



North Byron Parklands

Economic Impact and Benefits 2015

Prepared by:

RPS AUSTRALIA EAST PTY LTD

Suite 4, 34-36 Glenferrie Drive, Robina
PO Box 287, Robina
Queensland 4226

T: +61 7 5553 6900

Client Manager: William Owen

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Prepared for:

NORTH BYRON PARKLANDS

PO Box 517
Bangalow NSW 2479

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Summary

North Byron Parklands (NBP) are located at 126 Tweed Valley Way at Yelgun in the northern part of Byron Shire in NSW. In 2015, the NBP hosted two multi day festivals. The festivals were:

- Splendour in the Grass (SITG) – a three day music and arts event (with some lead in events)
- Falls Festival (Falls) – a four day music and arts event

Economic Indicators

- Total direct expenditure by festival organisers and attendees was \$46.8 million. This is a 15.3% increase from 2014 and 344% from the 2009 event. Byron Shire accounted for 29% of the total (\$13.5m).
- The total economic output is measured at \$107.8m; Byron Shire accounted for \$28.1m of this total. The economic output in Byron Shire has increased by 141% since 2009.
- The festivals held at the North Byron Parklands in 2015 were responsible for a Gross Value Added (GVA) of \$51.7m. Of this, \$13.8m is attributed to Byron Shire; this is an increase of 16.6% from 2014 and 209% from 2009.
- This GVA for Byron Shire in 2015 will increase the LGA's Gross Regional Product (GRP) by an estimated 1.23%.
- The creation of 196 Equivalent Full Time (EFT) jobs in Byron Shire in 2015 is significant as it represents 1.79% of the Byron Shire workforce. This is sizable given the North Byron Parklands hosted two events. This is a 237% increase from the 58 EFT generated in 2009. The total number of jobs created in 2015 was 673 EFT.

Future Use Scenarios – Permanent approval

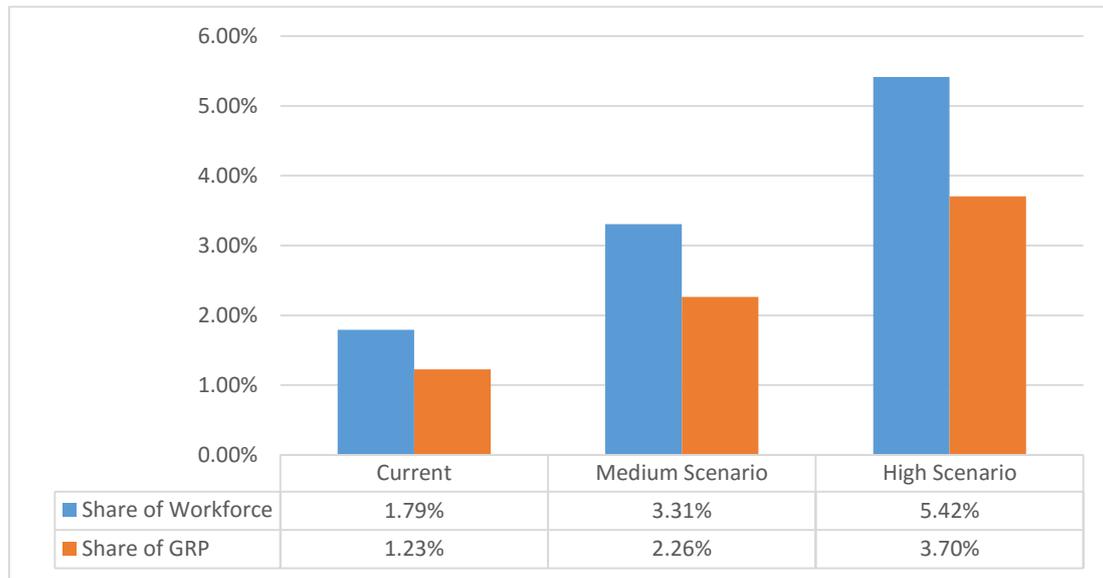
A series of different scale events have been modelled as it is considered a permanent approval will allow for more focused marketing while providing certainty for event managers seeking a stable location. The scenarios respond to the intent of increasing the capacity of the site to 50,000 patrons. The scale of the scenarios are detailed as follows:

- Current – 7 event days and 173,129 person days
- Medium Scenario – 12 event days and 324,750 person days
- High Scenario – 20 event days and 527,250 person days

The intensification in the operational use of the North Byron Parklands under a permanent approval has the potential to deliver enhanced economic benefits beyond those simply attributed to increased scale. As the use of the site is expanded it is expected the capacity of local businesses to cater these events will also increase, reducing the necessity for event organisers to use out-of-region suppliers. The likelihood of local businesses servicing the smaller events is also increased as they will be a better fit for the capacity of local businesses.

This improvement attributed to increased utilisation and the related local economic impacts is best illustrated by the share of Byron Shire employment and (GRP) that can be attributed to the North Byron Parklands. It is possible for the North Byron Parklands to generate up to 5.4% of the employment for the Byron Shire while representing over 3.7% of the economy (under the high scenario). This would be achieved with an estimated 20 event days per year. Such a utilisation is common among major sporting venues but the direct economic contributions are never this extensive.

Scenarios and share of Byron Shire workforce and GRP



Implications for Permanent Approval

A permanent planning approval will assist in maximising the economic benefits. These benefits include

- The planning and operation of a festival is a major undertaking, the benefits of which accrue as the event returns year after year (allowing for improved marketing – especially word of mouth). Certainty is considered to be a major factor for event organisers as a consistent site allows for enhanced (continual) improvement.
- Certain event costs (especially marketing) can effectively be amortised over a period of time. Allowing the event (and event space) to build a reputation will avoid the issues of rebooting the marketing and organisational costs every time an event uses a new location.
- A larger calendar of festivals will encourage local people to start businesses that can cater to the events. The impact of this becomes greater as the number of events is increased. In short, the number of local businesses and employees will increase as the utilisation of the North Byron Parklands increases. A permanent approval is required if the local economic benefits are to be maximised
- A permanent approval will encourage an ongoing program of investment and improvement in the venue. Any increase in on-site infrastructure will make the site more appealing for smaller events while allowing service contracts to be more easily undertaken by local businesses.
- A well-utilised sizable event facility can generate economies of scale that will return benefits to the organisers, attendees and local business. The regular use of the site will reduce costs on a per attendee basis, this will enable the NBP to respond to new opportunities as well as enhancing local employment opportunities.

Conclusion

Byron Bay, and the surrounding shire, are iconic locations with a well-established national and international brand and reputation. An event held in Byron Bay does not have to 'sell' the location, it can leverage the location to enhance the appeal of the event. Issuing a permanent approval and increasing the site capacity to 50,000 has the potential to allow the North Byron Parklands to evolve into a major driver of the Byron Shire economy.

1.0 Introduction

North Byron Parklands (NBP) are located at 126 Tweed Valley Way at Yelgun in the northern part of Byron Shire in NSW. The site is approximately 260 Ha in size and in 2015 hosted two multi day festivals. The festivals were:

- Splendour in the Grass (SITG) – a three day music and arts event (with some lead in events)
- Falls Festival (Falls) – a four day music and arts event

This economic assessment assumes the benefits and impacts from each event are attributed to the year in which the events are hosted.

The Parklands are currently approved to host 3 events per year with a total of 10 event days.

This report has been commissioned to assess the economic impact and benefits that can be attributed to the North Byron Parklands. This assessment will be conducted at a local level (Byron Shire), regional level (Northern Rivers) and the total impacts. These total impacts will include NSW and Queensland due to the sites proximity to South East Queensland.

1.1 Timeline

This report presents data from 2009, 2014 and 2015. In 2009 the SITG was a two day event with 17,500 attendees. This is significantly smaller than the 173,000 person days and two festivals hosted by NBP in 2015. This growth is (in part) attributed to the opportunities created by the scale and flexibility of the venue.

Additional reference is made to the June 2010 economic report prepared by RPS that accompanied the original planning application for the NBP.

1.2 Permanent Approval

The North Byron Parklands is operating under a temporary approval. The operators are seeking to make this approval permanent. The benefits of which will be assessed in this report by analysis of future use options and other issues that will shape the capacity of the site to attract additional events.

1.3 Modelling

This report utilises the RPS model prepared specifically for the Byron Shire area. Byron Shire Council has made an event modelling tool available online and RPS has undertaken parallel use of this tool. Overall, the differences are not material and this report provides the results from the RPS model.

2.0 Economic Impact Assessment

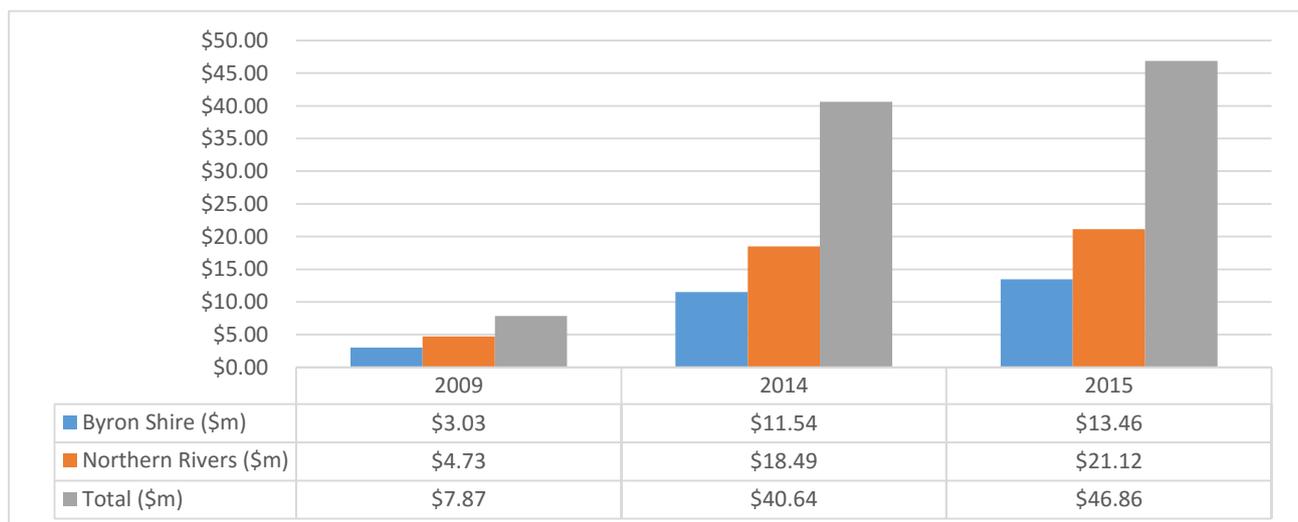
This section provides an assessment and summary of the analysis and demand modelling including both qualitative and quantitative impacts and benefits related to the events conducted at North Byron Parklands in 2015. This information is compared to the reporting prepared in 2009 and 2014. While 2015 is an increase in scale over 2014, the use of the NBP is significantly larger than in 2009 when a single event (SITG) was run over two days for 17,500 attendees at Belongil Fields. The 2009 data for SITG is provided for comparison purposes.

2.1 Direct Expenditure

The distribution of the direct expenditure reflects the specialised nature of the suppliers required to service major festivals and the limited business base of the local area. Many of the specialist and other service providers are located in Sydney or SE Queensland and travel specifically to service the events. Key findings include:

- Total direct expenditure by festival organisers and attendees was \$46.8 million. This is a 15.3% increase from 2014.
- Festival organisers spent \$16.0m on staff, goods and services while attendees spent \$30.9m (primarily on food/beverage and accommodation).
- 46% of this total (or \$21.1m) was directed towards businesses and individuals located in the Northern Rivers (including Byron Shire).
- The majority (54% - \$25.7m) was directed towards businesses and individuals located outside of the Northern Rivers.
- Byron Shire accounted for 29% of the direct expenditure (\$13.5m). This is a 16.7% increase from 2014.
- The direct expenditure in 2015 for Byron Shire is an increase of 344% from 2009.

Figure 1 – Direct Expenditure 2009, 2014 and 2015



2.2 Economic Output

The total economic output is measured at \$107.8m with 43.8% (\$47.3m) of the total derived from business and service providers located in the Northern Rivers. This is an increase of 15.4% and 14.2% (respectively) from 2014. Byron Shire accounted for 26% of the total economic output (\$28.1m).

Economic output in Byron Shire has increased from \$11.6m in 2009 to \$28.1m in 2015, this is an increase of 141%.

Figure 2 – Economic Output 2009, 2014 and 2015



2.3 Gross Value Added¹

The festivals held at the North Byron Parklands in 2015 were responsible for a Gross Value Added (GVA) of \$51.7m. Of this, \$23m is attributed to the Northern Rivers (including Byron Shire).

Byron Shire accounted for 26.3% of the GVA (\$13.8m). This is an increase of 16.6% from 2014 and 209% from 2009.

This GVA for Byron Shire in 2015 will increase the LGA's Gross Regional Product (GRP) by an estimated 1.23%.

Figure 3 - Gross Value Added 2009, 2014 and 2015



¹ Value added: value of output after deducting costs of goods and services used in the production process. Value added is the preferred measure for assessing economic impacts

2.4 Income (Wages and Salaries)

The total direct wages and salaries attributed to the North Byron Parklands in 2015 is summarised as follows:

- Byron Shire – \$3.4m
- Northern Rivers (inc Byron Shire) – \$5.4m
- Total (inc Northern Rivers and Byron Shire) – \$12.9m

The total wages and salaries taking into account direct employment, supply chain and household consumption is:

- Byron Shire – \$7.0m
- Northern Rivers (inc Byron Shire) – \$11.8m
- Total (inc Northern Rivers and Byron Shire) – \$27.4m

The total wages and salaries in 2009 was \$9.55. The 2015 figure (\$27.4m) represents a 187% increase.

2.5 Employment (Equivalent Full Time - EFT)

The direct employment creation attributed to the North Byron Parklands in 2015 is summarised as follows:

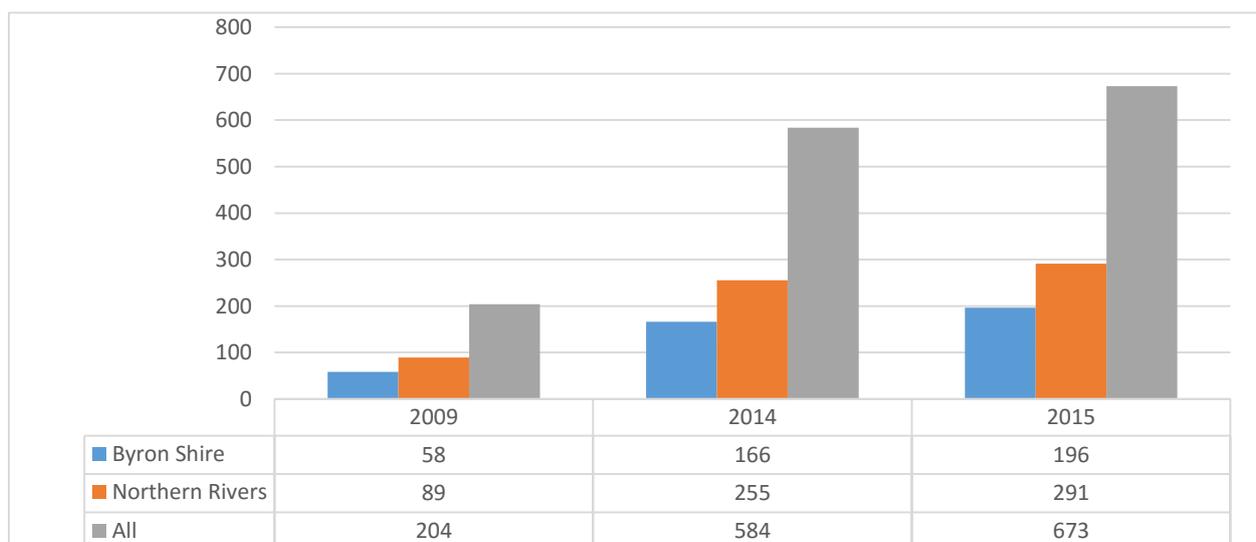
- Byron Shire – 118 EFT
- Northern Rivers (inc Byron Shire) – 152 EFT
- Total (inc Northern Rivers and Byron Shire) – 356 EFT

The total employment creation taking into account direct employment, supply chain and household consumption is:

- Byron Shire – 196 EFT
- Northern Rivers (inc Byron Shire) – 291 EFT
- Total (inc Northern Rivers and Byron Shire) – 673 EFT

The creation of 196 EFT in Byron Shire is significant as it represents 1.79% of the Byron Shire workforce. This is sizable given the North Byron Parklands hosted two events. This is a 237% increase from the 58 EFT generated in 2009.

Figure 4 - Employment (EFT)



2.6 Charity

The events hosted by North Byron Parklands provided \$125,800 in contributions to charitable organisations. This is a significant increase from the \$55,000 reported in 2014.

2.7 Tourist Accommodation

The events generated 28,995 room nights in commercial accommodation in Byron Shire and 7,721 room nights in other Nth NSW (does not include camping on-site).

3.0 Comparison to the 2010 Economic Impact Assessment

RPS prepared an Economic Impact Assessment (EIA), dated 10 June 2010, for the original planning application for the NBP. The passage of time allows for his report to be assessed in the context to the current use and assessed economic impact.

3.1 Comparison of Data

The 2010 EIA utilised a 5 year projection timetable with the use of the NBP building over that time. By year 5 it was expected the NBP would be utilised as follows:

- 2 minor (less than 300 people)
- 2 small events (300 to 3,000 people)
- 1 moderate events (3,000 to 10,000 people)
- 3 major (over 10,000 people)

In broad terms, the Year 5 scenario equates to the high scenario assessed in Section 4.

Overall, the assessment contained in the 2010 has proved to be conservative by comparison to the 2015 evaluation.

The following table provides data for the defined areas for the Year 5 projection (contained in the 2010 report) and the analysis of the 2015 actual data.

Table 1 Comparison of 2010 and 2015 Economic Reports

Item	2010 (5 year)	2015 Actual	Notes
Visitor nights for Northern Rivers	97,418	139,063 (as a share of the total – 173,129 nights)	Actual in 2015 was significantly higher than the 2010 projections (30%). This is attributed to the duration of the events.
Direct Expenditure for Northern Rivers	\$11.2m	\$21.1m	Actual in 2015 was significantly higher than the 2010 projections (90%). This is attributed to the duration of the events and much higher per capita spend by attendees than anticipated
Employment – Northern Rivers	210 EFT	291 EFT	Actual in 2015 was significantly higher than the 2010 projections (38%). This is attributed to greater visitation and expenditure.
Employment - Total	1,101 EFT	673 EFT	Sizeable but lower in total scale than anticipated in the 2010 projections. This is in part attributed to scale (2 events in 2015 as opposed to the 8 assessed in year 5 of the 2010 report) and the change in Australian Bureau of Statistics input output data in 2013 that had the effect of reducing flow on employment.

3.2 Conclusion

Although the scenarios contained in the 2010 economic report are not the same as the actual use of the NBP in 2015 it is possible to draw the following conclusions:

- The assumptions and assessment of the 2010 was very conservative when compared to the actual performance of the NBP in 2015. Longer events and higher per capita expenditure has underpinned the increase in total (and local) economic benefits.

-
- The benefits to the local economy (as a proportion of the total) are higher than anticipated. These economic links have been derived from discussion with event organisers, contractors and service providers and demonstrate the ability of local businesses to perform better than expected by the national figures.
 - Overall the analysis and conclusions of the 2010 report remain valid albeit that the scale of the economic impact was understated in comparison with the actual events.

4.0 Future Use Scenarios

4.1 Introduction

The planning approval for the North Byron Parklands is a time limited (temporary) instrument and this was issued to understand the actual benefits/impacts and how these might be enhanced/managed.

This analysis provides a review of possible use scenarios and how these might benefit the local economy. The following table defines the tested scenarios alongside the current (2015) figures. A series of different scale events have selected as it is considered a permanent approval will allow for more focused marketing while providing certainty for event mangers seeking a stable location. The scenarios respond to the intent of increasing the capacity of the site to 50,000 patrons.

Table 2 North Byron Parklands – Future Use Scenarios

Event Size	Calculation Inputs		Scenarios		
	Size	Duration	Current	Medium Scenario	High Scenario
Major >10,000 but <50,000	45,000	4		1	2
	35,000	3.5	2 (30,000 and 17,500)	1	1
Moderate >3,000 but <10,000	9,500	2		1	2
Small >300 but <3,000	2,750	1		1	2
Minor <300	250	1		2	5
Total Events			2	6	12
Event Days			7	12	20
Person Days			173,129	324,750	527,250

The medium and high scenarios represent a general doubling and tripling of the total number of person days that the site hosted in 2015.

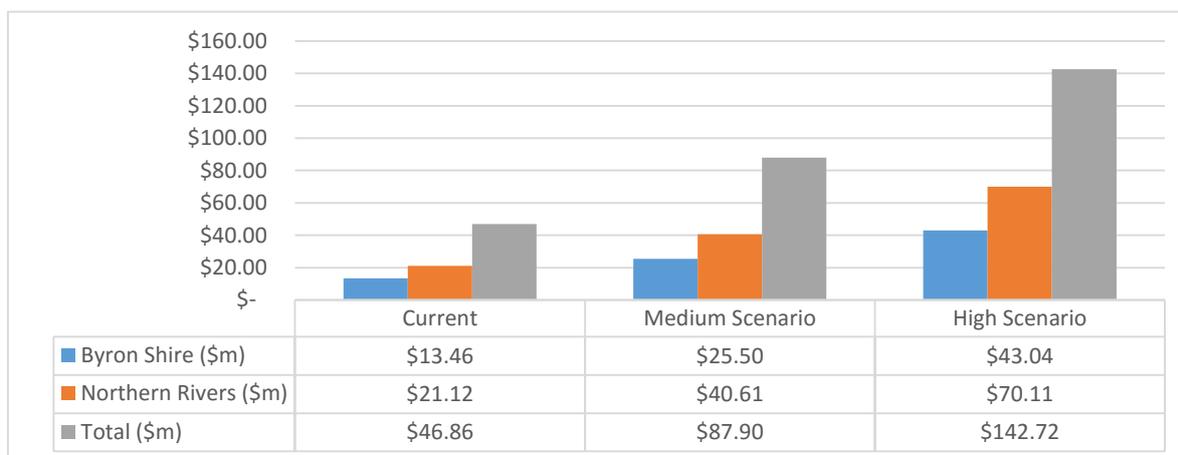
4.2 Analysis

These scenarios are not projections and no timing or performance is warranted. However, given the current scale of the 2 hosted festivals, it might take 5 plus years of active use and marketing to reach the level of use anticipated in the high scenario. Using the same methodology as for the 2015 assessment, and holding all individual values constant (eg daily expenditure etc), the scenarios yield the following results.

4.2.1 Direct Expenditure

The direct expenditure captured by Byron Shire will increase by 89% (to \$25.5m) in the medium scenario and 219% (to \$43m) in the high scenario.

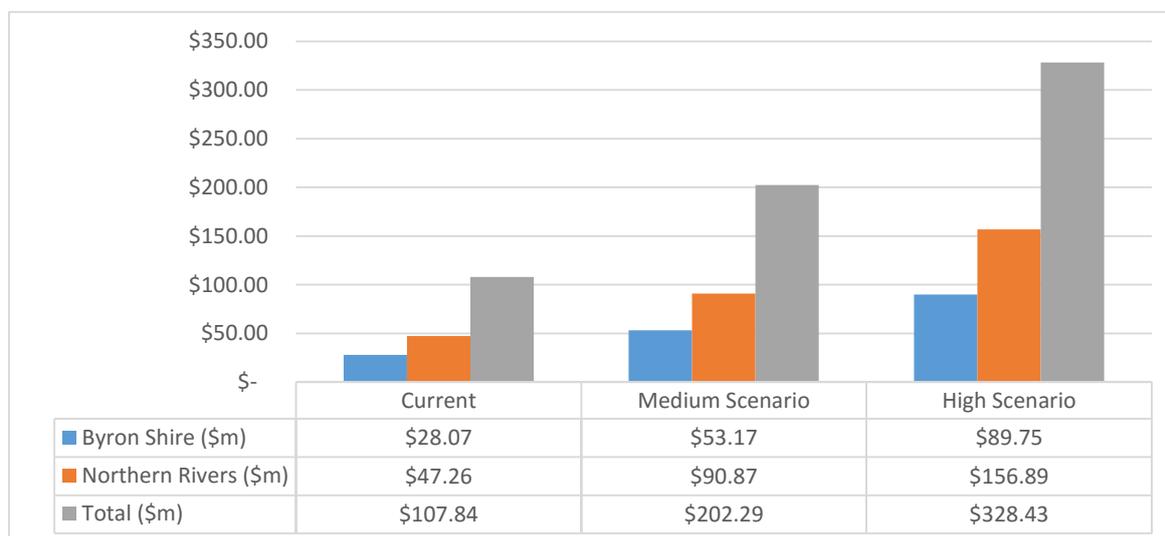
Figure 5 – Direct Expenditure, Scenarios



4.2.2 Economic Output

The economic output generated within Byron Shire will increase by the same magnitude as the direct expenditure. Under the high scenario the total value of the NBP will be \$328m with the medium representing \$202m.

Figure 6 – Economic Output, Scenarios



4.2.3 Gross Value Added

The GVA generated within Byron Shire will increase to \$26.1m under the medium scenario and \$44m under the high scenario.

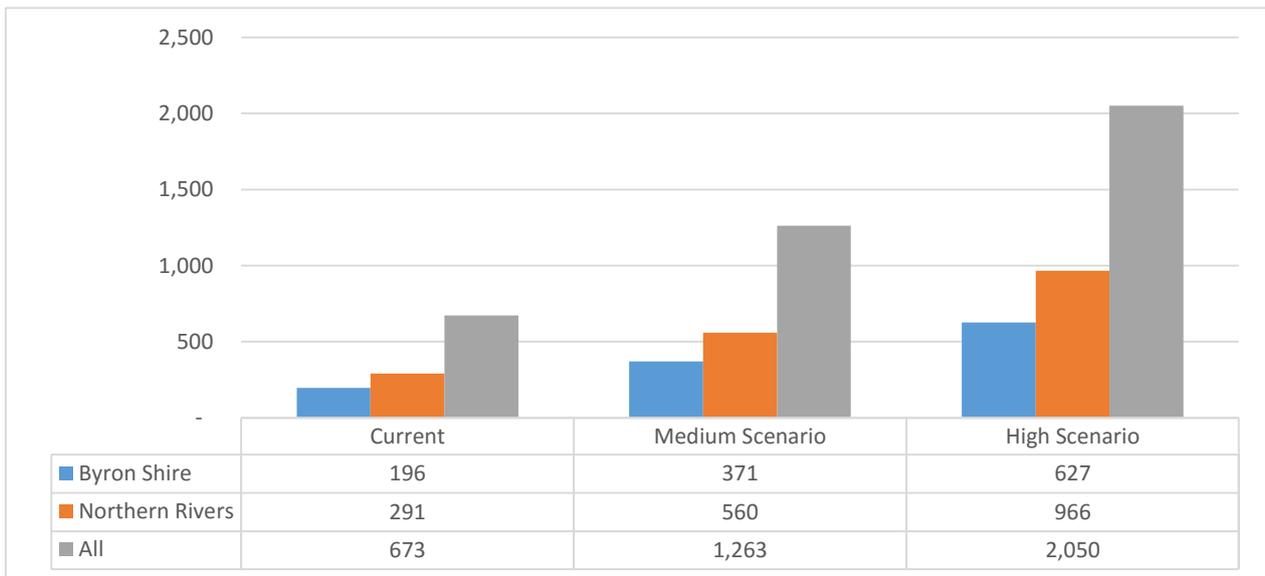
Figure 7 – GVA, Scenarios



4.2.4 Employment

The employment generated within Byron Shire will increase to 371 EFT under the medium scenario and 627 EFT under the high scenario. The total employment will increase to 1,263 EFT under the medium scenario and 2,050 EFT under the high.

Figure 8 – Employment Scenarios

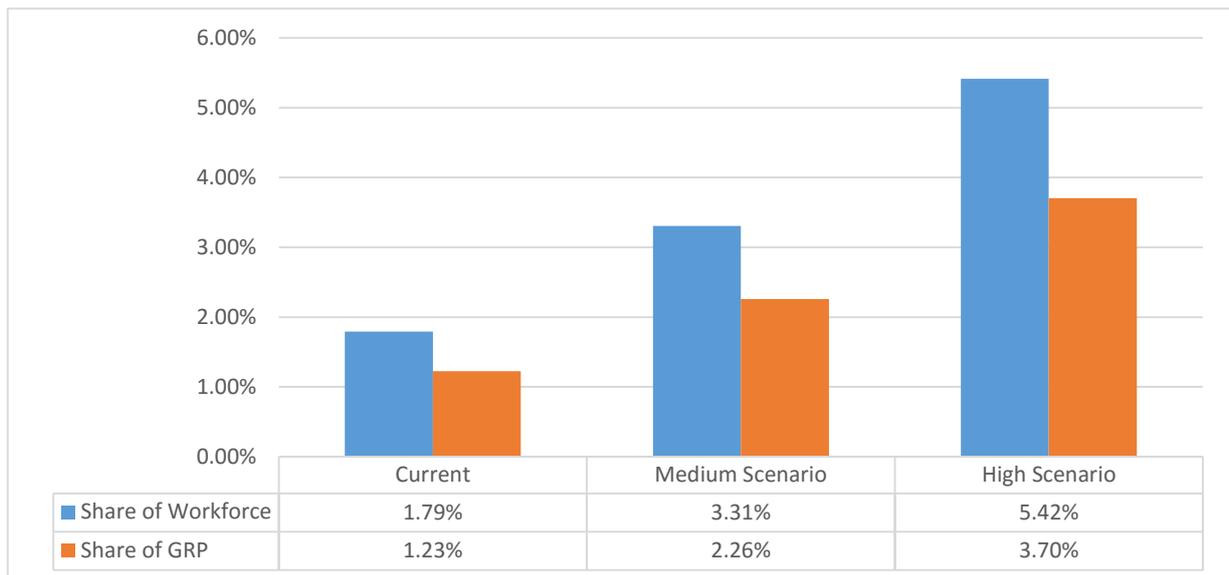


4.3 Conclusion

The intensification in the operational use of the North Byron Parklands under a permanent approval has the potential to deliver enhanced economic benefits beyond those simply attributed to increased scale. As the use of the site is expanded it is expected the capacity of local businesses to cater these events will also increase, reducing the necessity for event organisers to use out-of-region suppliers. The likelihood of local businesses servicing the smaller events is also increased as they will be a better fit for the capacity of local businesses.

This improvement attributed to increased utilisation and the related local economic impacts is best illustrated by the share of Byron Shire employment and gross regional product (GRP) that can be attributed to the North Byron Parklands. It is possible for the North Byron Parklands to generate up to 5.4% of the employment for the Byron Shire while representing over 3.7% of the economy (under the high scenario). This would be achieved with an estimated 20 event days per year. Such a utilisation is common among major sporting venues but the direct economic contributions are never this extensive.

Figure 9 Scenarios and share of Byron Shire workforce and GRP



5.0 Implications for Permanent Approval

5.1 The suitability of the location

Byron Shire is considered to be an ideal location to host a major arts and recreation event space. These reasons are summarised in the following table:

Table 3 Suitability of Byron Shire to host a major event space

Topic	Discussion
Local Brand	Byron Bay, and the surrounding shire, are iconic locations with a well-established national and international brand and reputation. An event held in Byron Bay does not have to 'sell' the location, it can leverage the location to enhance the appeal of the event. This is particularly important for smaller (or starter) events that do not have an established reputation.
Social capital	Over time the value of the social capital will be enhanced as networks of local individuals and businesses can be fostered to service the events. While this will be most obvious in a 'buy local' and 'patronise local business' campaigns, the enhanced networks will generate an authentic appeal that is attractive to residents and visitors alike.
Triple Bottom Line	The economic, social, and environmental approach to planning, decision making and provisioning is important for event organisers and attendees.
Creative industries	The skill sets required to deliver the events are a good match for the local creative industries.
Easily accessed	Byron Shire is easily accessible by road and air and is proximate to a major metropolitan population.
Setting	Northern NSW is one of the most attractive places in the world.

5.2 Permanent Approval - Benefits

Although the North Byron Parklands (NBP) hosts two successful festivals, a permanent planning approval will enable the managers of the site to attract a broader range of (acceptable) events. This increased utilisation will provide enhanced local benefits to the community, attendees and event organisers. These benefits are summarised in the following table.

Table 4 Benefits of Permanent Approval

Topic	Discussion
Certainty	<p>The planning and operation of a festival is a major undertaking, the benefits of which accrue as the event returns year after year (allowing for improved marketing – especially word of mouth). Certainty is considered to be a major factor for event organisers as a consistent site allows for enhanced (continual) improvement.</p> <p>The issues surrounding planning approval are well known and it will be easier for event organiser to commit to the North Byron Parklands knowing that the long term future of the site is secure (allowing for long term planning). The alternatives are locating the new events/festivals in other venues or not to hold the event at all.</p>
Expense	<p>Certain event costs (especially marketing) can effectively be amortised over a period of time. Allowing the event (and event space) to build a reputation will avoid the issues of rebooting the marketing and organisational costs every time an event uses a new location.</p>
Local Capacity	<p>A larger calendar of festivals will encourage local people to start businesses that can cater to the events. The impact of this becomes greater as the number of events is increased. In short, the number of local businesses and employees will increase as the utilisation of the North Byron Parklands increases. A permanent approval is a required if the local economic benefits are to be maximised.</p>
Capacity and Investment	<p>A permanent approval will encourage an ongoing program of investment and improvement in the venue. Any increase in on-site infrastructure will make the site more appealing for smaller events while allowing service contracts to be more easily undertaken by local businesses.</p>
Risk	<p>A permanent approval is necessary to reduce the risk associated with the project. The lack of a permanent planning approval will be viewed by many event organisers as a considerable risk when determining if to commit to the site.</p>
Economies of Scale	<p>A well-utilised sizable event facility can generate economies of scale that will return benefits to the organisers, attendees and local business. The regular use of the site will reduce costs on a per attendee basis, this will enable the NBP to respond to new opportunities as well as enhancing local employment opportunities.</p>

Appendix I – Economic Impact Tables

The following tables² have been derived based on the information described in the previous sections. The input/output model prepared by RPS has been regionalised to reflect the individual nature of the local and regional economies.

Table 5 Total Economic Impact (inclusive of Byron Shire and Northern Rivers)

All	Output (\$M)	GVA (\$M)	Income (\$M)	Employment (FTE)
Direct Impact	\$47.4	\$21.3	\$12.9	355.7
Indirect Impact (Type I)	\$25.9	\$11.2	\$5.9	114.4
Sub-Total	\$73.2	\$32.4	\$18.8	470.1
Indirect Impact (Type II)	\$34.6	\$19.3	\$8.5	203.1
Total Impact	\$107.8	\$51.7	\$27.4	673.2

Table 6 Northern Rivers Economic Impact (inclusive of Byron Shire)

All	Output (\$M)	GVA (\$M)	Income (\$M)	Employment (FTE)
Direct Impact	\$21.1	\$9.7	\$5.4	151.7
Indirect Impact (Type I)	\$11.3	\$5.0	\$2.7	52.0
Sub-Total	\$32.4	\$14.7	\$8.1	203.7
Indirect Impact (Type II)	\$14.9	\$8.3	\$3.7	87.4
Total Impact	\$47.3	\$23.0	\$11.8	291.1

Table 7 Byron Shire Economic Impact

All	Output (\$M)	GVA (\$M)	Income (\$M)	Employment (FTE)
Direct Impact	\$13.5	\$6.2	\$3.4	117.9
Indirect Impact (Type I)	\$6.0	\$2.7	\$1.5	28.9
Sub-Total	\$19.5	\$8.9	\$4.9	146.8
Indirect Impact (Type II)	\$8.6	\$4.8	\$2.1	49.2
Total Impact	\$28.1	\$13.8	\$7.0	196.1

² Assumptions

Constant returns to scale and no substitution between inputs

Production within an industry is homogenous across firms in that industry (i.e., same proportion of inputs are used by every firm in a given industry)

Each industry has only one primary output

The effect of carrying out a given level of production by one firm or many is the same

The economy examined is in equilibrium at given prices and

There are no capacity constraints so that the supply of each good is perfectly elastic. Each industry can supply whatever quantity is demanded of it and there are no capital restrictions.

Appendix 2 – Assumptions and Data Inputs

The impacts to the economic environment have been analysed based on a number of assumptions and collected data inputs. Some of this data has been provided by organisers and has been aggregated to respect commercial-in-confidence information. These assumptions and inputs are outlined below.

Item	Data and Assumptions
Visitation	<p>Average daily attendance</p> <ul style="list-style-type: none"> ▪ Falls – 17,500 ▪ SITG – 29,953 <p>Total person days of attendance</p> <ul style="list-style-type: none"> ▪ Falls – 62,871 ▪ SITG – 110,258 ▪ Total – 173,129
On-Site Campers	<p>Average daily campers</p> <ul style="list-style-type: none"> ▪ Falls – 15,750 ▪ SITG – 17,482 <p>Total person days of on-site camping</p> <ul style="list-style-type: none"> ▪ Falls – 63,000 ▪ SITG – 71,851 ▪ Total – 134,851
Off Site Accommodation	<p>Average daily off site accommodation</p> <ul style="list-style-type: none"> ▪ Falls – 2,340 ▪ SITG – 12,471 <p>Total off site accommodation nights (average stay 4.6 nights)</p> <ul style="list-style-type: none"> ▪ Falls – 10,763 ▪ SITG – 57,367 ▪ Total – 68,130
Off Site Accommodation assumptions	<ul style="list-style-type: none"> ▪ Proportion of nights in commercial accommodation – 85% ▪ Average occupancy 1.5 persons per room ▪ Average accommodation cost per night - \$120 ▪ Distribution <ul style="list-style-type: none"> » Byron Shire – 75% » Other NSW – 20% » Gold Coast – 5%
Food Expenditure ³	<ul style="list-style-type: none"> ▪ Campers – proportion purchasing meals – 60% ▪ Campers average daily meals expenditure per person - \$60 ▪ Non-Campers – proportion purchasing meals – 95% ▪ Non-Campers average daily meals expenditure per person - \$80
Beverage Expenditure ⁴	<ul style="list-style-type: none"> ▪ Campers – proportion purchasing beverages – 100% ▪ Campers average daily expenditure per person - \$80 ▪ Non-Campers – proportion purchasing beverages – 100% ▪ Non-Campers average daily expenditure per person - \$80

³ Based on discussions with festival organisers and selected vendors

⁴ Based on discussions with festival organisers and selected vendors – includes alcohol and non-alcohol beverages

Item	Data and Assumptions
Direct expenditure by the Festivals on staff, vendors, contractors and suppliers. ⁵	Total - \$15.96m Distribution <ul style="list-style-type: none"> ▪ Byron Shire-42% ▪ Other Northern NSW -21% ▪ Other – 37%
Total expenditure on commercial accommodation by attendees.	Total - \$4.63m Distribution <ul style="list-style-type: none"> ▪ Byron Shire-75% ▪ Other Northern NSW -20% ▪ Other – 5%
Total expenditure on Food and Beverage by attendees.	Total - \$26.3m Distribution <ul style="list-style-type: none"> ▪ Byron Shire-13% ▪ Other Northern NSW -12% ▪ Other – 74⁶%
Contributions to charitable organisations	SITG - \$35,000 Falls - \$90,800

⁵ Data obtained from the financial data provided by the festivals.

⁶ This is high as the majority of food and beverage services were sourced from outside the region.

Appendix 3 - Glossary and Reference

Types of Impacts Assessed

An input-output framework has been used to identify the direct and flow-on impacts, these direct and flow-on impacts to the economy have been estimated based on four key measures:

- **Output:** The total gross value of goods and services produced, measured in the price paid to the producer. Output includes any associated taxes or subsidies on its final production. Output values typically overstate the impacts as it counts all goods and services used in one stage of production as an input into later stages of production resulting in double counting.
- **Gross Value Add:** the additional value of a good or services over the cost of goods used in producing the good or service.
- **Incomes:** the level of wages and salaries paid to employees in each industry as a result of the development.
- **Employment:** the number of additional jobs created as a result of the additional expenditure, estimated as the number of jobs, expressed in terms of full-time equivalent (FTE) positions.

To measure these four indicators of the economic impact, three types of multipliers are used, these are:

- **Direct:** The construction or operational expenditure from the project under investigation. These involve the activities directly attributable to the development including operating expenditures and additional revenues. Direct impacts should only include the impacts which would not have occurred should the project not have gone ahead.
- **Indirect Type 1 Impacts (Supply Chain):** Represents the impacts arising from changes in activity for suppliers as a result of the direct stimulus. Type 1 impacts involve the impact on what the upstream supply chains do to fulfil the new increased level of spending.
- **Indirect Type 2 Impacts (household consumption induced):** Represents the household consumption induced activity arising from additional household expenditure as a result of the additional incomes received from the direct and type 1 industry impacts.

Criticisms of Economic Impact Assessments

Economic Impact Assessments based on IO-tables and Economic Multipliers have been criticised by Government and academia. RPS recognises Economic Multipliers are based on limited assumptions that can result in multipliers being a biased estimator of the benefits or costs of a project.

Shortcomings and limitations of Multipliers for economic impact analysis include:

- **Lack of supply-side constraints:** The most significant limitation of economic impact analysis using multipliers is the implicit assumption that the economy has no supply-side constraints. That is, it is assumed that extra output can be produced in one area without taking resources away from other activities, thus overstating economic impacts. The actual impact is likely to be dependent on the extent to which the economy is operating at or near capacity.
- **Fixed prices:** Constraints on the availability of inputs, such as skilled labour, require prices to act as a rationing device. In assessments using multipliers, where factors of production are assumed to be limitless, this rationing response is assumed not to occur. Prices are assumed to be unaffected by policy and any crowding out effects are not captured.
- **Fixed ratios for intermediate inputs and production:** Economic impact analysis using multipliers implicitly assumes that there is a fixed input structure in each industry and fixed ratios for production. As such, impact analysis using multipliers can be seen to describe average effects, not marginal effects. For

example, increased demand for a product is assumed to imply an equal increase in production for that product. In reality, however, it may be more efficient to increase imports or divert some exports to local consumption rather than increasing local production by the full amount;

- **No allowance for purchasers' marginal responses to change:** Economic impact analysis using multipliers assumes that households consume goods and services in exact proportions to their initial budget shares. For example, the household budget share of some goods might increase as household income increases. This equally applies to industrial consumption of intermediate inputs and factors of production.
- **Absence of budget constraints:** Assessments of economic impacts using multipliers that consider consumption induced effects (type two multipliers) implicitly assume that household and government consumption is not subject to budget constraints.
- **Not applicable for small regions:** Multipliers that have been calculated from the national I–O table are not appropriate for use in economic impact analysis of projects in small regions. For small regions multipliers tend to be smaller than national multipliers since their inter–industry linkages are normally relatively shallow. Inter–industry linkages tend to be shallow in small regions since they usually don't have the capacity to produce the wide range of goods used for inputs and consumption, instead importing a large proportion of these goods from other regions⁷.

Despite this, IO tables and Economic Multipliers remain popular due to their ease of use and communication of results. RPS has undertaken a number of steps and made appropriate adjustments to the EIA methodology to address and mitigate these concerns.

Firstly, this Assessment does not rely solely on the use of Economic Multipliers to inform the recommendations for the project. The study includes analysis of the characteristics of the local economy and tourism market and demonstrates economic benefits of the project. The EIA represents one of a number of assessments, allowing the results to be appropriately contextualised.

Secondly, RPS has provided results for direct, supply chain and household consumption induced benefits. This allows for the individual rounds of benefits to the economy of the project to be identified and separated.

Thirdly, the catchment Northern NSW is a large area with a critical mass of population and business activity and a diverse economy. Adjustments have also been made to national Economic Multipliers to calculate the impacts on the Northern NSW and State economies individually, through the development of regional transaction tables.

Fourthly, RPS regards the use of Economic Multipliers as part of the EIA for the development as appropriate and measured and the results of the assessment as conservative, defensible and suitable for informing decision making.

⁷ ABS (2013) Australian National Accounts: Input-Output Tables, 2009-10, Cat No 5209.0.55.001, Australian Bureau of Statistics, Canberra