	90%	8%
Melbourne West	0%	90%	10%
Rest of Victoria	0%	90%	10%

Wage/time costs

EY used the current Australian minimum wage for adults (\$16.37/hr) and assumed return trip travel time (hours) to estimate the foregone wages of the Precinct's adult visitors.

¹² <https://maps.google.com.au/maps?hl=en&tab=wl>

Appendix C Volunteerism

The number and dedication of volunteers is also an indication of the value the Victorian community attributes to the Precinct.

The estimated value of volunteerism is based on the following assumptions:

- ▶ Total volunteer hours of 61,099. This estimate is based on:
 - ▶ 34,329 volunteer hours in Werribee Park¹³
 - ▶ 229 volunteers at other Precinct attractions
 - ▶ Average number of volunteer hours per volunteer in Australia – 116.9 hours in 2012/13¹⁴. This equates to around 2.5 hours per week.
- ▶ Cost per hour of \$16.37
 - ▶ This represents the current national minimum wage for adults (\$16.37 per hour). This is the minimum cost per hour that could reasonably be assigned to volunteers and is a very conservative estimate, given many volunteers have higher education qualifications (i.e. could reasonably be assumed to receive more than the minimum wage in paid employment).

¹³ Data provided by Parks Victoria

¹⁴ Volunteering Australia estimates that 6.1 million volunteers worked a combined total of 713 million volunteer hours, in 2010 (<http://www.volunteeringaustralia.org/>, accessed 7 March 2014)

Appendix D Health benefits

The methodology used to estimate the health benefits generated by the Precinct is an avoided cost approach for visitors undertaking physical activity within the Precinct, based on estimates found in recent literature¹⁵.

It is important to note however, that calculating the direct attribution of parks to health outcomes including economic benefits is difficult and would require significant additional research outside the scope of this project. Therefore, the estimates of health benefits provided in this report are indicative only.

The estimate value of health benefits is based on the following assumptions:

Assumptions	Value
Share of physically inactive visitors (i.e. doing less than the minimum recommended exercise) ¹⁶	56%
Contribution of parks to recommended physical activity ¹⁷	11%
Number of visitors to Werribee Park with the primary purpose of fitness/physical activity	24,016
Number of visitors to Werribee Park Golf Course	13,500
Avoided health care and productivity costs per person due to physical inactivity ¹⁸	\$1,660

¹⁵ Warburton D. E. R., Nicol C. W., Bredin S. S. D. 2006 Health benefits of physical activity: the evidence. Canadian Medical Association Journal 174, pp. 801-809. DOI: 10.1503/cmaj.051351

¹⁶ ABS 2013, Australian Health Survey: Physical Activity 2011-12

¹⁷ DELWP, 2015, Valuing Victoria's Parks: Accounting for ecosystems and valuing their benefits

¹⁸ Medibank Private, 2008, The Cost of Physical Inactivity.

Appendix E Existence value assumptions

Placing a value on existence value associated with the Precinct would ideally involve contingent valuation and surveys of the Victorian population to understand how much Victorians would be willing to pay to maintain the Precinct's operations in Victoria, even if they do not attend the attraction. This level of primary research is outside the scope of this engagement.

Examples of values of this type of impact have been considered in other studies. For example, studies have estimated the average willingness to pay for the existence of various cultural heritage assets (see below).

Average existence value of cultural heritage assets (\$2015)

Author	Study	Measured	Average annual existence value		Total non-use value Wyndham LGA (\$'000)
			Per adult	Per household	
Tranter (2009)	Valuing Queensland Museum	WTP for existing QM products and services	\$22.16	n/a	\$1,915
Choi, Ritchie, Papandrea & Bennett (2010)	Economic valuation of cultural heritage sites: A choice modelling approach	Old Parliament House (all facilities currently available) in Canberra, Australia	n/a	\$15.75	\$463
Martin (1994)	Determining the size of museum subsidies	Support for all Quebec museums	\$13.59	n/a	\$1,175
Tohmo (2005)	Economic value of a local museum: Factors of willingness-to-pay	Average WTP to keep the Museum of Central Finland in existence - Non-users only	\$20.67	n/a	\$1,786
		Average WTP to keep the Museum of Central Finland in existence – Users & non-users	\$38.03	n/a	\$3,286

Source: Various, converted to AUD and inflated to June 2015 dollars

For the purposes of this study, an existence value of **\$22.16** per non-use adult has been applied. This value represents the same value that Queensland residents place on the Queensland Museum.

EY recognizes that a limitation of this analysis is the use of secondary information from studies conducted in other jurisdictions as well as on facilities that are of a different nature the Precinct. For instance, people in other jurisdictions may value assets differently to the Wyndham population. However, it was beyond the scope of this analysis to carry out surveys of Victorian Residents.

Non-use adults

This value per adult was applied to the assumed number of non-use adults (i.e. adults that did not visit the Precinct in 2014/15) in the vicinity of the Precinct (i.e. the Wyndham LGA). To avoid potential double counting, the number of unique visitors originating from Wyndham (65,440) has been subtracted from the Wyndham LGA population estimate (151,859, as at June 2014). Based on this, it is estimated that the number of non-use adults in the Wyndham LGA to be **86,419**.

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