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Yarrow Stadium value to the Taranaki community

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Making sense of the value of Yarrow Stadium

Yarrow Stadium was developed as a modern stadium for Taranaki in New Plymouth in 2002, superseding Rugby Park. In 2017-18 the structure of one grandstand and the ground below the other at Yarrow Stadium have been found to be insufficiently stable to withstand earthquakes. Significant investment shall be required to repair or replace the stands or the stadium. The purpose of this report is to assess the value of the Yarrow Stadium to the Taranaki community over the last 15 years. This can assist decisions on the necessary investment.

\$100m value
to Taranaki

Our findings are that the enjoyment by Taranaki people and the spending by visitors to Yarrow Stadium have brought over \$100 million of value to the Taranaki community over the 15 years from 2003 to 2017. In future, Taranaki can expect that the Present Value to them of the future stream of value shall be considerably larger than that estimated at \$100 million for 2003 to 2017, because the repaired Yarrow Stadium will last considerably longer than 15 years, and will provide a higher level of service and amenities in future than in the past.

The benefits and value to the community from a stadium like Yarrow cannot all be monetised. Community multi-use of the Stadium may not generate great revenue but does generate benefit, and is being pursued by Yarrow Stadium's owners, governance and management. Since 2014 community visitation, excluding at major events have increased from 16,397 in 2014/15 to 33,310 in 2016/17. The number of functions, like conferences etc. were 51 in 2014/15 and 128 in 2016/17. Both had doubled.

Community use
doubled 2014-17

For the local people it provides a multi-use venue for special occasions, and frequent social enjoyment of the company of friends and family watching sporting events at Yarrow Stadium. This Stadium has value due to its central location in New Plymouth, its iconic backdrop of Mt Taranaki and the friendly atmosphere commented on by visitors. Yarrow Stadium is where Taranaki people entertain visitors to Taranaki and New Zealand at national and international sporting and other fixtures.

715,000
Taranaki people
\$50m value

The two types of benefits which we can place dollar values on are:

- the amount Taranaki people have valued making 715,000 spectators' attendances at main fixtures at Yarrow Stadium over the 15 years. This value is over \$50 million
- the amount of economic activity generated in the Taranaki economy by the spending by 245,000 visitors to events at Yarrow Stadium. Many of these visitors stayed and spent on accommodation, entertainment and general spend which is estimated over \$60 million. The contribution to Taranaki GDP along the value chain is estimated at \$45 to \$55 million.

245,000 visitors
\$45-55m added
to Taranaki GDP

Any region needs a vibrant urban centre to attract people and businesses to locate there. Taranaki is fortunate to have New Plymouth as its main centre which has a high level of amenity, facilities and attractions including those of Yarrow Stadium with a capacity of over 22,000 people. Regional centres in New Zealand all have stadia of about that size. It would significantly compromise New Plymouth's and Taranaki's attraction to people and businesses if Yarrow Stadium was not repaired or replaced.

6,000+ Taranaki
people to all
NPC games

The nature of Taranaki and its people has been identified with the dairy cows grazing on lush pasture in the foreground, with Mt Taranaki as a backdrop, and also with their prowess at rugby, again with Mt Taranaki as a backdrop. The Taranaki community has shown a strong loyalty to rugby. Over the period 2003 to 2017 there have consistently been 6,000 to 8,000 spectators socialising at NPC games at Yarrow Stadium. Taranaki region also has a successful record of maintaining a high level of rugby participation and especially by girls and women. This is another key factor to indicate that there is a need to retain a Stadium facility in Taranaki, with the size and nature of Yarrow Stadium.

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1 Finding the value of Yarrow Stadium to Taranaki

Yarrow Stadium was developed as a modern stadium for Taranaki in New Plymouth in 2002, superseding Rugby Park. In 2017-18 the structure of one grandstand and the ground below the other at Yarrow Stadium have been found to be insufficiently stable to withstand earthquakes. Significant investment shall be required to repair or replace the stands or the stadium. The purpose of this report is to assess the value of the Yarrow Stadium to the Taranaki community over the last 15 years. This can assist decisions on the necessary investment.

1.1 Yarrow Stadium in Taranaki's development since 2002

Taranaki is a vibrant community with a strong economy and independent identity focussed on the fertile land and bush remnants around Mt Taranaki on the North Island's western side.

The Taranaki community has supported a number of recreational, sporting and cultural initiatives over the past twenty years which collectively have enhanced the reputation of Taranaki as a place to visit, to work and to live. One such initiative was the upgrading of Rugby Park in New Plymouth, to Yarrow Stadium in 2002, and its full functioning from 2003 to 2017.

The current work assesses the value of Yarrow Stadium to the Taranaki community from 2003 when the upgrade was completed, until the present. It is important to see the upgrading of Rugby Park into Yarrow Stadium as a part of the bigger picture of Taranaki becoming more attractive to its citizens, to current and potential visitors, and by internal and external migrants who may choose to move to Taranaki to live, work and play.

1.2 Method of assessing the value of Yarrow Stadium

This investigation can proceed in two different directions. It can:

- directly analyse the range of activities at Yarrow Stadium and assess their monetary value from spending by visitors to the Stadium from outside the region as a limited economic impact analysis or EIA, or
- take a big picture viewpoint to assess the extent to which Taranaki has become more attractive to current and prospective residents in a range of measures since Yarrow Stadium was completed in 2003.

There can always be debate as to the actual impact and value of any particular facility, whether the values would have accrued anyway through another means, or whether a benefit to one facility is gained through reduced benefit to another. The big picture will consider generally the place of any facility or event in the value of the quantitative standard of living, and the broader values of the way of life in the community. This report aims to find the value to the Taranaki community of the Yarrow Stadium over the past fifteen years.

To do this we assess the following:

1. Attendance at Yarrow Stadium by members of the Taranaki community, at other than major events.
2. The value of Taranaki people's enjoyment at major events at Yarrow Stadium since 2004.
3. The economic activity generated in Taranaki by visitors to major events at Yarrow Stadium since 2004.
4. Wider impacts on attraction of people and businesses to New Plymouth and Taranaki.
5. Providing a consistent, future venue for Taranaki's community and followers of sports.

2 Yarrow Stadium expands its community use

Yarrow Stadium ownership, governance and management have accepted that its primary use is to host sporting events, particularly hosting rugby matches. However they also have stated in the Yarrow Stadium Asset Management Plan (AMP) 2015-2025, at page 17, and again in the AMP 2018-2028, that other uses for the Stadium include:

- conferences
- exhibitions
- trade shows
- conventions
- corporate functions
- weddings
- community events.

2.1 The intention to increase community use

The stakeholder engagement for the same Asset Management Plan (AMP) 2015 -2025 received an ‘overwhelming response from those outside of rugby for the stadium to become more multi-use.’

This AMP developed in 2015, and the updated 2018-2028 Yarrow Stadium AMP draft of October 2017 both show the Plan’s demand criteria as being:

- to promote multi-use
- to encourage community activity and participation
- to enhance visitor spectator experience.

In order to achieve these aims, the 2015 document set six key goals for the level of service, and these goals are represented by eleven performance measures.

Directly relevant to monitoring performance to increase community use, is the fact that seven of those eleven performance measures are concerned with community use of the stadium. They are:

- number of key community events
- total community visitation (not including major events)
- number of functions
- number of conferences/meetings
- number of expos/exhibitions
- number of community sport
- number of community other.

There is also a category ‘number of trainings’, which presumably could include major sports and minor ones, and it is also a large number which could skew interpretation of the numbers, so we omit this category in the number of functions.

2.2 Early increase in community use 2014 to 2017

The stadium venue operation numbers since 2014 show that there was strong increase in these community participation performance measures.

At the headline level the community visitation, excluding major events was 16,397 in 2014/15. This visitation had increased to 33,310 in 2016/17 as shown in the AMP 2018-2028. These are significantly large numbers, and the total has more than doubled within two years.

The numbers of functions, conferences, expos and community uses were 51 in 2014/15 and this total number had more than doubled to 128 in 2016/17.

The numbers for the individual function types are as follows.

	2014-15	2016-17
Number of key community events	2	0
Total community visitation (not including major events)	16,397	33,310
Functions	9	11
Conference/meetings	26	43
Expos/exhibitions	2	6
Community sport	14	54
Community other	0	14
Sub-total functions	51	128
Trainings	198	311

These numbers indicate a significant achievement between 2014 and 2017 in bringing about an increase in community use and attendance at non-major functions at Yarrow Stadium. A strong increase has been achieved by focussing on these aspects in the recent years. Unfortunately we do not have similar numbers for previous years.

Nevertheless this picture augurs well for increased community involvement and benefit in future years.

Over 33,000 people from the Taranaki community visited a variety of 128 different functions at Yarrow Stadium in 2016/17. Double the number for 2014/15.

3 Taranaki people's value of sport at Yarrow Stadium

The purpose of this section is to explore our ability to identify and measure the values of the on-going benefits from the Yarrow Stadium facility and major events which Taranaki people and communities have enjoyed over the period 2003 to 2017. In the context of broadening the attraction and benefits beyond the earlier concentration, largely on rugby matches, we first outline the events at Yarrow Stadium which have brought other sporting events to the Taranaki communities. We do not have such detailed information on Taranaki people's attendance at these sporting events as we do for the rugby matches.

3.1 Sports other than rugby at Yarrow Stadium

BERL has obtained lists of the occurrence of other events at Yarrow Stadium especially what are essentially sporting events. These are football, cricket, rugby league and some motor events. We have some estimates of spectator numbers for some events, and have assessed them for others.

A summary of the information we have includes:

- Rugby League: three pre-season NRL league games in 2005, 2008 and 2016 with total estimated spectators of 30,000.
- Football: FIFA Under 20 World Cup games in 2015, six matches, 19,830 spectators; and two Phoenix matches indications the total spectators would be 34,000 people
- bulking up these numbers with conservative assessments of missing data yields an estimate that from 2003 to 2017, bringing total football spectators to approximately 30,000
- Cricket / T20: matches in 2004, 2015 and 2016, an indication only in the media would imply a total of approximately 40,000 spectators.
- Motor: Crusty Demons, in 2007, 2009, Nitro Circus in 2016, 2017, and Trucks in 2012 with some media.

These other 'sporting' events at Yarrow Stadium had a total attendance of about 130,000 people of which 105,000 were Taranaki people and 25,000 were visitors to the Region.

These also are quite significant numbers, and the visitor component of these spectators is estimated to have contributed \$5 million to the region's GDP over the fifteen year period. .

3.2 Approach to valuing rugby at Yarrow Stadium

We are looking to find the full value of the Yarrow Stadium facility to the community. We therefore value the benefit which locals believe they derive from spending money and time at the facility or event. If that was not worth more to them than spending that money and time elsewhere, they would not attend the event

In the following section 4 we then follow the approach taken by some other economists who measure only the benefits which communities receive as the GDP stimulated by spending by visitors to the region. That thinking implies that if local people spend at a facility or event, then this is taking revenue and activity away from other people and businesses in the community, as the economy is a 'zero-sum game'. If this were the case, regions should only develop facilities which outsiders wish to go to.

To now provide a perspective on the value Taranaki people derive from rugby matches at Yarrow Stadium, we describe some of the key aspects of rugby in Taranaki which appear at least to some extent to be dependent upon the success and continuity of rugby at Yarrow Stadium.

These aspects are:

- the ongoing continuity and apparent ‘loyalty’ of rugby spectators in Taranaki
- the value which can be estimated that the spectators from around the region have placed on attending rugby matches at Yarrow Stadium from 2003 to 2017
- the performance of the Taranaki provincial rugby team.

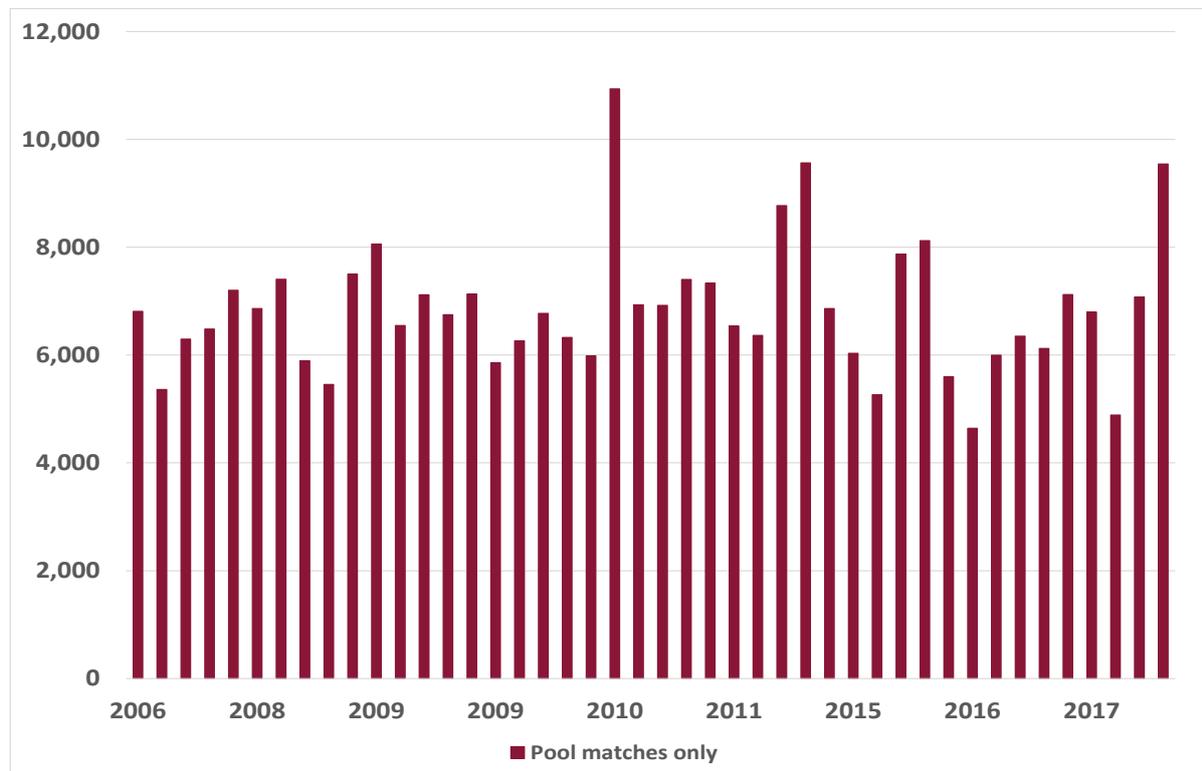
We then look at broader aspects of the place of rugby in the Taranaki community.

3.2.1 Social continuity and spectator ‘loyalty’

There is one very clear indicator of loyalty and appreciation of the social connectedness and inclusiveness of attending a rugby match at Yarrow Stadium. This indicator is the number of spectators attending NPC rugby matches at Yarrow Stadium over the years from 2003, the first year that Yarrow Stadium was fully functioning, to 2017¹. We show these actual spectator levels for normal pool matches from 2006 to 2017 in the chart.

In this chart, for clarity of interpretation of the underlying ‘loyalty’, we have omitted the matches when Taranaki had the Ranfurly Shield in 2011 to 2013 when attendance at games was often 10,000 to 13,000. Similarly we have omitted the NPC final in 2014 when the count was recorded in the media as over 20,000, and the semi-finals in 2014, 2016 and 2017. Including these high numbers on the chart increases the vertical scale and makes it more difficult to read the spectator levels at the individual matches.

Figure 3.1 Attendances at Yarrow Stadium Pool Matches: NPC, Air NZ, ITM, Mitre10 Cups



¹ Unfortunately the detailed numbers for the spectators at matches for 2002 to 2006 were not available, so to be conservative we have ‘backcast’ them at 90% of the 2007 level

3.3 Taranaki spectators' value attending Yarrow rugby matches 2003-2017

The accepted method of estimating the perceived value of recreation and spectator events is to use a standard system of valuing the travel cost of travelling for the recreation or event. This values the vehicle travel cost and the value of the time at which a person might value 'spare' time. These numbers are developed by the New Zealand Transport Agency and are used in estimating the value of travel. (In NZTA analyses, where travel is a part of normal work, those hours are valued at full hourly rates.) The methodology is outlined in Appendix A.

We wish to assess the value which Taranaki people believe that they have received by attending Yarrow Stadium rugby matches from 2003 to 2017. For this analysis we include Taranaki spectators at all rugby matches including NPC pool matches, Semi Finals and Finals, Ranfurly Shield games, Super Rugby and international matches. The total number of Taranaki spectators at all of these matches from 2003 to 2017 is estimated to be approximately 625,000 spectator visits.

We do not have any breakdown of the origin within the region of those spectators. We have therefore used as a proxy the share of registered rugby players in the rugby clubs located in the different areas around Taranaki, and selected an urban centre in each area as the place those people travel from.

Table 3.1 Estimates of geographic distribution of Taranaki rugby spectators

Place near origin of spectators	Waitara	New Plymouth	Inglewood	Eltham	Hawera	Opunake	Waverly	Total
Origin's share of spectators (percent)	12	28	9	17	15	16	3	100
Origin's estimated spectators (000)	77	176	54	106	92	102	16	623

This allocation of registered players to the geographic location of their Clubs indicates that the registered rugby players are quite evenly distributed throughout the region.

Using this geographic distribution we have then estimated for each geographic group of spectators the vehicle travel costs and the time travel costs of attending their matches at Yarrow Stadium. As well as these 'imputed' or 'perceived' costs we also require an order-of-magnitude indication of the amount they would be expected to spend as an entrance charge and on food and beverage purchases as part of their travel and visit to and from the match. Given current charges of just \$35 per adult ticket, and in order to be conservative, we have made an assumption that each person spends on average a total of \$50 per visit as a spectator at Yarrow Stadium.

These estimates are combined in the total shown in the table.

Table 3.2 Estimate of components of Taranaki rugby spectators' perceived value

Taranaki spectators	Units	Totals	Per person/visit
Spectators	Number	624,400	
Total vehicle travel cost	\$000	\$11,400	\$18
Total travel time cost	\$000	\$5,400	\$9
Total modelled travel cost	\$000	\$16,700	\$27
Spend at the event	\$000	\$31,200	\$50
Total Taranaki spectators' value	\$ Million	\$48	\$77

The indication is that over the period 2003 to 2017 it is likely that Taranaki rugby spectators would have perceived that they had received entertainment benefits to the value of at least \$48 million from attending rugby matches at Yarrow Stadium.

3.4 Region's distribution of estimated spectator value

We have noted above that there is a reasonably even distribution of rugby participation across the Taranaki region. The travel cost method of estimating the perceived benefit of recreation or spectator activity, rests on the logic that if people travel a longer distance to participate, then that will cost them more than for someone nearby, and that indicates that the more-distant person places a higher value on this spectator activity.

This logic is reflected in the distribution across Taranaki region of the estimated spectator's value. This is shown in the table.

Table 3.3 Estimated spectators' value across Taranaki Region (\$ million)

Item	Waitara	New Plymouth	Inglewood	Eltham	Hawera	Opunake	Waverly	Total
Total modelled travel cost	\$1.2	\$0.6	\$1.2	\$3.7	\$4.7	\$3.9	\$1.5	\$16.8
Spend at the event	\$3.9	\$8.8	\$2.7	\$5.3	\$4.6	\$5.1	\$0.8	\$31.2
Taranaki spectators' value	\$5	\$9	\$4	\$9	\$9	\$9	\$2	\$48

Source: TRFU, Clubs' websites, NZTA EEM, AA Trip Estimator, BERL estimates

The distance which people travel from areas around the mountain like Eltham, Hawera and Opunake means that the travel cost compensates for the slightly lower numbers of expected spectators from those areas than from the New Plymouth area.

The effect is that the spectator value is about \$9 million for each of these areas around the mountain at Eltham, Hawera and Opunake. This \$9 million value is about the same as the \$9 million value for the larger spectator numbers from the New Plymouth area.

This in turn implies that communities from around the Region will all receive a similar benefit from the resumption of the quality spectator experience and community socialising at Yarrow Stadium.

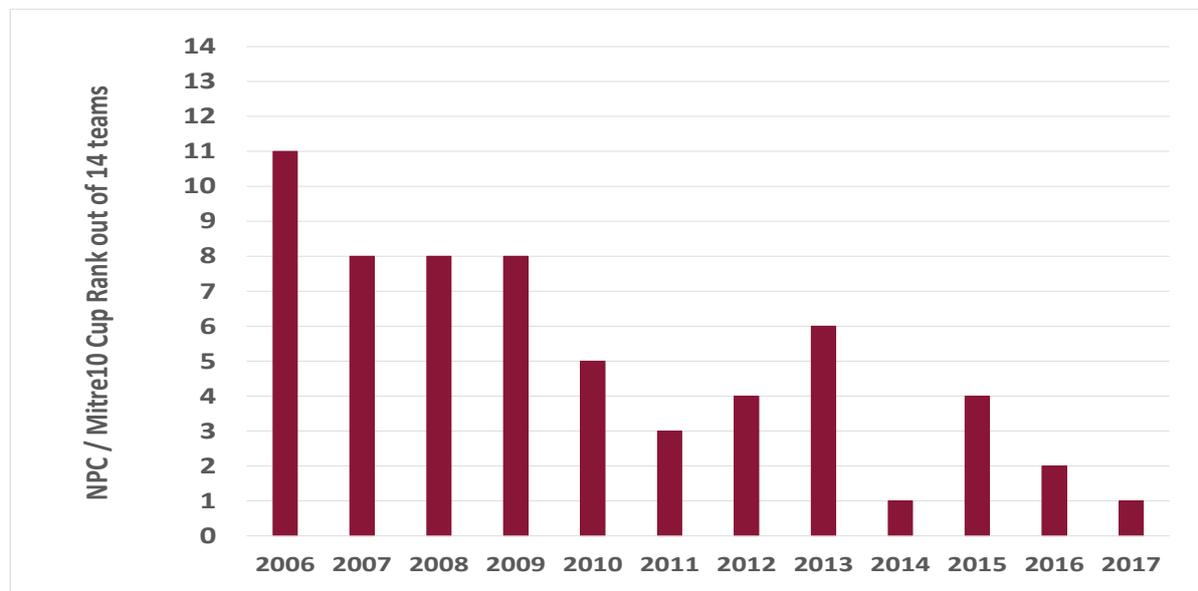
Between 2003 and 2017 the Taranaki rugby spectators from communities around the region received an enjoyment value of \$48 million from attending matches at Yarrow Stadium.

The same will apply to benefit from a repaired or replaced Yarrow Stadium

3.5 Taranaki provincial rugby performance 2006 to 2017

The loyalty of the Taranaki community to the provincial rugby team's matches at Yarrow Stadium has been rewarded with a steady climb up the rankings of the NPC provincial rugby teams over the years from 2006 to 2017. The Taranaki Bulls' ranking within the 14 team competition is shown in the chart.

Figure 3.3 Taranaki Bulls' ranking in provincial competition 2006 to 2017



This shows that having started in 2006 as 11th out of the 14 provincial teams, the Taranaki Bulls improved to eighth for the 2007 to 2009 seasons and from then on they have improved their ranking further. They have been top of the competition or top-equal in 2014 and 2017.

Unfortunately this performance has not continued into the 2018 season.

3.6 Taranaki rugby participation figures

As well as a province or region which performs well at competitive rugby, there is also strong participation in rugby in total, and by girls and women in particular in Taranaki.

In the *New Zealand Rugby 2017 Provincial union participation benchmarking booklet* the chart showing the rugby players as a percentage of the population in the 14 NPC provinces shows Taranaki to have had the highest participation in each of the last four years 2014 to 2017. In 2017 the Taranaki participation was 6.5 percent. The next highest were Northland and Southland with 5.5 percent to 5.7 percent. Most other regional provinces were about 4.5 percent, and Wellington, Canterbury, and North Harbour about 3 percent, and Auckland 2.7 percent.

Within the overall picture of high rugby participation in Taranaki, the share of participation by girls and women is higher in Taranaki than across the country. In 2016 the number of girls and women registered in Taranaki was 30 percent of the number of boys and men. Across the country as a whole the percentage was 16 percent. In 2017, the Taranaki number of girls and women had increased to 38 percent of the number of boys and men, and in New Zealand as a whole the number had increased a little to 18 percent.

This indicates that the rugby community in Taranaki is a leading Region in becoming more inclusive for rugby participation by girls and women.

4 Economic impacts of Taranaki's visitors to Yarrow Stadium

This section reports on the estimates of the present value of the economic benefits which can be assessed as coming to the Taranaki region from 2003 to 2017 because of the existence of Yarrow Stadium. Of course it could be argued that even if there were no Yarrow Stadium there may have been NPC rugby matches etc. played somewhere in Taranaki. That is possibly the case, but the reality is that there has been a Yarrow Stadium and this has attracted a range of events, many of which would NOT have come to Taranaki had Yarrow Stadium or a stadium of similar size and type not been here.

This will give one dimension of indication of the value which has accrued, and which could be lost if Yarrow Stadium is not re-instated, or replaced.

The other dimensions which have been explored in the earlier sections of this report are the on-going benefits from the Stadium facility and events which Taranaki people and communities enjoy.

4.1 How we estimate economic impacts

The strict economic interpretation of the impact or benefit which can be said to accrue to a facility such as a stadium in a region is the economic activity generated by people from outside the region who attend events at the stadium. These people generate economic activity by purchasing goods and services at the Stadium, and in the region as a whole. These goods and services include mainly food and beverages, accommodation, transport services, retail goods and other personal services.

The core of this analysis is as follows:

- assemble as far as possible a comprehensive list of events at Yarrow from 2003 to 2017
- obtain information where possible of the total attendance at each event;
- obtain for some representative events, the share of attendance who are visitors to the region
- obtain again for some representative or similar events, the pattern of spending by the visitors
- bulk up the spending by visitors to the region to each event.

This process generates the estimate of the total direct amount spent by visitors to the region to each event, and indirectly for all events in each year from 2003 to 2017.

Value added in the region: for each dollar spent some of that goes to cover the cost of components brought into the region, and the rest is the value added by businesses in the region. It is the total of this value added which is called GDP.

Value added along the value chain: from experience and analyses of the backward and forward linkages in the regional value chain we are able to estimate from the direct value added estimate, the total value added along the region's value chain as a result of the spending by the visitors.

Information from earlier analyses: there are earlier analyses of economic impacts of events at Yarrow Stadium such as the All Blacks vs France test in 2013 and the three Rugby World Cup matches in 2011. As well, BERL has over the years completed a number of Economic Impact Assessments (EIAs) in Taranaki for such events as WOMAD, garden festivals, exhibitions like Len Lye, and other activities and events. For a number of those by others and by BERL, surveys of the composition of those attending and the pattern and level of spending has been completed.

These earlier studies have provided a spectrum of sound information for assessing the likely visitor composition and spending patterns for people attending events at Yarrow Stadium between 2002 and 2017.

4.2 Assessment of economic impacts of visitors 2003 to 2017

BERL takes the rational position that estimates of economic impacts should always be treated as indications of the orders-of-magnitude of the impacts on the particular economy involved. The levels of impact cannot be measured with a great level of accuracy as each of a number of factors will vary as between specific events, origin and demographic of visitors, timing and so on. Also surveys of spending patterns are not completed for all groups of those attending all of the different events.

However, robust estimates of economic impacts have been completed for some events at Yarrow Stadium over the period. These give an indication of level of spending by visitors for some of the larger events over the period, namely the All Blacks vs France in 2013 and the three Rugby World cup games in 2011 which included teams from Ireland, USA, Russia, Wales and Namibia. As well, BERL has completed a number of studies of spending by visitors to Taranaki to events like a number of WOMAD festivals, garden festivals and the like. These provide an indication of the spending pattern of New Zealand visitors from other regions.

With this position in mind we now assess the order-of-magnitude of the GDP generated in the Taranaki region as a result of the pattern of visitors to the region attending events at Yarrow Stadium from 2003 to 2017.

4.2.1 Attendance of visitors

Our high-level estimate of the number of people attending events at Yarrow Stadium over the 15 years from 2003 to 2017 inclusive has been approximately 975,000 people. We have actual attendances or a reasonable basis to estimate attendances at all main sporting events. Counting other events for which we do not have sufficient information, the total attendances would certainly exceed 1 million visits.

Of the total of 975,000 the number of Taranaki people's visits are estimated to be 730,000, which means that the number of visitors to Taranaki region to attend events at Yarrow Stadium over the fifteen years has been about 245,000.

The types of events which these 245,000 visitors attended were approximately as follows:

NPC rugby matches	75,000
Super Rugby matches	40,000
International rugby matches	100,000
Other events, FIFA U20 World Cup, T20 cricket, League	
Nitro circus, Wellington Phoenix 2016, 2017	30,000
Total visitors to the Region	245,000

The NPC visitors are mainly from other regions in NZ, although both NPC and Super Rugby matches do attract general tourists including those from Europe, who travel around New Zealand with the intention of attending one or two rugby matches while here. The Super Rugby matches attract a reasonable number of followers from the SANZAAR countries. The largest number is the 100,000 visitors for the international rugby matches which together with the Super Rugby visitors made up about 60 percent of the 245,000 visitors.

Looking at the 100,000 visitors to international rugby matches, about 80 percent of those attended matches at Yarrow Stadium as part of a larger tour of matches such as the 2005 British and Irish Lions tour, the Ireland tour of 2010, and the Rugby World Cup matches in 2011. Visitors on these tours generally have days between one match and the next, and stay in each place for a number of nights. An example was the Ireland tour in 2010 when Ireland played the All Blacks at Yarrow on 12 June and then played NZ Māori at Rotorua on 18 June. They then went to Australia, so followers are likely to have made a substantial tour in Australasia. Another example

was the USA team in 2011 who played one match at Yarrow Stadium on 11 September and a second on 15 September. It is likely that a number of USA supporters would have spent six nights in Taranaki, and spent significant sums of money here.

The FIFA Under 20 World Cup matches played at Yarrow Stadium in June 2015 consisted of five Group E pool games played on three days over the period from Monday 1 June to Sunday 7 June. Group E was made up of Nigeria, Brazil, Korea Democratic Peoples' Republic and Hungary. Nigeria and Hungary each played three pool games during this time and Brazil and Korea DPR played two pool games each. However Brazil returned for a round-16 match against Uruguay on 11 June. It is probable some supporters of some or all of these countries would have stayed in Taranaki for the period of the round-robin pool games. The FIFA data indicates that total attendances at these matches was over 19,830 people. Where two games were played on the same day, some spectators came for both games, and others just the one.

4.2.2 Total direct spend by visitors at the time

Using the spending levels and an element of judgement for the composition of visitors to the various events, and given that about 80 percent of visitors to international matches and other events are following touring rugby teams, we have made estimates of visitor spending for all of the event types including football, T20 cricket, and NRL league games.

Our estimate is that the total direct spending by these 245,000 visitors over the 15 years has been over \$60 million.

This implies an average spend per person of \$240 to \$250. This seems relatively conservative given that the survey for the RWC 2011 matches indicated New Zealand visitor spending at \$211 per person and overseas visitors at \$382 per person. The latter is likely to be closer to the level of spend for the 80 percent of visitors who are followers of international touring teams.

4.2.3 Total Regional value chain impact at the time

The spending by visitors at the game and afterwards, in their accommodation, in the cafes and other food and beverage outlets and general retail goods and services, increases demand back up the value chain to suppliers to the direct providers of goods and services. Also the people employed to provide them with goods and services spend part of their money, and this effect is called the value chain multiplier effect.

In this case the combination of goods and services purchased indicate that the total impact along the value chain would be that of an increase in total spending by \$120 to \$130 million.

4.2.4 Total Regional value added at the time

The actual benefit to the people and communities of Taranaki is the increase in their wages and salaries at work, or their increased profits in their small businesses in hospitality, retail, transport and other services. In economics the earnings of wages, salaries, profits, interest and rents are called in total the value added by the amount spent. Where the value added in a region is totalled that is called the Gross Domestic Product or GDP for the region. In

most regions in New Zealand a pattern of spending such as that by these visitors to Taranaki would generate approximately \$0.40 cents value added for each extra \$1.00 of spending along the value chain. This was also found to be the case in the EIAs of main Yarrow Stadium events.

The total Regional value added along the value chain at the time would amount to \$45 million to \$55 million.

5 Yarrow Stadium in a vibrant Taranaki attracting people

In Taranaki since 2002 there have been a range of improvements in private and public facilities, and events, and Yarrow Stadium is a part of that big picture. It is therefore contentious to attempt to apportion a specific part of that benefit to Yarrow Stadium as a component part of the whole. The facilities and events in the Taranaki region are spread widely throughout, from walking or riding the Coastal Walkway to surfing at Opunake, Oakura and beaches along the surf highway, to eating whitebait fritters at Mokau, visiting the Tawhiti Museum near Hawera or the Hollard Gardens at Kaponga.

However the main focus is on the city of New Plymouth, the regional centre.

5.1 New Plymouth's strength as a regional centre

New Plymouth is the main urban centre on the western side of the central North Island. The city therefore functions as a regional centre, or at a 'tertiary' level in New Zealand's settlement hierarchy having tertiary social service facilities – a base hospital and tertiary education.

5.1.1 New Plymouth in New Zealand settlement hierarchy

There are a number of ways of defining the tiers in settlement hierarchies, but in general the tier level reflects the level of social and business services located in the centre. Hence centres with primary schools and general practice medical facilities would be on the primary tier; those with secondary schools and a health centre of some form would be on the secondary tier and so on.

From the highest level in New Zealand we have the four main tiers reflecting their urban populations², and the level of services they have:

- 1 Metropolitan urban centres, Auckland (1.4 million); Wellington (390,000); Christchurch (370,000).
- 2 Zonal four urban centres which serve larger zones and/or provide a substantial specific function, like a substantial import/export seaport. These four are Hamilton (214,800), Napier-Hastings (127,600); Tauranga/Mt Maunganui (125,700) and Dunedin (115,100).
- 3 Six regional urban centres, each of similar size. These are Palmerston North (81,500), Nelson (63,300), Rotorua (55,800), New Plymouth (54,800), Whangarei (53,600) and Invercargill (49,300), each with about 50 to 60,000 residents in their urban area as defined by StatisticsNZ.
- 4 A large number, 41 districts with a number of smaller secondary and primary urban centres.

5.1.2 Urban amenity level reflected in property values

The urban amenity value at each level in the hierarchy is reflected in the average residential value in the urban area. The averages shown in the QV data for these tiers in the hierarchy areas illustrate this general principle.

² These data come from Statistics NZ Dataset: Urban area population projections – the 2013 Base

Metropolitan centres:	Auckland area \$1.05 million; Wellington area \$650,000; Christchurch Area \$523,000. (Still depressed since the earthquakes.)
Zonal:	4 regional centres \$530,000
Regional:	6 centres \$440,000; Of which New Plymouth \$450,000
Districts:	41 Average \$320,000

This indicates that New Plymouth is well-placed above the amenity value in the 41 general districts, and a little above the average for the six regional centres.

5.2 Outdoor stadium amenity

As with the other regional centres, New Plymouth has a population of approximately 50,000 or more and has a range of recreational and cultural facilities. All of the ten regional centres with populations of 50,000 and above have substantial outdoor stadia of capacity for 18,000 or more spectators.

New Plymouth has the Yarrow Stadium, which, when fully operational has a capacity of over 24,000³ spectators.

Regional centre	Stadium capacity
Hamilton	25,800
Napier – Hastings	24,000
Tauranga	20,000
Dunedin	30,700
Palmerston North	25,000
Nelson	19,000
Rotorua	26,000
New Plymouth	22,400
Whangarei	18,500
Invercargill	18,000

The implication of this information is that New Plymouth city and the Taranaki region are well-served with the current Yarrow Stadium when at a capacity of over 22,000 spectators, with substantial grandstands providing covered seating and quality food and beverage facilities. However if Yarrow Stadium were to have its capacity permanently lowered much below this level, with limited covered seating, the city of New Plymouth, and the region of Taranaki would be seen to have a level of amenity in this dimension to be below what is to be expected in a region and city of this size and importance.

5.3 Yarrow Stadium and attractive Taranaki

Yarrow Stadium has generated high praise from international visitors both for the Stadium itself and for Taranaki as a whole.

World Rugby magazine 2009 ranked the Yarrow stand as the third best in the world, making specific mention of Mt Taranaki setting the dramatic backdrop. This mention occurs in a number of surveys and reports.

³ The actual capacity given for Yarrow Stadium varies as between sources. The Asset Management Plan (AMP) 2015-2015 Executive Summary states that in 2010 capacity was raised to 22,420. In the AMP 2018-2028 at Page 17, it states that capacity was raised to Rugby World Cup standards of 24,138, which includes 1,920 temporary seats. It would seem then a normal; capacity would be over 22,000.

Visitors to the Rugby World Cup in 2011 rated as excellent the Stadium itself, the friendly people, the scenery including mountain and coast, and the “Sense of freedom you don’t get in other places.” One-third of them rated Taranaki as *Absolutely fantastic*, 10/10, and 83 percent rated it 8/10 or better.

Visitors to All Blacks vs France in 2013 when 82 percent rated the experience at the Stadium as 4 out of 5, or *Awesome*, and 92 percent said they had a good time in Taranaki.

New Zealand’s Entertainment Venue Association in 2016 gave Yarrow Stadium the national award for the best venue of more than 5,000 seats “with a clear vision, an exceptional visitor experience, and continued growth.”

And Yarrow Stadium is only one attraction for people to visit Taranaki.

Some of the specific events to attract visitors to Taranaki include:

- WOMAD (World of music and dance) which records nearly 50,000 show visits
- Powerco Garden Festival which similarly records about 50,000 event visits
- Taranaki International Arts Festival with nearly 20,000 event visits
- Len Lye Centre with similarly about 20,000 visits per year
- New Zealand Tattoo and Art Festival.

As well are **the public attractions** available to be enjoyed by all in the region, including

- the annual Americarna for wonderfully restored American cars
- the TSB Festival of Lights and performances which attract a total of more than 100,000 people to Pukekura Park over the holiday period.

Supporting all of these events and attractions are the range of quality and quirky accommodation, cafes, restaurants and bars. Some of these are becoming destinations in themselves.

Taranaki is the world’s #2 region to visit as ranked by Lonely Planet’s *Best in Travel 2017*. They mentioned Mt Taranaki’s Pouakai Crossing, as well as the region’s museums, Wind Wand, and some of the events and attractions listed above.

This powerful evidence indicates an *a priori* position:

If Taranaki and New Plymouth are to retain their credibility and amenity, it will be essential to re-instate or replace Yarrow Stadium.

6 Conclusions

Yarrow Stadium was developed as a modern stadium for Taranaki in New Plymouth in 2002, superseding Rugby Park. In 2017-18 the structure of one grandstand and the ground below the other at Yarrow Stadium have been found to be insufficiently stable to withstand earthquakes. Significant investment shall be required to repair or replace the stands or the stadium.

Our findings are that the enjoyment by Taranaki people and the spending by visitors to Yarrow Stadium have brought over \$100 million of value to the Taranaki community over the 15 years from 2003 to 2017. In future, Taranaki can expect that the present value to them of the future stream of value shall be considerably larger than that estimated at \$100 million for 2003 to 2017, because the repaired Yarrow Stadium will last considerably longer than 15 years, and will provide a higher level of service and amenities in future than in the past.

The benefits and value to the community from a stadium like Yarrow Stadium cannot all be monetised. Community multi-use of the Stadium may not generate great revenue but does generate benefit, and is being pursued by Yarrow Stadium's owners, governance and management. Since 2014 community visitation, excluding at major events have increased from 16,397 in 2014/15 to 33,310 in 2016/17. The number of functions, like conferences etc. were 51 in 2014/15 and 128 in 2016/17. Both had doubled.

For the local people it provides a multi-use venue for special catered occasions, as well as the frequent social enjoyment of the company of friends and family watching sporting events at Yarrow Stadium. This Stadium has value due to its central location in New Plymouth, its iconic backdrop of Mt Taranaki and the friendly atmosphere commented on by visitors. Yarrow Stadium is where Taranaki people entertain visitors to Taranaki and New Zealand at national and international sporting and other fixtures.

The two types of benefits which we can place dollar values on are:

- the amount Taranaki people have valued making 715,000 spectators' attendances at main fixtures at Yarrow Stadium over the 15 years. This value is over \$50 million
- the amount of economic activity generated in the Taranaki economy by the spending by 245,000 visitors to events at Yarrow Stadium. Many of these visitors stayed and spent on accommodation, entertainment and general spend which is estimated over \$60 million. The contribution to Taranaki GDP along the value chain is estimated at \$45 to \$55 million.

Any region needs a vibrant urban centre to attract people and businesses to locate there. Taranaki is fortunate to have New Plymouth as its main centre which has a high level of amenity, facilities and attractions including those of Yarrow Stadium with a capacity of over 22,000 people. Regional centres in New Zealand all have stadia of about that size. It would significantly compromise New Plymouth's and Taranaki's attraction to people and businesses if Yarrow Stadium was not repaired or replaced.

The nature of Taranaki and its people has been identified with the dairy cows grazing on lush pasture in the foreground, with Mt Taranaki as a backdrop, and also with their prowess at the national game of rugby, again with Mt Taranaki as a backdrop. The Taranaki community has shown a strong loyalty to rugby. Over the period 2003 to 2017 there have consistently been 6,000 to 8,000 spectators socialising at NPC games at Yarrow Stadium. Taranaki region also has a successful record of maintaining a high level of rugby participation and especially by girls and women. This is another key factor to indicate that there is a need to retain a Stadium facility in Taranaki, with the size and nature of Yarrow Stadium.

Appendix A Travel Cost Method to value local spectator visits

Travel Cost Method: A methodology for measuring benefits from individuals' recreational and spectator activities

The travel cost method (TCM) is one of the most frequently used non-market valuation techniques to value benefits of recreational and spectator activities based on peoples' revealed preference. It was developed by Harold Hotelling, a Harvard economist, who applied the method to calculate the value to tourists in monetary terms of visits to national parks in the United States in the late 1940s⁴. It has been used in a range of applications in New Zealand including by people estimating the revealed value to people of such activities as angling, tramping etc. The TCM method can be used to estimate the perceived value to local Taranaki people of a visit to an event at Yarrow Stadium.

As with the Economic Impact Assessment (EIA) in Section 2 of this report, the estimation of the value to Taranaki people of at least some of the visits to events at Yarrow Stadium will provide only an order-of-magnitude measure and not claim to be highly accurate. However it would allow potential funders of the Yarrow Stadium remediation to assess whether this value is trivial or quite substantial.

For the purpose of this estimation we require to know the location within Taranaki of the visitors to events, the distance to the Stadium and back and thus the vehicle running cost, and the time taken. In our current estimate of Taranaki people attending events at Yarrow from 2002 to 2017, over 87 percent have been to rugby matches.

As a first proxy as to where the visitors to Yarrow rugby matches come from within the Taranaki region, we have allocated the 715,000 spectator-visits as originating from areas of Taranaki proportional to the number of registered rugby players in those areas.

In order to estimate the travel cost we use the following.

The vehicle costs per kilometre and the value of time spent in non-work-related travel both come from the NZTA Economic Evaluation Manual.⁵ Finally the times and distances from the location of spectator-source areas to Yarrow Stadium were obtained online from the AA Trip Estimator.

Table 6.1 Estimation of Taranaki rugby spectators' values in geographic areas

Place near origin of spectators	Waitara	New Plymouth	Inglewood	Eltham	Hawera	Opunake	Waverly	Total
Origin's share of spectators	12%	28%	9%	17%	15%	16%	3%	100%
Origin's estimated spectators	77,000	176,000	54,000	106,000	92,000	102,000	16,000	623,000
Total return distance (km)	3,600	1,200	3,700	11,500	14,700	12,500	4,500	51,700
Total return travel time (hours)	58,800	45,900	59,100	163,900	215,200	168,200	67,600	778,700
Total vehicle travel cost (\$m)	0.8	0.3	0.8	2.5	3.2	2.8	1.0	11.4
Total travel time cost (\$m)	0.4	0.3	0.4	1.1	1.5	1.2	0.5	5.4
Total modelled travel cost (\$m)	1.2	0.6	1.2	3.7	4.7	3.9	1.5	16.8
Spend at the event (\$m)	3.9	8.8	2.7	5.3	4.6	5.1	0.8	31.2
Taranaki spectators' value (\$m)	5	9	4	9	9	9	2	48

Source: TRFU, Clubs' websites, NZTA EEM, AA Trip Estimator, BERL estimates

⁴ Hotelling, H. *The economics of public recreation*. Washington, National Parks Service. 1947.

⁵ NZ Transport Agency. *Economic evaluation manual*. Wellington. Effective from 1 January 2016.