

Mount Panorama Second Circuit Feasibility Study



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Commercial in confidence

Prepared for
Homebush Motor Racing Authority

Prepared by
AECOM Australia Pty Ltd
Level 11, 44 Market Street, Sydney NSW 2000, PO Box Q410, QVB Post Office NSW 1230, Australia
T +61 2 8295 3600 F +61 2 9262 5060 www.aecom.com
ABN 20 093 846 925

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Prepared by Daniel Thompson

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Executive Summary

Background

HMRA commissioned AECOM to undertake a feasibility study to assess the feasibility of a second circuit and other significant complementary infrastructure projects at Mount Panorama, Bathurst (the Site). The study examined the technical, regulatory, commercial and financial feasibility.

The second circuit layout was located on Bathurst Regional Council (BRC) owned land. The need for the second circuit was driven by the desire to bring back motorbikes racing to Mount Panorama, which had ceased on the circuit due to safety considerations.

The feasibility assessment considers previous studies that had been undertaken for the Mount Panorama precinct, which identified the need for greater use of the existing facilities and suggested a number of alternative second circuit and complementary infrastructure projects.

Second circuit design

A technical review of the tendered national and international second circuit layout designed by Allan Cunynghame was undertaken. The review concluded that the second circuit layout had a number of limitations including:

- Proximity to South Bathurst residences and the potential to impact on residential amenity due to noise;
- Large number of turns limiting opportunities for passing and maximising race speed;
- Impact on vegetation and the creek line; and
- Lack of integration with the existing pit complex.

Consequently, a revised second circuit layout was developed that was endorsed by HMRA for consideration in the feasibility study. The revised layout relocated the circuit further from South Bathurst and allowed for better integration with the existing pit and paddock complex. Additionally, the revised second circuit layout reduced the number of turns, which lead to reduced construction costs and a smaller footprint.

Consultation

Community and stakeholder consultation was undertaken as part of the feasibility analysis to gather opinions and ideas in relation to the feasibility of constructing a second circuit and complementary infrastructure. The community was generally supportive of the concept of a second circuit, although issues were raised relating to residential amenity due to access and noise generation. Recurring themes raised during consultation included anecdotal unmet demand for motor racing tracks in NSW, the under-utilisation of the existing facilities at Mount Panorama and the potential economic benefits to Bathurst and Central West NSW.

Site analysis

The following assessments were undertaken to inform the technical feasibility:

- Noise;
- Contamination;
- Flora and Fauna;
- Hydrology;
- Geotechnical;
- Indigenous and European Heritage; and
- Legislative review.

The technical assessments found that it is feasible to develop a second circuit at Mount Panorama. However, it is recommended that further investigations, including the preparation of an approvals strategy, are undertaken once a concept design is produced to provide more certainty as to the feasibility of the second circuit.

Further investigation is particularly important in relation to noise, as appropriate noise generation criteria do not currently exist for the Site. Consequently, noise criteria derived from national and international legislation were developed modelling of a range of motor racing events was undertaken. The noise assessment found that, subject to mitigation measures, minimum noise impact events such as driver training could occur on an unlimited basis on the national circuit while complying with the derived noise criteria. Mitigation measures include the construction of noise walls and berms as well as property acquisition.

Complementary activities

There is the potential for Mount Panorama to become a multipurpose recreational precinct focused upon the existing motor racing use. The precinct usage could be diversified through the development of complementary infrastructure and providing the facilities and marketing to undertake additional activities such as bicycle races and driver training courses.

Potential complementary infrastructure includes:

- Tourist Centre;
- Sky Tower;
- Grandstand seating and potential accommodation/commercial activity;
- Existing track repair; and
- Research and Development Park.

There is the potential to undertake these complementary infrastructure projects both with and without the construction of a second circuit. The Tourist Centre and Sky Tower would improve the precincts tourist facilities potentially leading to greater numbers of visitors and a continuous revenue stream.

Cost estimation

An estimate of the cost of developing the second circuit was undertaken for both the national, international and combined layouts by Arenco. Costs were also estimated for the complementary infrastructure activities based on current values. The cost estimates, which are fed into the financial analysis, are described below:

- National circuit - \$35,795,000
- International circuit - \$39,870,000
- Combined circuit - \$46,440,000
- Tourist Centre fit out - \$460,000
- Sky Tower and Restaurant - \$1,875,000
- Grandstand seating and accommodation/commercial units - \$55,863,000 (four grandstand blocks).

Financial and market analysis

The financial analysis estimated that annual revenue of \$4.6m would be required to pay back capital and operating expenditure for the second circuit. To generate \$4.6m annually, two marquee events would need to be held at Mount Panorama attracting a combined crowd of 100,000 spectators, which is considered unlikely due to the limited demand from marquee events for additional motor racing tracks.

If the second circuit is funded by a non-repayable grant, with only operating and maintenance costs required to be recovered then the circuit is estimated to become viable based on the following key assumptions:

- The circuit would need to be hired for 100 days per year for 30 years, at a rate of \$10,000 per day, while also hosting two rounds of a national event such as Australian Superbikes and one marquee event.
- If the circuit could not be hired for 100 days per year, the asset manager would face a substantial revenue deficit.

This analysis demonstrates the need for investing in the upgrade of facilities for existing spectators and tourists through the development of an enhanced Tourist Centre and a Sky Tower. This infrastructure would maximise capture of potential revenue from the 300,000 to 500,000 people who travel around the circuit annually. Relocation of the National Motor Racing Museum (NMRM) to Pit Straight in an enhanced Tourist Centre and development of a Sky Tower are found to be the least risk options for complementary infrastructure investment and are recommended to proceed to a detailed business plan assessment regardless of whether the second circuit is constructed.

It is recommended that a Special Purpose Vehicle (SPV) be established to facilitate efficient management of the Mount Panorama precinct as a whole. The SPV would hold the key assets on the mountain, facilitate public and private sector investment in the precinct, and provide a framework for specialist management of the tourism facilities on the mountain, without requiring a change in ownership of the assets. As outlined in this report, establishing an SPV could reduce the cost of reserving the corridor for the second circuit by around \$137,000 per year.

Recommendations

The findings of the report can be separated into three chronological stages being short, medium and long term.

Short term (immediate) recommendations include:

- As a priority implement a revised governance structure through the establishment of a Special Purpose Vehicle (SPV) to undertake the operational and strategic management of the Mount Panorama precinct. The SPV would allow specialist managers to market and operate the integrated precinct to maximise use of the existing and proposed facilities. The SPV would comprise a board that includes the existing asset owner, key stakeholders and the community.
- Deferment of the development of the proposed second circuit until such time as an SPV is in place and there is confidence that marquee events can be attracted.
- Develop an enhanced Tourist Centre at the eastern end of the Pit Complex comprised of the existing NMRM exhibits, with potential enhancements including café, track tours, podium photos and interactive history of Mount Panorama.
- Develop a Sky Tower on the top of the mountain. The Sky Tower would include a restaurant, viewing gallery and tower that would offer panoramic regional views and an anchor for telecommunications infrastructure. This could become a new destination for the Central West, attracting people from Sydney across the perceived 'Sandstone curtain' (Blue Mountains).
- Develop a permanent grandstand along the northern side of Pit Straight to raise additional income during peak events and remove the cost of constructing and removing temporary grandstands. The grandstand could be built with accommodation/commercial activity subject to detailed feasibility.
- Remove/rationalise the power poles in the Pit Paddock area to the south of Pit Straight to allow this large and currently underutilised area to be used for driver training, criterium bike racing and the like.

Medium term (ongoing) recommendations include:

- Establish a land corridor in which to develop a second circuit. The SPV would acquire properties to the east of the existing circuit on land covered by the proposed Motor Industry R&D Park layout (Figure 13) so that should a second circuit become feasible land is reserved to construct the circuit.
- Continually monitor the marquee event demand for motor racing circuits in Australia. Should it be deemed that demand reaches sufficient levels to warrant a second circuit at Mount Panorama further investigations should be undertaken to establish the regulatory and financial viability of a second circuit.

Long term (potential) recommendations include:

- Development of a second circuit (Figure 6) to meet the demand from marquee and local events, as well as supporting complementary uses.
- Construct a Motor Industry R&D Park (Figure 13) to the west of College Road. It is recommended that a Motor Industry R&D Park development should be undertaken by a private developer. The sale of industrial/commercial units within a Motor Industry R&D Park could cover part of the costs of a second circuit development.
- Incorporate accommodation/commercial development into the Pit Straight grandstands. The accommodation/commercial units could be used for student accommodation or office space during non peak event times, with units being converted for corporate entertainment during peak events to maximise the potentially higher rental income. It is recommended that the accommodation/commercial development be undertaken by a private developer.

1.0 Introduction

1.1 Background

The NSW Government's State and Regional Development and Tourism (SRD&T), a division of Industry and Investment NSW (I&I), has tasked the Homebush Motor Racing Authority (HMRA) with initiating a study to determine the feasibility of a second circuit and other significant complementary infrastructure projects at Mount Panorama (the Site), Bathurst. HMRA has engaged AECOM to undertake the feasibility study.

AECOM was assisted by the following groups in undertaking this Study:

- M & M Track Consulting – car circuit review;
- Hall Technical – motorbike circuit review;
- Arenco – cost estimating; and
- AJ&C – complementary infrastructure projects.

1.2 Report Structure

In order to provide HMRA with a comprehensive examination of feasibility a number of specialist studies and extensive stakeholder consultation has been undertaken to ascertain the technical, regulatory, commercial and financial feasibility. This section provides a brief outline of our approach to the Mount Panorama Second Circuit Feasibility Study (Feasibility Study).

Section 1.0 Introduction

Section 1.0 details the structure and scope of the Feasibility Study. Background to the Feasibility Study is provided including the reasons for the Study and details of previous studies undertaken examining the Mount Panorama precinct and potential second circuit designs.

Section 2.0 Second Circuit Design

Section 2.0 examines the rationale behind the second circuit proposal and includes a technical review of the initial circuit layout. A revised second circuit layout is subsequently proposed.

Section 3.0 Consultation

Section 3.0 details the community and stakeholder consultation undertaken for the Feasibility Study and documents feedback from respondents for consideration in the analysis.

Section 4.0 Site Analysis

Section 4.0 examines the key physical, biological, cultural and legislative factors that influence the feasibility including noise, contamination, flora and fauna, hydrology, geotechnical, heritage and legislation.

Section 5.0 Complementary Activities

Section 5.0 details the infrastructure projects that could be undertaken either in isolation or complementary to the development of a second circuit.

Section 6.0 Cost Estimation

Section 6.0 describes the costs associated with the development of a second circuit and complementary infrastructure.

Section 7.0 Financial and Market Analysis

Section 7.0 examines the potential markets for a second circuit and complementary infrastructure and discusses the estimated financial viability.

Section 8.0 Conclusion

Section 8.0 provides a conclusion as to the feasibility of a second circuit and complementary infrastructure at Mount Panorama.

1.3 Study Objective

The objective of the Feasibility Study is to determine whether a second circuit, or other significant infrastructure projects that could supplement the existing facilities at the Site, would be feasible. In order to provide HMRA with a comprehensive response a number of key tasks have been undertaken including:

- Technical review of second circuit design for both cars and motorbikes;
- Community and stakeholder consultation including workshop presentations;
- Collection and analysis of background data;
- Technical investigations to review the physical feasibility of the second circuit including:
 - Geotechnical;
 - Noise; and
 - Surface water and flooding.
- Cost estimation;
- Business Case analysis; and
- Review of alternative infrastructure and land use options.

The tasks have been carried out to inform the feasibility study and therefore meet the project objectives.

1.4 Purpose of Study

Mount Panorama is a premier motor car racing facility with iconic national and international status. The pit buildings and paddock areas have been upgraded through substantial investment from Bathurst Regional Council (BRC), NSW State Government and the Commonwealth Government. The recreational and tourist facilities at the Site have diversified to accommodate uses other than motor racing including archery, shooting and motor cross as well as a motor racing museum creating a local attraction. Additional investment has been made in recent years to develop a hotel on the Site operated by Mirvac that includes a conference centre.

The SRD&T, as a division of I&I seeks to attract significant investment projects to NSW as well as major events that have the potential to benefit the State economy and promote NSW nationally and internationally. It is recognised that the Site has the potential to attract further investment in facilities and events due to its profile, natural assets and existing high class infrastructure and buildings that have won design excellence awards.

The proposed second circuit is considered an opportunity to achieve further investment and extend the profile and utilisation of the Site. It is intended to accommodate motorbikes, which cannot use the current circuit due to safety requirements. It is noted that an alternative concept second circuit layout has been developed to reflect the scope of the study; comprising an international circuit coupled with a national circuit that can be utilised on a regular basis.

1.5 Mount Panorama History

Mount Panorama became the heartland of motor racing in Australia with the opening in 1938 of the Mount Panorama Scenic Drive as a dirt road. Today it is one of the world's top motor racing circuits, gaining its unique status due to a combination of factors. The Site contains a steep hill (Mount Panorama), over which the circuit passes, with district scenic views, being 874 m above sea level. The circuit is approximately 6 km in length with a diverse configuration including challenging grades and curves as a result of the hill climb. Furthermore the Site sits within a classic Australian rural setting with extensive natural vegetation surrounding the circuit. The essential nature of the circuit remains as it was in 1938 and numerous World class drivers and riders have raced and won at the "Mountain" including Sir Jack Brabham, Wayne Gardner, Alan Jones, Kel Carruthers and Mick Doohan.

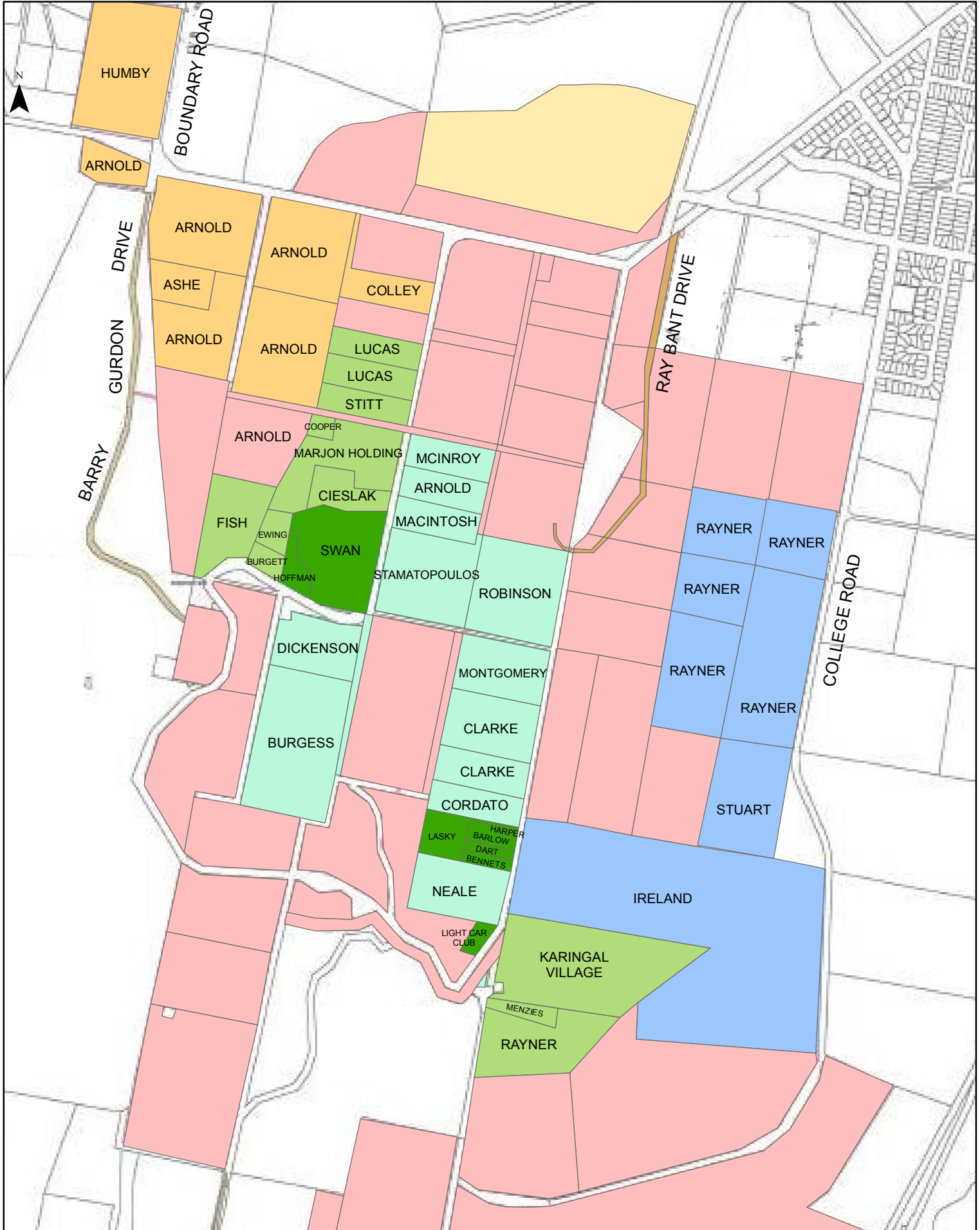
The Mount Panorama circuit is best known today as the home of the V8 Supercars Bathurst 1000; Australia's best known motor racing event. However, up until 2000 the circuit hosted four days of motorbike racing held over the Easter long weekend. As a result, there has been a strong push to bring motorbike racing back to the Mountain in order to maintain the place of Bathurst in Australian motorbike racing history.

The Easter races came to an end due to two main forces. First, the circuit was increasingly enclosed by concrete barriers to prevent the V8's running into vegetation or into deep ravens. While this improved the safety aspect of the circuit for four wheeled motor racing, it had the opposite effect for motorbike racing. Without adequate run off areas it was no longer safe for motorbikes to race on the iconic circuit. A second element was crowd disturbance at the Easter events, which had some part to play in bringing the long tradition of the Easter races to a close in 2000. It is noted that crowd management is not within the scope of the Feasibility Study.

Within the Site precinct a diverse range of complementary tourism businesses, rural and recreational activities have evolved. Surrounding land uses include over 40 private residences, high end accommodation, vineyards, a restaurant, parks and a fruit orchard. Additionally, the National Motor Racing Museum (NMRM) is located in the north east corner of the Site and contains a collection of car racing and motorbike memorabilia from around Australia and specific to classic events at the Site.

The diverse land uses occurring both within the circuit and around the circuit's perimeter have led to mixed land ownership. BRC owns the majority of the land in proximity to the northern end of the circuit including the pit complex in addition to a number of sites in and around the southern (Mountain) section of the circuit and to the east of the circuit in proximity to the hotel and South Bathurst (refer to Figure 1 for Site ownership map).

Private holdings are located primarily in a diagonal line from north west of the circuit to south east (refer to Figure 1). The location of these properties has the potential to limit future infrastructure development at the Site and requires consideration when examining infrastructure development options.

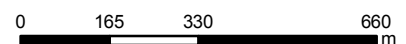


- Bathurst Regional Council Land
- Crown Land
- Access usually to track, potential to go 4WD or onto access roads
- Access to College Road

- Access to Boundary Road
- Access to tunnel

MOUNT PANORAMA
LAND OWNERSHIP
 Source: Bathurst Council (2010)

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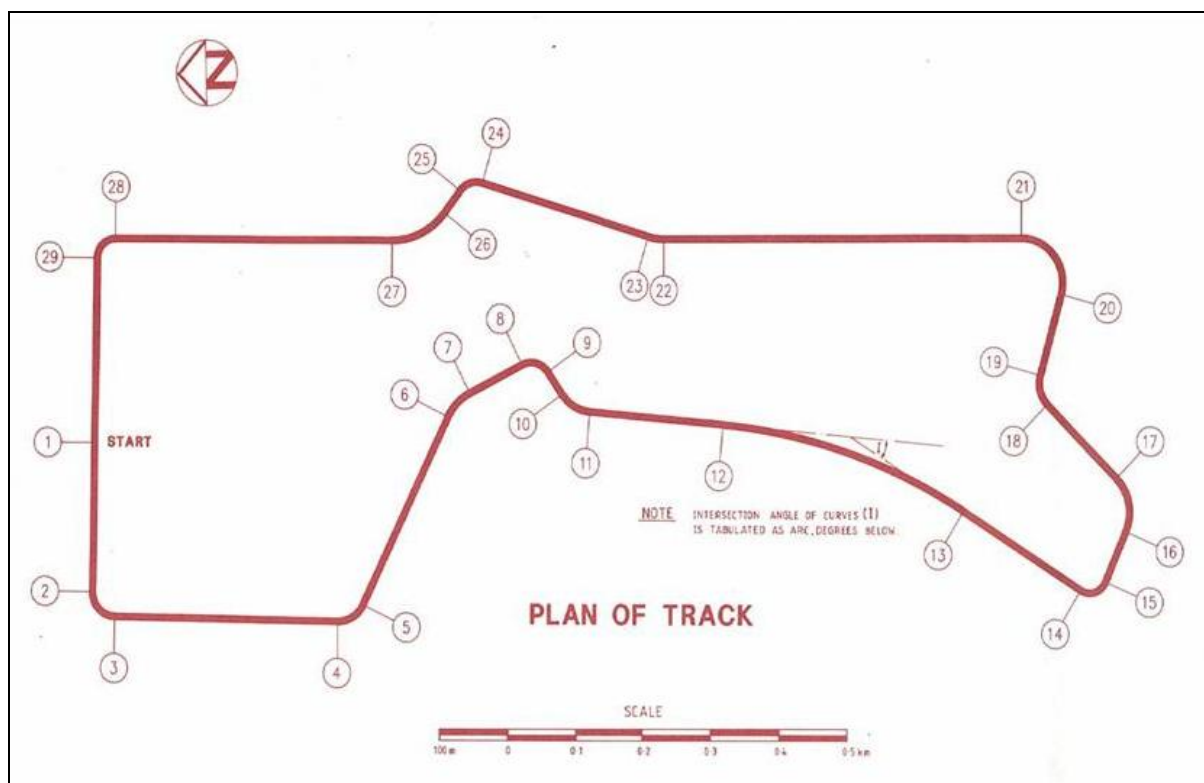
1.6 Historic second circuit proposals

There have been a number of second circuit proposals for the Site over the years. These alternate proposals have emerged due to the need to cater for other types of motor events such as motorbike racing, driver training, changing safety requirements and the cost of staging an event on the hill circuit.

BRC commissioned Pak-Poy and Kneebone Pty Ltd (PPK) to undertake the *Mount Panorama Proposed Second Circuit Study* (PPK Study) in 1989. The PPK Study was undertaken in response to changes in the motor racing industry to ensure that Mount Panorama remain a significant location for motorsport. The PPK Study considered six alternative circuit layouts each complying with the existing Formula 1 standards, five of which were located within the existing circuit and one external to it. The preferred option was then subjected to engineering, environmental and economic analysis (refer to Figure 2 for the PPK Study second circuit layout).

The 4.2 km layout utilised existing pit and paddock facilities, while complying with the safety requirements of the time, which limited motorbike use on the Mountain. The proposal also provided the opportunity to produce a shorter national level circuit for club racing.

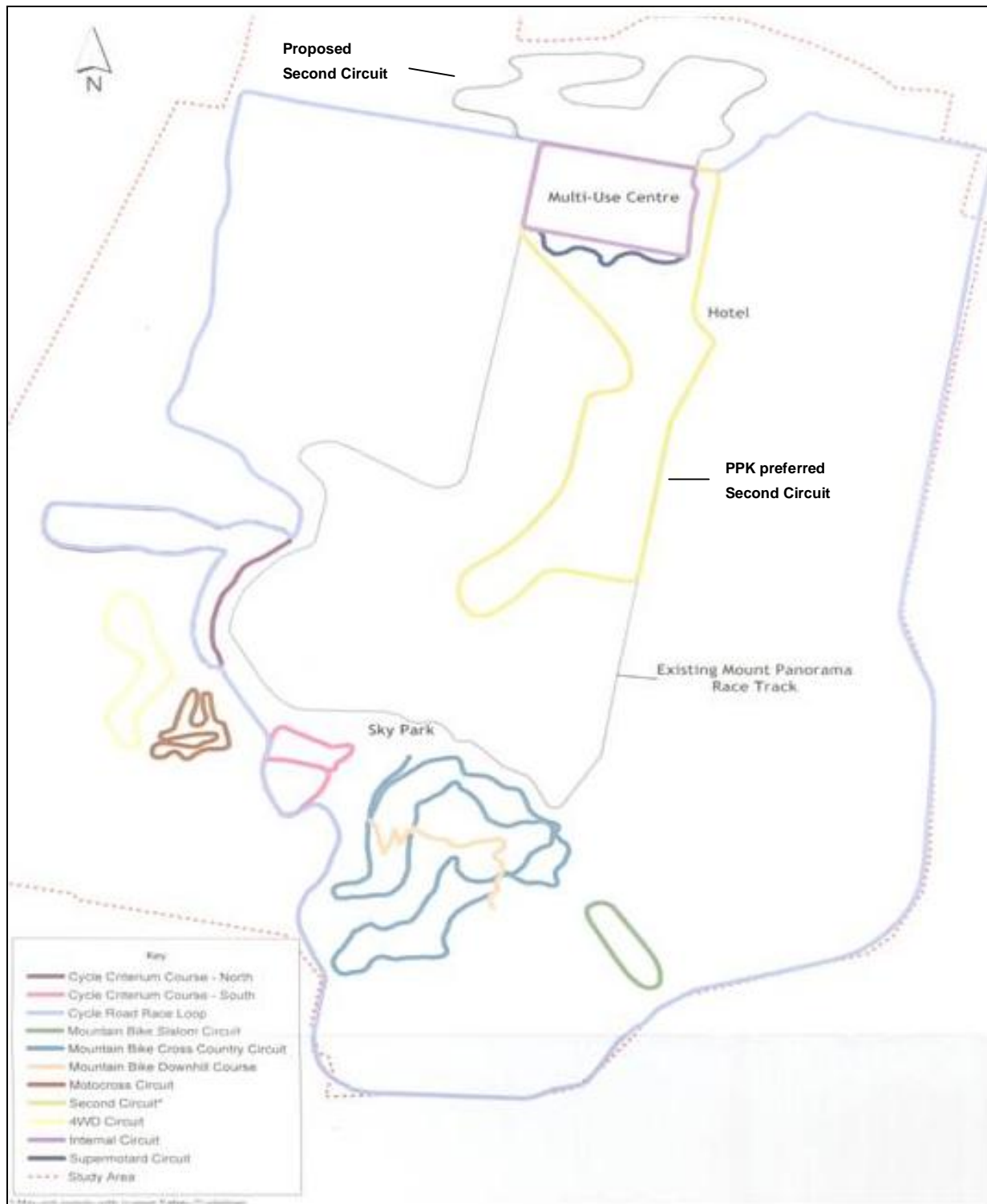
Figure 2 PPK Study preferred second circuit layout



Source: *Mount Panorama Proposed Second Circuit Study*. (1989), Pak-Poy and Kneebone Pty Ltd

Kellogg Brown and Root Pty Ltd (KBR) undertook the Mount Panorama Regional Tourism and Recreation Strategy (2003) (Tourism Strategy). The Tourism Strategy included the preferred PPK Study layout and other sporting circuits around the Mountain. During public consultation a local motoring enthusiast produced an alternative second circuit layout to the north of the existing circuit. The revised circuit layout included a number of tight corners minimising the amount of room taken up by the second circuit proposal, while utilising Pit Straight and the existing pit facilities (refer to Figure 3 for the revised layout).

Figure 3 Revised second circuit resulting from the Tourism Strategy public consultation



Source: *Mount Panorama Regional Tourism & Recreation Strategy*. (2003), Kellogg Brown and Root Pty Ltd

1.7 Existing operations

1.7.1 Event profiles

The Site is currently permitted by the *Mount Panorama Motor Racing Act 1989* (the Mount Panorama Act) to conduct five major events annually. Subject to the Mount Panorama Act environmental noise requirements are waived during these major events. The Site is currently used for four major events annually, which are:

- *V8 Event*. Conducted over four days in October, the event utilises the full circuit, with V8 cars being the main category comprised of 32 vehicle entries in the main class, with over 120 support category entries.
- *Motor Racing Festival*. Conducted over four days the festival utilises the full circuit with the 12 Hour Race being the main event comprised of 47 entries and over 220 support entries.
- *Festival of the Sporting Car*. Conducted over four days at Easter the festival utilises the full circuit. The event caters for historic sports and touring cars, marquee and production sports cars, with in excess of 500 entries.
- *TrackCorp*. Conducted over five days the event utilises the full circuit and is by invitation only. The event has two categories, one for racing and one for driver training. This is a non spectator event, resulting in lower impacts on surrounding land uses.

In addition to the four major events a number of smaller events are held both on the circuit and within the surrounding area including:

- Motocross events located at the top of the Mountain. The motocross events are conducted mostly in the winter months, with seven events annually comprised of one day per event. Entries range from 80 to 170 depending on whether the event has national, state or club status.
- Hill Climb events are held six times annually and mostly consist of two day events utilising five different variations of the circuit. Entries can vary between 50 to over 200 depending on whether it is a national, state or club event. Approximately 10 generators located mainly around the lower part of the circuit, pit complex and corporate viewing areas are required.

Additionally, an archery club, pistol club and rifle and shotgun club operate ranges in the area surrounding the circuit.

Previous events held at the circuit include:

- A five day Super Tourers event conducted from 1997 to 1999;
- A 24 hour event conducted from 2002 to 2003; and
- A Super motard event conducted from 2003 to 2005, utilising Pit Straight parts of Mountain Straight before running across the rear of the paddock area along a purpose built motocross track, prior to returning onto Conrod Straight. The event was on for one day attracting 80 to 90 entries.

It is noted that motorbike racing is no longer permitted on the existing circuit as it does not meet safety requirements. The last motorbike road racing event was held over Easter 2000 utilising the full Circuit, attracting over 370 entries during five days of racing.

1.8 Findings

Key background points of relevance to the Feasibility Study include:

- An identified need for greater use of the existing facilities;
- To provide a permanent race track at Mount Panorama a second circuit is needed;
- A number of second circuit designs and complementary infrastructure projects have previously been proposed; and
- There is a view of Mount Panorama as a national and international iconic racing venue that should receive more use including motorbike racing and driver training.

This Study assesses the feasibility of a second circuit at Mount Panorama.

2.0 Second Circuit Design

A number of second circuit iterations have been examined since the PPK Study in 1989. The tender released by HMRA for this Feasibility Study was based on a second circuit layout developed by Allan Cunynghame (referred to as the HMRA tendered layout) as discussed below at Section 2.1. The HMRA tendered layout was further refined following a technical review as discussed at Section 2.2 below.

2.1 HMRA tendered layout

The design incorporates approximately 2.5 km of new track which combined with existing sections of the Mount Panorama circuit being Pit Straight, Mountain Straight and Conrod Straight would create a 4.6 km grandprix style circuit (refer to Figure 4). The second circuit design would allow for a number of configurations including the full 4.6 km or a smaller 2.5 km circuit linked by an additional section of track running parallel to Conrod Straight. The full course is envisaged for high profile international events such as a round of the World Superbike Championship, with smaller national, state and club level events using the new 2.5 km circuit, which could be wholly self-contained with fencing and would not require the closing of public roads.

Allan Cunynghame, the HMRA tendered second circuit designer submitted a paper justifying the proposed second circuit. The key points of the paper are noted below:

- For over 50 years the Mount Panorama circuit has been regarded as one of the most challenging tracks in the world. However, like many other famous tracks around the world the Mount Panorama track is no longer suitable for the speeds modern race bikes and cars are capable of and the circuit layout no longer meets the design requirements needed to keep them safe.
- Mount Panorama needs to look to the future with a bold vision that keeps the venue viable, with a new plan that enables the track to host the best motorsport the world has to offer.
- A vision for Mount Panorama sees the precinct no longer reliant on an annual race that showcases a parochial category of V8 Touring Car racing that is now over 30 years old. Instead there should be a grand plan with the potential to deliver growth and ever-increasing economic benefits to Bathurst and the Central West region all year round.
- Bathurst can attract international categories of Bike and Car racing with a new state-of-the-art circuit designed to FIM specifications that utilizes the bottom half of the existing circuit and infrastructure.
- Motorbike racing has a long and illustrious history in Australia and the races at Bathurst have been an important part of that history since 1938. Unfortunately the existing circuit is no longer safe for motorbike racing, which has not been undertaken at Bathurst for over ten years.
- The new HMRA tendered circuit has been designed to meet international FIM safety standards and is the result of a collaboration of experts which includes consultation with Claude Danis, President FIM Motorcycle Road Racing Commission and Paolo Ciabatti, General Manager of Infront Motorsports (World Superbike Championship), Rome, Italy.
- The prospects and potential of this new GP circuit at Bathurst are unlimited. With international events currently accommodated at other tracks in Australia likely to be attracted to the new venue including:
 - Phillip Island is a world-class circuit but it is affected by unpredictable weather conditions, remote location, difficult access and lack of accommodation and facilities.
 - Melbourne's Albert Park is a temporary circuit that is expensive to build and dismantle, with the F1 GP costing the Victorian Government up to \$35 m per year.
 - Sydney's Oran Park closes this year, leaving an already over-used Eastern Creek as the only fully licensed circuit in NSW.
 - Australia lost its round of the Indy Car Championships when the category tired of it's tenure at the temporary and very restrictive Surfers Paradise circuit.
 - Organizers of the A1GP International Series are not happy with spectator attendances at Eastern Creek and would look at a more viable venue.
- The HMRA tendered circuit meets the minimum length requirement for international FIM Championship competition, with new sections of circuit located on BRC owned land. The full circuit utilizes the existing pit

facilities. Additionally, a connecting loop joins a part of the new section of circuit to allow for a smaller 2.5 km Club racing circuit and Rider Safety Training facility away from and completely independent of the existing circuit.

- A new circuit could host up to two major meetings each year and two national meetings as well as bike/car club days and private hire for car and bike manufacturers media release/track days/functions and private hire.
- The location of the new circuit extension and the infrastructure planned around it also offers an opportunity to bring other sporting facilities to the immediate area and surrounds.
- The Bathurst 1000 race injects tens of millions of dollars into the economy of the Central West, with accommodation booked out from the upper Blue Mountains to as far west as Cowra. There is the potential to significantly increase the capital generated through events undertaken on a second circuit.

Figure 4 HMRA tendered circuit layout



Source: Bathurst Regional Council – Proposed Plan of Circuit (2009)

2.2 Design review and modification

2.2.1 Review process

The HMRA tendered layout has been reviewed by Michael McDonough of M&M Track Consulting Pty Ltd (M&M Track) and Chris Hall of Hall Technical Pty Ltd (Hall Technical). The two reviewers have extensive knowledge in the assessment and operation of international motor racing circuits for both cars and motorbikes. Their experience includes input into the layout of the Phillip Island Superbike World Championship Circuit and Melbourne and Singapore Formula 1 Grandprix circuits. The following section is based on the report developed by M&M Track and Hall Technical titled *Proposed Second Circuit, Mount Panorama, Bathurst - Preliminary Technical Assessment*, 2010, (Technical Assessment) which has been developed to inform the Feasibility Study. The full report is provided in Appendix A.

The Technical Assessment provides a general review based on the level of detail provided in the existing plans. The Technical Assessment has been undertaken on the basis that the circuit must be able to achieve homologation to host a World Championship motorbike event such as Moto GP (Category Grade A) and international motor car racing events up to Category Grade 2. In addition, the facility must also be available for regular use at a national and club level.

The Technical Assessment has been prepared based on information contained in documents titled Mount Panorama Proposed Second Circuit prepared by Bathurst Regional Council and a site visit. It is noted that the level of detail provided in plans to date is insufficient to provide more than a general review. An acceptable circuit layout would need to be finalised in order to prepare track geometry, speed profile analysis, run off calculations and track barrier details.

2.2.2 HMRA tendered layout review

The HMRA tendered second circuit involves the development of a 4.6 km circuit commencing on the existing Pit Straight and utilising sections of Mountain Straight and the bottom of Conrod Straight with the remainder of the circuit requiring new track construction to the east of Conrod Straight. The area to the east of Conrod Straight would comprise a second smaller circuit of approximately 2.5 km providing the opportunity to host club level races without impacting on residents' access to properties on Mount Panorama. For the smaller circuit to work autonomously the construction of additional Pit Facilities and associated infrastructure would be required due to its remoteness from the main Pit Building complex. The two circuits (Category A) international circuit and (Category B) national circuit are examined in more detail in the following subsections.

Category A International Circuit

The circuit travels in an anti-clockwise direction comprising 19 turns. The section of the circuit requiring new construction is undulating in character with many of the turns close together. Gravel traps are proposed at all turns. Overall it is considered that there are too many slow sections resulting in a lack of flow and providing limited overtaking opportunities. The review provided a number of general recommendations for improving the circuit design including:

- The circuit could be improved by reducing the number of turns, which would increase the potential to create a straight section in excess of 600 m (it is estimated that the maximum Superbike speed on the current layout would be limited to approximately 250 km/h), and reducing the overall length of the circuit, which is unnecessarily long at 4.6 km.
- Consideration of a design with a higher number of straight sections and less turns would reduce run off requirements and therefore costs and disturbance of surrounding land.
- Run off should be constructed of asphalt instead of gravel, which is the preferred surface for contemporary motor racing circuits.
- There are a large number of downhill run off areas in the layout which would need to be filled. This would require extensive earthworks in the proposed eastern section of the circuit. Run offs for both cars and bikes should be filled and graded so that they are slightly elevated away from the circuit.
- Parts of the circuit layout are considered dangerous due to conflict between the run off requirements and the location of the circuit downstream. The high risk of uncontrolled excursions from the circuit resulting in the bike and/or rider re-entering the circuit at moderate to high speed in an uncontrolled manner must be avoided.

The circuit layout with turn numbers is illustrated below at Figure 5.

Figure 5 HMRA tendered second circuit with turns numbered



Source: AECOM (2010)

Figure 5 is referenced in the following commentary on the HMRA tendered second circuit layout.

- *Turn 1 – Pit Straight/Mountain Straight*

While the run off has been considered acceptable for car racing in recent years, the run off at the exit of the first corner would need to be extended to accommodate motor bikes. This would necessitate the removal of a section of the viewing mound.

- *Turns 1 – 2 Mountain Straight*

This section of the circuit layout utilises part of the existing Mountain Straight.

- *Turns 2 – 7 New Track Construction*

The proposed new section of race track at the top of the camp ground behind the Paddock consists of a series of esses similar in geometry to the section of the existing circuit at the top of the Mountain. This would produce single file racing for both cars and bikes with no opportunity for passing. The run offs at each of the Turns encroach onto the circuit downstream, raising the risk that bikes/riders leaving the circuit in one section can re-enter at another section without control and into the path of other racers.

The proposed layout would also appear to require the removal of a number of large gum trees between Turns 6 and 7. Extensive cut and fill earthworks would be required at this section in order to overcome the steep descent onto Conrod Straight and into the run off area.

- *Turns 7 – 8 Conrod Straight*

This section of the circuit layout utilises part of the existing Conrod Straight.

- *Turns 8 – 15 New Track Construction*

The proposed new section of race track exiting from Conrod Straight and extending to the eastern boundary is a constant descent through a series of open radius turns and traversing a water course (small creek) at the eastern most point. Changes to the track geometry would be required through some turns in order to avoid encroachments of run offs onto the downstream track. The circuit extends from a curve radius of 120 m at Turn 12 directly into a curve radius of 40 m at Turn 17 in the opposite direction.

Comprehensive earthworks and drainage would be required between Turns 14 and 15 where the circuit crosses the water course.

Overall, this section of the race circuit is slow with the open radius turns providing single file racing, with most run offs requiring large amounts of fill in order to overcome the downward slope.

- *Turns 15 – 18 New Track Construction*

The section of circuit between Turns 15 and 16 is generally level. The left (Turn 16) and right (Turn 17) involve a steep descent through vegetation and into the water course, with the run off at Turn 17 potentially in conflict with the run off at Turn 14. Significant earthworks and modifications to circuit geometry would be required in order for this section of the race track to work.

- *Turns 18 – 19 Conrod Straight/Pit Straight*

This section of the circuit layout utilises part of the existing Conrod Straight with Turn 19 being the last corner onto Pit Straight. While the run off has been considered acceptable for car racing in recent years, the run off at the exit of the corner would need to be extended to accommodate motor bikes. This would necessitate removal of a section of the viewing mound.

It is likely that the available run off area would be limited by the existing bridge across to the Pit Paddock. Placement of additional energy absorbing devices may overcome this issue.

Category B National Circuit

The proposed creation of an autonomous national circuit in the eastern section of the international circuit would provide for motor related activities to occur throughout the year without impeding access to local residents' properties along Conrod and Mountain Straights.

The circuit layout utilises a section of the proposed new circuit construction between Turns 8 and 18 and requires the construction of an additional straight section of circuit connecting in between. This section of new circuit dissects the existing camp ground area.

The circuit, 2.5 km in length has the same issues referred to above from Turns 8 to 18 (see Figure 5 for turn numbering).

New pit and paddock facilities, including garages, race control, fuel supply depot and other amenities would need to be established. Due to grade and access issues, the only viable location for locating these facilities would be along the level section of race circuit between Turns 15 and 16. However, length available for pit entry and exit is marginal and potentially conflicts with the existing circuit access.

It is considered that the proposed location and layout of the national circuit is remote and does not "connect" with either the existing circuit facilities or the hotel complex.

Supporting Infrastructure

Circuit Access

An additional two tunnels would need to be constructed between Turns 17 and 18 and adjacent to Turn 6 in order to maintain unimpeded access to the Paddock on race days. This is assuming that a tunnel is not required under the additional section of circuit on the national circuit, as this would not be in use when the longer circuit is being utilised.

An additional entrance point from the road on the eastern boundary would require consideration.

Spectator Locations

While the HMRA tendered layout does not address the potential for provision of grandstands or spectator mounds, a commentary on potential issues is listed for consideration.

- *Turn 1- Pit Straight/Mountain Straight*

A section of the viewing mound at the exit to Turn 1 would be lost due to the additional run off requirements for motor bikes.

- *Turns 2 – 7 New Track Construction*

The proposed new section of circuit behind the Paddock would appear to run very close to residents' property on the south (elevated) side, restricting space and accessibility for patrons. There is the potential for good spectator viewing at Turn 7; however the proposed circuit alignment takes out a traditional spectator location on the existing circuit.

- *Turns 8 – 18 New Track Construction*

Subject to accessibility issues, good spectator viewing opportunities are available on the approach and exit to Turn 8. The private property to the east between Turns 9 and 14 restricts availability for access by patrons.

There is potential for good spectator viewing between Turns 14 and 16 to the north and east, although this is close to a residential area with noise, access and egress potentially being issues.

- *Turn 18 – 19 Conrod Straight/Pit Straight*

The hotel offers excellent viewing in this location as well as the west side of the exit to Turn 18 in the existing Paddock area.

A section of the viewing mound at the exit to Turn 19 would need to be extended further back due to the additional run off required for motor bikes.

Conclusion

There are a number of issues associated with the proposed HMRA tendered layout geometry and location that would cause difficulties in implementation and add unnecessary cost to the project.

The circuit length, multiple turns at changing elevations, closer proximity to residential areas and the lack of connection of the proposed national circuit with the existing facilities are likely to generate unacceptable impacts with respect to noise, safety, cost, construction and integration issues.

However, there are opportunities to improve the basic concept, alleviate the difficulties identified and provide a more integrated development within the Mount Panorama precinct. These opportunities are discussed in Section 2.2.3.

2.2.3 Revised Second Circuit layout

An alternative concept second circuit layout has been developed to reflect the scope of the study, which is to establish an international circuit for major events coupled with a national circuit that can be utilised on a regular basis. The alternative layout is illustrated in Figure 6 below.

The design seeks to minimise the number of corners in order to improve circuit flow, provide a longer straight, minimise the amount of earthworks required and lessen the overall impact on the environment. It provides a shorter circuit distance of just under 4 km, thus reducing the construction cost as well as minimising operational and race infrastructure costs associated with marshalling points and race control. It is noted that the minimum circuit length required to achieve the necessary level of homologation is 3.5 km and the alternative design is therefore acceptable.

The alternative concept for the national circuit attempts to better utilise existing facilities within the Pit Paddock area and “connect” with the hotel complex. However, it is recognised that direct access to the properties along Conrod Straight would be affected when the national circuit is in use and tourists would not be able to drive around all of the existing circuit. Open access to the Mount Panorama Circuit roadway would be available to all but one property (Robinson). However tunnel access onto Ray Bant Drive is directly available to that property.

In order to minimise the noise pollution to South Bathurst, the circuit does not utilise the full extent of the available land to the east. The layout also minimises the impact on the existing camp ground to the east of the hotel. It does encroach, albeit slightly, into the area behind the existing Pit Paddock.

Figure 6 Alternative Second Circuit layout



Source: AECOM (2010)

Table 1 below outlines a Strengths, Weaknesses, Opportunities and Threats (SWOT) analysis of the HMRA tendered second circuit and the alternative second circuit developed as a result of the circuit review.

Table 1 SWOT analysis of the HMRA second circuit and revised second circuit layouts

	Strengths & Opportunities	Weaknesses & Threats
HMRA tendered second circuit	Maximises use of Council owned land	Noise generation to residents of South Bathurst
	Utilises existing circuit sections	Cost associated with extensive earthworks and management of the creek
	Allows 24/7 access to the existing circuit	Distance from existing facilities
	Provides for independent operation of national circuit.	Rider safety compliance
		Excessive run off areas required affecting cost/spectator viewing/safety
		Vegetation removal
		Noise affected property acquisition
Alternative second circuit	Use of existing paddock and pit facilities	Additional design required
	Views from hotel	Reduced access along Conrod Straight for residents/tourists
	Reduced cost due to shorter circuit and smaller run off areas	Noise affected property acquisition
	Improved rider safety	
	Potential for more noise mounds and spectator viewing areas	
	Improved relationship to tourist precinct	

2.2.4 Further investigations

In order to provide a more detailed review of the second circuit layout, the plans, would need to be further developed to FIA/FIM submission stage to best assess the technical feasibility of the second circuit. This would involve preparation of an appropriate level of geographical and topographical survey and preparation of plans in the obligatory circuit dossier format required by motor racing authorities.

As a minimum, deliverables to be provided for further detailed review would include the following computerised plans in AutoCAD format:

- Circuit layouts to scale 1:2000 (minimum), with an indication of orientation, buildings, installations, access roads, spectator areas, safety barriers, run off calculations, race control post, pits and paddock location, start and finish lines, marshal posts and emergency vehicles, medical centre and helipad;
- Profile of circuit centreline, to minimum scale 1:2000 (length)/1:200 (altitude);
- Cross sections of circuit and lateral space (for at least 10 m on each side of the circuit edge), at the start line, centre of principal corners, points of minimum and maximum width of the circuit, bridges, tunnels and other singular points, to a scale 1:200 (minimum); and
- Plans of any new buildings associated with race operations which may be required for the second circuit to scale 1:200 (minimum).

2.3 Findings

Based on the early circuit iterations and this detailed track review the key findings are described below:

- It is recommended that the second circuit be fully integrated with the current infrastructure facilities, to maximise the value, minimise noise impacts and reduce capital and operating costs. The optimum circuit layout would require further analysis and the consideration of property acquisition. The realisation of a second circuit at Mount Panorama would require a fundamental change in the operations of Mount Panorama, a paradigm shift in thinking.
- The northern section of Conrod Straight may need to be closed to public access for certain periods of time. Alternative access for residents and for driving or walking the circuit for this section of Conrod Straight can be made. Only approximately 14.5 percent (900 m) of the 6.2 km circuit would be affected and this is not one of the most iconic sections such as the Esses or Pit Straight.
- The existing circuit would benefit from the potential second circuit infrastructure including improved spectator viewing and safety. Furthermore public roads are closed regularly, both permanently and temporarily for special events. Permanent closures occur to reflect changing times and needs for example the introduction of pedestrianised malls, traffic management initiatives and for the introduction of public transport systems.

3.0 Consultation

3.1 Overview

Understanding key stakeholder and community views is important to the study as they can provide useful information, indicate levels of support and identify key issues that need to be examined and addressed. This section reviews the results of the stakeholder consultation, where relevant, from the extensive program undertaken in 2003 for the subsequent redevelopment of the Pit building and paddock area. It also summarises issues raised during consultation undertaken for the feasibility study that can inform the overall findings.

3.2 Previous consultation

Public consultation was undertaken during 2003 to gain an understanding of the communities association with Mount Panorama and their desired future character for the area. The extensive consultation was intended to both inform a motor racing facility upgrade and provide input to a tourism and recreation strategy. Stakeholders consulted included both residents and tourism operators on the Mountain, motor racing and other recreational user groups, the media, tourism industry, public services and emergency services providers. These stakeholders identified a range of values for the Mount Panorama precinct from operational (for race and non-race times), commercial and recreational through to cultural, aesthetic and historical. The consultation informed the following documents:

- *Mount Panorama Regional Tourism & Recreation Strategy 2003* (KBR) (Tourism Strategy);
- *Mount Panorama Business Plan 2003* (KBR) (Business Plan); and
- *Mount Panorama Redevelopment Master Plan Volumes A & B 2003* (KBR) (Master Plan).

The responses were collated by KBR in a *Stakeholder Consultation Technical Paper* (2003) (Consultation Paper). The consultation established that Mount Panorama is well known and appreciated within the local area as a multi user precinct for motor racing, tourism and recreation. A common thread emerged which was essentially “do not change the circuit, it is iconic and it is the challenge of the layout which produces the history which must be maintained”(Stakeholder Consultation Technical Paper, (KBR) 2003).The community also placed great importance on the value of spectator appeal and the park-like nature of Mount Panorama. Suggestions were made to improve the vegetation and public spaces particularly where degraded on the top of the Mountain, with clean fill available used to construct spectator mounds on the outside of Hell Corner and to increase camping areas.

Support was raised for the development of a second racing circuit, as increased safety requirements have resulted in the existing circuit being unsuitable to host motor bike races as well as historic car and international/grand prix style events as was once the case. An argument put forward for the second circuit was the high staff and operational costs of the existing circuit due to the grades and corners limiting the requirement for 'line of sight' monitoring of the circuit. Other issues raised of particular relevance to this study include:

- A second circuit built around the existing facility may alter the existing layout, reducing the appeal of Mount Panorama;
- The proposal could have a negative impact on the iconic status of the current circuit;
- The proposal may impact on existing events and their iconic appeal;
- Some stakeholders would only be satisfied by the construction of a second circuit which would facilitate motorbike racing and high level international-standard motor racing competition;
- A key concern of all stakeholders interviewed was the need to improve access for residents during major events. There was an unwillingness to promote more events at Mount Panorama under the perception that more events would mean the road is closed more often;
- Manufacturers and many potential users requested an area where they could do product launches, presentations and driver training. One suggested area was an extension southwards up the hill from the paddock area;

- There is a strong feeling amongst stakeholders that Mount Panorama is underutilised and is not realising its true potential as a tourism and recreation destination. Opportunities are discussed in detail in the *Mount Panorama Regional Tourism & Recreation Strategy*. Tourism opportunities identified included Mount Panorama as a catalyst for a range of tourist attractions in the region as well as increasing use by local people for informal uses including jogging and cycling-both on and off road; and
- The top of the Mountain is considered important for flora regeneration and as an important place for local Aboriginal people.

In summary the Consultation Paper indicated no major conflicts or concerns about noise or other environmental matters. The main concern related to resident access during events. There was wide support for redeveloping Mount Panorama as a tourist and recreation destination and for the maintenance of the iconic status of the circuit.

3.2.1 Mount Panorama Regional Tourism and Recreation Strategy (2003)

The Tourism Strategy was produced following the above consultation to inform the redevelopment of the Pit buildings and paddock area. The Tourism Strategy proposed the following themes as a sustainable mix of activities;

- **Bathurst Central Park** – building on the strategic location of Mount Panorama, and facilitating use by local residents;
- **Tourist Destination** – a four seasons attraction of international appeal;
- **Regional and National Sports Centre** – expanding its current status as a premier sporting venue; and
- **Campus** – providing lecture, meeting, accommodation, research and parkland to neighbouring Charles Sturt University.

The consultation and research undertaken provides context to assess the proposed second circuit. The Tourism Strategy illustrated a variety of potential circuits within the precinct including road cycling and criterium (similar to the Tour Down Under), mountain bikes, motocross, second circuit for road motor bikes, four-wheel drive, driver training and supermotard. Stakeholder comments included comparison to Homebush as a multi-use sport, recreational and entertainment precinct.

3.3 Stakeholders

3.3.1 Steering Committee Workshop One – Problem and Solution Definition Workshop

To assist HMRA with the delivery of the feasibility project the Mount Panorama Infrastructure Steering Committee (Steering Committee) was established.

The aim of Steering Committee Workshop One was to establish the basic logic for investment in a second circuit and for this logic to be understood and accepted by all Stakeholders. The model used for establishing the investment logic was based on the Victorian Government Department of Treasury and Finance process requiring that a cost benefit analysis of any investment begin with a clear statement on the nature of the problem that the investment seeks to solve. The process applies a rigorous critical analysis to the question of the second circuit's feasibility. The workshop therefore aimed to examine the problem that the investment seeks to address and how the investment would provide a solution. The outcomes of the workshop are articulated through an Investment Logic Map (ILM) (refer to Figure 7).

The workshop established a number of problems and solutions and well as raising a number of other issues pertinent to the project.

Discussion of the problem that the second circuit sought to address raised six clearly identifiable problems, which include:

- The Mount Panorama Act waives noise controls during events. However, the Act limits events to five per year on the existing circuit (previously the Mount Panorama Act allowed two events). Currently four events are run per year.
- The existing circuit and infrastructure is large and uneconomical for smaller operators to run events.
- The Central West Tourism Region lacks a theme and the State body tasked with developing tourism Central NSW Tourism represents Councils of Central West NSW poorly.
- Fatal accident rates in the Chifley Local Area Command, which covers an area from Blayney to Lithgow incorporating Bathurst, are among the highest in NSW.

- Following the closing of the Oran Park circuit there is a lack of track facilities. Eastern Creek receives high levels of usage and is fully booked out for the remainder of the year (with the exception of 3 – 4 days).
- The existing Mount Panorama pit facilities could be a drain on BRC resources in the future if underutilised.

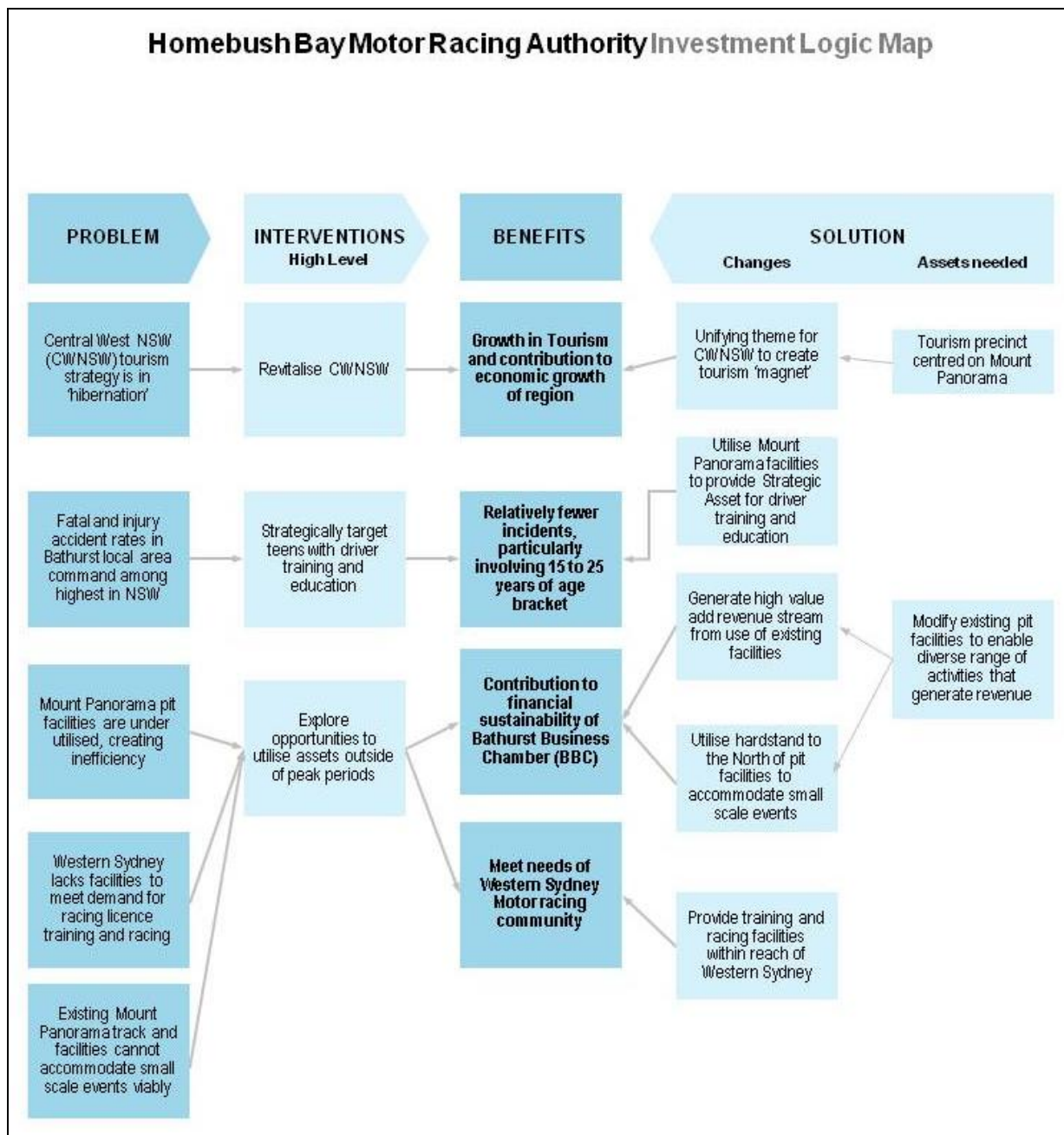
Following the discussion of problems potential solutions were examined. It was noted that the solution should consider all alternatives rather than being limited solely to the establishment of a second circuit. Other solutions identified include alternative infrastructure upgrades, a wider range of uses for the existing site and alterations to the circuit's governance / management structure.

Solutions raised during the workshop included:

- Amendment of the Act to include smaller scale use of both the existing and second circuit to allow driver training / small scale corporate events to take place on a more frequent basis.
- Utilise Mount Panorama facilities to provide a strategic asset for driver training and education. There is the potential to undertake driver training through State funding.
- Generate high value additional revenue streams from the expanded use of the existing facilities. A local TAFE currently uses the pit complex for mechanical training, while BRC currently use the facility for a range of workshops and events. Potential expanded uses include a venue for indoor sports activities / lecture theatres for Charles Sturt University and the TAFE; the holding of conferences in conjunction with the Hotel.
- A second circuit could provide a complementary use now that Oran Park has closed. Alternatively, the motor racing uses undertaken on the existing circuit could be expanded, without extensive investment, to include a skid pan and motor racing licence testing.
- The Mount Panorama site could be used as a unifying theme for Central West NSW to create a tourism magnet. A tourism hub at Mount Panorama could entail the reinvigoration of the museum alongside complementary tourism facilities such as podium and finish line photos. Additionally, the Mount Panorama could be incorporated into a cycling event / festival ranging from local to international level cycle races such as the Bathurst to Blayney cycle race or a professional Union Cycliste Internationale (UCI) event similar to the Tour Down Under or Sun Tour (*Sydney Morning Herald* 10 November 2010).

The output from the workshop was an ILM to illustrate the interactions between the problems and solutions and establish whether the second circuit is a suitable solution to the problems posed by the steering committee, or alternatively whether other solutions would be more appropriate.

Figure 7 Investment Logic Map



Source: AECOM (2010)

3.3.2 Events NSW

A meeting was held with Events NSW to discuss a potential role in relation to the development and operation of a second circuit at Mount Panorama. The following issues were raised at the meeting:

- Events NSW provide operations and sponsorship subsidies rather than capital expenditure for events.
- Phillip Island is likely to host a round of the World Super Bike championships until 2014 with possible options to extend the contract.
- There is potential for non-motor racing events at Mount Panorama.
- Currently there are a number of pro-tour bicycle event proposals in NSW similar to the Tour Down-under seeking sponsorship that could potentially feature at Mount Panorama.

3.3.3 Confederation of Australian Motor Sport

Discussion was held with John Bruning the Confederation of Australian Motorsport (CAMS) National Manager for Sport and Club Development. The following key points were made:

- NSW has 140 clubs with 90 in the Sydney Basin accessible to Bathurst.
- Clubs and members only have current access to the Eastern Creek and Wakefield Park (Goulburn) circuits.
- In recent years, despite a rise in vehicle ownership and use Sydney has lost circuits at Warwick Farm, Amaroo and Oran Park. It is considered that a second circuit at Bathurst would be used every weekend if it was available for club use.
- The greatest need is for a community facility for driver training and education that is incorporated into the school curriculum.
- The police, ambulance, fire and other emergency services can also use the facility for training purposes, which would help to reduce road accidents. The Chifley Local Area Command has an unfortunate accident and fatality record.
- It is considered that space should be set aside for skills training (e.g. skid pans) and for club rooms.

3.3.4 Paul Rogers, General Manager Citigate Mount Panorama

The General Manager of Citigate Mount Panorama raised the following issues:

- Higher circuit utilisation and increased events are supported as they are good for generating business at the Hotel and within the local economy.
- The hotel has been in receivership since opening in September 2009.
- Since February 2010 the Hotel has achieved consistent occupancy of 40-45% and peak occupancy at special event time and for large conferences.
- The Hotel has 118 rooms as well as a further 15 rooms that have not yet been fitted out.

3.3.5 Bathurst Business Chamber and local business representatives

A meeting was held with six local business and motor sports representatives. The key points that emerged at this meeting were:

- No other major industry could attract the same level of economic activity as a second circuit could. Information from other Australian Councils that have club circuits is that a second circuit could generate \$15-\$20 m locally within a few years and spread consistently over the year. An Australian Motorbike GP or a Superbike round could generate a further \$50 m per year.
- Following the closure of Oran Park there are only two circuits left in NSW with many motor enthusiasts having to travel interstate for competition. Bathurst is close enough to satisfy the Sydney market.
- Morgan Park Raceway (Warwick, Queensland) is a good example of a successful combined club car/bike circuit run by a District Sporting Club
- Bathurst Light Car Club and other regional enthusiasts would use a second circuit and so take pressure off the existing circuit, parks and facilities used by spectators
- The Pit building represents the biggest convention centre in NSW outside of Sydney. This building, the NMRM and paddock are massively underutilised assets. A second circuit would increase their use.

- Mount Panorama does not capitalise on its name and assets for motor racing, tourism and other sports. There is too much reliance on the V8s and so there is no fallback position
- Lots of people are attracted by motor sports to live in and visit Bathurst. Mount Panorama could have a motor sports business park as occurs at other circuits including for research and development. Hampton Downs (40 mins from Auckland, New Zealand) is branded as a "Motorsport Park" and has 32 trackside freehold business apartments and sold the first 80 trackside 2 & 3 bed apartments in 5 weeks. Students from CSU are a market for these.

3.3.6 Allan Cunynghame - Bathurst businessman and second circuit designer

Allan is a long term Bathurst resident, Managing Director of Multitool International, a previous motorbike racing competitor, current enthusiast and the designer of the original second circuit which prompted this feasibility study.

Allan has contributed to the consultation for this study by attending two public meetings, private discussion with the consultant team and submission of a paper outlining justification for the second circuit (for a summary refer to Section 2.1).

Some further key points for consideration from discussion with Allan are:

- Major motorbike events back at the Mountain would do what V8s have done and extend the significance of the Mountain. It would bring back large crowds as the Australian Motor Cycle Grand Prix did between 1950s-80s
- He is open to suggestions to achieve a world class motorbike circuit that can also cater for local and regional events. Some example of courses and facilities included internationally Misano, Italy, which is refurbishing old circuit, driven by local Chamber of Commerce, to extend tourist season and locally Wakefield Park.
- Other events should also be attracted to the Mountain to use the current underutilised facilities and infrastructure.

3.3.7 V8 Supercars

A discussion was held with Shane Howard the General Manager Events of Avesco, which owns the V8 Supercars brand, who emphasised the need to maintain the integrity of the historic hill race course, to improve spectator viewing and experience wherever possible, to maintain concessions, and to ensure detailed circuit design was undertaken to maximise racing quality

3.4 Community

3.4.1 Residents Consultation Meeting

A Residents Consultation Meeting was held at the Pit Building Complex, Mount Panorama on the 24 August 2010. The aim of the meeting was to inform local residents as to the studies objectives and gain an understanding of the local community's views. To achieve these aims a select group of residents who live within proximity to Mount Panorama were invited to the meeting. For a comprehensive review of the meeting and list of attendees refer to the Minutes taken, located at Appendix B.

The meeting commenced with an overview of the project and work undertaken to date by AECOM. The meeting was then open to discussion. The following key issues were raised by the community:

- Access to dwellings and businesses on the Mountain.

The proposal may lead to increased road closures, which has the potential to impact on resident's amenity due to reduced access or more complex access arrangements via back-roads. Additionally, road closures may impact on business and tourism visitation numbers due to business on the Mountain being inaccessible or having reduced access. Residents noted the importance of early notice of road closures to minimise impacts.

Residents noted that they do not want the Mount Panorama Act varied to allow additional major events, which would result in further road closures beyond the five currently permitted. Additionally, residents noted that clarification should be provided as to whether the second circuit would fall under the controls of the Mount Panorama Act.

- Flora and Fauna Management

The proposal would result in vegetation removal. Residents questioned the constraints that could be placed on the circuit operator to limit impacts on vegetation. It was noted that vegetation removal would be subject to local, State and Commonwealth legislation.

Increased use of the circuit may require additional fauna management. It was noted that fauna would be managed in accordance with the Fauna Management Strategy for the Mount Panorama Precinct that Council is currently in the process of preparing.

- Maintenance of amenity

The proposal would lead to increased motor vehicle operation in the area, some of which dependent upon the final second circuit layout would be in close proximity to dwellings. Residents noted the need to maintain amenity for surrounding dwellings including those on the Mountain and in South Bathurst. Amenity is likely to be impacted upon by noise in particular, with air quality also raised as a potential issue.

A number of potential solutions were raised including the redesign of the second circuit to relocate it away from dwellings; the use of berms to limit noise impacts; and the limiting of race days through the incorporation of the second circuit into the Mount Panorama Act.

- Increased utilisation of facilities and second circuit development

The demand for additional motorbike venues in NSW was noted, with the shortage of facilities compounded by the closure of Oran Park. The second circuit designer Allan Cunynghame explained his vision for a second circuit hosting major international motorbike racing, while allowing for a smaller autonomous circuit that would maintain access for residents by allowing the existing public roads to remain open. A smaller circuit would also be more economically viable for smaller events. However, the need for the construction of additional pit facilities to allow the second circuit to be used autonomously would increase construction and maintenance costs.

Support for the second circuit was provided by attendees from the Bathurst Light Car Club, Panorama Motorcycle Club and Bathurst Cycling Club, who would all use the facility.

Residents primarily felt that even if a second circuit was not considered feasible the existing infrastructure was underutilised and increased usage would be welcome.

3.4.2 Community Consultation Meeting

Discussion at the Residents Consultation Meeting, highlighted the need to hold another Meeting that would allow a wider range of the Bathurst community to comment on the second circuit proposal.

The aim of the meeting was to inform the community as to the studies objectives and gain an understanding of the local community's views. The meeting commenced with an overview of the project and work undertaken to date by AECOM. The meeting was then open to discussion. For a comprehensive review of the meeting and list of attendees refer to the Minutes taken, located at Appendix C.

The following key issues were raised at the meeting:

- Review of the second circuit and amendment to the Mount Panorama Act

A peer review of the second circuit would be required to ensure it is viable. Additionally, amendment to the Mount Panorama Act is likely to be required to allow increased periods of time where high noise levels are permissible.

The circuit layout has been shown to the motorbike racing governing body and the concept layout met their specifications at a preliminary level. It was noted that there are no plans to amend the Act at present, however, noise modelling and profiling is being undertaken to ascertain the operating conditions that would allow an acceptable level of amenity for surrounding land users to be maintained.

- Demand for second circuit

There is perceived to be a high demand for motor racing facilities in NSW, with the grass roots motor racing community feeling that big business (V8) is taking over and limiting non-professional opportunities. There is currently limited knowledge within the motor racing community of the second circuit proposal.

A permanent second circuit at Bathurst would make Mount Panorama more attractive to the motor industry for the testing of vehicles.

- Community support

Community support is essential for the project to succeed, with research required to establish community opinion. The community require full knowledge including the results of noise modelling and the business case. The importance of community support was illustrated by the Marulan Driver Training Centre, which received high levels of local Council and community opposition due to noise and is likely to be shut down in the near future.

- Council position

Council are keen to see the Feasibility Study conclusions and costs in particular, prior to making any decisions. Funding from State/Commonwealth governments would be required to supplement any Council investment to realise the project.

- Consultation with other precinct users

The extent of consultation with other precinct users including the shooting/archery club was raised in order to address any potential conflict in land uses. It was noted that there is the potential to wrap all the different activities into a recreational/tourism precinct with the second circuit providing a complementary as opposed to competing use.

3.4.3 Mount Panorama Second Circuit Action Group (MPSCAG) - Public Meeting

A Public Meeting was undertaken on the 21 October 2010. For a comprehensive review of the meeting refer to the minutes taken, by both AECOM and MPSCAG located at Appendix D. The meeting was organised by MPSCAG and attended by representatives from HMRA, BRC, AECOM and members of the local community and media. The meeting was chaired by Will Hagon. An introduction was provided by the MPSCAG committee at which support for the second circuit was discussed prior to Allan Cunynghame detailing the benefits of a second circuit to Bathurst.

The Mayor of BRC stated that BRC would support a second circuit if it was found to be financially viable by the Feasibility Study.

AECOM delivered a presentation illustrating progress to date, future actions and potential development options including:

- The Tourist Centre;
- Harris Park grandstand and accommodation; and
- Sky Tower lookout and restaurant.

The floor was then open for attendees to speak. Comments were generally supportive of a proposed second circuit, with the following themes:

- A shortage of racing opportunities in NSW;
- The potential financial benefits to the region as a result of the development of a second circuit;
- Additional uses for the existing and proposed circuit including driver training opportunities, skid pans, cycling and motocross.

BRC's chief engineer discussed the ongoing operation and maintenance of the Mount Panorama circuit. FIA inspections are undertaken once every three years, with CAMS inspections annually. The inspections generally result in BRC being required to undertake a number of improvements to allow the continued operation of the circuit as a motor racing venue. Currently the circuit requires debris catching fences along Pit Straight and the raising of the sand traps. A \$15 m application for a grant to undertake these works has been made to State and Federal Government by BRC.

Prior to the conclusion of the meeting a count of those attendees in support of further investigations into a second circuit was made. The room unanimously supported further investigations.

A summary of the key points raised at the meeting include:

- Attendee's supported the ideals of the MPSCAG.
- The second circuit proposal would ensure that Mount Panorama would maintain its place as the spiritual and physical home of all forms of motorsport within Australia.
- The proposal to build a second circuit would help to establish Bathurst as the major rider/driver and plant operator education centre for Central and Western New South Wales.
- MPSCAG firmly believe Local, State and Federal investment in the Second Circuit would result in comprehensive economic benefits to Bathurst and the Central West.

3.4.4 Community Submissions

Table 2 provides a summary of the issues raised by stakeholders and the community in submissions to the Feasibility Study.

Table 2 Community submissions summary

Submitter	Summary of comments
Panorama Motor Cycle Club (PMCC)	<ul style="list-style-type: none"> • 400 club members participating in Motocross, Grass Track, Road Racing and Road Rally Riding. The PMCC motocross track is located in McPhilliamy Park. • Second circuit provides a great opportunity for international motorbike racing to return to Bathurst; Club racing; Increased tourism; and Youth driver training. • PMCC want to be involved in the second circuit proposal.
Bathurst Second Circuit Action Group (Action Group)	<ul style="list-style-type: none"> • Action Group was established by Bathurst business owners in response to the second circuit proposal and provides full support for the second circuit. • The Action Group supports expanding motor sport events at Mount Panorama, particularly the call to "Bring back the bikes" to Bathurst, with the potential for a Moto GP event to attract \$50 m to the Central West Region per annum. • National level circuit has the potential to generate \$20-25 m per annum.

Submitter	Summary of comments
	<ul style="list-style-type: none"> Existing facilities should be better utilised. Support for Driver training; Club racing; Cycling; and Go Karting. Support for a separate management structure for the circuit on behalf of BRC, NSW and the Commonwealth. The second circuit would potentially secure 200 jobs per annum. A carbon sink should be developed on adjacent land to create a carbon neutral precinct.
Motor - cycling NSW Ltd (MNSW)	<ul style="list-style-type: none"> Supports the development of an alternative motorsport venue in NSW. Submits that the closure of Oran Park has left a shortfall in motor racing facilities in NSW including driver training with Eastern Creek and Wakefield Park remaining. Want to be included in future discussion of the second circuit.
Bathurst Business Chamber (BBC)	<ul style="list-style-type: none"> Supports in principle the establishment of a second circuit, particularly as part of the Mount Panorama complex. Supports expanding motor sport and events in Bathurst. Supports the further utilization of the Mount Panorama facilities. Estimates a Moto GP event would attract \$50 m to the Central West Region per annum, with a national level circuit potentially generating \$15 -20 m per annum. Submits that the closure of Oran Park has left a shortfall in motor racing facilities in NSW with Eastern Creek and Wakefield Park remaining. Potential to further develop existing motor racing industries in Bathurst at Mount Panorama. Mounds would need to be located between the second circuit and South Bathurst to address noise impacts.
Post Classic Racing Association of NSW (PCRA)	<ul style="list-style-type: none"> 380 members and supports the second circuit proposal. Submits that the closure of Oran Park has left a shortfall in motor racing facilities in NSW with Eastern Creek and Wakefield Park remaining. Have had to reduce the number of rounds in their club championship from 6 to 4 due to the lack of available track time. Would be willing to hold club events at Mount Panorama.
Bathurst Light Car Club (BLCC)	<ul style="list-style-type: none"> 260 members supports expanding motor sport events at Mount Panorama, particularly the call to "Bring back the bikes" to Bathurst. Would be particularly interested in using the national circuit for club events. Submits that the closure of Oran Park has left a shortfall in motor racing facilities in NSW with Eastern Creek and Wakefield Park remaining. The second circuit would allow BLCC to reduce the number of events held on the main circuit. The existing facilities are extensive and have out priced local events. A second circuit would benefit the local and NSW economies. There is the potential to further develop existing motor racing industries in Bathurst at Mount Panorama as well as attract specialised companies from Sydney.
Annandale Leichhardt Motor Cycle Club (ALMCC)	<ul style="list-style-type: none"> Supports the second circuit proposal. Submits that the closure of Oran Park has left a shortfall in motor racing facilities in NSW. Submits that Mount Panorama's motor racing history should be retained.
Proforma letters from members of MNSW (188)	<p>Letter content:</p> <p>I, (name) am a member of Motorcycling NSW Limited and take this opportunity to offer my support for the proposed second circuit at Mount Panorama, Bathurst.</p>

Submitter	Summary of comments
	<i>As a motorbike racing enthusiast and competition licence holder, I strongly advocate for this piece of infrastructure to be developed for the benefit of motorbike sport in Australia.</i>
Individual submission	<ul style="list-style-type: none"> <i>NSW previously had a number of motor racing circuits, with the number now reduced and is in desperate need for more motor sport facilities for people to learn vehicle control skills and for advanced rider and driver training to be carried out safely.</i> <i>The proposed second circuit would have a number of positive benefits for Bathurst.</i>
Individual submission	<ul style="list-style-type: none"> <i>As a qualified driving instructor, the availability of a closed short circuit would be very useful as a training facility.</i> <i>The PCRA has 20 Bathurst based riders and side car passengers who participate in local meetings, alongside friends and family, raising meeting attendance up to 60 people. The host track and local accommodation facilities benefit from these meetings and these benefits can be replicated at Bathurst.</i> <i>There are limited opportunities to race bikes in NSW, resulting in the need to travel to Victoria to race.</i> <i>Development of Mount Panorama would lead to regional economic benefits, as well as continuing the Mount Panorama legacy.</i> <i>A strong managerial structure is required to operate any new facility.</i>
Individual submission	<ul style="list-style-type: none"> <i>Request for an open community consultation meeting.</i>
Individual submission	<ul style="list-style-type: none"> <i>NSW is in desperate need for more motor sport facilities and this would seem an ideal opportunity to further enhance the reputation of Bathurst as a leading player in Australian motor sport history.</i>
Individual submission	<ul style="list-style-type: none"> <i>There are limited opportunities to race bikes in NSW, resulting in the need to travel to Victoria to race.</i> <i>A second circuit at Bathurst would be used by our club the PCRA.</i>
Individual submission	<ul style="list-style-type: none"> <i>Support a second circuit at Bathurst to provide additional racing in NSW and increase the utilisation of existing facilities.</i>
Individual submission	<p><i>Six issues relating to amenity were raised including:</i></p> <ul style="list-style-type: none"> <i>Circuit closures</i> <p><i>Historically full circuit closure occurred for eight days per year, with this increasing to five full circuit closures permitted per year of an indeterminate number of days.</i></p> <p><i>In addition to actual circuit closure events can result in a loss of amenity for residents due to the traffic congestion created particularly along William Street during the Bathurst 1000 race. An international motorbike event is likely to attract a similar crowd and therefore similar levels of congestion. No matter how alternative access is devised, it would lead to further delays for people attempting to access their property.</i></p> <ul style="list-style-type: none"> <i>Access to properties during races</i> <p><i>Access to dwellings at Mount Panorama is limited for at least five periods per year, potentially impacting on social occasions. The situation was worsened in 2006 with Council requesting a 250% increase in the loss of access and amenity due to the variation of the Mount Panorama Act. Any further impost would be unreasonable.</i></p> <p><i>Primary property access should be guaranteed along Mountain and Conrod Straights with the Mount Panorama Act and all pertinent Council documents.</i></p> <p><i>The current one lane tunnel under Conrod Straight can be very slow and should be widened to two lanes.</i></p> <p><i>The second circuit does not appear to provide for a second circuit crossing via</i></p>

Submitter	Summary of comments
	<p>bridge or tunnel.</p> <ul style="list-style-type: none"> Protection from pollution <p>During non circuit closure periods noise levels must be continuously monitored and when noise at a residence exceeds 50dB then the circuit is closed for the remainder of the day. Remote noise monitoring equipment should be placed by residents who request it, with the data visible to residents and at a monitoring centre who can inform the circuit authorities, who must act or be subject to action by the Environmental Protection Agency.</p> <p>The number of days that noise pollution legislation is suspended for should be specified as opposed to being specified by event. Noise pollution suspension should be better specified as 20 days.</p> <p>A suggested curfew for noise would be similar to that at other Australian motor racing venues such as Phillip Island, with racing engines only permitted to run between 9 am and 4.30 pm. There could be an exception of one day per full circuit closure.</p> <ul style="list-style-type: none"> BRC conflict of interest <p>BRC has a conflict of interest as it receives income at the expense of resident access and amenity.</p> <p>If BRC is to present itself as an impartial advocate for residents then it should forgo all income and management roles at Mount Panorama. BRC should facilitate and require the presence of residents in decision making to allow residents to safeguard their own interests.</p> <ul style="list-style-type: none"> Resident representation during contract and traffic management negotiation <p>Due to the BRC conflict of interest resident representation should occur in contract and traffic management negotiations and decisions. The lack of contract oversight by residents has resulted in absurd road closures for over ten hours a day in December for a whole week, with the racing cars on the road for less than a third of that time.</p> <p>The road closure timetable for the 2010 V8 race arrived late, allowing little time for residents to organise and plan. BRC's respect for residents amenity should be the primary concern. For example the first paragraph of all contracts should state that a fundamental requirement is to ensure that resident access is vital and that future events would be jeopardised and possibly cancelled if resident arrangements are unsatisfactory.</p> <ul style="list-style-type: none"> Alternative sites <p>If HMRA and BRC cannot foresee compatible usage that complies with the Mount Panorama Act then a Greenfield site should be considered for the project.</p>
Individual submission	<ul style="list-style-type: none"> The second circuit should not detract from existing races. Resident access is important and a second tunnel should be provided if necessary. The existing circuit is iconic and should not be changed. Residents should be notified in writing of all meetings regarding the new circuit proposal. There should not be any additional road closures as they impact on business.
St George Motorcycle Club (SGCC)	<ul style="list-style-type: none"> SGCC is the only club in NSW running regular modern motorbike events. The Honda Rjays Road Race Series runs over four rounds annually and is extremely well supported by sponsors, officials and competitors. SGCC would like to run events at Mount Panorama as the spiritual home of motorbike racing.

Submitter	Summary of comments
	<ul style="list-style-type: none"> SGCC has 750 members and supports the second circuit proposal. SGCC submits that the closure of Oran Park has left a shortfall in motor racing facilities in NSW with Eastern Creek and Wakefield Park remaining.
Devro	<ul style="list-style-type: none"> Support for a second circuit at Bathurst and an increase in the utilisation of existing facilities.
Gold Country Sport-21k Sports Tourism strategy	<p>Gold Country Sport-21k is a 12 year study of Bathurst Sport and Recreation Opportunities, Youth Community Building, Technology and Sports Tourism with students from Charles Sturt University. A number of strategies are recommended to establish Bathurst as a development site for sport:</p> <ul style="list-style-type: none"> Promotional Event Signage on the Highway using SMS messaging and development of a planning website to accommodate the circuit development. Encourage sports tourism as a branding point for marketing Bathurst as a sports tourism destination is something that needs to be promoted in your study. Cross-marketing with events and sports competition throughout the year should be undertaken in conjunction with schools and university as well as Netball, Aquatic Centre, Adventure Playground, AFL, Cycle Park and Football facilities Creation of a Youth Go Kart project to promote social and recreation opportunities. Integration of motor racing precinct with school automotive workshops. Jamberoo style amusement park development. Adventure Playground and Aquatic Centre development. Suggest that the Motor racing Museum be expanded to be more inclusive of all sports. Suggest the permanent setup of scalelectric for draw card attraction for young children under the age of 12 Suggest the placement of console setup for clubs and commercial opportunities that engage and satisfy the adrenaline needs of people. Playgrounds , electric battery operated ride on cars V8 drive days. Consider a chair-lift on the Sky-Line precinct to take advantage of the incredible views over the city. Placement of a Toboggan Track.
Anonymous Submission Bathurstians Against Second Track and Residential Desecration (BASTARD)	<ul style="list-style-type: none"> How can a 7 day per week circuit within one kilometer of one preschool, three primary schools and one high school, TAFE and Charles Sturt University as well as a number of residences be considered? How can the "best bit of road in Australia" (Mark Skaife October 2010) need \$20 m to make it better by building a second circuit on the side? Why is the "best bit of road in Australia" only used three times per year when it is permitted to be used five times?
Individual submission	<ul style="list-style-type: none"> Support for a second circuit at Bathurst. The existing circuit and facilities are suited to the V8 race only, with the pit complex inadequate to accommodate 200 – 300 competitor vehicles, with no line of site or radio communications due to the uniquely high pit wall. Competitors like to race at Bathurst due to the Mountain, consequently, any new circuit should incorporate the Mountain. The existing concrete walls make the circuit dangerous and difficult to operate. Walls should be relocated to allow runoff areas, so that motorbikes could use the circuit once again. The circuit could then be shortened by

Submitter	Summary of comments
	<p>connecting the first part of Conrod Straight with the top of Mountain Straight, with temporary pit facilities used.</p>
Mount Panorama Estate	<ul style="list-style-type: none"> • Bathurst is the second most visited inland region in NSW, with the majority of visitors driving the circuit. Additional circuit closures that make the Mountain inaccessible would have a detrimental impact on tourism. • A second circuit would benefit the region as a whole as long as local and tourist vehicles can still travel the majority of the circuit and make use of the Mountain facilities. • Additionally, the existing pit facilities should be better utilized. • Alternatives include the construction of a public road through Harris Park to connect William Street to Mountain Straight, diverting traffic away from Pit Straight, allowing it to be used for racing activities. Additionally Mountain Straight could be widened to allow for the second circuit to be built on the inside of Mountain Straight. Additionally, a road would need to be constructed to connect Conrod Straight with College Road past the southern end of the second circuit to allow traffic good access to and from Mount Panorama. • A dangerous situation currently exists on Pit Straight, with people taking photos of their stationary cars on the grid, while other cars go past in either direction. The Harris Park diversion would eliminate this as Pit Straight would be a secondary or internal road with only tourist and race traffic using it. Additionally, the need for a second tunnel would be removed, while vehicles can still access the top of the Mountain. • Residents and business need to be able to access the Mountain, therefore good road connectivity is essential.
Individual submission	<ul style="list-style-type: none"> • Operator of Bathurst Laser Skirmish, looking to expand the business due to additional demand. There is the potential to integrate the expanded skirmish facilities into the Mount Panorama precinct. • Additional complementary activities that he is in the process of constructing include an indoor and outdoor snow park, and ski/board terrain park. • A third potentially complementary project further down the circuit is a Free Fall Sky Dive centre, using large fans to lift people. The fans could be located on the Mountain to provide people with the illusion of flying.
Individual submission	<ul style="list-style-type: none"> • Support a second circuit at Mount Panorama. • The business (Racers Edge) employs 6 full time staff and turns over approx \$500, 000 per annum, with the primary work being fabrication of race motorbike parts, which are freighted all over the world. • They also own, prepare and maintain race motorbikes which compete in the Australian Superbike Championship, being 1 of only 2 NSW based Superbike race motorbike teams. • If the proposed 2nd circuit goes ahead they intend to re-locate the business to the Mount Panorama area – staff have also indicated that they also would re-locate with their families.
Proforma letters from residents (received as the report was being finalised)	<ul style="list-style-type: none"> • Maximum of 5 full circuit closures per year. • Maximum of 4 race days per closure. • A second crossing, either a bridge or tunnel should be constructed to allow residents to access Bathurst should the second circuit go ahead. • Widen the existing tunnel to two lanes. • Noise levels from the national circuit should be continuously monitored, with the circuit closed when the noise levels are exceeded. Noise levels should be no greater than 50dB. • A curfew should be applicable to race engines.

Submitter	Summary of comments
	<ul style="list-style-type: none"> <i>BRC has a conflict of interest as they receive income at the expense of resident access and amenity.</i> <i>Residents should be included in contract negotiations and traffic management decisions to protect resident interests.</i> <i>Partial circuit closures that obstruct free access should be eliminated due to the already disproportionate burden on Mountain residents.</i> <i>The distance of Mount Panorama from a large population centre would limit visitation, impacting on financial viability.</i>

3.5 Findings

Community and stakeholder consultation has been undertaken to gather opinions and ideas in relation to the feasibility of constructing a second circuit and other development options. A number of key issues have been raised both in support of and opposing a second circuit. However, it is noted that the majority of the ideas generated and submissions received have been in support of a second circuit. Based on the responses received from stakeholders and the community a number of key themes have emerged which are:

- There is a high demand for motor racing track time in NSW following the closure of the Oran Park circuit.
- The existing facilities at Mount Panorama particularly the pit complex should be better utilised.
- There is strong support for a wider range of uses to be undertaken at Mount Panorama including driver training, club racing and cycling events all of which could be held on a second circuit.
- The second circuit has the potential to advance the economy of Central West NSW and Bathurst in particular by \$15-20 m as a result of events on the national circuit and \$50 m as a result of events on the international circuit per annum.
- Concerns were raised by local residents in relation to potential impacts on the amenity of adjacent residents as a result of reduced access to dwellings, increased noise generation and reduced air quality.

4.0 Site Analysis

This section describes the key physical, biological, cultural and legislative factors that influence the feasibility of the proposed Mount Panorama Second Circuit.

4.1 Noise

A Noise Assessment has been undertaken to support the assessment of feasibility of the proposed second circuit. The aim of the investigation was to provide an assessment of potential noise impacts from the proposed second circuit layout based on the revised layout following the track review. Refer to Appendix E for the comprehensive noise report.

4.1.1 Noise Measurements

The Noise Assessment identified potentially sensitive receivers, which are identified in Table 3 below.

Table 3 Sensitive receivers

Receiver Number	Address
R1	66 Mountain Straight, Bathurst
R2	98 Mountain Straight, Bathurst
R3	117 Mountain Straight, Bathurst
R4	107 Mountain Straight, Bathurst
R5	135 Mountain Straight, Bathurst
R6	527 Conrod Straight, Bathurst
R7	505 Conrod Straight, Bathurst
R8	146 College Road, Bathurst
R9	100 College Road, Bathurst

In order to establish the existing noise environment and to help establish suitable noise criteria for the Site, the ambient noise levels were monitored at locations that are considered representative of the area. The background noise levels or rating background level (RBL) is representative of the average minimum background sound level (in the absence of the source under consideration), or simply the background level.

Graphical representation of the noise logging results are shown in the appendices of the Noise Report located at Appendix E of this report. A summary of the calculated RBLs and existing L_{Aeq} ambient noise levels are presented in Table 4 below.

Table 4 Ambient noise measurement results

Noise Logging Location	Rating Background Level, L_{A90} (dB(A))	Ambient, L_{Aeq} (dB(A))
Mount Panorama	Day ¹ 40	Day ¹ 47

Note 1: The day period has been defined as 9:00 am to 5:00 pm, consistent with the circuit's proposed operating hours.

Noise logging was undertaken at Eastern Creek Raceway over a period of one week to ascertain $L_{Aeq(1hour)}$ noise levels from typical events in lieu of a variety of race types being undertaken on the Mount Panorama circuit during the study period. The events measured are summarised in Table 5 below.

Table 5 Events list

Day	Event	Noise Levels Represent
Wed 18/08/10	V8 Supercar Experience	Replica V8 Supercars
Thu 19/08/10	Formula Ford and Porsche Practice	Private Practice Days
Sat 21/08/10	Morgan Owners Club Supersprints	Open race day (street legal and race cars)
Sun 22/08/10	Council of Motor Clubs	Car Show

The noise levels measured at Eastern Creek Raceway and Roads and Traffic Authority of NSW (RTA) typical street legal car and motorbike noise level data have been used to develop representative noise levels for different events at Mount Panorama. It is noted that CAMS regulations limit all race vehicles (cars and motorbikes) to a maximum sound pressure level L_{Amax} of 95 dB(A) at 30 m. This maximum noise level is considered to be representative of V8 Supercar, superbike and similar events.

Table 6 below details the representative noise levels to be assessed at Mount Panorama for the different types of motor sport events.

Table 6 Raceway noise levels

Event	Sound Pressure Level at 30 m, $L_{Aeq(1hour)}$
Race car or race bike	92 ¹
Supersprint events	76
V8 Experience	79
Private practice	72
Car show	71
Driver training	56

Note1: The L_{Aeq} is considered to be 3 dB(A) below the L_{Amax}

4.1.2 Motor Sport Noise Limits

Noise limits for motor sport are generally regulated by the appropriate Council. However, BRC do not have any existing noise guidelines for motor sports. A review of both national and international practices and criteria has been undertaken to determine appropriate noise limits for the proposed circuit. The review has lead to the development of a suite of noise levels and the number of days that each noise level can be reached per year as illustrated in Table 7 below.

Table 7 Mount Panorama recommended noise limits

$L_{Aeq(1hour)}$ noise limits	Number of days per year
≤ 50 dB(A)	No restriction
50 dB(A)	100
55 dB(A)	50
60 dB(A)	25
65 dB(A)	13
> 70 dB(A) (No limit)	6

As illustrated in Table 7 a total of 100 events are permissible using the recommended noise limit of 55 dB(A), with unlimited events up to 50 dB(A). If the race exceeds the $L_{Aeq(1hour)}$ noise limit of 55 dB(A), the event is penalised by being worth more 'events'.

Should a second circuit be constructed then BRC would be required to monitor event noise levels to gain a definite event noise profile from which to regulate the impact on sensitive receivers. This monitoring and regulation may lead to the number of events being modified depending on the actual noise levels recorded.

4.1.3 Noise Modelling and Predictions

Noise modelling has been undertaken to determine the potential impact at nearby receivers using SoundPLAN V7. The model includes the two proposed circuit layouts with the events split between the circuits.

The $L_{Aeq(1hour)}$ noise level from a V8 Supercar or Superbike event is provided graphically in Appendix D of the Noise Assessment located at Appendix E. Each 5 dB contour line represents a difference in penalty of 50% reduction of the number of events.

4.1.3.1 International Circuit noise assessment

Table 8 presents the permissible number of events based on the 'event quota' factors for the different residential receivers adjacent to the proposed circuit.

Table 8 Number of events

Receiver		Race Cars Race Bikes	V8 Experience	Supersprint	Practice/ Car Shows	Driver Training
R1	66 Mountain Straight	6	6	6	6	25
R2	98 Mountain Straight	6	6	6	6	44
R3	117 Mountain Straight	6	6	6	8	76
R4	107 Mountain Straight	6	6	6	6	25
R5	135 Mountain Straight	6	6	6	8	76
R6	527 Conrod Straight	6	6	6	6	33
R7	505 Conrod Straight	6	6	6	6	25
R8	146 College Road	6	6	6	9	87
R9	100 College Road	6	6	7	13	No restriction

Receiver R1 (66 Mountain Straight) and R7 (505 Conrod Straight) would define the maximum number of race days, ranging between six Race car or bike events to 25 Driver Training Days. An additional four practice days could be gained if receivers R1, R2, R4, R6 and R7 were acquired, however it is unlikely this would prove cost-effective considering the small benefit.

4.1.3.2 National Circuit noise assessment

Table 9 presents the permissible number of events based on the 'event quota' factors for the different residential receivers adjacent to the proposed circuit.

Table 9 Number of events

Receiver		Race Cars Race Bikes	V8 Experience	Supersprint	Practice/ Car Shows	Driver Training
R1	66 Mountain Straight	6	7	11	19	No restriction
R2	98 Mountain Straight	6	6	8	14	No restriction
R3	117 Mountain Straight	6	6	8	14	No restriction
R4	107 Mountain Straight	6	6	6	11	No restriction
R5	135 Mountain Straight	6	6	6	8	76
R6	527 Conrod Straight	6	6	6	6	29
R7	505 Conrod Straight	6	6	6	6	29
R8	146 College Road	6	6	6	9	87
R9	100 College Road	6	6	8	14	No restriction

Receiver R6 (527 Conrod Straight) and R7 (505 Conrod Straight) would define the maximum number of race days, ranging between six Race car or bike events to 29 driver training days. An additional two practice day or 47

driver training days could be gained if receivers R6 and R7 were acquired. Unrestricted driver training and 11 practice days could be achieved if receivers R5, R6, R7 and R8 were acquired.

4.1.4 Noise mitigation

Respite periods could also be used to reduce the overall $L_{Aeq(1hour)}$ noise levels. Racing for 40 minutes every hour would provide approximately 2 dB(A) reduction whilst racing for 20 minutes every hour would provide approximately 5 dB(A) reduction. However, applying time restrictions on the proposed circuit operations may prove to be too restrictive.

Mitigation in the form of noise barriers may provide some benefit at nearby receivers such as R4 and R7. However, the benefit is likely to be marginal and would not result in a substantial increase in the number of track days. It would be difficult to achieve more than a 5 dB(A) reduction at the most affected receivers. Receivers located further from the track may only benefit by approximately 2 dB(A) reduction.

A more realistic alternative to provide adequate noise attenuation at nearby sensitive receivers would be to provide walls surrounding nearby properties. The walls would typically surround the house and nearby garden on the sides of the individual property facing the circuit. This would typically provide 10 dB(A) to 15 dB(A) attenuation. Based on the predicted noise generation levels (with a target of 50 dB(A) resulting in 'No Restriction'), appropriate noise levels could be achieved inside the residential property and surrounding gardens for unrestricted practice days at receivers R1, R2, R3 and R9 with minor exceedances of the appropriate criteria at receivers R4, R5 and R8 (an increase in noise of 1 dB(A) to 2 dB(A) is generally considered indiscernible). In this instance, receivers R6 and R7 would need to be acquired to result in unrestricted practice days.

The three tables below outline the quota of events that could be undertaken under three different noise mitigation scenarios.

The calculations provided below in Table 10 are for the number of permissible events on the national circuit assuming receivers R6 and R7 are acquired, with the controlling receiver (most noise affected receiver) being R5.

Table 10 Remaining Quota – acquisition of receivers R6 and R7

Race Car/Bike	Remaining Events ¹			
	V8 Experience	Supersprint	Practice/ Car Shows	Driver Training
0	6	6	8	76
1	5	5	7	64
2	4	4	6	52
3	3	3	4	39
4	2	2	3	27
5	1	1	2	15
6	0	0	0	3

The calculations provided below in Table 11 are for the number of permissible events on the national circuit assuming receivers R5, R6, R7 and R8 are acquired.

Table 11 Remaining Quota

Race Car/Bike	Remaining Events ¹			
	V8 Experience	Supersprint	Practice/ Car Shows	Driver Training
0	6	6	11	No Restriction
1	5	5	9	No Restriction
2	4	4	7	No Restriction
3	3	3	6	No Restriction
4	2	2	4	No Restriction
5	1	1	2	No Restriction
6	0	0	0	No Restriction

The calculations provided below in Table 12 are for the number of permissible events on the national circuit assuming receivers R5 and R6 are acquired and localised noise walls are built surrounding the remaining residential properties.

Table 12 Remaining Quota

Race Car/Bike	Remaining Events ¹			
	V8 Experience	Supersprint	Practice/ Car Shows	Driver Training
0	16	25	44	No Restriction
1	14	21	37	No Restriction
2	11	17	30	No Restriction
3	9	13	23	No Restriction
4	6	9	16	No Restriction
5	3	5	9	No Restriction
6	1	1	2	No Restriction

4.1.5 Findings

In lieu of BRC having appropriate noise guidelines a review of national and international guidelines has resulted in the development of recommended noise limits based on the background noise levels at Mount Panorama and the proposed number and type of events in a calendar year.

Based on an initial review of the proposed second circuit layout, it was considered that the proximity of the circuit within 200 m of South Bathurst, which contains a large number of dwellings has the potential to reduce the acoustic amenity of nearby residences. Noise generation from this section of the circuit would be further exacerbated by the location of a corner in the circuit, which is where the highest levels of noise are typically generated. Consequently, a more appropriate layout would relocate the second circuit away from South Bathurst into less heavily populated areas.

The revised second circuit layout reflected the acoustic engineers' comments and relocated the circuit away from the South Bathurst residential area. Noise modelling has subsequently been undertaken on the national and international revised second circuit layout. The results of the noise modelling indicated that a maximum of six peak noise generating race events (95 dB(A)) for the international circuit or national circuit would be appropriate per year, which is one more event than currently permitted by the Mount Panorama Act. However, the second circuit could be used more regularly by balancing the number of peak noise generating events with lower level noise generating events to produce a suite of events that would deliver an acceptable level of noise generation based on the noise limits developed.

The maximum number of driver training days (minimum noise generating event) permitted is 76 per year on the national circuit, although this would result in no days being available for race events. Consequently, a reduction in the 76 driver training days could be undertaken to allow a certain number of race events to be held, while still remaining within the quota. For example, the following suite of events could be undertaken on the national circuit within the recommended noise quota:

- Two Race car or bike events;
- Two V8 experience events; and
- Ten Driver training days.

To maximise the potential for a second circuit at Mount Panorama there is the potential to acquire the closest sensitive receivers and/or implement dwelling specific mitigation measures to increase circuit usage. Mitigation measures would include the construction of noise walls around the perimeter of nearby properties and a 1m high noise berm along the edge of the second circuits' eastern straight.

To maximise use of the national circuit, property acquisition is recommended. To allow an unlimited number of driver training days (minimum noise generating event) per year, the following sensitive receivers would need to be acquired:

- R5 135 Mountain Straight;
- R6 527 Conrod Straight;
- R7 505 Conrod Straight; and
- R9 146 College Road.

The acquisition in conjunction with mitigation measures such as property specific noise walls and berms would also allow a small increase in the number of other events that could take place within the noise limits.

It is important to note that the noise limits recommended are 'best practice' based on similar guidelines both nationally and internationally. All guidelines recognise there is a balance between the community expectations and noise limits for motor sport events. If the community recognise that there is a need for an additional circuit at the proposed location and would accept slightly higher noise levels, an increased noise limit could be justified.

4.2 Contamination

Based on discussion with BRC officers, a review of historic aerial photos and a site inspection there does not appear to be a constraint to the construction of the proposed circuit resulting from ground contamination. The site has historically been used for agriculture, with a drive-in cinema adjacent to the eastern side of Conrod straight.

Any residual debris associated with agriculture or motor racing events and storage activities that may have occurred is expected to be minimal and located on the surface only. Consequently, it is considered that any such impacts can be easily identified and remediated if required during development and do not impact on the overall feasibility of the second circuit.

4.3 Flora and Fauna

Vegetation in the Bathurst area has been extensively cleared, with remnant native vegetation highly fragmented consisting of semi-intact woodlands and scattered trees, with no areas of remnant vegetation in a natural or near natural state (Terra Consulting, 2003). Remnant vegetation surrounding the Mount Panorama area is generally comprised of Blakely's red gum – yellow box open woodland (Box gum woodland) and is listed under the *Threatened Species Conservation Act 1995* (TSC Act) as an Endangered Ecological Community (EEC) called 'Box-gum woodland' (*Mount Panorama Redevelopment Master Plan*, 2003 KBR). Consequently, the vegetation is of State conservation significance even in a degraded state.

The Sir Joseph Banks Nature Park is located at the southern end of the circuit adjacent to the eastern boundary of McPhillamy Park providing potential habitat for threatened fauna species and is of high conservation significance (Terra Consulting, 2003). The vegetation significance in the Sir Joseph Banks Nature Park is greater than those to the east including McPhillamy, Sulman and Reid Parks and has been protected from the public through the restricting of access (*Mount Panorama Redevelopment Master Plan*, 2003 KBR).

The listing of the Box-gum woodland as an EEC has the potential to impact on proposed buildings or works at Mount Panorama. Consent for development in areas of Box-gum woodland would be required subject to a seven part test being carried out to identify the significance of any vegetation (*Mount Panorama Redevelopment Master Plan*, 2003 KBR). Due to the degraded nature of the Box-gum woodland at Mount Panorama the Master Plan states that it is not considered that the woodland would be identified as being of high conservation value.

A review of background flora and fauna data does not identify protected species located in proximity to the proposed second circuit. Flora and fauna should not therefore be considered as a constraint on development. However, should development be undertaken further to the south, higher up the Mountain there are patches of remnant native vegetation, which may be impacted, particularly in proximity to Sir Joseph Banks Nature Park. Investigations would be required to be undertaken prior to works commencing in these areas.

The rural landscape character of Mount Panorama is important to protect, as it contains areas of vegetation that contribute to the history of racing through the tree lined slopes of the Mountain and remains as a distinct feature of the precinct. The proposed second circuit development is on the disturbed land of the low lying slopes of Mount Panorama, which preserves the natural landscape quality of the Mountain.

4.4 Hydrology

The topography of the study area generates a dominant pattern of overland flow from south west to north east. The site of the proposed second circuit is traversed by a creek line running from the south west to north east, located to the east of Conrod Straight. An open drainage channel is located parallel to the west side of Conrod Straight running northwards.

The location of the proposed second circuit runs over both the open drainage channel and parts of the creek line. There is the potential to pipe the drainage channel for a distance of approximately 155 m and the creek line for approximately 400 m. The piping would allow existing flow rates to be maintained and may require a number of openings or diversion drains to allow surface run off to enter the pipes. Modelling would be required to ascertain likely flow rates and the piping designed for a particular return period such as 100 years. However, there is the risk that the piping may not be able to accommodate the flow rates in a flood event. Additionally, there is the potential for pipes to become blocked by debris, which would need to be addressed through preparation of a management plan.

The preferred method of drainage for the creek once the second circuit has been developed would be to divert the creek channel around the circuit to minimise the requirement for piping. Creek diversion would ensure that the water course is not enclosed and less likely to be impacted by debris or flooding.

The slope of the study area would ensure that the site is well drained. To ensure that runoff does not result in a reduction in water quality enclosed dish drains would be used with piping channelling runoff to the existing drainage network dependent upon modelling to ascertain the capacity of the existing network to accommodate the additional load. Based on the outcome of the drainage modelling an alternative run off management option would be to locate swales around the perimeter of the circuit to capture and treat run off in-situ.

4.5 Geotechnical

This section describes the findings of the geotechnical assessment of the proposed second circuit based on the revised second circuit layout. It is noted that while no information regarding potential structures that may be constructed as part of the second circuit are available, it is anticipated that light structures such as single storey temporary amenities and facilities buildings as well as spectator viewing platforms would be required in the future. The following section provides a summary of the Geotechnical Investigation with the full investigative report located at Appendix F.

4.5.1 Site conditions

The site topography is dominated by Mount Panorama, which rises steeply in the southern corner of the Site to a total height of 870 m above sea level. There is a height difference of over 150 m between the highest and lowest points of the existing circuit, with grades of up to 1 in 6. The northern and eastern sections of the Site are generally gently undulating, with the overall fall of the Site to the northeast, towards the Macquarie River.

Through the central paddock area, between Mountain Straight and Conrod Straight, the ground is undulating. The overall fall in this section of the proposed circuit is to the east with a very steep grade change near the proposed junction with Conrod Straight (near corner 5). It is noted that the corner numbers referenced by the Geotechnical Investigation are those located at Appendix A of the Geotechnical Investigation provided at Appendix F of this report.

The ground conditions were moderately wet on some sections of the proposed circuit near between corners 2 and 3.

An existing drainage channel runs north through the north eastern section of the central paddock, along the proposed national circuit connection alignment.

The proposed new circuit alignment east of Conrod Straight is typically covered in grass, gravel/dirt tracks and small trees and bushes. A small stream runs through the south eastern corner of the Site, passing under the existing Conrod Straight and just south of corner 10 on the proposed second circuit. The stream was noted to be relatively dry with pools of standing water at the time of the site walkover.

Gently sloping farmland on the eastern side of the site between corner 9 and corner 10 is covered with reed grasses indicating that poor soil drainage conditions may be present over this section of the Site.

An area in the southern section of the Site immediately north of corner 9 was previously operated as a drive-in theatre. The ground in this area has been stripped of vegetation, gravel surfaced and is relatively dry.

A gully covered in grass and minor vegetation was also observed towards the southern end of the Site near corner 7. The banks of the stream, drainage channel, pond and exposed cuttings around the Site were all typically bare and showed signs of erosion typical of dispersive soils.

4.5.2 Discussion of investigation results

4.5.2.1 Earthworks

Existing fill within the Site should be treated as uncontrolled fill and when found it should be excavated and re-compacted, if suitable or replaced using imported fill. Excavated fill and in-situ soils are likely to be suitable for reuse as fill materials, provided they do not contain unacceptable levels of unsuitable materials such as organics, waste or oversized particles and the materials do not have excessively high moisture contents.

Sections of the Site would require cutting to provide a suitable grade for the proposed second circuit, with permanent cut batters at 3H:1V likely to be suitable.

Embankment fills may be required in areas to bring the subgrade up to design levels or to provide suitable drainage runoff. Suitable embankment fill material may be sourced from the existing fill stockpiles on site and from the proposed cut materials subject to further laboratory testing and assessment.

The gully feature on the southern section of the course immediately south of corner 7 may require significant filling in order to provide sufficient vehicle run off from the circuit. In order to achieve the batter slopes of 3H:1V, the footprint of this fill may extend over neighbouring property boundaries. Alternative options for this fill embankment comprise reinforced earth batters or retaining structures to reduce the extent of the fill footprint if insufficient room is available on BRC land.

Based on the results of the geotechnical site investigation and a visual assessment of the Site, the majority of the proposed cuttings would extend into weathered soils or existing fill stockpiles. Such materials should be capable of being excavated by a dozer or excavator/backhoe. However, less weathered and stronger rock may require considerably more effort using rippers and impact hammers. Further investigations should be undertaken in areas where the proposed cut depth exceeds 3 m.

Further testing of the entire proposed site won materials should be undertaken to determine if moisture conditioning (drying or lime treatment) of the fill and in-situ soils is required prior to placement and compaction.

4.5.2.2 Pavement Subgrade

The majority of the Site is likely to be founded on firm to stiff residual soils. Results from the laboratory tests indicate that these soils have CBR values between 2% to 4%. Previously reported values in the *Bathurst City Council Proposed Second Circuit Study Report* indicate values between 1.5% and 4%.

Subgrade CBR values greater than 4% are likely to be suitable for pavement subgrade construction such that the pavement movement (deflections) are within acceptable limits for the proposed road usage as a racetrack. Where the existing soils are wet or water logged, or where the subgrade CBR is less than 4%, subgrade treatment using lime conditioning or excavation and replacement is likely to be required.

4.5.2.3 Soil Chemical Analysis

Soil chemical analysis was carried out on soil samples from test pits TP1, TP4 and TP8. Results from the soil chemical analysis indicate that the soils have low values of chlorides and sulphates and the measured pH of the soils were neutral with pH values between 6.9 and 7.5. Based on these results, the Site is considered to have a low aggressivity rating.

Evidence of dispersive soils is present in the existing cuttings and in the banks of the stream that runs through the eastern section of the Site. Therefore, it is recommended that soils be classified as dispersive for design purposes.

4.5.3 Recommendations

The following conclusions and recommendations are made:

- Ground conditions over the Site of the proposed circuit generally comprised varying thickness of topsoil or fill overlying residual soils, transported soils (alluvium and colluviums) and completely weathered granite and basalt rock.
- Existing fill materials beneath the proposed circuit alignment should be treated as uncontrolled fill. Where encountered, these materials should be excavated and re-compacted, if suitable, or replaced using imported fill.
- The excavated fill and in-situ soils are considered to be suitable for reuse as fill materials in embankments. On-site verification by a suitably qualified geotechnical engineer during construction would however be required to confirm their suitability for re-use.
- Permanent cut batters at 3H:1V are considered to be suitable for sections of the circuit which require cutting provided consideration has been made to other contributing factors such as maintenance of vegetation (i.e. mowing) and spectator viewing.
- It is recommended that soils on site be classified as dispersive for design purposes.
- The majority of the site is likely to be founded on firm to stiff residual soils. These soils are likely to have CBR values between 2% - 4%.
- Where the existing soils are wet or water logged, or where the subgrade CBR is less than 4%, subgrade treatment using lime conditioning or excavation and replacement is likely to be required.
- While the strength characteristics of granitic soils encountered on site are likely to be suitable for reuse as pavement subgrade materials, consideration must also be given to the reactivity of these soils and further testing of the site won or in-situ subgrade soils should be undertaken during the detailed design phase to determine if any subgrade treatment is required.
- Basalt soils encountered on site are not considered suitable for reuse directly beneath pavement subgrade. A transition layer is recommended between the subgrade and basalt soil layer.
- The gully feature south of corner number 7 may require significant filling in order to provide sufficient vehicle run off from the circuit. Reinforced earth batters or retaining structures may be required to reduce the extent of the fill footprint.
- Foundation soils are considered to be suitable for light structures such as single storey amenities buildings, light framed temporary facilities buildings and spectator viewing platforms. Isolated pad footings, slab on grade or strip footings should be designed in accordance with AS 2870 - Residential Slabs and Footings.
- Further geotechnical investigation and laboratory testing of soils on the final circuit alignment is recommended in the detailed design phase. More test pits should be carried out at shallower depths to confirm these recommendations.

4.6 Indigenous and European Heritage

As part of preparing the Tourism Strategy a local Aboriginal elder was consulted, who identified that “*there are a number of aboriginal heritage sites located on the mountain and in the surrounding hills*” (*Mount Panorama Regional Tourism & Recreation Strategy 2003 KBR*). Further, investigations including a search of the Aboriginal Heritage Information Management System (AHIMS) database would be required to ascertain the locations of potentially significant sites. If sites are identified in proximity to proposed development measures would be required to ensure that the significance of these sites is considered in any proposal through appropriate mitigation measures.

A Heritage Study undertaken by Hughes Trueman Ludlow was undertaken in 1992, which recognised Mount Panorama as an area of local, regional and State landscape significance (*Mount Panorama Regional Tourism & Recreation Strategy 2003 [KBR]*). The Heritage Study identified the ridge of hills at Mount Panorama as being significant as the skyline contains views of an early European landmark, in addition to the area containing many aboriginal heritage sites.

A search of the *Bathurst Regional (Interim) Local Environmental Plan 2005* (LEP 2005) did not reveal any heritage sites in proximity to the Mount Panorama area.

4.7 Legislative controls

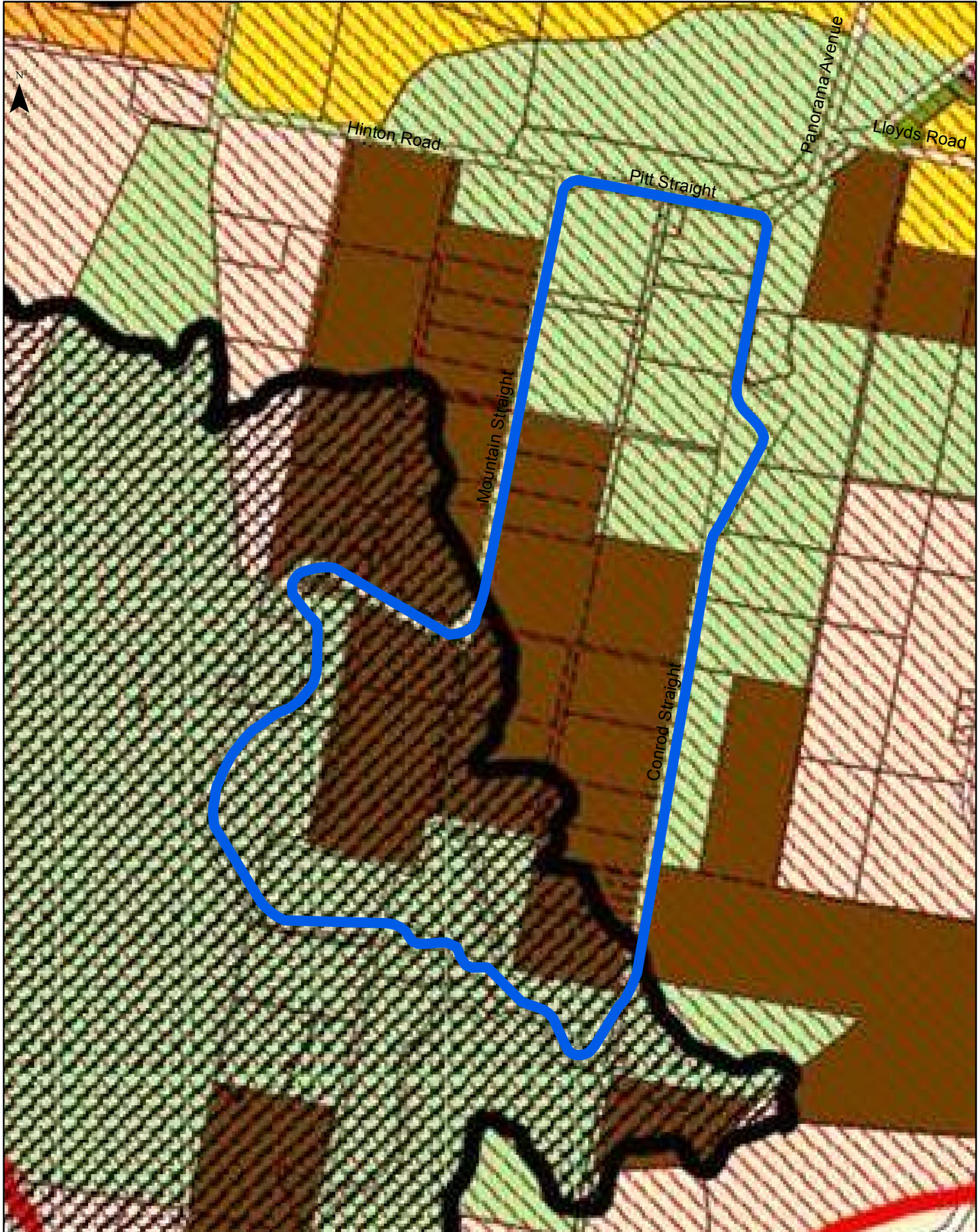
The Mount Panorama precinct is subject to a number of legislative controls and land use policies that impact on current land use, as well as providing strategic direction for that use.

4.7.1 Bathurst Regional (Interim) Local Environmental Plan 2005

Subject to the LEP 2005 the land in the Mount Panorama Precinct is within the following zones:

- 1 (d) (Rural Special Purposes Zone) (1(d) zone); and
- 6 (b) (Regional Recreation Zone) (6(b) zone).

The 1(d) zone covers private land, with the 6(b) zone applied to BRC owned land. Refer to Figure 8 for land use zoning.



Zoning	
1a	Rural Special Purposes
1c	Rural Residential
1f	Special Rural Small Holdings
2a	Residential
6a	Local Recreation

BATHURST REGIONAL (INTERIM) LOCAL ENVIRONMENTAL PLAN 2005.

6b	Regional Recreation
	50DBA Noise Contour
	Scenic Protection Area

Existing Track

MOUNT PANORAMA

Source: Google (2010), GeoEye (2010), Bathurst Council (2010)

0 150 300 600 m

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Fig. **8**

The objectives of the 1(d) zone are to complement the existing rural activities, while encouraging and promoting activities that are compatible with motor racing activities. Subject to the 1(d) zone agriculture and bushfire hazard reduction are permitted without consent, with land uses not stated as either permitted without consent or prohibited being permissible with consent. Relevant prohibited activities include motor race hosting, commercial premises and shop.

The objectives of the 6(b) zone are to complement the existing motor racing and associated activities, sports or recreation, while protecting and conserving scenic value by controlling the siting of buildings and materials used. Additionally, the zone aims to encourage and promote the development of Mount Panorama as a regional recreation facility and as an international motor racing circuit. Subject to the 6(b) zone agriculture and bushfire hazard reduction are permitted without consent, with land uses not stated as either permitted without consent or prohibited being permissible with consent. Relevant prohibited activities include commercial premises and shop.

The prohibiting of commercial activities in the 1(d) and 6(b) zones limits commercial opportunities that would compete for revenue with events on the circuit. However, BRC have noted that with the implementation of a Standard LEP template local provisions that are not covered by the Standard template would be removed. Of particular relevance is the commercial motor race hosting definition, which means *"the use of land to provide viewing areas for motor racing for a fee or reward to 13 or more persons. It may or may not include the provision of accommodation, food or drink"*. The prohibition of commercial motor race hosting limits competition for patronage between private landowners and event organisers. Should the commercial motor race hosting definition and subsequent prohibition be removed from the private land surrounding Mount Panorama this may impact on the commercial viability of events at the circuit.

4.7.2 Mount Panorama Motor Racing Act 1989

Subject to Section 5(1) of the Mount Panorama Act the Minister may issue a permit to *"Council authorising it to hold or authorise the holding of a meeting or meetings for motor racing and associated events (including events not connected with motor racing) at the Mount Panorama Circuit on a day or days specified in the permit"*. However, no more than five meetings are permitted under the Mount Panorama Act in a calendar year.

Subject to Section 12 the Mount Panorama Act permits the suspension of certain legislation including:

- Section 40 of the *Road Transport (Safety and Traffic Management) Act 1999*;
- The *Protection of the Environment Operations Act 1997* (being those parts of that Act that relate to noise); and
- The *Roads Act 1993*.

The above legislation *"does not apply to or in respect of the use of land that is, or is part of, the Mount Panorama Circuit for the purposes of, or in connection with, meetings for motor racing and associated events on a day or days specified in a permit"*. Consequently, during events for which BRC has obtained a permit (to a maximum of five per year) access and noise control legislation can be varied to accommodate the events.

4.8 Summary

There does not appear to be any site features that affect the feasibility of the development of a second circuit. It is considered that geotechnical and hydrological issues encountered can be resolved during detailed design and construction. Services for the proposed circuit can be extended from existing corridors including along College Road, Conrod Straight and the paddock area.

Planning controls including the Mount Panorama Act would need to be reviewed for suitability once other aspects are considered including demand, noise and community views.

5.0 Complementary activities

The following section describes potential activities that would complement infrastructure and facilities at Mount Panorama both with and without a second circuit.

5.1 Tourism potential

5.1.1 Market profile

Mount Panorama is a recognised regional tourist destination. In 2002 it was the third most visited place in the Central West after the Western Plains Zoo, and the Parkes Telescope (Environmetrics, 2002). The Bathurst Tourism Survey (Bathurst Regional Council and WRI, 2004) found that Mount Panorama was the top attraction followed by the NMRM, Jenolan Caves and historic buildings.

The Environmetrics surveys showed the largest tourist segment was families and friends of residents (43%) who spent \$111 per day (2000). The higher spending group with interest in wineries and high value experiences represented only 11% of the market, but spent \$172 per day.

Current visitor numbers who potentially could utilise attractions at Mount Panorama can be estimated using a number of sources. The Bathurst Visitor Information Centre received 74,500 people through its doors in 2009 which was similar to the numbers recorded in 2004 when it relocated to a more prominent highway frontage. In 2009 the NMRM had 30,500 visitors.

Environmetrics estimated that there were around 1.2 m visitors to Bathurst in 2000 and of these 25% planned to visit Mount Panorama and 50% actually did. This equates to a potential market of 600,000 visitors. Traffic counts undertaken by Council for the Pit Buildings and Paddock upgrade (28 August to 7 September 2003) showed a 7 day average at 1,441 cars which extrapolated over the year gives 526,000 vehicles. Allowing for double counting of cars doing circuit twice, use by local residents and contractors, an assumption of two people per car (ignoring coaches) gives a potential market in 2003/4 of 400,000-600,000 visitors.

5.1.2 Market Potential

The Tourism Strategy drawing upon the Environmetrics surveys, community consultation and other sources noted that *"Bathurst does not send a message to the market of a strong, coherent and stimulating tourist destination"*. Motor racing is of narrow interest to the general tourist market (9% of Australians participate in motor sports and only a few are women). The Tourism Strategy found a need to build a coherent mass of activities and attractions associated with Mount Panorama and to send a strong message that Mount Panorama is a tourist destination.

"In terms of market positioning, it is important to develop a simple, clear underpinning concept that drives the emotional tone of the Mount Panorama brand. This is related as much to the physical signage and branding of the locale as to the mix of complementary attractions" (KBR, 2003).

The Tourism Strategy found that the marketing of Mount Panorama should be tailored to increase its attractiveness to the Sydney market and international visitors travelling through Sydney. Bathurst is not a significant Sydney daytrip or overnight tourist destination because of a lack of a key tourist attraction and the perceived distance created by the Blue Mountains, (also known as "sandstone curtain"). The main competitor regions are the Blue Mountains and Hunter Valley, with Mudgee and Orange having recently been successful in promoting food and wine experiences.

5.1.3 Tourism markets

The Tourism Strategy recommended the following market segments as being available to Mount Panorama to achieve a robust, long term visitation and to convey a sense of “destination”:

- Bathurst and Central West-history/gold, food/wine, local residents;
- Motor Sports Market-races, training, circuit driving; and
- New Tourism Markets such as Sydney focussed on domestic and international, events, functions, recreation, sport and CSU/TAFE.

The current circuit and associated infrastructure and buildings in association with other Mountain tourist facilities can be better utilised to meet these markets;

5.1.4 Current Tourism Activities

The current tourist activities on the Mountain that relate to the feasibility of a second circuit and to the better utilisation of existing infrastructure can be described as motor sports and non-motor sports related ,although the Mount Panorama branding to date is primarily motor racing specific.

Motor Sports

The major tourism activity undertaken at Mount Panorama consists of people driving the circuit as their main purpose. Visitors also use the top of the Mountain for viewing, parklands and amenities and the pit building for photo opportunities.

The V8 Supercar event and the three other designated circuit events are major tourist magnets. The V8s attract some 180,000 people annually and a large television and media audience.

The NMRM located at the entry to the precinct receives 30,495 paid visitors per year, occupies some 2,912m² and received a net Council subsidy of \$345,141 in 2008/9. The NMRM was originally established by the Bathurst Light Car Club and taken over by Council in 1997. The collection comprises six vehicles, three motorbikes, numerous documents and photos. The NMRM has recently undertaken an Operational Review (Confidential) which amongst other things found that the Museum needs to change from “business as usual” and recommended actions including business enterprise development such as personal circuit tours, endorsement of the Museum’s core role and responsibilities, the development of a 10 year strategic plan and the need to reconfigure and upgrade the design of the museum’s building.

Non-Motor Sport Activities

There are a variety of non-motor sport tourism, recreation and leisure activities that use the precinct and that can contribute to, and benefit from better utilisation of the precinct infrastructure and brand. These include;

- Wineries, restaurants, goldfields experience tourism
- Mountain scenic views and parkland
- Jogging and walking circuit
- Archery range
- Rifle range and gun club
- Motocross circuit
- Aboriginal cultural centre
- Bicycle groups including a Bathurst to Blayney cycle race and recently announced NSW cycle series
- Hotel conference users who can also use the Pit Buildings and precinct for leisure opportunities.

5.2 Complementary infrastructure

5.2.1 Overview

Many capital intensive leisure and sport facilities are cross subsidised in their development and operations by associated complementary activities. Examples include:

- The integration of hotels into football stadium grandstands that can double as corporate boxes;
- Horse racing courses operating convention centre businesses;
- Marinas including apartments and retail outlets;
- Golf courses incorporating exclusive residential estates on their periphery;
- Equestrian themed housing estates have been developed in the US; and
- There are airports that have hangars with tarmac access for private and commercial use.

There are numerous opportunities for Mount Panorama to have a variety of commercial complementary activities with or without the second circuit. During consultation with the local community a number of suggestions were made regarding the development of complementary commercial activities to help support and offset the circuit capital and operational costs. The more significant commercial opportunities are outlined below and in the following images.

5.2.2 Tourist Centre

A significant opportunity exists to develop a Tourist Centre in a high profile location adjacent to the Pit Straight pedestrian bridge within the Pit Buildings in the current first aid centre (refer to Figure 9 below). This opportunity was initially developed in the architectural plans and redevelopment plans for the Pit Building and paddock. This location would capture the current and future tourist market that drives Pit Straight and could utilise part or all of the existing NMRM. It could also act as the management centre for utilisation of the corporate suites, garages and paddock area in non-race time for events and functions. The fit out can be designed such that during race time the tourist functions and displays can be temporarily relocated.

The activities at the Tourist Centre could include:

- Cafe-food and beverage;
- Souvenirs;
- Undertake guided bus tours of the circuit;
- Development of a Mount Panorama race simulator in an enhanced interactive Tourist Centre;
- Development of a video showing the history of Mount Panorama in an enhanced interactive Tourist Centre;
- Winners' podium photo shoot; and
- Promotion of other Mountain activities (e.g. wineries, sport facilities).

Figure 9 Tourist Centre



Source: Allen Jack and Cottier (2010)

5.2.3 Sky Tower Restaurant and Look-out

The Tourism Strategy identified the opportunity to develop an integrated structure on the top of the Mountain near the current dilapidated control building (refer to Figure 10 below). This Sky Tower would incorporate the following functions:

- Restaurant;
- District look-out and race viewing deck; and
- Communications tower providing an improved facility to the current situation with towers in a number of locations on the Mountain.

The structure would be designed to be an iconic four seasons destination that could draw visitors from Sydney, as well as tourists visiting the Blue Mountains. It would be promoted and integrated with the Tourist Centre and become the focus of Mount Panorama and a must see Bathurst attraction.

Figure 10 Sky Tower, Restaurant and Lookout



Source: Allen Jack and Cottier (2010)

5.2.4 Pit Straight Grandstand Seating and Commercial Property Development

The trackside space in Harris Park located along Pit Straight, opposite to the Pit Building and garages could be developed to accommodate some 14,728 grandstand spectator seats in four blocks (3,682 seats per block) with adjacent commercial or residential units. The following images (Figure 11 and Figure 12) show four blocks with the equivalent of 49 x 1 bed units and 36 x 2 bed units per block. This space assumes student or residential use during non peak event time, which would then be vacated during major events for use as corporate suites. This space could alternatively be developed for commercial, storage and office type uses.

The accommodation would have an excellent southern aspect over Pit Straight, looking into the garages and up the Mountain. To the north it has vistas to CSU with good solar orientation. The building undercroft would be used for car parking but could be designed to allow for race mode concessions and movement. It is understood that there is an accommodation shortage in Bathurst, particularly for students.

An existing example of trackside business apartments is located at Hampton Downs, New Zealand. The Hampton Downs circuit is accessible to both Auckland and Hamilton. It is branded as a motorsport park which also contains a motorsport village with a retail hub and restaurants. A recent release contained 32 freehold self-contained "Business Apartments" with a number of 2-3 bedroom options with secure storage for up to seven cars. The apartments can also be used for retail, storage, office or general business space.

Figure 11 Pit Straight Grandstand Seating and Commercial Property Development



Source: Allen Jack and Cottier (2010)

Figure 12 Pit Straight Grandstand Seating and Commercial Property Development



Source: Allen Jack and Cottier (2010)

5.2.5 Motor Industry Research and Development Park

An alternative circuit layout involves the opportunity to develop the privately owned orchard between Conrod Straight and College Road as a specialised Motor Industry R&D park with premium lots having track frontage. Figure 13 shows a circuit aligned through this section of land with a subdivision layout for industrial/commercial activities comprising a land area of 29 ha, with parking and camping located on 12 ha of land. Additionally, the layout provides spectator viewing and noise mounds on 6 ha of land. These lots and others in the estate could be marketed to motor sports and the wider motor industry for component and vehicle testing, driver training and associated motor industry uses. This layout would allow for road access between Conrod Straight and College Road, as suggested by a resident on the Mountain.

The Australian automotive sector represents a huge industry in terms of annual turnover, investment, innovation and public interest. Innovation in the sector is demonstrated by examples such as:

- Electric vehicle technologies
- Alternative fuel sources
- Mix and match components
- Self driving cars.

Many European and Japanese automotive companies use New Zealand and Victorian circuits to test components in the northern winter. Victoria has a number of tracks for R&D associated with their well developed vehicle industry. One example of the Australian Government's promotion of new technologies in this sector is the Automotive Transformation Scheme which is part of the Government's "New Car Plan for a Greener Future".

A specialised R&D park at Mount Panorama could be well placed to attract industries in this sector from locally, nationally and internationally by virtue of the brand name, the exceptional parkland setting, the existing facilities, access to Bathurst services and location within a supportive educational cluster which includes CSU, Bathurst TAFE and secondary schools.

The estate would need to have strict development controls to ensure the landscape quality is maintained. Figure 14 shows an example of how this could be achieved.

Depending on the mix of activities and floor space developed the fully developed estate could cost in the order of \$500m and provide over 1,000 jobs.

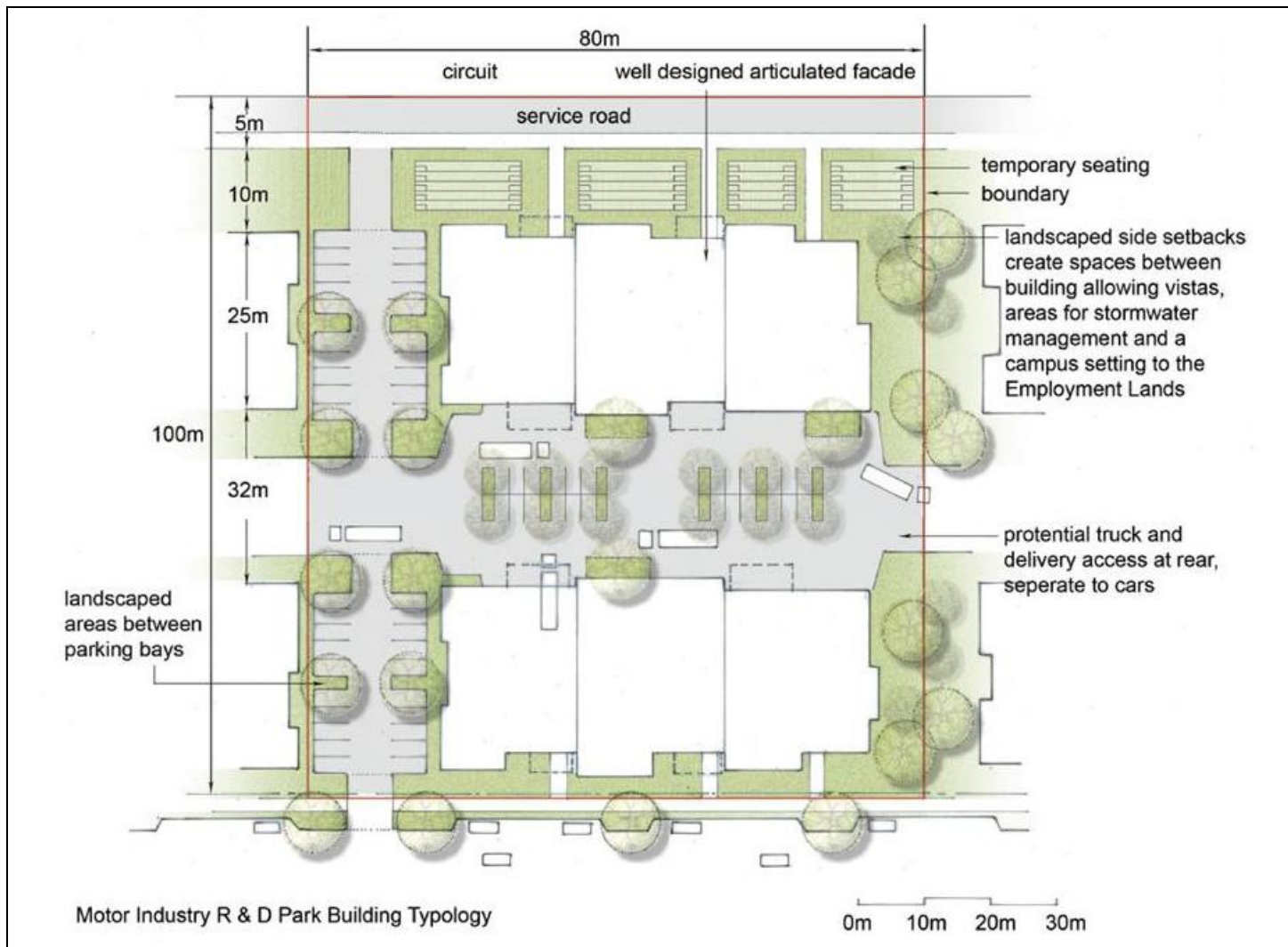
There is a precedent for private sector investment in racing facilities for the purpose of complementary development in the form of Phillip Island in Victoria. LinFox purchased the facility in 2004 primarily with the view of developing accommodation on the site, not due to the financial viability of the circuit itself. Although development has been frustrated to date by regulatory constraints, LinFox still holds the asset, presumably because the potential from development outweighs the costs of holding and operating the site.

Figure 13 Motor Industry Research and Development Park



Source: AECOM (2010)

Figure 14 Motor Industry Research and Development Park – building typology



Source: AECOM (2010)

5.3 Complementary land uses

There is the potential for Mount Panorama to transcend motorsport and become a multipurpose recreational precinct. A number of complementary activities are already undertaken at the site including cycling, motocross, archery and shooting. However, these activities could be added to and enhanced in a manner that does not diminish motor sports primacy within the precinct.

The public consultation and submissions received as part of this Study highlighted a number of complementary land uses that could be undertaken on the Site, including:

- Promotion of a Tour de Panorama bicycle stage race similar to the Tour Down Under;
- Driver training;
- Learner driver safety courses;
- Skid pan development in the pit paddock area;
- Laser Skirmish;
- An indoor and outdoor snow park, and ski/board terrain park;
- A Free Fall Sky Dive centre, using large fans to lift people, located on the Mountain to provide the illusion of flying;
- Cross-marketing of events throughout the year, especially in conjunction with schools, sports clubs, Bathurst TAFE and CSU;
- A Youth Go Kart program to promote social and recreational opportunities for teenagers;
- Integration of school automotive workshops;
- Development of a Jamberoo style amusement park for children; and
- Development of a chair-lift and / or toboggan on the sky line precinct to take advantage of the views over Bathurst.

6.0 Cost Estimation

6.1 Introduction

The revised second circuit layout as discussed in Section 2.2 of this study and the complementary infrastructure have been costed by Arencos. The following section provides a summary of Arencos's findings with the full report and associated costs located at Appendix G.

The cost estimate has been based on the revised second circuit layout as illustrated in Figure 6 of this report and supplementary information for additional facilities as described in the following subsections. Cost estimates are generally based on design and construction elements only and excludes Goods and Service Tax, land acquisition costs, interest charges, re-zoning fees and Section 94 contributions if required.

In forming a basis for the cost estimate, the new racing circuit design is assumed to be 14 m wide (consistent with the Phillip Island racing circuit in Victoria and other Moto GP world circuits) with a run off area of 15 m on each side of the circuit on the straights. The runoff areas then increase to 30 m on the outside edge of the circuit around corners. The circuit is assumed to have a 300 mm thick sub-base with a 100 mm thick asphaltic concrete topping. The run off area would comprise of 50% asphaltic concrete extension and 50% sand/gravel finish. Excavation and fill works have been allowed for in subsurface materials other than rock and are subject to future geotechnical information. Furthermore, a contingency sum of 5% has been included in each of the proposed areas of works.

6.2 Second circuit

The second circuit is comprised of both an international and a smaller national configuration using the revised layout based on the findings of the track review (see Section 2.2 and Figure 6). For the purposes of this feasibility analysis the assessment incorporates two financial scenarios based on the events held on the circuit which are:

- Scenario one bases the financial analysis on the second circuit attracting one or more marquee events. It is assumed that the marquee events would attract a total of 100,000 spectators annually for a period of 30 years.
- Scenario two bases the financial analysis on the second circuit being hired out for smaller scale events, including club races, promotions, driver training and individual self drive events.

The following subsection details the costs associated with the development of a second circuit comprised of a national and international layout.

6.2.1 National Circuit

The national racing circuit is approximately 3 km long incorporating 0.6 km of existing circuit along Conrod Straight leaving a new circuit distance of 2.4 km located to the east and west of Conrod Straight.

Allowances have been made as follows:

- Upgrade works to the existing 600 m of the existing circuit (Conrod Straight is approximately 9 m wide) with works included to join the new and old circuits in three locations.
- New 1350 mm high concrete barrier walls for a length of 4.8 km and modifications to existing property boundary fencing for 2 km.
- Extension of Ray Bant Drive and additional access roads as required (850 m).
- New circuit creek crossing, including two vehicular track underpasses and one pedestrian track overpass.
- Provision of eight marshalling points.
- Spectator mounds, noise berm (1 m high) and noise walls (2 m high), although no allowance has been made for any grandstand seating.
- Provision of toilet amenities and basic pit facilities in the Upper Paddock area.
- Associated electrical, communication, water and drainage services including piping of the existing open drainage channel to the west of the northern end of Conrod Straight.
- Design fees, construction preliminaries and contingency sum.

The estimated cost for the national circuit is **\$35,795,000**.

6.2.2 International Circuit

The international portion of the racing circuit is approximately 4.3 km long incorporating 1.7 km of existing circuit along Pit Straight, Mountain Straight and Conrod Straight leaving a new circuit distance of 2.6 km located at the top of the existing Upper Paddock area and to the east of Conrod Straight.

Allowances have been made as follows:

- Upgrade works to the existing 1.7 km of existing circuit (addressing run off areas at each end of the existing Pit Straight) with works included to join the new and old circuits in four locations.
- New 1350mm high concrete barrier walls for a length of 5.2 km and modifications to existing property boundary fencing for 2.45 km.
- Extension of Ray Bant Drive and additional access roads as required (850 m).
- New circuit creek crossing, including three vehicular track underpasses and one pedestrian circuit overpass.
- Provision of ten marshalling points.
- Spectator mounds, noise berm (1 m high) and noise walls (2 m high), although no allowance has been made for any grandstand seating.
- Provision of toilet amenities.
- Associated electrical, communication, water and drainage services.
- Design fees, construction preliminaries and contingency sum.

The estimated cost for the international circuit is **\$39,870,000**.

6.2.3 Combined Circuits

The combined national and international racing circuits are approximately 4.7 km long incorporating 1.7 km of existing circuit along Pit Straight, Mountain Straight and Conrod Straight leaving a new circuit distance of 3.0 km located at the top of the existing Upper Paddock area and to the east and west of Conrod Straight.

Allowances have been made as follows:

- Upgrade works to existing 1.7 km of existing circuit (addressing run off areas at each end of the existing Pit Straight) with works included to join the new and old circuits in four locations.
- New 1350 mm high concrete barrier walls for a length of 6.0 km and modifications to existing property boundary fencing for 2.45 km.
- Extension of Ray Bant Drive and additional access roads as required (850 m).
- New circuit creek crossing, including three vehicular circuit underpasses and one pedestrian circuit overpass.
- Provision of twelve marshalling points.
- Spectator mounds, noise berm (1 m high) and noise walls (2 m high), although no allowance has been made for any grandstand seating.
- Acquisition of properties adversely impacted by noise, at an estimated cost of \$2.6m.
- Provision of toilet amenities and basic pit facilities in the Upper Paddock area.
- Associated electrical, communication, water and drainage services including piping the existing open drainage channel to the west of the northern end of Conrod Straight.
- Design fees, construction preliminaries and contingency sum.

The estimated cost for the combined circuit is **\$46,440,000**.

6.3 Complementary infrastructure

The following complementary infrastructure developments were analysed for the Mount Panorama precinct:

- **Repair circuit** – upgrade the existing circuit to offset annual maintenance costs;
- **Redevelop hardstand** – relocate lighting columns from hardstand south of the pit building to enable better use of area for activities such as driver training;
- **Develop Tourist Centre** – consolidate and relocate exhibits from NMRM to the eastern end of the pit building;
- **Develop grandstand** – build permanent fixtures along the northern side of Pit Straight to offset costs of building and dismantling temporary structures;
- **Develop accommodation blocks** – construct accommodation blocks to the rear of the grandstands, to provide housing; and
- **Develop Sky Tower** – build a tourist facility on top of the mountain comprised of a restaurant and lookout that also accommodates and consolidates the existing aerials on the mountain.

The following subsection details the costs associated with the development of complementary infrastructure.

6.3.1 Pit Straight Grandstand Seating and Commercial Property Development

The proposal is for the design and construction of accommodation/commercial blocks along Pit Straight that would have grandstand seating attached. Details of the accommodation / grandstand are provided below:

- Each accommodation block would house 49 x 1 bed units plus 36 x 2 bed units creating a total of 85 units per block (units could also be used for offices/entertainment).
- The grandstand seating can accommodate approximately 3,682 persons per block. The concept design shows four accommodation blocks along Pit Straight which would total 340 units and grandstand seating for 14,728 persons.
- The total number of units and grandstand seating would increase to 425 and 18,410 respectively if the accommodation blocks were increased to five along Pit Straight.
- The cost estimate is based on four accommodation blocks as per the concept plan.

The estimated cost for the combined accommodation / grandstand comprised of four blocks is **\$55,863,000**.

6.3.2 Tourist Centre

As part of the second circuit proposal, preliminary costing has been included for a Tourist Centre for the circuit located at the eastern end of the pit buildings at the beginning of Pit Straight in the existing First Aid Facility.

Allowances have been made as follows:

- Strip out the existing first aid facility.
- Provide a basic fit-out of the ground floor area for a tourist facility extending to the first floor to include a small theatre.
- Construction of a permanent first aid facility with amenities in a nearby location (120 m²).
- Design fees, construction preliminaries and contingency sum.

The estimated cost for the Tourist Centre is **\$460,000**.

6.3.3 Sky Tower Restaurant and Lookout

Provision of a new restaurant and communications tower located between the Esses and McPhilliamy Park at the top of the Mountain.

Allowances have been made as follows:

- Site costs and extensions to the existing services.
- Restaurant seating area (200 m²).
- Kitchen & amenities (100 m²).
- Stores and communication tower service room located under the raised restaurant floor areas (125 m²).
- Communications tower.
- Design fees, construction preliminaries and contingency sum.

The estimated cost for the Sky Tower restaurant is **\$1,875,000**.

7.0 Financial and market analysis

7.1 Approach

This section provides an analysis of the financial viability of each of the upgrade options from the perspective of the asset owner. The analysis estimates the required revenue and time periods in order for the capital expenditure to be recovered. The financial model developed calculates the revenue estimates for the project to be NPV (Net Present Value) neutral (i.e. the discounted benefits/revenues equal the discounted annual costs over the appraisal period) as well as those that would be required to deliver a 10% operating margin.

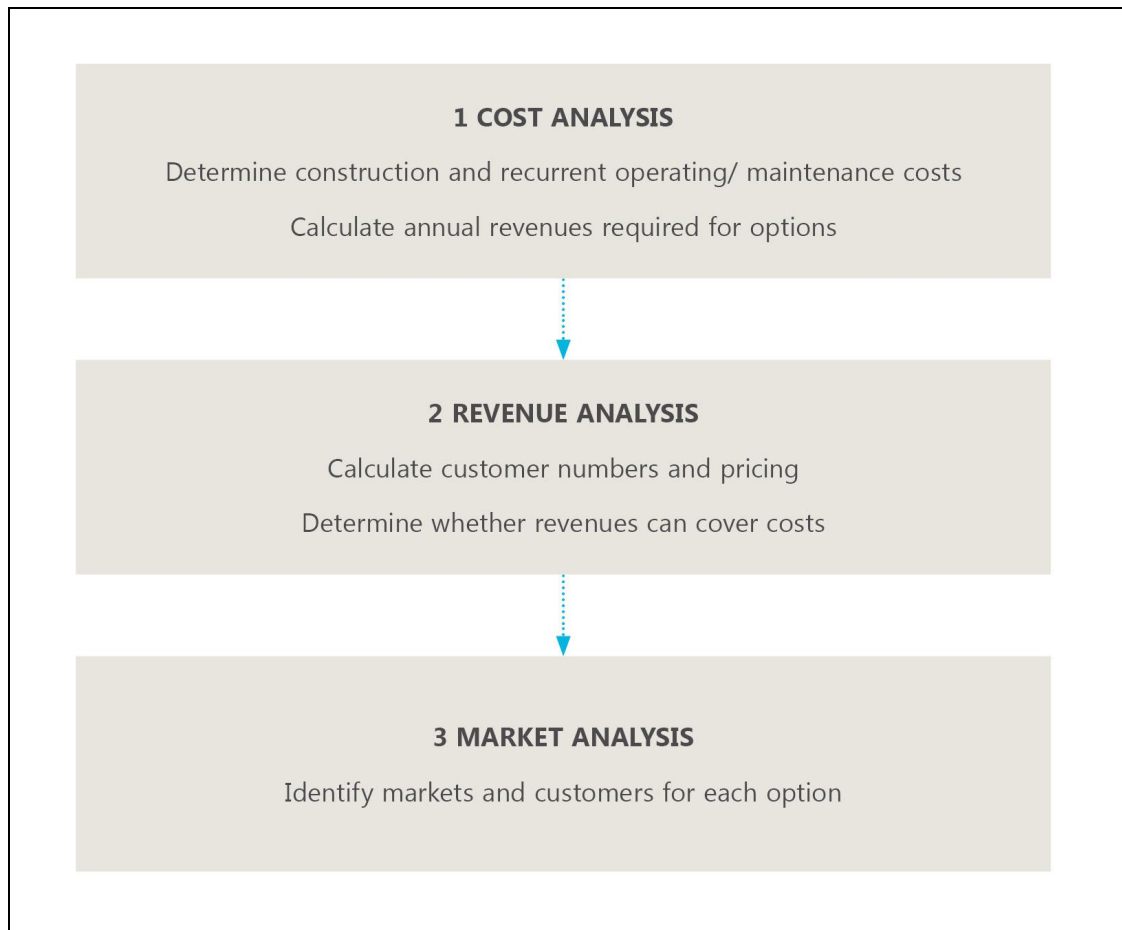
A bottom-up analysis is then undertaken to estimate the revenue streams in each year, to indicate whether the asset owner can meet the estimated revenue requirement.

All options have been assessed over a 30-year timeframe at a discount rate of 7%, in line with NSW government guidelines. These are the rates of return and investment period required for standard government projects, but do not reflect the return periods and risk/reward rates that would typically be required by the private sector.

At this stage, no funding models or procurement methods have been considered. Private sector involvement may dictate that a higher discount rate is required (i.e. to reflect the cost of borrowing by the private sector and risk premia) and shorter appraisal periods required (i.e. the private sector would expect to see a return on investment within a shorter time period than the State Government).

There are likely to be cross-subsidies from other revenue streams and potential for grants from government that could support the development feasibility. However, through estimating the main beneficiaries and the revenues required this financial analysis allows governments to make decisions on the appropriate level of subsidies. This section analyses the financial and market conditions that influence feasibility of the revised second circuit layout (Section 2.2.3 and Figure 6) and the range of complementary infrastructure (Section 5.2). Figure 15 describes the overall approach.

Figure 15 Financial analysis – overall approach



Source: AECOM (2010)

7.2 Second circuit

The following subsections describe the costs and financial analysis associated with constructing a second circuit at Mount Panorama. This analysis is based on the revised track layout as described in Section 2.2.3.

7.2.1 Capital and operating costs

Table 13 describes the key cost inputs and assumptions for the analysis of the national, international and combined second circuit.

Table 13 Key assumptions

Item	Value	Notes
Discount rate	7%	NSW Treasury central rate
Appraisal period	30 years	Assumption
Construction start year	2012	Assumption
Opening year	2014	Assumption
Construction costs	\$43,840,000	Total estimated investment cost; includes all project development fees and contingencies
Land acquisition costs	\$2,600,000	Acquisition of noise affected properties adjacent to circuit
Annual operating and maintenance costs	2% of construction costs	AECOM assumption. Includes all non-event related costs e.g. administration, overheads

Using the costs in Table 13, analysis was undertaken to estimate the revenue required in order for the project to be NPV-neutral, i.e. revenues would cover routine operating and maintenance costs and the capital costs over a 30-year payback period.

Table 14 shows the estimated annual revenue requirements in order to recover the capital and assumed operating costs of the circuit. The analysis indicates that to break even, \$4.6m per annum (over 30 years) would need to be raised, whilst to deliver a margin of 10%, \$5m is required.

Table 14 Annual revenue requirements for second circuit

Item	Value estimate (in 2010 prices)
Annualised capital cost	\$3,742,433
Operating and maintenance costs (2% of construction cost)	\$876,800
Total (revenue required to break even)	\$4,619,233
Total (revenue required to deliver 10% margin)	\$5,081,156

Table 15 describes the estimated revenue required for the circuit to be NPV neutral for differing discount rates and payback periods. The central case, which is the standard values for appraisal of infrastructure projects in NSW – is highlighted in grey. If the circuit is privately funded, the private sector is likely to seek a shorter payback period and command a higher discount rate, which means the annual revenues would need to be higher.

Table 15 Analysis of effect of differing payback periods and discount rates

Payback period years)	Discount Rate		
	3.50%	7%	10%
5	\$11,162,395	\$12,203,084	\$13,127,555
10	\$6,460,809	\$7,488,811	\$8,434,696
15	\$4,908,956	\$5,975,662	\$6,982,442
20	\$4,144,368	\$5,260,407	\$6,331,625
25	\$3,694,502	\$4,861,840	\$5,993,005
30	\$3,401,805	\$4,619,233	\$5,803,120

7.2.2 Revenue analysis

The following section analyses two revenue scenarios, as described at Section 6.2, for the raising of revenue to cover the annual total costs associated with the second circuit. Section 7.2.3 provides a brief market analysis to illustrate how the revenue analysis results compare to the rates that currently prevail in the Australian market.

To estimate the number of events/clients required for the circuit to break even and deliver a 10% profit margin the calculated annualised costs (as detailed above) have been used.

The analysis only considers the value of the ticket price/hire charge recovered to go towards recouping the capital and operating costs of the circuit. It does not consider the costs of operating the race/event, costs that go to promoters, licensing costs or other administrative fees.

The annualised cost to be recovered from the circuit each year is estimated at \$4.6m in order to break even and \$5m to deliver a 10% margin to the asset owner.

Revenue Scenario 1 – Revenue raised from marquee events

In this scenario, it is assumed that the second circuit attracts one or more marquee events. This could include an event which is currently held elsewhere in Australia, such as the Moto GP, or an event that does not yet exist in Australia, such as the FIA GT1, (an international road race championship featuring marquee brands of sports car).

To recover the costs, it is assumed that the second circuit hosts marquee events each year for 30 years, which between them attract 100,000 paying spectators per year. The results of the analysis are shown in Table 16.

In order to recover the capital and operating costs, the asset owner would need to recover a levy of \$46.19 per spectator in order to break even. This would most likely be via the gate, but could, for instance include a proportion of profits from food, beverage and souvenir concessionaires.

Should recovery of the operating costs of the circuit only be required, the levy per spectator required to break even would be approximately \$8.77.

The experience of Eastern Creek Raceway in NSW demonstrates the uncertain nature of the marquee international motor racing industry. Despite having been specifically built to attract the Moto GP, it was held at Eastern Creek Raceway for less than five years.

Table 16 Revenue Scenario 1 cost recovery estimates

Scenario	Cost recovery per spectator (break even)	Cost recovery per spectator (to deliver 10% margin)
Capital and operating costs	\$46.19	\$50.81
Operating costs only	\$8.77	\$9.64

Sensitivity analysis on the NPV (which represents the difference between the total revenues and costs over thirty years, discounted to present values) tests the impact of differing levels of paying spectators and the cost recovery per spectator. Table 17 shows sensitivity to NPV from differing spectator numbers and cost recovery levels (for recovery of capital and operating costs).

The NPV was found to be highly sensitive to the number of spectators and cost recovery per spectator. For example, in order to reduce the cost recovery component of the gate fee to below \$20, over 240,000 paying

spectators would be required each year. This in turn equates to circuit hire fees of around \$4.8m per year. This is understood to be far in excess of the levies currently charged for use of the Mount Panorama main circuit each year.

Table 17 Revenue Scenario 1 – Sensitivity to NPV for recovery of capital and operating costs

Cost recovery per spectator	Number of spectators per annum							
	20,000	40,000	60,000	80,000	100,000	120,000	140,000	160,000
\$10	-\$54.8m	-\$52.4m	-\$49.9m	-\$47.4m	-\$44.9m	-\$42.4m	-\$39.9m	-\$37.5m
\$20	-\$52.4m	-\$47.4m	-\$42.4m	-\$37.5m	-\$32.5m	-\$27.5m	-\$22.6m	-\$17.6m
\$30	-\$49.9m	-\$42.4m	-\$35.0m	-\$27.5m	-\$20.1m	-\$12.6m	-\$5.2m	\$2.2m
\$40	-\$47.4m	-\$37.5m	-\$27.5m	-\$17.6m	-\$7.7m	\$2.2m	\$12.2m	\$22.1m
\$50	-\$44.9m	-\$32.5m	-\$20.1m	-\$7.7m	\$4.7m	\$17.1m	\$29.5m	\$42.0m
\$60	-\$42.4m	-\$27.5m	-\$12.6m	\$2.2m	\$17.1m	\$32.0m	\$46.9m	\$61.8m
\$70	-\$39.9m	-\$22.6m	-\$5.2m	\$12.2m	\$29.5m	\$46.9m	\$64.3m	\$81.7m
\$80	-\$37.5m	-\$17.6m	\$2.2m	\$22.1m	\$42.0m	\$61.8m	\$81.7m	\$101.5m
\$90	-\$35.0m	-\$12.6m	\$9.7m	\$32.0m	\$54.4m	\$76.7m	\$99.0m	\$121.4m
\$100	-\$32.5m	-\$7.7m	\$17.1m	\$42.0m	\$66.8m	\$91.6m	\$116.4m	\$141.2m

Values discounted at 7% over 30-year period

Table 18 shows the sensitivity to the NPV of differing spectator numbers and cost recovery levels if only the annual operating costs are recovered.

Table 18 Revenue Scenario 1 – Sensitivity to NPV for recovery of operating costs only

Cost recovery per spectator	Number of spectators per annum							
	20,000	40,000	60,000	80,000	100,000	120,000	140,000	160,000
\$10	-\$8.4m	-\$5.9m	-\$3.4m	-\$1.0m	\$1.5m	\$4.0m	\$6.5m	\$9.0m
\$20	-\$5.9m	-\$1.0m	\$4.0m	\$9.0m	\$13.9m	\$18.9m	\$23.9m	\$28.8m
\$30	-\$3.4m	\$4.0m	\$11.4m	\$18.9m	\$26.3m	\$33.8m	\$41.2m	\$48.7m
\$40	-\$1.0m	\$9.0m	\$18.9m	\$28.8m	\$38.7m	\$48.7m	\$58.6m	\$68.5m
\$50	\$1.5m	\$13.9m	\$26.3m	\$38.7m	\$51.2m	\$63.6m	\$76.0m	\$88.4m
\$60	\$4.0m	\$18.9m	\$33.8m	\$48.7m	\$63.6m	\$78.5m	\$93.3m	\$108.2m
\$70	\$6.5m	\$23.9m	\$41.2m	\$58.6m	\$76.0m	\$93.3m	\$110.7m	\$128.1m
\$80	\$9.0m	\$28.8m	\$48.7m	\$68.5m	\$88.4m	\$108.2m	\$128.1m	\$147.9m
\$90	\$11.4m	\$33.8m	\$56.1m	\$78.5m	\$100.8m	\$123.1m	\$145.5m	\$167.8m
\$100	\$13.9m	\$38.7m	\$63.6m	\$88.4m	\$113.2m	\$138.0m	\$162.8m	\$187.7m

Values discounted at 7% over 30-year period

It should be noted that the estimate of \$46.19 per spectator to recover capital and operating costs (Table 16) is dependent upon 100,000 spectators per year being attracted to the circuit every year for 30 years. However, if a

'marquee' event were to alternate between the second circuit and another venue every 10 years, then the cost recovery figure is estimated to increase to \$65 per spectator.

Revenue Scenario 2 – Circuit hire for smaller events

In this scenario, it is assumed the cost of the circuit is recouped from hiring out circuit facilities either for club events, promotions and/or product launches. It is assumed that for individual events (such as drive yourself access to the circuit, driver training days), the equivalent daily charge would be recouped from all individual participants.

Table 19 shows, over a 30 year period, the average charge that would need to be levied per day (365 days per year) to recover:

- The capital and operating costs of the track; and
- Operating and maintenance costs of the track.

Table 19 Revenue Scenario 2 – Cost recovery estimates

Scenario	Cost recovery per circuit hire (break even)	Cost recovery circuit hire (to deliver 10% margin)
Capital and operating costs	\$12,655	\$13,921
Operating costs only	\$2,402	\$2,642

To test the impact of differing levels of paying spectators and the cost recovery per spectator, Table 20 shows sensitivity on the NPV, which represents the difference between the total revenues and costs over thirty years, discounted to present values.

Table 20 Revenue Scenario 2 – Sensitivity to NPV for recovery of capital and operating costs

Circuit hire per day	Number of days circuit is hired out each year						
	50	100	150	200	250	300	350
\$5,000	-\$54.3m	-\$51.2m	-\$48.1m	-\$45.0m	-\$41.9m	-\$38.8m	-\$35.7m
\$10,000	-\$51.2m	-\$45.0m	-\$38.8m	-\$32.6m	-\$26.3m	-\$20.1m	-\$13.9m
\$15,000	-\$48.1m	-\$38.8m	-\$29.4m	-\$20.1m	-\$10.8m	-\$1.5m	\$7.8m
\$20,000	-\$45.0m	-\$32.6m	-\$20.1m	-\$7.7m	\$4.7m	\$17.1m	\$29.5m
\$25,000	-\$41.9m	-\$26.3m	-\$10.8m	\$4.7m	\$20.2m	\$35.7m	\$51.2m
\$30,000	-\$38.8m	-\$20.1m	-\$1.5m	\$17.1m	\$35.7m	\$54.3m	\$72.9m
\$35,000	-\$35.7m	-\$13.9m	\$7.8m	\$29.5m	\$51.2m	\$72.9m	\$94.6m
\$40,000	-\$32.6m	-\$7.7m	\$17.1m	\$41.9m	\$66.7m	\$91.5m	\$116.4m
\$45,000	-\$29.4m	-\$1.5m	\$26.4m	\$54.3m	\$82.2m	\$110.2m	\$138.1m
\$50,000	-\$26.3m	\$4.7m	\$35.7m	\$66.7m	\$97.7m	\$128.8m	\$159.8m

Values discounted at 7% over 30-year period

Table 21 shows the sensitivity to the NPV of differing circuit hire rates and number of days' hire if only the annual operating costs are recovered.

Table 21 Revenue Scenario 2 – Sensitivity to NPV for recovery of operating costs only

Circuit hire per day	Number of days circuit is hired out each year						
	50	100	150	200	250	300	350
\$5,000	-\$7.8m	-\$4.7m	-\$1.6m	\$1.5m	\$4.6m	\$7.7m	\$10.8m
\$10,000	-\$4.7m	\$1.5m	\$7.7m	\$13.9m	\$20.1m	\$26.3m	\$32.5m
\$15,000	-\$1.6m	\$7.7m	\$17.0m	\$26.3m	\$35.6m	\$45.0m	\$54.3m
\$20,000	\$1.5m	\$13.9m	\$26.3m	\$38.7m	\$51.2m	\$63.6m	\$76.0m
\$25,000	\$4.6m	\$20.1m	\$35.6m	\$51.2m	\$66.7m	\$82.2m	\$97.7m
\$30,000	\$7.7m	\$26.3m	\$45.0m	\$63.6m	\$82.2m	\$100.8m	\$119.4m
\$35,000	\$10.8m	\$32.5m	\$54.3m	\$76.0m	\$97.7m	\$119.4m	\$141.1m
\$40,000	\$13.9m	\$38.7m	\$63.6m	\$88.4m	\$113.2m	\$138.0m	\$162.8m
\$45,000	\$17.0m	\$45.0m	\$72.9m	\$100.8m	\$128.7m	\$156.6m	\$184.6m
\$50,000	\$20.1m	\$51.2m	\$82.2m	\$113.2m	\$144.2m	\$175.2m	\$206.3m

Values discounted at 7% over 30-year period

The results presented in Table 20 and Table 21 demonstrate that the second circuit would not only need to be hired for a significant number of days throughout the year, but the daily hire rate required to ensure financial feasibility would also be substantial.

7.2.3 Market analysis

7.2.3.1 Overview

To establish likely demand for a second circuit, this section describes the current state of the market for marquee events as well as motor racing circuit hire. The types of events that could make use of the proposed second circuit, include:

- Marquee events (e.g. Moto GP, World Superbikes) – international events which would draw large numbers of spectators to the circuit;
- Second tier events (e.g. national CAMS/MA events) – smaller events which would draw most revenue from competitor entry fees ;
- Club or private circuit hire (for club race meetings, product launches and 'Hot Lap' style experiences);
- Drive-yourself access – similar to access to the Nürburgring in Germany; and
- Driver training days (e.g. safe driving courses) or 'Speed off the Streets' days – non-competitive events which would draw revenue for participants.

7.2.3.2 Marquee events

Marquee events are classified as those that are primarily spectator events, with the primary revenue sources from ticket fees and consumer spending on food, beverage and merchandise whilst at the event. Other revenue streams for the event would include TV and broadcast rights.

Marquee events are typically hosted across 3 or 4 days, and attract crowds of over 50,000 on race day. Whilst motor racing is the focus of the event, other entertainment is frequently provided. Table 22 shows the typical attendances for existing marquee events held within Australia.

Table 22 Attendance for selected marquee events

	Race weekend	Race day
Formula 1 Grand Prix ¹	286,000	105,000
Moto GP ²	105,000	50,000
World Superbikes ¹	50,000	N/A

Sources:

1. <http://www.grandprixcities.com/raceattendances.html>
2. <http://www.invest.vic.gov.au/300510VictoriasecuresMotoGPuntil2016>

Existing marquee events

Australia currently hosts a round of the following international series:

- Formula 1 Grand Prix;
- Moto GP;
- World Superbikes;
- World Rally Championship; and
- V8 Supercars 'marquee' events such as the Bathurst 1000, the Clipsal 500, the Homebush 500 and the Phillip Island 500.

These events form part of a world championship tour for which an Australian leg is included.

Due to the international exposure (from global TV audiences), there is strong competition between states and venues to host the international marquee events. These events are already contracted to other venues until at least 2014, as shown in Table 23.

Table 23 International events

Event	Current venue	Year when contract with venue ends
Formula 1 Grand Prix ¹	Albert Park, Melbourne, Victoria	2015
Moto GP ²	Phillip Island, Victoria	2016
World Superbikes ³	Phillip Island, Victoria	2014

Sources:

1. <http://www.premier.vic.gov.au/newsroom/3031.html>
2. <http://www.invest.vic.gov.au/300510VictoriasecuresMotoGPuntil2016>
3. <http://www.premier.vic.gov.au/newsroom/9524.html>

At the expiration of these contracts, it may be possible for Bathurst to secure these events to be held on the second circuit.

In addition to the costs of running such events, a licence fee is also payable to the event promoter. For example, it is estimated that the Victorian Government paid a sanction fee of \$42m to host the F1 Grand Prix in Melbourne in 2008¹. A share of the revenue may also go to the organisers of the series to cross-subsidise other events or TV coverage (for many motorsport events, organisers must pay TV companies to broadcast the event).

¹ Source: <http://www.theage.com.au/national/47m-fee-a-formula-for-easy-profits-20090313-8xxq.html?page=-1>

New marquee events

An alternative to taking an existing event from another venue would be to attract a round of an international series which is not currently hosted in Australia to Mount Panorama. Two such events are:

- FIA GT1 World Championship; and
- FIA World Touring Car Championship.

The FIA GT1 World Championship is a touring car series in its inaugural season, which seeks to become the second tier championship to Formula 1. Currently six brands, comprising Aston Martin, Corvette, Ford, Lamborghini, Maserati, Nissan compete with twelve two-car teams competing in a ten circuit tournament. The competition is in its inaugural season in 2010, having split from the previous FIA GT Championship which had been running since 2007. Due to increasing costs in Formula 1, the organisers purport that GT1 offers a more affordable alternative with costs on average of US\$2.6m per season.

The FIA World Touring Car Championship is currently in its sixth season. It currently consists of 12 race meetings around the world. Spectators average 63,000 per meeting in 2009 (<http://www.fiawtcc.com/>).

7.2.3.3 National competitions or second tier events

National competitions or second tier events are organised by CAMS or MA affiliated clubs.

The Motorcycling Australia website lists around 54 events in the 2010 motorcycling road racing calendar around Australia, including:

- Motorcycle Road Race Development Association (MRRDA) series;
- Australian Formula Xtreme Championships;
- Australian Superbikes championships;
- Road racing sidecar championships;
- Historic road race championships;
- Honda RJays championships;
- Phillip Island 6-hour endurance race; and
- NSW Post Classic Racing Association.

The CAMS website lists around 15 race events per month at various circuits around Australia (http://www.cams.com.au/en/Sport/Events/Event_Calendar.aspx), including:

- Formula 3;
- Formula Ford;
- HQ Holden Racing;
- Formula Vee;
- Australian GT;
- Aussie Racing Cars;
- Commodore Cup;
- MINI Challenge;
- Porsche GT3 Cup Challenge;
- Australian Manufacturers Championship;
- Saloon Car Series;
- Superkarts;
- Touring Car Masters; and
- V8 Ute Racing Series.

In addition to race events, speed events such as sprints (time trials) and hill climbs also take place. Approximately, 30 events per month occur around Australia.

The circuit would typically be hired out to a club or promoter for these events, who would recoup the fees via competitor entry fees. Circuit hire fees range from around \$5,000 to \$10,000 per day.

7.2.3.4 Private circuit hire

Circuits may also be hired by car manufacturers for product launches or demonstrations.

Companies offering adrenalin sports 'experiences' also hire out the circuit for activities, such as 'hot laps' in a V8 Supercar or Grand Tourer car with a qualified racing driver. Experiences typically retail for around \$300 for an hour-long session.

Commercial events such as product launches and manufacturer client days would typically command an increased circuit hire fee.

7.2.3.5 Driver training/open practice events

Most circuits around Australia offer a variety of products for individual drivers to bring their own road-registered vehicles to the track in order to operate them at high speeds under the supervision of qualified safety officers and medical staff. In general, these are not timed events and competition between users is not permitted. A selection of products currently on offer at other circuits is listed below:

- **Eastern Creek** offers Car Track Days and Motorbike Ride Days for around \$300 and \$200 respectively. Typically 30 vehicles are permitted on the circuit at any one time, and they are given six 20-minute sessions on the circuit.
- **Eastern Creek** also offers Driver Training Days combining theory and small-group practical learning on the circuit's skidpan for \$255. Defensive driving techniques are taught.
- **Wakefield Park** offers 'Speed off the Streets' days whereby members of the public can bring road-registered vehicles to the circuit for \$140. Approximately 10 events are held each month.
- **Calder Park** offers Open Practice sessions for \$220.

7.2.3.6 Drive-yourself access

An example of allowing self drive access to a motor racing circuit is the 20 km Nordschleife at the Nürburgring in Germany. The circuit allows members of the public to access the circuit for a fee of approximately EUR23 (A\$32) per lap. Access to the road is covered by German road licensing laws and rules of the road, and as such, other than in a few locations, no speed limits apply in the same way that German motorways are derestricted.

Racing, the use of timing devices and filming equipment are explicitly forbidden on the circuit. The circuit is monitored by marshals and local police survey the circuit by helicopter. Reckless driving or driving in a manner which contributes to a crash can lead to bans from the circuit and prosecution.

Drivers are responsible for paying all costs for damage caused to the circuit or safety barriers and the use of recovery vehicles. If the circuit needs to be closed due to a crash, then the driver who caused the crash can be liable to a penalty of around A\$2,000 per hour. Many car insurance companies specifically exclude cover for drivers using the circuit. Car hire companies also prohibit use of rental vehicles on the road.

A similar operation could occur at Mount Panorama's second circuit, however if the road were to operate as a public road then it would be restricted by the laws of NSW. Safety provisions, insurance and legal provisions for liability would need to be established.

7.2.4 Pricing analysis

The following section describes typical prices charged by other circuits at motorsport events around Australia, to estimate the hire rates order of magnitude that could potentially be charged by the second circuit.

7.2.4.1 Spectator ticket prices

Existing events at Bathurst are priced as shown in Table 24.

Table 24 Prices for events at Bathurst

	Whole race period	Main raceday
Bathurst 1000 (2010)¹		
General Admission	\$118	\$103 (tickets available for Sunday only)
Grandstand	\$210-255	N/A
Bathurst 12-hour Race (2010)²		
General Admission	\$40	\$20
Grandstand	\$50	N/A
Festival of Sporting Cars (2010)³	\$50	\$25

Sources:

1. <http://bathurst.v8supercars.com.au/tickets/tabid/121/default.aspx>
2. <http://www.bathurst12hour.com.au/event-info/ticketing/>
3. <http://www.fosc.com.au/Pages/Bathurst/2010/Bathurst%20Updates.htm#Admission>

Table 25 shows current prices charged for marquee events in Australia.

Table 25 2010 prices for marquee events around Australia

	Whole race period	Main raceday
Formula 1 Grand Prix (2011)¹		
General Admission	\$185	\$99
Grandstand	\$199 - \$499	\$199 (one stand only)
Moto GP (2010)²		
General Admission	\$150	\$90
Grandstand	\$265+	N/A
World Superbikes (2011)³		
General Admission	\$130	\$70
Grandstand	\$250	N/A

Sources:

1. <http://www.grandprix.com.au/default.aspx?s=2010-tickets>
2. <http://www.motogp.com.au/Tickets/>
3. <http://www.phillipislandcircuit.com.au/superbikes/tickets.html>

Table 26 shows ticket prices charged for selected national motorcycling series.

Table 26 2010 selected ticket prices for national events

	Whole race period	Main raceday
Australian Superbikes (Phillip Island) ¹	\$80	\$55
Formula XTreme (Eastern Creek) ²	\$30	\$30

Source:

1. <http://www.asbk.com.au/spectatorinfo.shtml>
2. <http://www.formula-xtreme.com.au/xtremema.nsf/WebOrderTickets!OpenForm>

Based upon these rates, the following average rates for events in Australia are estimated:

- Marquee events are priced at approximately \$100 for race day for General Admission; \$250 per day for Grandstand/Premium access; and
- Second tier or national events are priced at approximately \$30 for race day for General Admission.

Mount Panorama's existing circuit's track hire fees vary for each of the four events held annually. For the year 2009, track hire fees are shown in Table 27.

Table 27 Bathurst track hire rates

	Total hire fee	Number of days	Rate per day	Spectators	Gate fee per Spectator
Bathurst 1000	\$680,000	4	\$170,000	150,000	\$4.53
Bathurst 12-hour	\$85,000	3	\$28,000	50,000	\$1.70
Festival of Sports	\$230,000	5	\$46,000	30,000	\$7.67
TrackCorp	\$213,000	5	\$43,000	N/A	N/A

Source: Bathurst Regional Council

The composition of the gate fee is not known (i.e. what proportion of this goes to promoters/event management, cost of security, staffing). However, Table 27 illustrates that the circuit hire fee divided by the number of spectators gives an estimated gate fee per spectator of less than \$10. The derived break even cost of \$45.50 is greater than current spectator (gate fees) revenue (see Section 7.2.3).

7.2.4.2 Track hire

Table 28 describes the track hire prices for selected circuits in Australia. Charges tend to vary depending upon whether the circuit is being hired for club use or for corporate purposes.

Table 28 Published track hire prices for selected circuits

	Weekdays	Weekends
Wakefield Park ¹	\$3,600	\$5,200
Calder Park ²		
Car Manufacturers/ Experiences	\$11,000	\$14,850
Motor Sports Club and Driving Schools	\$6,600	\$11,000
Barbagallo (WA) ³	\$3,600	\$4,600

Source:

1. http://wakefieldpark.com.au/index.php?option=com_content&task=view&id=34&Itemid=51
2. <http://www.calderpark.com.au/track-hire.aspx>
3. <http://www.wascc.com.au/>

In addition to circuit hire, additional items which may be required include:

- CAMS events levy (\$500 at Wakefield Park)
- Insurance cover (\$800 at Wakefield Park, \$660 at Calder Park)
- Track marshal (\$280 at Wakefield Park, \$360 at Calder Park)
- Ambulance (\$600 at Wakefield Park, \$1,040 at Calder Park)
- Use of control tower (\$200 at Wakefield Park)

Table 28 shows typical track hire prices range from \$3,600 to \$11,000 for use by clubs, with premia charged at Calder Park for corporate hire.

For national events (i.e. where the circuit would be booked out to a promoter who would on-sell tickets/admission fees to competitors), the charge out per day for Phillip Island is reported to be \$40,000 per day.

7.2.5 Event/revenue scenarios

The following scenarios consider the revenue which could be raised using the typical prices outlined in the Section 7.2.4. The analysis considers combinations of events and fees that could be charged so that the second circuit is cost competitive relative to other venues.

7.2.5.1 Revenue Scenario 3 – optimistic

Based upon the pricing analysis undertaken in Section 7.2.4 to determine competitive market rates, for revenue scenarios the following combination of revenue streams for the second circuit are assumed:

- One international marquee event (attracting 100,000 people, with a cost recovery of \$5 per person);
- Two national events (hired out at \$40,000 per day for 3 days each); and
- 100 small events (driver training days/club days) (hired out at an average of \$10,000 per day).

The total estimated revenue resulting from this scenario of events is shown in Table 29.

Table 29 Revenue Scenario 3 – revenue streams

	Number of events	Spectators	Gate fee per spectator	Track Hire per day	Days of Track Hire per event	Estimated revenue
Marquee event	1	100,000	\$10			\$1,000,000
National events	2			\$40,000	3	\$240,000
Small club events	100			\$10,000	1	\$1,000,000
Total						\$2,240,000

7.2.5.2 Revenue Scenario 4 – noise restriction enforced

Revenue scenario 4 uses the same pricing assumptions as for Revenue scenario 3; however the number of events held is fewer, having respect to the noise restrictions outlined in Section 4.1.2. The following combination of revenue streams are assumed for the second circuit:

- One international marquee event (attracting 100,000 people, with a cost recovery of \$10 per person);
- One national event (hired out at \$40,000 per day for 3 days); and
- 25 small events (driver training days/club days) (hired out at an average of \$10,000 per day).

The total estimated revenue resulting from this scenario of events is shown in Table 30.

Table 30 Revenue Scenario 4 – revenue streams

	Number of events	Spectators	Gate fee per spectator	Track hire per day	Days of Track Hire per event	Estimated revenue
Marquee event	1	100,000	\$10			\$1,000,000
National events	1			\$40,000	3	\$120,000
Small club events	25			\$10,000	1	\$250,000
Total						\$1,370,000

7.2.5.3 Cost/revenue analysis

Table 31 describes the estimated profit/loss for Revenue scenarios 3 and 4, if total capital and operating costs are recovered. The results illustrate that under prevailing market conditions the second circuit is unlikely to recover total costs.

Table 31 Cost/revenue analysis for Revenue scenarios 3 and 4 (capital and operating cost)

	Optimistic scenario (3)	Noise restricted scenario (4)
Revenue	\$2,240,000	\$1,370,000
Annualised cost (capital and operating)	\$4,619,233	\$4,619,233
Profit/(loss) on total annualised costs	-\$2,379,233	-\$3,249,233
Margin	-52%	-70%

Table 32 describes the resulting estimated profit/loss for combinations 1 and 2, if only operating costs are recovered. It can be seen that under combination 2, the potential for the circuit to achieve a sustainable rate of return and cover operating costs is diminished.

Table 32 Cost/revenue analysis for Revenue scenarios 3 and 4 (operating cost)

	Optimistic scenario (3)	Noise restricted scenario (4)
Revenue	\$2,240,000	\$1,370,000
Annualised cost (capital and operating)	\$876,800	\$876,800
Profit/(loss) on total annualised costs	\$1,363,200	\$493,200
Margin	155%	56%

7.2.6 Second circuit feasibility conclusions

The key findings of the financial analysis of the proposed second circuit area as follows:

- As a financial proposition, it is considered that the second circuit is only likely to recover total costs under the scenario where two marquee events can be held at Mount Panorama each year for the next 30 years, and the average cost recovery from each spectator is approximately \$46.
- Under a scenario where the second circuit is primarily reliant on track hire throughout the year by local events and clubs, the second circuit is likely to be not financially viable.
- On the basis that only operating and maintenance costs of the second circuit are recovered, the second circuit could be financially viable provided that the circuit could be hired for at least 100 days a year, for the next 30 years.

It is important to recognise that events held at the second circuit could provide flow-on benefits to the local economy of Bathurst and NSW more generally. NSW Government investment appraisal conventions dictate that those flow-on benefits are not included in financial feasibility studies.

7.3 Complementary Infrastructure

7.3.1 Overview

The following subsections provide a financial analysis associated with potential complementary infrastructure (with or without a second circuit) at Mount Panorama.

The following complementary infrastructure options are analysed:

- **Repair circuit** – lump sum investment in circuit upgrade to offset annual maintenance costs;
- **Redevelop hardstand** – relocate lighting columns from hardstand south of pit building to enable better use of area;
- **Develop Tourist Centre** – capture existing passing tourist traffic, consolidate and relocate exhibits from NMRM to pit building;
- **Develop grandstand** – build permanent fixtures to offset costs of building/dismantling temporary structures;
- **Build accommodation blocks** – attached to grandstands, to provide housing; and
- **Develop Sky Tower** – build restaurant/tourist facilities on top of mountain and consolidate aerials onto mountain.

7.3.2 Capital and operating costs

The capital and operating costs for each of the six options is shown in Table 33. A 30-year appraisal period and 7% discount rate have been assumed as used for the financial analysis of the second circuit. Operating and maintenance costs have been assumed to be 2% of capital costs. The total annualised cost represents the revenue that would need to be recouped on an annual basis to break even.

Table 33 Capital and operating costs for circuit development

	Capital cost	Annualised capital cost	Maintenance costs	Total annualised cost
Option 1 – Circuit redevelopment	\$2,000,000 (every 10 years)	\$284,755	\$40,000	\$324,755
Option 2 – Hard stand redevelopment	\$500,000	\$40,293	\$0	\$40,293
Option 3 – Tourist Centre development	\$460,000	\$37,070	\$377,252	\$414,322
Option 4 – Grandstand	\$14,000,000	\$1,128,210	\$280,000	\$1,408,210
Option 5 and 6 – Accommodation blocks	\$55,863,600	\$4,501,847	\$1,117,272	\$5,619,119
Option 7 – Sky Tower	\$1,875,000	\$151,100	\$37,500	\$188,600

7.3.3 Revenue analysis

7.3.3.1 Option 1: Repair circuit

Analysis of current accounts suggests that currently around \$390,000 per annum are spent on maintaining and repairing the circuit.

A one-off investment every ten years of \$2m into the repair of the circuit, with an assumed annual operating cost of \$40,000 is estimated to result in an annualised saving of \$64,807, as shown in Table 34.

Table 34 Estimated maintenance cost savings for Option 1 (repair circuit)

Item	Estimated value
Capital cost	\$2,000,000
Annualised capital cost	\$284,755
Maintenance cost	\$40,000
Total annualised cost	\$324,755
Avoided annual maintenance cost	\$389,562
Annual maintenance cost saving	\$64,807

7.3.3.2 Option 2: Redevelop hardstand

The existing hardstand behind the pit facilities, which is not utilised outside of race events, has potential to be used for events such as driver training, cycling criteriums and the like. However, current use of the hardstand is physically restricted by the presence of light poles.

Uses of the hardstand could include:

- Product displays;
- Car shows;
- Driver training ;
- Skid pan usage;
- Festivals; and
- Concerts.

Assuming that relocation of the lighting facilities costs \$500,000 but that operating/maintenance costs would remain unchanged from present, if 10 events per annum could be held on the hardstand at a hire out charge of \$5,000 each, a margin of 24% could be achieved. This is shown in Table 35.

Table 35 Cost/revenue analysis for Option 2 (hard stand upgrade)

Item	Estimated value
Capital cost	\$500,000
Annualised capital cost (total)	\$40,293
Annual revenue	\$50,000
Profit/loss	\$9,707
Margin	24%

The results presented in Table 35 do not include any increase in revenue that could be derived from greater utilisation of the existing pit facilities. The general purpose facilities above the pit garages could be hired for a variety of uses such as conferences, overflow lecture space for Charles Sturt University and local events (weddings, celebrations, annual dinners and the like). An increase in revenue from greater utilisation of the pit facilities would increase the margin estimated in Table 35.

7.3.3.3 Option 3: Redevelop Tourist Centre

The Mount Panorama circuit currently attracts around 300,000 to 500,000 visitors throughout the year outside of race periods (Bathurst Regional Council, 2010). Tourists currently tend to drive the circuit and leave without dwelling in the precinct. There is potential to provide an attractive and stimulating tourist experience to encourage visitors to stay longer. The existing NMRM attracts approximately 38,000 visitors annually, but the bulk of visitors are during the V8 Supercars motor racing weekend.

A visitor exit survey undertaken for the NMRM in 2009 found that there is strong demand for guided tours of circuit and pit buildings (Bathurst Regional Council, 2010). By relocating a revitalised NMRM to the existing pit facilities and expanding the tourist offering, greater revenue could be derived from tourist expenditure due to food, drink and memorabilia sales.

Consolidation of the museum's exhibits could also reduce the NMRM's insurance costs each year, which at present lead to the museum making a loss (Bathurst Regional Council, 2010).

In addition to the NMRM exhibits, the Tourist Centre could offer:

- Refreshment facilities and branded Bathurst souvenirs;
- Winners podium still photo shoot;
- A motion simulator of the circuit, enabling visitors to 'drive Bathurst' at race speed; and
- Guided tours of the pit facilities and circuit.

By providing a 'focal' point for the circuit, safety benefits could also eventuate from a reduction of visitors who currently park their cars on the starting grid in order to take photos.

The fit out of the pit building is estimated at approximately \$460,000 based on the cost estimation described in Section 6.3.2. Assuming that operating costs can be reduced by 20% and that visitor numbers can be raised by 25%, the revitalised Tourist Centre could earn a 10% margin if the average visitor spend equates to \$12. This is shown in Table 36.

Table 36 Cost/revenue analysis for Option 3 (Tourist Centre redevelopment)

Item	Estimated value
Capital cost	\$460,000
Annualised capital cost	\$37,070
Operating costs	\$377,252
Annualised capital cost (total)	\$414,322
Annual visitors	38,119
Spend per visitor	\$12
Total annual revenue	\$455,754
Profit/loss	\$41,432
Margin	10%

Table 36 shows that the current number of visitors that would earn a 10% margin. Capturing a larger share of the tourists visiting the precinct would result in higher revenue streams. Although costs would also increase, if the profit margin could be preserved then profitability would be higher than indicated by this analysis. This highlights the benefits to the NMRM from specialist management of the tourist facilities.

7.3.3.4 Option 4: Grandstand development

Currently, four temporary grandstands are erected annually for the Bathurst 1000, and one grandstand erected for the 12-hour race. Option 4 involves the construction of four permanent grandstands as described in Section 5.2.4.

Provision of permanent structures could offer improved facilities for patrons such as permanent toilet blocks and refreshment stalls underneath the stands. The construction costs of the permanent grandstands is estimated at \$3.5m per block of 3,682 seats, totalling \$14m for four blocks (see Section 6.3.1). This cost is reduced to around \$2m per block if combined with accommodation blocks (as discussed in Section 7.3.3.5).

It is assumed that the cost of erecting and dismantling the temporary grandstands totals approximately \$800,000 per year (Bathurst Regional Council, 2010). Avoiding this cost and applying a cost per seat of \$26.50 for the Bathurst 1000 (with a slightly smaller premium and occupancy rate for the Bathurst 12-hour) is estimated to recoup the annualised capital and maintenance costs (Table 37).

Table 37 Cost/revenue analysis for Option 4 (permanent grandstand)

	Estimated value
Capital cost (all four blocks)	\$14,000,000
Annualised capital costs	\$1,128,210
Annual maintenance costs	\$280,000
Total annual costs	\$1,408,210
Revenue calculations	
<i>Bathurst 1000</i>	
<i>Premium charged per grandstand seat</i>	<i>\$26.50</i>
<i>Occupancy</i>	<i>100%</i>
<i>Bathurst 12-hour</i>	
<i>Premium charged per grandstand seat</i>	<i>\$20.00</i>
<i>Occupancy</i>	<i>25%</i>
Total annual revenue	\$611,212
Avoided cost of temporary structures	\$800,000
Profit/loss	\$3,002
Margin	0%

It is important to recognise that since BRC could potentially benefit financially from the construction of permanent grandstand facilities, it would be appropriate for them to fund construction.

7.3.3.5 Option 4 and 5: Grandstand and accommodation development

Building combined grandstand and accommodation blocks reduces the cost per grandstand from \$3.5m for the grandstand only to approximately \$2m per grandstand block. However, an additional \$12m is required to construct the accommodation component of each block, resulting in a combined cost of \$14m per grandstand/accommodation block. In this scenario, accommodation is leased out to students during the academic year (approximately February to October).

Each block is designed (in accordance with the description contained in Section 5.2.4) to accommodate 121 students in a mix of 1 and 2 bed units (Table 38). These units could also be used for office and other commercial functions.

Current Charles Sturt University accommodation rates range from \$5,141 to \$7,195 for the academic year from March to October (Charles Sturt University, 2010). Using comparable rates to those charged for the newer accommodation blocks, estimated rents for the new accommodation units, together with the estimated annual income per block (allowing for a proportion of rent to cover utilities, staff and the like) are shown in Table 38.

Table 38 Assumptions - accommodation

Assumption	Number of units (per block)	Assumed annual rent per bed
1 bed units (balcony)	12	\$8,000
1 bed units (view)	37	\$7,500
2 bed units (view)	12	\$7,000
2 bed units (no view)	24	\$6,500
Total number of beds	121	
Estimated total annual rent		\$853,500
Estimated rent net of 10% overhead (staff, utilities etc.)		\$768,150

<http://www.csu.edu.au/oncampus/accommodation/on-campus/bathurst>

Adding the grandstand revenue calculated in Table 37 to the rents calculated for each block in Table 38 results in an estimated total annual revenue of \$3.7m.

The combined revenue does not cover the annualised capital and operating costs, allowing for the avoided cost of the temporary grandstand structures with a shortfall of over \$1m per annum (Table 39).

Table 39 Cost/revenue analysis for Option 4 and 5 (grandstand and accommodation combined)

	Value
Capital cost (all four blocks)	
Grandstand	\$7,896,600
Accommodation	\$47,967,000
Total	\$55,863,600
Annualised capital costs	\$4,501,847
Annual maintenance costs	
Grandstand	\$157,932
Accommodation	\$959,340
Total annual costs	\$5,619,119
Revenue	
Grandstand	\$611,212
Rent from accommodation	\$3,072,600
Total annual revenue	\$3,683,812
Avoided cost of temporary grandstand structures	\$800,000
Profit/loss	-\$1,135,307
Margin	-25%

7.3.3.6 Option 5: Further analysis – sale of accommodation units

The average estimated cost for each of the units in the accommodation blocks is \$141,079. Table 40 below shows a snapshot of property prices in the Bathurst urban area taken from the real estate website, <http://www.realestate.com.au>, in October 2010. The data shows the average cost for units in the accommodation block at Mount Panorama is likely to be between the average prices for one or two bedroom unit accommodation in Bathurst.

Table 40 Selection of house prices for 1- and 2-bed houses in Bathurst

Address	Bedrooms	Land area (m ²)	Price	Average price
Bathurst	1	36	\$79,000	\$86,000
Bathurst	1	36	\$89,000	
Bathurst	1	36	\$81,000	
Bathurst	1		\$95,000	
Bathurst	2	171	\$265,000	\$208,000
Bathurst	2		\$234,000	
Bathurst	2	104	\$170,000	
Bathurst	2		\$237,000	
Bathurst	2		\$170,000	
Bathurst	2	120	\$149,000	
Bathurst	2		\$249,000	
213 Ophir Road, Bathurst	2		\$230,000	
Bathurst	2	125	\$199,000	
Bathurst (median unit price)	2		\$210,000	

Source: www.realestate.com.au , October 2010

Table 41 provides a sensitivity analysis to estimate the effect of accommodation units being sold at below or above the average cost per unit.

Table 41 Sensitivity analysis – revenue raised from sale of units

Proportion of units sold	Average sale price per unit					
	\$120,000	\$140,000	\$160,000	\$180,000	\$200,000	\$220,000
20%	-\$39.8m	-\$38.4m	-\$37.1m	-\$35.7m	-\$34.4m	-\$33.0m
40%	-\$31.6m	-\$28.9m	-\$26.2m	-\$23.5m	-\$20.8m	-\$18.0m
60%	-\$23.5m	-\$19.4m	-\$15.3m	-\$11.2m	-\$7.2m	-\$3.1m
80%	-\$15.3m	-\$9.9m	-\$4.4m	\$1.0m	\$6.4m	\$11.9m
100%	-\$7.2m	-\$0.4m	\$6.4m	\$13.2m	\$20.0m	\$26.8m

Table 41 demonstrates that accommodation at Mount Panorama is a high risk/ high reward venture. As such, it is appropriate that a private sector developer pursue this infrastructure option given the risk involved. The accommodation need not be restricted to residential use. A private sector investor may determine that the accommodation is better suited to commercial office space. There is an example of this type of development at Hampton Downs in New Zealand.

7.3.3.7 Option 6: Sky Tower

The potential Sky Tower development as described in Section 5.2.3, at Reid Park is estimated to cost \$1,875,000. Revenue sources include spend from visitors on food, beverage and souvenirs. Additionally, the tower provides an opportunity to consolidate some of the communications aerials on top of Mount Panorama onto a single site, thus attracting rent from television and telecommunications companies.

Assuming 30,000 visitors per annum visit the Sky Tower and spend around \$7 each, the potential Sky Tower is estimated to generate a 10% margin, as shown in Table 42.

Table 42 Cost/revenue analysis for Option 2f (Sky Tower development)

Item	Estimated value
Capital cost	\$1,875,000
Annualised capital cost	\$151,100
Operating costs	\$37,500
Annualised capital cost (total)	\$188,600
Annual visitors	30,000
Spend per visitor	\$6.92
Revenue from communications	Discuss with telecommunications companies
Total annual revenue	\$207,459
Profit/loss	\$18,860
Margin	10%

An option not considered here is to convert the Sky Tower to premium corporate accommodation during marquee events such as the Bathurst 1000. Hiring of the facility at race time could provide income, further underpinning the viability of the Sky Tower development.

7.4 Financial Analysis – overall conclusions

7.4.1 Second circuit

The second circuit is estimated to require revenues of \$4.6m per annum to pay back capital and operational expenditure. There is limited potential to attract sufficient marquee events and revenues are not guaranteed. The second circuit would require at least two marquee events per annum, attracting crowds of at least 50,000 spectators each.

If the second circuit is funded by a non-repayable grant, recovering only operating and maintenance costs, the circuit is estimated to become viable, albeit under a set of generous assumptions. In particular, the circuit would need to be hired for 100 days per year, every year for the next 30 years, at a rate of \$10,000 per day, while also hosting two rounds of a national event such as Australian Superbikes, and one marquee event.

It is important to recognise that prudent asset management requires that maintenance funding be consistently put aside regardless of whether an asset is fully utilised. This implies that if the circuit could not be hired for 100 days per year, the asset manager would face a substantial revenue deficit even where the construction costs of the circuit were gifted.

7.4.2 Complementary infrastructure

There is a clear case for investing in upgrade facilities for existing spectators and tourists to the circuit. This centres around enhancing the NMRM and developing a Sky Tower. The existing NMRM is detached from the circuit and it is recommended to be relocated to the end of the existing Pit Building complex. Of the 300,000 to 500,000 people who travel around the circuit each year, all of them pass by the pit buildings and potential Sky Tower location, giving both the Sky Tower and NMRM comprehensive exposure to visitors. A diversion of 20% of these visitors would provide a greater revenue stream and improved visitor experience. The Sky Tower would provide a unique tourist facility that has the potential to attract visitors from Sydney who may not otherwise travel to Bathurst.

Relocation of the NMRM and development of a Sky Tower are found to be the least risk options for complementary infrastructure investment and is recommended to proceed to a detailed business plan assessment regardless of whether the second circuit is constructed.

The other alternative infrastructure options investigated are relatively higher risk and in some cases are best considered by the private sector.

8.0 Conclusion

8.1 Second circuit feasibility analysis

The Feasibility Study has received and considered extensive local and peak body input, which has primarily been supportive of a second circuit for club motorbike use as well as driver training and education as a community facility. Key stakeholder messages include:

- The need for greater use of the existing facilities;
- The development of a second circuit is required to allow motorbikes to race at Mount Panorama;
- Ancillary uses and complementary infrastructure projects have been proposed;
- Mount Panorama is considered to be an iconic venue; and
- Residents concerns relate to amenity, access and noise.

The feasibility of the second circuit is based on an assessment of:

- Technical issues – could the circuit be built in the proposed location from a 'practical' viewpoint?
- Regulatory issues – are there regulatory constraints that would represent significant barriers to the construction and/or operation of the facility?
- Commercial/ Market issues – Is there sufficient demand for the facility to be well utilised?
- Financial issues – Could sufficient benefits be derived from development of the circuit to outweigh the costs associated with construction and operation?

The following subsections provide a summary of the findings of these factors relating to the feasibility of a second circuit at Mount Panorama.

8.1.1 Technical feasibility

An assessment of the original second circuit layout was undertaken (refer to Section 2.2.2) and a revised layout was developed that improved the layout for motor racing and reduced potential impacts such as noise generation (refer to Section 2.2.3). The revised circuit illustrated in Figure 6 has been designed to meet the standards required to host international events such as Moto GP. The technical feasibility assessment found that it would be feasible to construct this circuit within the physical constraints of the location, on BRC owned land.

To support technical feasibility the second circuit would require a number of mitigation measures to be put in place, including:

- Management of noise impacts would require construction of noise barriers at strategic locations and the acquisition of three properties for which noise impacts cannot be sufficiently mitigated.
- Access roads would need to be constructed to provide year round access to the majority of the main circuit for tourists and access to residential properties on the Mountain when the second circuit is being used.

For the purposes of this feasibility assessment, the revised track layout (Figure 6) is used as the preferred second circuit configuration.

8.1.2 Regulatory considerations

There is regulatory uncertainty associated with the construction of the second circuit, primarily relating to the management of noise impacts on residents. As outlined in Section 4.1.2 of this report, there is currently no standard by which regulatory authorities (i.e. BRC or the NSW State Government) can assess motor racing noise thresholds. For the purposes of this feasibility study AECOM developed noise criteria to assess the implications of a second circuit, which are based on international and national regulations. When applied against the derived noise criteria, the noise profile of the second circuit was found to be within an acceptable range. However, in practice, the second circuit would require approval by multiple regulatory bodies. It is recommended that an approvals strategy be developed in consultation with applicable regulatory authorities including the NSW

Department of Environment, Climate Change and Water (DECCW) once a concept second circuit design has been developed.

A review of background flora and fauna data does not identify protected species located in proximity to the proposed second circuit.

8.1.3 Commercial feasibility

Stakeholder submissions from a wide range of organisations (see Section 3.0 for details) indicate that there is strong and unmet demand for motor racing facilities in a location within reasonable proximity to Sydney. This is likely to be the result of the closure of Oran Park motor racing circuit (Sydney) and the very high utilisation of Eastern Creek Raceway (Sydney's main motor racing circuit). Demand for a second circuit at Mount Panorama is likely to come largely from local motor sport clubs, driver training providers, and other organisations that make use of closed racing facilities (e.g. car manufacturers).

While there is anecdotal evidence of unmet demand for motor racing circuits, the managers of Eastern Creek Raceway have an advanced proposal for redevelopment of that facility. This may increase in the capacity of Eastern Creek Raceway by allowing events to be held on two circuits simultaneously². If the Eastern Creek Raceway is redeveloped as proposed it is likely that the current unmet demand could be accommodated at Eastern Creek, diminishing the short term demand for a new facility within reasonable proximity to Sydney.

Our analysis suggests that there are sufficient motor racing circuits in Australia, and particularly along the eastern seaboard, to meet current demand for major international motor racing events. For example, Moto GP and World SuperBikes are accommodated by the Philip Island raceway; Formula 1 is located at Albert Park. It follows that if large scale events were to be held at Mount Panorama, this would necessarily be at the expense of circuits currently hosting those events. While this may bring flow-on benefits for Bathurst and NSW, the Commonwealth Government would not view this as contributing to the economic growth of Australia, and would therefore be highly unlikely to provide support for the facility.

8.1.4 Financial feasibility

The capital expenditure required to construct the combined second circuit (international and national circuits) is estimated to be \$46.44m (excluding noise mitigation measures). Approximately \$35m of that capital expenditure relates to the national circuit, since it is the bulk of the new infrastructure. As the international circuit makes use of part of the national circuit, the standards required for international motor racing must be met for the entire circuit.

The estimate of annual operation and maintenance expenditure for the second circuit is 2% of the initial capital expenditure. This estimate accords with best practice asset management guidelines and results in an annual operation and maintenance expenditure of \$876,800.

Applying standard NSW Government investment appraisal guidelines, the yearly benefits (i.e. revenue) required to offset the initial capital expenditure and yearly operation and maintenance expenditure is estimated to be \$4.6m per annum for 30 years.

Under a scenario whereby Mount Panorama attracts two large scale (marquee) events, with crowds of around 50,000 per event it is estimated that \$46.19 from each of the 50,000 tickets sold would need to be recouped by the investor to cover capital and operating costs. This outcome relies on the assumption that the two marquee events are held each year for 30 years. Should the two marquee events be held less regularly (10 years on, 10 years off) the benefits required increase to \$65 from each ticket sold.

Local motor sport events could be held throughout the year at minimal cost when the circuit was not closed.

Under a scenario whereby only the operating and maintenance costs of the second circuit were required to be recovered, the second circuit may be financially viable. However, this relies on high utilisation of the circuit from the first year of operation and circuit hire fees that are higher than those currently charged in the Australian market.

² See Australian Racing Drivers Club Newsletter October 2010, Vol 22, No 4.

8.1.5 Conclusions and recommendations

The second circuit is technically feasible to construct, however the noise generation limits are uncertain as noise criteria do not currently exist for the Site. Based on consultation with stakeholders and interest groups there appears to be unmet demand for a range of uses for a second circuit, but there is little evidence of unmet demand for international motor racing events. As a result, the calendar of events for the second circuit would be dominated by local usage. Based on a range of assumptions the benefits from constructing the second circuit could outweigh the costs of construction and operation/ maintenance of the facility, making the second circuit economically viable. However, this is highly sensitive to two key parameters:

- The number of events to be held at the circuit attracting in excess of 50,000 full fee paying spectators; and
- Those events being held every year for the next 30 years.

Analysis demonstrates that with current noise restrictions limiting the number of days that the circuit can be used, the circuit would cover its operating costs by a small margin.

On the balance the above considerations, the feasibility assessment has found that the risks associated with the financial feasibility of the second circuit are of sufficient magnitude to warrant deferment by the public sector of further consideration of the second circuit redevelopment. Should a number of large scale motor racing events arise that could not be accommodated by existing facilities, then the second circuit should proceed to detailed design stage.

In light of this conclusion, and the considerable regulatory uncertainty in relation to noise impacts, it is recommended that the land identified for the second circuit be reserved. It is recommended that land around the circuit footprint that could potentially be impacted by noise when the circuit is developed, be acquired as a buffer primarily to prevent a change in land use that would further preclude motor racing activities through encroachment of sensitive land uses (Figure 13).

8.2 Complementary infrastructure feasibility analysis

8.2.1 Complementary infrastructure

Feasibility analysis findings can be grouped according to two themes, which are:

- Better utilisation of existing facilities on the Mountain:
 - Establish a Tourist Centre in existing pit facilities; and
 - Utilisation of existing hardstand for use outside of race events.
- New infrastructure to complement existing activities:
 - Permanent grandstands on to Pit Straight to replace temporary structures;
 - Permanent grandstands that incorporate accommodation/commercial uses; and
 - Development of a Sky Tower at Reid Park to utilise panoramic views.

The feasibility of these alternative infrastructure options is assessed in terms of financial considerations. The assessment also draws from the technical and commercial analysis of these options in the Tourism Strategy (KBR, 2003).

There is a clear case for investing in upgrade facilities for existing spectators and tourists to the circuit. This centres around enhancing the NMRM and developing a Sky Tower. The existing NMRM is detached from the circuit and it is recommended to be relocated to the end of the existing Pit Building complex. Of the 300,000 to 500,000 people who travel around the circuit each year, all of them pass by the pit buildings and potential Sky Tower location, giving the both the Sky Tower and NMRM comprehensive exposure to visitors. A diversion of 20% of these visitors would provide a greater revenue stream and improved visitor experience.

The Sky Tower would provide a unique tourist facility that has the potential to attract visitors from Sydney who may not otherwise travel to Bathurst and would be financially viable if a \$7 profit could be earned from 30,000 visitors.

Establishment of a Tourist Centre with relocation of the NMRM and development of a Sky Tower are found to be the least risk options for complementary infrastructure investment and are recommended to proceed to a detailed business plan assessment regardless of whether the second circuit is constructed.

The existing hardstand behind the pit facilities is not utilised outside of race events. There is great potential for this area to be used for events such as driver training and cycling criteriums. However to allow driver training to take place existing power poles would need to be removed.

BRC currently erects temporary grandstands to accommodate V8 Supercar crowds, at a considerable expense each year. The grandstands are generally sold out over the Saturday and Sunday of racing. Constructing permanent grandstands would allow the Council to avoid the yearly expense associated with the temporary stands. Our analysis suggests that this would be viable if \$26.50 from each grandstand ticket was recouped by the investor.

The other alternative infrastructure options investigated being accommodation/commercial development with the grandstand seating and an Automotive R&D Park on privately held land are relatively higher risk and in some cases are best considered by the private sector.

8.2.2 Conclusions and recommendations

As standalone investments, the redeveloped Tourist Centre, permanent grandstands and Sky Tower development are all financially feasible. However, the feasibility of the tourist facilities is reliant on specialist tourist management so that the offering consistently meets the needs of the tourist market.

The development of a Sky Tower on the mountain could help Mount Panorama to become an iconic destination, attracting visitors from Sydney across the Blue Mountains (described as a 'Sandstone curtain' due to the limited number of tourists who travel west beyond them). The Tourist Centre and Sky Tower together with better infrastructure utilisation could enhance the feasibility of a second circuit in the future by providing a sound commercial and operational base.

There is potential for the existing pit facilities to be hired regularly throughout the year including to support driver training and other hardstand uses, subject to the removal of power poles from the existing hardstand. The potential accommodation/commercial uses to be integrated with the grandstand facilities is best suited to a private sector investor.

8.3 Managing Mount Panorama as a unified precinct

8.3.1 Need for a unified precinct

To realise the maximum potential for Mount Panorama it should be viewed as a distinct precinct with a unique range of events. The precinct is a significant tourism site in the Western District of NSW, attracting short-term visitors throughout the year. However, the potential of that market is not maximised at present in terms of capturing tourist related expenditure. Further, the existing circuit does not currently host the five events per year permitted under the Mount Panorama Act, indicating that the existing facilities are also under utilised.

There is potential for the second circuit to be feasible in the medium term should the demand from marquee events improve. However, in order to mitigate noise impacts privately held land surrounding the footprint of the second circuit would need to be acquired, primarily to prevent interim land use change that would impact the technical and regulatory viability of the second circuit.

There are two main options for the land to be reserved, which are:

- The public sector could purchase the land. This option would require the outlay of capital to purchase the privately held land, most likely by BRC. BRC would also incur holding costs until such time as the second circuit became feasible. Furthermore, BRC would forego rate revenue once the property was purchased.
- A governance model is established for the Mount Panorama precinct with the purpose of facilitating public and private sector investment in the precinct.

To facilitate greater utilisation and potential expansion of facilities it is recommended that the governance arrangements that apply to the Mount Panorama precinct are reformed to establish a Special Purpose Vehicle (SPV) into which responsibility for publicly and privately held assets within the precinct could be placed. This

option is most likely to result in greater utilisation of the existing facilities through specialist management, and brings the added benefit of the public sector avoiding the costs associated with purchasing land to facilitate the second circuit.

The SPV would be governed by a Board with representation from BRC, the NSW Minister for State and Regional Development and a representative of private land owners on the circuit. The Board would be held accountable by the NSW Parliament through standard reporting procedures. An Advisory Committee would also have formal input into oversight of the board. The Advisory Committee would have representation from local residents, the BBC and user groups.

Management of the precinct would be tendered to the private sector to attract specialists with the necessary skills and experience to make the most of the precinct and to fully utilise the existing tourists visiting the area.

The specialist managers would:

- Develop and implement a strategy to revitalise the tourist offering of the Mountain. This would include the commercial operation of the tourist facilities (Tourist Centre and Sky Tower) to ensure the market is 'tapped';
- Address regulatory requirements as they arise;
- Manage contracts for utilisation of the full circuit to ensure the precinct is getting its 'fair share' of revenue raised from events held in the precinct; and
- Issue and manage tenders for high risk/ high reward ventures in the precinct, with the first tender being the grandstand with accommodation development.

The Corporation would have a CEO, with the following direct reports:

- CFO
- Operations manager
- Contracts and procurement specialist
- Tourism specialist

The SPV governance model (Figure 16) has the potential to deliver three main benefits when compared with the alternative approach, which are:

- Specialist management of tourist precinct;
- Greater utilisation of the existing circuit for major events; and
- Benefits from facilitating public and private sector investment in the Mount Panorama precinct.

These benefits are described in the following subsections.

Specialist management of tourist precinct

The SPV governance board would tender managing the Mount Panorama precinct to experienced and successful tourist facility managers. Appropriate management of the Mount Panorama precinct would facilitate the establishment of targeted infrastructure and activities to encourage tourists to dwell for extended periods and spend.

Table 43 outlines the financial benefits that could be realised if the Tourist Centre and Sky Tower were to attract 100,000 and 80,000 visitors annually respectively. The calculations in Table 43 and Table 44 do not include income from rental of the pit/garage facilities or income from premium spectator viewing and communications infrastructure rental on the Sky Tower.

Table 43 Tourist Centre potential from increased visitation

	Low	High
Number of visitors per annum to museum	38,119	100,000
Spend per visitor	\$11.96	\$11.96
Total revenue	\$455,754	\$1,195,616
Annualised capital costs	\$37,070	\$37,070
Annual operating costs (2% of construction + 80% of current museum costs)	\$377,252	\$828,644*
Total annual costs	\$414,322	\$414,322
Profit/loss	\$41,432	\$366,972
Margin	10%	88%

*Note: Operating expenditure is assumed to double from the increase in visitation for illustrative purposes.

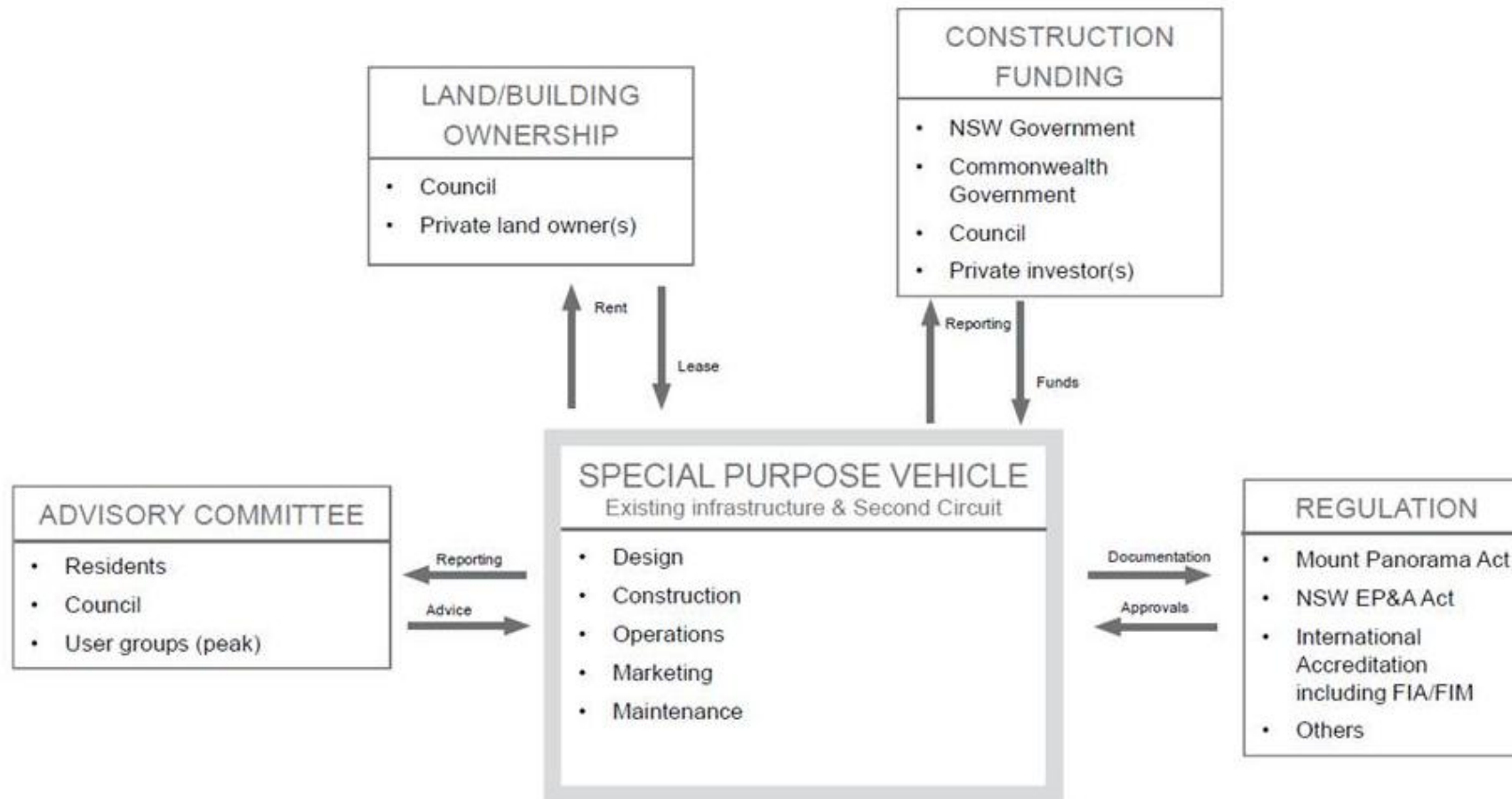
Table 44 Sky Tower potential from increased visitation

	Low	High
Number of visitors per annum to Sky Tower	30,000	80,000
Spend per visitor	\$6.92	\$6.92
Revenue from communications aerals	N/A	N/A
Total revenue	\$207,459	\$553,225
Annualised capital costs	\$151,100	\$151,100
Annual operating costs (2% of construction cost – exc staffing/operations etc.)	\$37,500	\$75,000*
Total annual costs	\$188,600	\$226,100
Profit/loss	\$18,860	\$327,125
Margin	10%	173%

*Note: Operating expenditure is assumed to double from the increase in visitation for illustrative purposes.

Table 43 and Table 44 demonstrate the net benefits from appointing specialist managers with the mandate to maximise revenue capture from visitors to Mount Panorama. Under the proposed governance model those benefits would be distributed to the shareholders of the SPV.

Figure 16 Mount Panorama Governance Concepts



Source: AECOM (2010)

Greater utilisation of the existing circuit for major events

The Mount Panorama Act permits up to five events per year to be held without the need to take into account noise and access impacts on residents. Currently there are four events held, although it is understood that the only event that consistently generates net financial benefits for BRC is the V8 Supercars round. Specialist management may be more successful in attracting 'marquee' events under beneficial terms for the asset owner. Any net positive revenue stream would be paid to the SPV and distributed to the shareholders of the SPV according to the governance rules.

Potential economic benefits

The operating model outlined in Figure 16 has the potential to facilitate both public and private investment in Mount Panorama to generate economic activity and create employment in Bathurst from two primary sources, being the Tourist Centre and Sky Tower as well as the development of an R&D Park.

Local employment will be generated both via the Tourist Centre and the Sky Tower. The increase in employment and economic activity could be realised relatively quickly, as the Tourist Centre does not require major construction.

The development of an R&D Park (Section 5.2.5) could support up to 1,000 jobs. This estimate is based on standard industry benchmarks that establish the employment potential of commercial floor space. The economic activity and employment creation would be realised in the medium term, due to the inherent time lag between construction and economic activity.

Both sources of employment have the benefit of being reasonably constant throughout the year, which is in contrast to the casual employment that tends to result from peak tourist events, such as V8 Supercars.

As outlined in Section 4.1.3, purchase of privately held land would improve feasibility of the second circuit by preserving land and buffer areas. Under the governance structure illustrated in Figure 16, it may be possible for private land owners to transfer ownership of the land to the SPV in return for a share of the financial benefits that are expected to arise from specialist management of the facilities in the precinct. This would allow acquisition and holding costs to be avoided by the public sector and the lost rate revenue to be retained for BRC. Furthermore, a speculative venture, such as the R&D Park outlined in Section 5.2, would be more likely to attract private sector investment if a clearly defined governance structure for an investment vehicle, such as the SPV, is in place and has a proven track record of performing for the benefit of stakeholders.

Table 45 demonstrates that there would be a reduction in the estimated revenue requirement for the second circuit of approximately \$137,000 per year if the largest private sector land holder adjacent to the track (Rayner's orchard) transferred land holdings into the SPV rather than selling the land to the public sector. The analysis presented in Table 45 assumes a land value for Rayner's orchard of \$3m, purely for illustrative purposes. This is likely to be conservative since the current land holder would seek a purchase price for the land that reflects its potential as an industrial/commercial development, rather than its current rural land use value.

Table 45 Second circuit financial feasibility with/without orchard purchase costs

	Second circuit feasibility without property purchase	Second circuit feasibility with property purchase
Construction cost	\$43,840,000	\$42,800,000
Land cost	\$2,600,000	\$5,600,000
Total capital cost	\$46,440,000	\$48,400,000
Annualised capital cost	\$3,742,433	\$3,900,382
Operating cost (as % of construction cost)	2%	2%
Total operating cost	\$876,800	\$856,000
Total annual cost	\$4,619,233	\$4,756,382
a. Annual revenue required to breakeven		
To cover capex	\$3,745,656	\$3,900,382
To cover opex	\$877,600	\$856,000
To cover both capex and opex	\$4,623,256	\$4,756,382
b. Annual revenue required to deliver operator margin		
To cover capex	\$4,120,222	\$4,290,420
To cover opex	\$965,360	\$941,600
To cover both capex and opex	\$5,085,582	\$5,232,020

Appendix A

Track Review

Appendix A Track Review

Appendix B

Residents Consultation Meeting

Appendix B Residents Consultation Meeting

Appendix C

Community Consultation Meeting

Appendix C Community Consultation Meeting

Appendix D

Public Forum

Appendix D Public Forum

Appendix E

Noise Assessment

Appendix E Noise Assessment

Appendix F

Geotechnical Investigation

Appendix F Geotechnical Investigation

Appendix G

Cost Estimation

Appendix G Cost Estimation