

IN THE MATTER of the Resource Management
Act 1991

AND

IN THE MATTER of applications by ADCOCK
AND DONALDSON
PROPERTIES LIMITED for
the Stanley Brook Regional
Motorsport Park

EVIDENCE OF DR PHILIP BRENT WHEELER

INTRODUCTION

1. My name is Philip Brent Wheeler. I hold a Ph.D from the University of Otago and I am a specialist in economics, notably financial economics and the economics associated with resource management. I am employed by Brent Wheeler Group (BWG).
2. I have been employed in providing advice on economic effects of various developments and events for over 20 years. Relevant aspects of my experience covers assessments for central government where I worked for the N.Z. Treasury, Local and Regional Government where I worked as Deputy City Planner and Deputy Regional Planner in the Manawatu region, and membership of the 1991 Resource Management Bill Review Committee.
3. In the past I have prepared economic impact analyses in respect of applications in the mining and minerals industry (cement industry 1976, six for Newmont Waihi Gold), the water sector (water allocation), the entertainment sector (Casinos, resort developments), the sporting events sector (Americas Cup, Taupo District Council tourism) and heritage areas (Wanganui commercial, Wellington City heritage).

4. I have read the Environment Court's code of conduct for expert witnesses and agree to comply with it. I have prepared my statement of evidence accordingly. I confirm that my evidence is within my area of expertise and that I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

SUMMARY OF FINDINGS

5. The Stanley Brook Regional Motorsport Park (SBRMP) project involves the development of a major facility with associated infrastructure for holding a wide variety of motorsport events in the Tasman District.
6. In summary, the economic analysis I have undertaken shows that on a net present value basis for output and value added multipliers for capital investment and operations over the first five years, and in terms of average full time equivalent employment (FTE) opportunities, the project can be expected to have the following positive economic effects:

Present Day Dollar Effects - Range Midpoints			
	Average		Year 5
FTE Employment	39		47
	Output basis		Value added
Capital	\$ 59,822,136	\$	49,914,095
Operation	\$ 22,889,987	\$	11,282,653
TOTAL	\$ 82,712,123	\$	61,196,748

7. It is expected that the SBRMP will generate, in the first five years of establishment and operation an annual average of 39 FTE jobs growing to 47 FTE positions, economic effects from capital investment of some \$59.8m on an output multiplier basis and \$49.9m on a value added basis, and in terms of operations, to have an output estimated impact of some \$22.9m and a value added impact of \$11.3m.

SCOPE OF EVIDENCE

8. My evidence examines the likely economic impacts (also referred to as “effects” in my evidence) of the proposal in terms of dollar outputs and full time equivalent employment as well as the additional flow on effects to activities other than motorsport in the affected economies.

NATURE OF THE DEVELOPMENT

9. The Stanley Brook Regional Motorsport Park (SBRMP) involves the development of a major facility with associated infrastructure for holding a wide variety of motorsport events in the Tasman District. Details of the development are set out in the relevant resource consent applications.
10. The primary focus of the present report is on the economic effects of the motorsport activity. From a broader perspective however it should be noted that a much broader range of (generally outdoor) activities is contemplated. These include various cycle tracks, confidence course and related facilities.
11. There is also to be a conference centre and camping ground as well as amenities which will be used for various general as opposed to purely motorsport activity. In this respect the facility is to have the characteristics of a multi-use regional park and recreation asset.
12. Factors of specific relevance to this assessment of economic effects include:
 - 12.1. The motivation for the development. This is significant since it underlies present and future demand for the facility and the likely levels of expenditure which will be associated with it;
 - 12.2. As in most regions, cities and towns in N.Z. motorsport has developed from a primarily amateur platform in which use has been made of various facilities such as airstrips, show grounds and like facilities, on a part time basis;
 - 12.3. As the sport has grown increasing urbanisation and population growth has meant that the various impacts of the activity – noise, traffic congestion,

large scale movement of people and related impacts associated with any large scale event based sport have grown to be increasingly incompatible with part time venues and an improvisational approach to catering for demand;

- 12.4.** It is understood that in recent years there has been something of a decline in levels of motorsport which have been able to be undertaken as participants seek to accommodate the wishes of various communities and as venues become increasingly unsuitable;
- 12.5.** At the same time interest and growth in the several sports which fall under the heading "motorsport" has grown and continues to grow¹. One indication of this is the international data which show that while attendance fluctuates very significantly and competition for entertainment spending is intense, attendances at major motor sporting events have grown, on average at 27% per annum over the period 2003 – 2009;
- 12.6.** In N.Z. growth has been experienced both in terms of participation and in terms of the forms of participation; and,
- 12.7.** The fact that very considerable investment of one type or another is at stake - at individual levels, in the form of expenditure, in respect of employment, in terms of relationships with the "non-sporting" auto industry, and through an array of economic relationships – means that the assessment of economic effects is an important part of assessing the proposed SBRMP development.
- 13.** From an economic perspective the development involves the outlay of a significant investment in infrastructure in the form of access, water and wastewater plant and treatment, provision of energy and communications facilities and standard site development works.
- 14.** In addition construction of specialised facilities for the holding of a variety of motorsport events which involve significant spectator involvement, public

¹ See Motor Sport Industry Association. <http://www.the-mia.com>

assembly, participant facilities, catering and like arrangements and development of a platform for growth is required.

15. In terms of the on-going operation a sustained "business" in the holding of motorsport events is contemplated. This is to involve significant operating income and expenditure as well as the marketing and administration required to support the hosting of events in a growing industry. Significant levels of increased output and the creation of employment are likely to accompany the activity.
16. In short the SBRMP is likely to generate significant capital and operating gains of an economic nature while at the same time ensuring the avoidance of growing environmental impact issues associated with the present forms of activity.

SCOPE OF DEVELOPMENT

17. It is understood that in full realisation the SBRMP will involve some \$27m of investment in the proposed facility with that investment made in three tranches of \$9.0m.
18. A staged version of the development leading to eventual full realisation may be made. In this case the investment after three years (the point at which a satisfactory level of operation may be undertaken) would involve three tranches of \$3.0m for development.
19. The prime focus in my economic assessment has been the fully realised concept with investment of \$27m. The reason for this is that the staging is a function of finance and timing rather than ultimate economic value. The economic effects then are considered primarily from the perspective of a successfully completed development.
20. The effects of the development process itself are also considered. The emphasis again is on the investment of \$27m.

ESTIMATING ECONOMIC EFFECTS AND MULTIPLIERS

21. The economic effects analysis of the type included in this assessment is primarily concerned with estimating the multiplier or spin-off effects of projects such as the SBRMP Project.

Estimating Economic Effects

22. The purpose of economic impact analysis (estimating economic effects) is to estimate the benefits to be gained from the project. Economic benefits are properly defined as being concerned with an overall improvement in total well-being not just simple commercial gains².
23. Such overall benefits are typically proxied by gains in full time equivalent (FTE) jobs and gains in dollar denominated gross domestic product or output. Estimates of economic effects seek to quantify the size of those gains.
24. There are several means for estimating such effects. Each has conceptual and empirical advantages and disadvantages and the choice of model reflects various trade-offs made amongst those characteristics. BWG has adopted what might be termed the standard input output framework (as used in numerous economic impact studies including those used to study sporting activity and infrastructure³).
25. That framework provides estimates of the way dollars and FTE jobs involved in the direct provision of activities such as those required for and involved in motorsport generate additional economic gains throughout the community as "spin offs" or "multiplier effects" so that the overall impact of the activity creates greater benefits than just those directly derived from the activity itself.

² The notion of improved well-being, or economic benefit, is not therefore, exclusively or even mostly concerned with "money". It is concerned with improvements across the entire spectrum of individual and societal endeavour.

³ See for example ECONOMIC IMPACT REPORT ON GLOBAL RUGBY PART IV: RUGBY WORLD CUP 2011 Commissioned by MasterCard Worldwide Researched and prepared by the Centre for the International Business of Sport Coventry University Simon Chadwick, Anna Semens and Dave Arthur,

ECONOMIC IMPACT STUDIES – CURRENT STATE OF DEBATE

26. It is relevant to note that economic impact studies have become popular over recent decades having been deployed to both support and express dissent regarding a range of projects in many parts of the world and in N.Z. Recent times have seen considerable scepticism arise about the relevance, accuracy and usefulness of such studies.
27. Difficulties and criticisms are comprehensively documented in *The benefits of events: An annotated bibliography* prepared by the NZ Tourism Research Institute and AUT University in 2007.
28. Useful conclusions to be drawn from that review along with a consideration of other criticisms coupled with peer review over many years, of previous analyses undertaken by BWG suggest that studies of economic effects are useful as means for indicating the likely orders of magnitude of effects providing the following cautions are applied:
 - I. The tendency to overestimate beneficial impacts through ignoring opportunity costs must be avoided;
 - II. The tendency to overestimate beneficial impacts when in fact a component of benefit is simply a "transfer" from another part of the economy is to be avoided; and,
 - III. Point estimates rather than ranges of estimate are likely specious, can be dangerous and should be avoided.
29. It is critical to draw a sharp distinction between projects which are privately funded without explicit or implicit support, subsidy or other form of "assistance" from governments (whether central, regional or local) and projects which do obtain such assistance.

September 13, 2011 and Deloitte, (2008), Potential Economic Impact of the Rugby World Cup on a Host Nation, September 2008.

30. Many of the criticisms of government subsidised projects are well founded and entirely valid as born out in theory and practice. The key problems identified do not however apply to private projects (such as the SBRMP).
31. The approach adopted by BWG employs:
- a. Explicit means for estimating opportunity costs;
 - b. Explicit means to assess the impacts (if any) of transfers; and,
 - c. A conservative approach at each step of the data gathering and the analysis so as to accumulate a conservative view throughout the analysis.
32. As noted the SBRMP is a private initiative funded through private investment thus the standard public policy critique of government investment in event based economic stimulation do not apply. I note that the Long Term Community Plan contemplates some support for a motorsport facility at some point but this would be by way of loan⁴. In the absence of certainty regarding such support the initiative is planned as if fully funded privately.

Estimating Economic Effects

33. The analysis of economic effects and their characteristic multiplier effects are well known and documented. However it is useful to briefly explain the components of the economic effects assessed in my evidence and the multipliers used, before describing the outcome of my analysis.
34. The analysis involves estimating economic effects for the capital component (typically initial infrastructure provision and construction) and the operating component (the on-going day to day undertaking of the activity) component. In the present case this amounts to estimating the economic effects of establishing and developing the motorsport facility (capital) and operating it (operating).

⁴ The commercial nature of such a loan means that the issues arising with public subsidy do not necessarily apply.

35. The economic effects are those referred to as direct, indirect and induced effects.

Direct Effects

36. Direct effects are those effects created by construction, development and operation of the project itself. In this case the direct effects are the dollar outputs, defined as forecast cash expenditure as estimated for spectators, participants and support staff, and the jobs directly generated by the Project.
37. Both of these effects (output in dollars and jobs generated) are estimated using the methods discussed below.

Indirect Effects

38. Indirect effects are in turn those effects created by the need to support and service all of the activity which the project involves. Examples of indirect effects include provision of fuel for vehicles, provision of plant and equipment, and provision of administrative or like services. As with direct effects, indirect effects take the form of jobs generated and dollars output.
39. Indirect effects are estimated through input-output transaction table manipulation and associated statistical techniques. These techniques produce estimates (not observed numbers) and the forecasts are the result of applying accepted econometric techniques to appropriate data.

Induced Effects

40. Finally, induced effects are the effects created by the fact that households (of all descriptions) associated with direct and indirect expenditure and employment consume and produce as a result of the project, thus generating further economic activity in the form of dollar output and jobs generated. Examples include consumer expenditure by suppliers of plant and services. Consequently there are beneficial effects on social, personal and community services arising from the SBRMP Project.
41. Induced effects are the most difficult to estimate because high quality data measuring transactions involving household consumption do not exist in suitable

form (some data are not collected, there are compatibility issues and some data are simply not produced in usable form). Various estimation techniques are used to produce forecasts.

42. In summary, the multipliers associated with the three types of effects assessed in my analysis are as follows:

Effects and Multiplier Terminology

ECONOMIC EFFECT	MULTIPLIER TYPE
Direct effect	No multiplier – direct effect
Indirect effect	Type I multiplier (direct plus indirect)
Induced effect	Type II multiplier (indirect plus induced)

Output, Value Added and Employment Multipliers

43. As well as measuring different types of economic impact it is also common to measure effects from more than one perspective. Three perspectives are typically recognised, each giving a different view of effects. These are:

Output Multipliers

44. Output multipliers provide estimates of direct, indirect and induced effects based on the expenditure incurred by a project and the spin-off effects of that expenditure through the economies (district, regional, national and international) in which it takes place. The term “expenditure” refers to all capital and operating expenses associated with a project over its life. Output multipliers thus give an expenditure based perspective on economic benefit.

Value Added Multipliers

45. Value added multipliers provide estimates of direct, indirect and induced effects based on the wages, salaries and surpluses (together called value added) generated by a project and their spin-off effects through the economies (district, regional, national and international) in which they occur. The term “surplus”

typically refers to profit but may include other forms of income which do not derive from the core activity⁵. Value added multipliers thus give a view of economic benefit more narrowly focussed on profit than on gross expenditure.

Employment Multipliers

46. Finally, employment multipliers provide estimates of direct, indirect and induced full time equivalent (FTE) employment positions generated by a project and the spin-off effects through the economies (district, regional, national and international) in which they occur. Employment multipliers are estimated from expenditure based output multipliers.

DIFFERENCES BETWEEN OUTPUT AND VALUE ADDED MULTIPLIERS

47. Output multipliers focus on total impact as evidenced by expected total expenditure. Value added multipliers focus only on the narrower expected effects from compensation of employees (wages and salaries), and proprietary income or profits.
48. Each provides a different perspective on economic effects. Unsurprisingly the economic effects estimated by output multipliers are generally higher than those estimated by value added multipliers.
49. I have used both output and value added multipliers in my analyses undertaken for the SBRMP Project so as to give both views of likely effects⁶.

⁵ An example would be a grant or subsidy. These forms of surplus do not apply in the case of SBRMP.

⁶ I note that these methods are consistent with other economic impact reports I have prepared, for example for the many resource consents for mining activities in Waihi where such reports and evidence were accepted as far back as the then Planning Tribunal, during the hearing for the Mining Licence in 1987, and have also been accepted by the Environment Court in subsequent hearings.

METHODS AND DATA

50. The data I used to estimate output, value added and employment multipliers themselves were drawn from the standard sources for economic impact analyses. In New Zealand these are the Department of Statistics Inter-Industry Studies series coupled with the Census of Population and Dwellings.
51. I used estimates of multipliers for output and employment made by NZIER, while value added multipliers were estimated directly from the input output tables contained in the Department of Statistics Inter-Industry Studies. These three measures cover the commonly used indicators. Output multipliers for expenditure tend to be larger than value added multipliers because an element of “double counting” can be argued to be present and thus I derived both output and value added results.

ESTIMATING MULTIPLIERS

52. Bearing in mind the previous discussion, output, value added and FTE employment multipliers were derived for the SBRMP as follows:

The aggregate multiplier estimated for the construction sector was adjusted to exclude inappropriate activity. The main exclusion was “DIY building” activity category which is not relevant to commercial construction activity; and,

The motorsport and related multipliers were taken from the Australian Federal Government multiplier study which isolated sport specifically. Checks against other multipliers from the studies quoted in this report confirm the magnitude as within the ranges commonly estimated. The BWG estimate for recreation in N.Z. was used as the FTE multiplier.

53. In order to assess the magnitude of any transfer impact – whereby an absence of businesses in the region to take up demand created might lead to significant leakage beyond the region a location quotient assessment was undertaken⁷.

⁷ See *Location Quotient Technique*, Florida State University Department of Urban and Regional Planning Methods III: Forecasting. <http://mailer.fsu.edu/~tchapin/garnet-tchapin/urp5261/topics/econbase/lq.htm>

54. The location quotient, used in this context, measures the extent if any to which a given region or district is under represented in any given industry or sector of activity. In the present case if demand for a particular good or service was not available in the Nelson / Tasman area then the economic "value" of the demand would leak beyond the regional borders and be felt elsewhere.
55. Where location quotients have a value of "less than 1.0" leakage is likely to occur and multipliers need to be adjusted otherwise raw multipliers are appropriate. This was the case for the Tasman / Nelson regions and no adjustment was made.
56. Multipliers and their derivation for the construction sector are shown in the following table:

Area	Tasman	Nelson	N.Z.
Construction sector	1,929	1,725	149,373
Labour market	23,316	22,020	1,985,844
Proportions	0.08	0.08	0.08
Location quotient	1.10	1.04	N/A
Output multiplier	3.20	3.20	3.20
Value added multiplier	2.67	2.67	2.67
FTE multiplier	3.14	3.14	3.14

57. Multipliers and their derivation for the motorsport sector are shown in the following table:

Multiplier Estimation - Tasman District and Nelson City 2006 Census			
Area	Tasman	Nelson	N.Z.
Recreation sector	408	426	32,679
Labour market	23,316	22,020	1,985,844
Proportions	0.02	0.02	0.02
Location quotient	1.06	1.18	N/A
Output multiplier	2.82	2.82	2.82
Value added multiplier	1.39	1.39	1.39
FTE multiplier	2.29	2.29	2.29

THE SBRMP PROJECT

58. The immediate subject of my analysis is the net cashflow expected to be generated by the development and operation of the SBRMP project. The cashflows consist of:

- Expected net capital expenditure (cash outflows for capital items as set out in the application and accompanying documents); and,
- Expected net year by year cashflow generated by anticipated motorsport and related activity operations as estimated by BWG using the methods discussed below.

59. My results are expressed in the following terms:

- i. Year by year net capital and operating expenditure along with the multiplier effects of that expenditure in \$NZ millions;
- ii. Net Present Values including multiplier effects (thus incorporating direct, indirect and induced economic effects) for both output multipliers and value added multipliers to provide a single number simple estimate of effects in today's dollars;

- iii. Year by year FTE employment generated along with the multiplier effects of that employment for the construction and operational component of the project.; and
- iv. An annual average of FTE employment likely to be created by the SBRMP which has been calculated to give a summary view of employment effects.

INPUTS

- 60. A prime input into the estimation of economic effects is impact of participant expenditure. Such expenditure is important in generating direct, indirect and induced effects. A first issue is to estimate direct effects.
- 61. Both convenience and prior research suggest that participants can be grouped into spectators and participants (including their support personnel). Estimates of likely expenditure need to be made having regard to:
 - The pattern of events expected at the SBRMP;
 - The types of event and the markets they draw from; and,
 - The type and quantity of spending which might be expected.

SPECTATOR SPEND

- 62. Estimated spectator spend is a critical input. While a significant number of economic impact assessments have been undertaken (most notably in N.Z. for V8 Supercar specific events⁸) there is little or no existing reliable general data on this and thus methods for estimation must be developed having regard to particular circumstances. The following two step process was used for the SBRMP:
 - a. An analysis of the literature enabled international data to be gathered from broadly comparable motorsport events which have been studied. In this case studies of economic impacts for five major motorsport events were examined. A wide variety of adjustments were made to data and

results so as to adapt those to N.Z. conditions and one estimate of likely spend was derived; and,

- b. A direct analysis of price components – notably ticket prices – in the current (2012) N.Z. context was made. Estimates for other components of spend (for instance food and drink) were added. Adjustments were made to take account of what is proposed for SBRMP and thus a second estimate of likely spend was derived.
63. This approach allowed at least an element of independent confirmation of estimated spend.
64. It should be noted that while the information used to estimate spectator spend was drawn from the activities of auto racing and stock car or drag racing, these activities and the spend associated with them are regarded as suitable proxies for the full spectrum of activity (which includes motor cross, motor cycle based motorsport, go karting and related sports).
65. References to “events” then covers a wide range of motorsport activity but involves similar spending patterns.

COMPARABLE EVENTS: ESTIMATE FROM INTERNATIONAL EXPERIENCE

66. The British Motorsport Industry Association in conjunction with the East Midlands Development Agency in the UK undertook an extensive analysis of the impact of the British Grand Prix in 2002. The value of that work in the present context is the examination of types of expenditure, ratios of attendance to spending and like information gathered in respect of a range of motorsport events (including one in N.Z.).

⁸ See for example *V8 SUPERCARS EVENT: RESOURCE CONSENT APPLICATION ASSESSMENT OF ENVIRONMENTAL EFFECTS* Bloxham, Burnett, Olliver, Hamilton 2006 and *Wellington V8 Car Race*, McDermott, Miller 2005.

67. A series of adjustments were made to take account of:
- i. Exchange rate and inflation factors. These adjustments allowed data to be expressed in 2012 N.Z. dollars;
 - ii. The “team spend” component was adjusted downward because in F1 racing very significant expenditure on vehicle preparation, tuning, part replacement and various types of auto engineering which is not applicable outside such events takes place and involves significant expenditure;
 - iii. Merchandise spend was also adjusted because Grand Prix and like very high profile events create a platform for sales of high value merchandise. Very high value sales of merchandise are unlikely to be of great relevance in the case of the SBRMP; and,
 - iv. The overseas literature – including the British study – identified significant expenditure reduction through what that literature terms leakage . This refers to expenditure of relevance to the event (including preparation) but not occurring on or immediately adjacent to the site for the event.
68. Adjusting for each of these factors on the basis of past research and consideration of the NZ situation allowed a per spectator per event expenditure of some \$115.00 to be derived. Annex I provides a worksheet for the derivation.

COMPARABLE EVENTS – LOCAL DIRECT ESTIMATES

69. An alternate estimate was developed in a more direct fashion using local data. The key input to the estimate was the currently advertised prices for tickets for the Hamilton based 2012 ITM 400 event to be held later this year. In line with a conservative approach and the likely lesser stature of the SBRMP in early days the lower end of ticket pricing was adopted (\$105 for the event).
70. Identical logic in respect of merchandise sales to that explained above was used to establish a ratio and then a price for event merchandise and other sales. The result is an estimated per spectator per event expenditure of some \$135.00.

COMPARING THE ESTIMATES

71. Considering that only some \$30.00 is allowed for the non-ticket component of the local direct estimate and the considerably higher international spend ranges (upwards of \$200), the estimate of \$135 may seem unduly conservative. On the other hand, factors of relevance to the SBRMP alone – for example the likely “unknown” status of its profile in early years suggest that the spend derived from adjusted international data (\$115) is entirely plausible.
72. A single figure is required to assess economic effects and the following factors were taken into consideration in selecting that figure⁹:
- The events to be staged at SBRMP will not, at least initially have the stature of F1 type events although stature is likely to grow over time;
 - Ability to charge top of the range prices on a sustained basis throughout a 10 event annual calendar is likely to be limited. Again this may change subsequently but initially it may even be that various forms of discount pricing will be required.
 - Similar remarks apply to the sale of merchandise and related sales.
73. For these reasons along with the range established by the two methods a major event spend figure of \$120.00 was adopted.

MINOR EVENTS

74. Events of lesser size are expected to form a major part of the activity at the SBRMP. These will include events such as so called “Drag Racing” and “Stock Car” racing. While drawing smaller crowds such events are to be held more frequently and will form the bulk of the on-going activity.
75. Spend by spectators for these events consists again of direct ticket spend plus expenditure on other items such as food and drink and to a much lesser extent

⁹ The need to establish a range of effect estimates discussed above is dealt with as a later step in the procedure and is discussed below.

merchandise. Direct examination of prices at existing venues was used to establish an estimate for the spend.

76. Ticket prices for these events were priced for 21 venues in NZ used for stock and “mini” car racing and at seven drag racing venues for the present season. Merchandise sales were regarded as negligible while food and drink expenditure is expected to be similar – at least on average – to that at other venues.
77. The combination suggested that a reasonable all up spend estimate is \$25 being \$15.00 minimum for tickets plus an additional amount for sundries. Early days might see discounts to these prices but the long run may also see capacity to charge a slight premium over other venues to the extent that facilities are a significant improvement over other venues¹⁰. At the same time these events operate in the strongly competitive market for ad hoc entertainment which includes movie attendance and like activity so that ability to charge premia is limited.

PARTICIPANTS

78. Ratios of spectator to participant spend were drawn from the overseas literature and research on super car events in N.Z. to derive an estimate of likely participant spend. The advantage of using total spend data in this manner is that it overcomes comparability problems where participant numbers include support crew attendances before events, during events and in differing numbers for differing events.
79. The typically observed ratios see spend at a discount of some 20.5% to spectator spend and thus an estimate of \$96 and \$20 per person per event was adopted for major and minor events respectively.

SUMMARISING EVENTS AND SPEND

80. The results of applying the methods discussed are shown in the following tables.

¹⁰ Existing drag races for instance are held at the Motueka air strip rather than a dedicated venue. Such improvisation is common throughout the country whereas the SBRMP will be a dedicated facility.

81. For estimated spectator spend:

Spectators	Major	Minor	TOTALS
Events	10	20	30
Per event	1,550	388	1,938
TOTAL (and major plus minor)	15,500	7,750	23,250
Spend	\$ 1,937,500	193,750	\$ 2,131,250

82. For estimated participant spend¹¹:

Participants	Major	Minor	TOTALS
Events	10	20	30
Per event	320	80	400
TOTAL (and major plus minor)	3,200	1,600	4,800
Spend	\$ 307,200	\$ 32,000	\$ 339,200

83. Bringing together the spend estimates gives:

Spend	Major	Minor	TOTALS
Per event Spectators	\$ 125	\$ 25	\$ 150
Per event Participants	\$ 96	\$ 20	\$ 116
TOTAL (and major plus minor)	\$ 221	\$ 45	\$ 266

84. It was noted above that the facility at SBRMP will extend well beyond motorsport in terms of its activities with general outdoor recreation facilities being provided along with a conference centre and camping ground. These activities will undoubtedly have an economic effect.
85. It is however unclear what the nature and magnitude of that effect will be – especially once opportunity costs (for example impact on use of other facilities) is taken into account.

¹¹ Participants in major events are expected to number 80 involving four persons per participant. Minor events 40 involving two per participant.

86. In line with the stress on not over estimating benefits and given the proportionately small level of economic effect a separate analysis of these impacts was considered unlikely to be meaningful.
87. Instead, the spinoffs of the many activities related to but not directly involving motorsport (for example club administration, facility promotion and on site catering) were considered to capture these benefits (and avoid double counting)¹².

EMPLOYMENT

88. Employment effects, like dollar output effects involve FTE jobs created through direct employment (those working in the business hosting motorsport activity and events), indirect employment (those working in businesses and activities supporting the events and activities) and induced effects (those working in jobs supporting households created through association with the direct and indirect effects of the activity).
89. Employment associated with the events and hosting of motorsport activity has two components:
- That associated with full time permanent employment administering and operating the business which hosts events; and,
 - The much more variable part time based labour associated with operating and supporting events on a case by case basis.
90. Numbers in the former category tend to be relatively low while numbers in the latter tend to be high on the occasions employment occurs but low when expressed as FTE on an annual basis.

¹² A number of activities are likely to be "non-commercial" (cycle trails etc) or breakeven (for example public camping grounds) with benefits captured in the indirect and induced analysis for motorsport. Thus a "conference centre is likely to be used by a wide variety of groups but primarily by those associated with motorsport.

91. Estimates of full time permanent persons running the operation in the first year of full operation stand at six. This is expected to rise to 10 or so over a period of time. These numbers represent the expectation for operating the facility with only limited time spent on other activity.
92. Other activity which is likely to generate employment (direct, indirect and induced), such as marketing and promotion is to be undertaken by clubs and organisations affiliated with the SBRMP, industry bodies, nationwide sports bodies associated with the codes and so on. Some of this employment will be "picked up" by the multipliers some perhaps not.
93. Part time based work is somewhat deceptive in that common observation suggests that there are a significant number of "officials" and other workers employed at such events. That is correct but the translation of such numbers to FTE jobs reduces the apparently large labour force to much lower numbers.
94. The British Grand Prix week long events for example involve 5,600 marshals, litter wardens, police and others but this translates to some 82 FTE positions only. Intuitively these orders of magnitude seem unlikely in N.Z.
95. The following table shows the calculation for part time work converted to FTE positions for the first year of operation with per event totals based on the full time numbers expected, the types of event and numbers reported in the literature:

Event type	Persons Per Day	Days per Event	Hours	Person Hours per event	Events per Year	Total Hours per year
Major	50	3	8	1,200	10	12,000
Minor	20	1	8	160	20	3,200
						15,200
FTE hours per year		1,920				
FTE positions		8				

96. It is clear that the estimation of FTE employment is difficult and estimates are liable to large swings depending on event schedules and conditions prevailing in

any one year. That is the experience worldwide. For the present analysis the emphasis has been on avoiding over estimation.

CAPITAL EFFECTS

97. The following table sets out the estimated economic effects of the capital investment in the development of the SBRMP for both the full concept and the smaller scale version:

Economic Effects - capital investment: Full Scale					
\$000	2012	2013	2014	Sum	
Capital	\$ 9,000	\$ 9,000	\$ 9,000	\$ 27,000	
FTE employment	40	40	40		
Output Multiplier	3.20	3.20	3.20		
Total	\$ 28,800	\$ 28,800	\$ 28,800		
Opportunity cost factor	0.85	0.85	0.85		
Net effect	\$ 24,480	\$ 24,480	\$ 24,480		
PV at cost of capital	\$ 22,054	\$ 19,869	\$ 17,900	\$ 59,822	
Value Added multiplier	2.67	2.67	2.67		
Total	\$ 24,030	\$ 24,030	\$ 24,030		
Opportunity cost factor	0.85	0.85	0.85		
Net effect	\$ 20,426	\$ 20,426	\$ 20,426		
PV at cost of capital	\$ 18,401	\$ 16,578	\$ 14,935	\$ 49,914	
FTE Multiplier	3.14	3.14	3.14		
Total	126	126	126		
Opportunity cost factor	0.85	0.85	0.85		
Net effect	107	107	107		

98. The table is to be interpreted as follows:

- i. The first two rows show the annual capital investment in today's dollars and the expected FTE employment involved in the development work;
- ii. The Output Multiplier, derived as discussed above is the factor to be applied to the dollar investment and shows the full, gross, output once indirect and induced effects are taken into account;
- iii. The next row labelled "Total" shows the gross dollar output for each year;

- iv. The row labelled "Opportunity cost factor" shows that it is expected that investment in the SBRMP development can be expected to divert some 25% of investment from other areas of the economy thus reducing the gross effect;
 - v. This gives a net effect shown in the row so labelled; and,
 - vi. The "PV at cost of capital" row shows the value of the net effect in today's dollars.
 - vii. The PV at cost of capital for the entire project is shown in the column headed "Sum" and expresses in a single figure the economic effect of the capital component of the development.
99. An identical interpretation is to be lent to the following rows in the table which use a value added multiplier for the reasons discussed above. As noted the value added result gives the more conservative but more conceptually sound view. The size of economic effect estimated is accordingly lower (through the removal of potential double counting in the value added method).
100. The cost of capital used in discounting to obtain the PV figures is estimated using the capital asset pricing model. This ensures that the discount rate reflects the risk associated with the development. Other parameters in the model reflect the expected performance of the economy over the development period¹³.
101. The interpretation of FTE employment is identical except that, PV of FTE employment not being a meaningful concept, an annual average is used showing the number of FTE positions which are sustained for each year of the project.

OPPORTUNITY COST

102. As noted above investment in developments such as the SBRMP means that some portion of investment which would otherwise take place in alternative

¹³ The riskfree rate used is 5% being the approximate rate for government five year bonds expected to prevail over the investment period. The beta of 1.0 reflects an average of beta values for projects such as this determined with reference to the Bloomberg data set and the Value Line data for N.Z. and Australia as at January 2012. The equity risk premium is the standard 6% cited in the literature.

opportunities is reduced. Deriving an appropriate amount by which to reduce gross impacts so as to recognise this is a difficult exercise.

103. The literature provides some clues. In a well acknowledged study Haveman and Krutilla¹⁴ conclude that net benefit accrues to somewhere between 6% and 31% (versus 100%) of economic effects. In N.Z. at present investment opportunities actually attracting investment are sparse and seem likely to remain so for some time.
104. A significant discount for opportunity costs does not therefore appear to be justified. In my view the 25% value adopted (appearing therefore as 85% of total in the table above for calculation purposes) would seem to ensure that only a conservative estimate of effects is produced. At present all such discounts are subjective and to an extent arbitrary thus the important point is for the estimate to lie well within the appropriate range (in this case a relatively conservative figure so as not to exaggerate benefits).
105. In the case of FTE employment the logic is the same. It should be noted that as at the end of January 2012 unemployment in N.Z. stood at some 150,000 and thus it seems unlikely that opportunity costs imposed by the SBRMP would be significant at all.
106. It is this logic which has been applied throughout the analyses.
107. The following table shows an identical analysis applied to the smaller \$9m (total) version of the development.

¹⁴ Haveman, R.H. and J.V. Krutilla *Unemployment, Idle Capacity and the Evaluation of Public Expenditures*, National and Regional Analysis, Baltimore, John Hopkins University Press 1968.

Economic Effects - capital investment: Small Scale				
\$000	2012	2013	2014	Sum
Capital	\$ 3,000	\$ 3,000	\$ 3,000	\$ 9,000
FTE employment	14	14	14	
Output Multiplier	3.20	3.20	3.20	
Total	\$ 9,600	\$ 9,600	\$ 9,600	
Opportunity cost factor	0.85	0.85	0.85	
Net effect	\$ 8,160	\$ 8,160	\$ 8,160	
PV at cost of capital	\$ 7,351	\$ 6,623	\$ 5,967	\$ 19,941
Value Added multiplier	2.67	2.67	2.67	
Total	\$ 8,010	\$ 8,010	\$ 8,010	
Opportunity cost factor	0.85	0.85	0.85	
Net effect	\$ 6,809	\$ 6,809	\$ 6,809	
PV at cost of capital	\$ 6,134	\$ 5,526	\$ 4,978	\$ 16,638
FTE Multiplier	3.14	3.14	3.14	
Total	44	44	44	
Opportunity cost factor	0.85	0.85	0.85	
Net effect	37	37	37	

108. The interpretation of the table is identical to that of the full concept as set out above.

OPERATING EFFECTS

109. Applying the methods discussed the economic effects of the expected operations can be estimated and are shown for in the following table. The analysis uses data as discussed and shown above.

110. A growth rate set at the expected long run growth rate (real, i.e. inflation adjusted) for the N.Z. economy as a whole. Given the growth in attendances at motorsport events (at 27% average p.a. - to the extent that this is a reasonable indicator), expected long run economy wide growth may be regarded as conservative.

	Year 1	Year 2	Year 3	Year 4	Year 5	
Spectator spend	\$ 2,131,250	\$ 2,184,531	\$ 2,239,145	\$ 2,295,123	\$ 2,352,501	
Participants spend	\$ 339,200	\$ 347,680	\$ 356,372	\$ 365,281	\$ 374,413	
TOTAL spend	\$ 2,470,450	\$ 2,532,211	\$ 2,595,517	\$ 2,660,404	\$ 2,726,915	
FTE Full time	6	8	9	10	10	
FTE from part time	8	11	11	14	14	
TOTAL FTE	14	19	20	24	24	
<i>Output Multiplier</i>	2.82	2.82	2.82	2.82	2.82	
Total	\$ 6,966,669	\$ 7,140,836	\$ 7,319,357	\$ 7,502,341	\$ 7,689,899	
Opportunity cost factor	0.85	0.85	0.85	0.85	0.85	
Net effect	\$ 5,921,669	\$ 6,069,710	\$ 6,221,453	\$ 6,376,989	\$ 6,536,414	
PV at cost of capital	\$ 5,334,837	\$ 4,926,313	\$ 4,549,073	\$ 4,200,720	\$ 3,879,044	\$ 22,889,987
<i>Value Added multiplier</i>	1.39	1.39	1.39	1.39	1.39	
Total	\$ 3,433,926	\$ 3,519,774	\$ 3,607,768	\$ 3,697,962	\$ 3,790,411	
Opportunity cost factor	0.85	0.85	0.85	0.85	0.85	
Net effect	\$ 2,918,837	\$ 2,991,808	\$ 3,066,603	\$ 3,143,268	\$ 3,221,850	
PV at cost of capital	\$ 2,629,583	\$ 2,428,218	\$ 2,242,274	\$ 2,070,568	\$ 1,912,011	\$ 11,282,653
<i>FTE Multiplier</i>	2.29	2.29	2.29	2.29	2.29	
Total	32	44	46	55	55	
Opportunity cost factor	0.85	0.85	0.85	0.85	0.85	
Net effect	27	37	39	47	47	39

111. The following should be noted:

112. The table shows only five years operation on a line by line basis since this is believed to offer an adequate view of economic effects. Naturally the facility can be expected to operate for many years beyond year five. Attempts to model effects in detail involves, beyond year five speculation rather than reliable analysis in our view and simple views which see the effects continuing at their year five level or doubling over the subsequent decades are likely to be as plausible as views developed from more complicated approaches; and,

113. The interpretation of each component of the analysis is identical to that shown above for the capital effects. In particular the reasoning behind the estimation of opportunity costs applies to economic effects of the operation, and the values in the last column to the far right of the table shows a present day dollar estimation of the economic effects.

SMALL SCALE OPERATIONAL IMPACTS

114. It is much more difficult to establish estimates of economic effects for the smaller scale operation implied by slower development. The reason for this is that at the

smaller scale it is likely that a different path to full development might be chosen and thus economic effects may differ in terms of sequence.

- 115.** For this reason a simple linear “scaling down” of the analysis presented above while feasible in the case of the capital effects (since that is largely a matter of the “same tasks” being performed over a longer time period), is likely to be mechanistic and perhaps misleading in the case of operations.
- 116.** Two key issues are:
- The need to build critical mass for some events. At too smaller scale it would not, for example, be possible to draw international crowds to certain events. On the same basis certain types of events (for instance various classes of auto competition) may not be feasible unless and until a given level of facility is provided because of safety requirements, preparation area infrastructure needs and so on; and,
 - The profile of the facility and events held there will be an important determinant of ability to run the operation at varying levels. Again that is likely to depend upon critical mass and reputation built over time.
- 117.** A more useful way to think of the small scale economic effects is likely to be in terms of extending the time taken to reach the level of effects set out for the full concept. Thus to gain an impression of the impact of the smaller scale investment it may be more appropriate to consider that the time scale of effects is likely to be extended to a 10 year horizon rather than the three and five year shown above.
- 118.** In adopting this approach to considering slower rates of development the significance of the non-motorsport activities should not be lost. While it might take some time for the commercial scale of the motorsport activity to build up, the benefits of other infrastructure could (depending on development sequencing) be available at much the same time for the smaller and fuller versions of the concept.

FORESTRY OPERATIONS

119. Outside of the opportunity costs accounted for in assessing the economic effects of motorsport and related activity the effect on existing forestry operations on an adjoining property and part of the site for the proposed SBRMP.
120. In respect of forestry operations on adjoining properties possible impacts include:
- I. Possible additions to cost of management should workloads rise through any need to have forestry management plans make allowance for fire breaks and possibly from increased traffic occasioned by additional activity; and,
 - II. the possible need once every 20 – 30 years in the forestry cycle to plan harvesting timetables around events at the SBRMP.
121. Neither of these disruptions to existing operations seem likely to be of material economic significance. Moreover there are gains in risk management and cost control through having significantly improved access and roading along with water availability for fire fighting which are likely to arise from the development of the facility.
122. There is also likely to be some lost opportunity for planting land in the subject property because of the need for fire breaks. I understand arrangements for compensation which neutralises any economic detriment are able to be made to cover any loss through this means.
123. In my view the economic opportunity cost imposed by the proposed development in terms of both adjoining properties and the subject site are negligible or slightly positive on a net basis.

SUMMARISING RESULTS OF ANALYSIS

124. The following table sets out the range of estimated economic effects. A relatively broad range has been chosen to recognise the considerable noise involved in the analysis arising from the several unknowns discussed throughout the analysis:

Range of Economic Effects			
Lower			
	Average		Year 5
FTE	31		37
	Output basis		Value added
Capital	\$ 47,857,709	\$	39,931,276
Operation	\$ 18,311,989	\$	9,026,122
TOTAL	\$ 66,169,698	\$	48,957,398
Upper			
	Average		Year 5
FTE	47		56
	Output basis		Value added
Capital	\$ 71,786,563	\$	59,896,914
Operation	\$ 27,467,984	\$	13,539,184
TOTAL	\$ 99,254,548	\$	73,436,098

125. For the purposes of ready communication the midpoint estimates of the ranges are shown in the following table:

Present Day Dollar Effects - Range Midpoints			
	Average		Year 5
FTE Employment	39		47
	Output basis		Value added
Capital	\$ 59,822,136	\$	49,914,095
Operation	\$ 22,889,987	\$	11,282,653
TOTAL	\$ 82,712,123	\$	61,196,748

CONCLUSION

126. It is expected that the SBRMP will generate, in the first five years of establishment and operation an annual average of 39 FTE jobs growing to 47 FTE positions, economic effects from capital investment of some \$59.8m on an output multiplier basis and \$49.9m on a value added basis, and in terms of operations, to have an output estimated impact of some \$22.9m and a value added impact of \$11.3m.

Philip Brent Wheeler

12 February 2012

Annex I: Derivation of Spectator Spend Estimates

International Data - Derivation of Spend Estimate		
Motorsport average NZD (historical exchange rates)	\$ 481.06	From analysis of economic effects of Grand Prix events.
Adjust for team	70%	Expenditure split between spectator and participant.
Net spectator spend	\$ 337	
Remove part merchandise	50%	Leaves
	\$ 168.37	
Leakage	50%	
Adjusted	\$ 84.19	
Inflation adjust	1.37	
2011 spend NZD	\$ 115.33	

Local Data - Derivation of Spend Estimate			
	Tickets	Other	Total
Hamilton	\$ 105.00	\$ 30.00	\$ 135.00
flexi tickets	\$ 135.00		
grandstand	\$ 159.00		
		\$	135.00

Small events	\$ 30.00	\$ 15.00	\$	45.00
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IN THE MATTER of the Resource Management
Act 1991

AND

IN THE MATTER of applications by ADCOCK
AND DONALDSON
PROPERTIES LIMITED for
the Stanley Brook Regional
Motorsport Park

EVIDENCE OF DR PHILIP BRENT WHEELER

INTRODUCTION

1. My name is Philip Brent Wheeler. I hold a Ph.D from the University of Otago and I am a specialist in economics, notably financial economics and the economics associated with resource management. I am employed by Brent Wheeler Group (BWG).
2. I have been employed in providing advice on economic effects of various developments and events for over 20 years. Relevant aspects of my experience covers assessments for central government where I worked for the N.Z. Treasury, Local and Regional Government where I worked as Deputy City Planner and Deputy Regional Planner in the Manawatu region, and membership of the 1991 Resource Management Bill Review Committee.
3. In the past I have prepared economic impact analyses in respect of applications in the mining and minerals industry (cement industry 1976, six for Newmont Waihi Gold), the water sector (water allocation), the entertainment sector (Casinos, resort developments), the sporting events sector (Americas Cup, Taupo District Council tourism) and heritage areas (Wanganui commercial, Wellington City heritage).

4. I have read the Environment Court's code of conduct for expert witnesses and agree to comply with it. I have prepared my statement of evidence accordingly. I confirm that my evidence is within my area of expertise and that I have not omitted to consider material facts known to me that might alter or detract from my expressed opinions.

SUMMARY OF FINDINGS

5. The Stanley Brook Regional Motorsport Park (SBRMP) project involves the development of a major facility with associated infrastructure for holding a wide variety of motorsport events in the Tasman District.
6. In summary, the economic analysis I have undertaken shows that on a net present value basis for output and value added multipliers for capital investment and operations over the first five years, and in terms of average full time equivalent employment (FTE) opportunities, the project can be expected to have the following positive economic effects:

Present Day Dollar Effects - Range Midpoints			
	Average		Year 5
FTE Employment	39		47
	Output basis		Value added
Capital	\$ 59,822,136	\$	49,914,095
Operation	\$ 22,889,987	\$	11,282,653
TOTAL	\$ 82,712,123	\$	61,196,748

7. It is expected that the SBRMP will generate, in the first five years of establishment and operation an annual average of 39 FTE jobs growing to 47 FTE positions, economic effects from capital investment of some \$59.8m on an output multiplier basis and \$49.9m on a value added basis, and in terms of operations, to have an output estimated impact of some \$22.9m and a value added impact of \$11.3m.

SCOPE OF EVIDENCE

8. My evidence examines the likely economic impacts (also referred to as “effects” in my evidence) of the proposal in terms of dollar outputs and full time equivalent employment as well as the additional flow on effects to activities other than motorsport in the affected economies.

NATURE OF THE DEVELOPMENT

9. The Stanley Brook Regional Motorsport Park (SBRMP) involves the development of a major facility with associated infrastructure for holding a wide variety of motorsport events in the Tasman District. Details of the development are set out in the relevant resource consent applications.
10. The primary focus of the present report is on the economic effects of the motorsport activity. From a broader perspective however it should be noted that a much broader range of (generally outdoor) activities is contemplated. These include various cycle tracks, confidence course and related facilities.
11. There is also to be a conference centre and camping ground as well as amenities which will be used for various general as opposed to purely motorsport activity. In this respect the facility is to have the characteristics of a multi-use regional park and recreation asset.
12. Factors of specific relevance to this assessment of economic effects include:
 - 12.1. The motivation for the development. This is significant since it underlies present and future demand for the facility and the likely levels of expenditure which will be associated with it;
 - 12.2. As in most regions, cities and towns in N.Z. motorsport has developed from a primarily amateur platform in which use has been made of various facilities such as airstrips, show grounds and like facilities, on a part time basis;
 - 12.3. As the sport has grown increasing urbanisation and population growth has meant that the various impacts of the activity – noise, traffic congestion,

large scale movement of people and related impacts associated with any large scale event based sport have grown to be increasingly incompatible with part time venues and an improvisational approach to catering for demand;

- 12.4.** It is understood that in recent years there has been something of a decline in levels of motorsport which have been able to be undertaken as participants seek to accommodate the wishes of various communities and as venues become increasingly unsuitable;
- 12.5.** At the same time interest and growth in the several sports which fall under the heading “motorsport” has grown and continues to grow¹. One indication of this is the international data which show that while attendance fluctuates very significantly and competition for entertainment spending is intense, attendances at major motor sporting events have grown, on average at 27% per annum over the period 2003 – 2009;
- 12.6.** In N.Z. growth has been experienced both in terms of participation and in terms of the forms of participation; and,
- 12.7.** The fact that very considerable investment of one type or another is at stake - at individual levels, in the form of expenditure, in respect of employment, in terms of relationships with the “non-sporting” auto industry, and through an array of economic relationships – means that the assessment of economic effects is an important part of assessing the proposed SBRMP development.
- 13.** From an economic perspective the development involves the outlay of a significant investment in infrastructure in the form of access, water and wastewater plant and treatment, provision of energy and communications facilities and standard site development works.
- 14.** In addition construction of specialised facilities for the holding of a variety of motorsport events which involve significant spectator involvement, public

¹ See Motor Sport Industry Association. <http://www.the-mia.com>

assembly, participant facilities, catering and like arrangements and development of a platform for growth is required.

15. In terms of the on-going operation a sustained "business" in the holding of motorsport events is contemplated. This is to involve significant operating income and expenditure as well as the marketing and administration required to support the hosting of events in a growing industry. Significant levels of increased output and the creation of employment are likely to accompany the activity.
16. In short the SBRMP is likely to generate significant capital and operating gains of an economic nature while at the same time ensuring the avoidance of growing environmental impact issues associated with the present forms of activity.

SCOPE OF DEVELOPMENT

17. It is understood that in full realisation the SBRMP will involve some \$27m of investment in the proposed facility with that investment made in three tranches of \$9.0m.
18. A staged version of the development leading to eventual full realisation may be made. In this case the investment after three years (the point at which a satisfactory level of operation may be undertaken) would involve three tranches of \$3.0m for development.
19. The prime focus in my economic assessment has been the fully realised concept with investment of \$27m. The reason for this is that the staging is a function of finance and timing rather than ultimate economic value. The economic effects then are considered primarily from the perspective of a successfully completed development.
20. The effects of the development process itself are also considered. The emphasis again is on the investment of \$27m.

ESTIMATING ECONOMIC EFFECTS AND MULTIPLIERS

21. The economic effects analysis of the type included in this assessment is primarily concerned with estimating the multiplier or spin-off effects of projects such as the SBRMP Project.

Estimating Economic Effects

22. The purpose of economic impact analysis (estimating economic effects) is to estimate the benefits to be gained from the project. Economic benefits are properly defined as being concerned with an overall improvement in total well-being not just simple commercial gains².
23. Such overall benefits are typically proxied by gains in full time equivalent (FTE) jobs and gains in dollar denominated gross domestic product or output. Estimates of economic effects seek to quantify the size of those gains.
24. There are several means for estimating such effects. Each has conceptual and empirical advantages and disadvantages and the choice of model reflects various trade-offs made amongst those characteristics. BWG has adopted what might be termed the standard input output framework (as used in numerous economic impact studies including those used to study sporting activity and infrastructure³).
25. That framework provides estimates of the way dollars and FTE jobs involved in the direct provision of activities such as those required for and involved in motorsport generate additional economic gains throughout the community as “spin offs” or “multiplier effects” so that the overall impact of the activity creates greater benefits than just those directly derived from the activity itself.

² The notion of improved well-being, or economic benefit, is not therefore, exclusively or even mostly concerned with “money”. It is concerned with improvements across the entire spectrum of individual and societal endeavour.

³ See for example ECONOMIC IMPACT REPORT ON GLOBAL RUGBY PART IV: RUGBY WORLD CUP 2011 Commissioned by MasterCard Worldwide Researched and prepared by the Centre for the International Business of Sport Coventry University Simon Chadwick, Anna Semens and Dave Arthur,

ECONOMIC IMPACT STUDIES – CURRENT STATE OF DEBATE

26. It is relevant to note that economic impact studies have become popular over recent decades having been deployed to both support and express dissent regarding a range of projects in many parts of the world and in N.Z. Recent times have seen considerable scepticism arise about the relevance, accuracy and usefulness of such studies.
27. Difficulties and criticisms are comprehensively documented in *The benefits of events: An annotated bibliography* prepared by the NZ Tourism Research Institute and AUT University in 2007.
28. Useful conclusions to be drawn from that review along with a consideration of other criticisms coupled with peer review over many years, of previous analyses undertaken by BWG suggest that studies of economic effects are useful as means for indicating the likely orders of magnitude of effects providing the following cautions are applied:
 - I. The tendency to overestimate beneficial impacts through ignoring opportunity costs must be avoided;
 - II. The tendency to overestimate beneficial impacts when in fact a component of benefit is simply a “transfer” from another part of the economy is to be avoided; and,
 - III. Point estimates rather than ranges of estimate are likely specious, can be dangerous and should be avoided.
29. It is critical to draw a sharp distinction between projects which are privately funded without explicit or implicit support, subsidy or other form of “assistance” from governments (whether central, regional or local) and projects which do obtain such assistance.

September 13, 2011 and Deloitte, (2008), Potential Economic Impact of the Rugby World Cup on a Host Nation, September 2008.

30. Many of the criticisms of government subsidised projects are well founded and entirely valid as born out in theory and practice. The key problems identified do not however apply to private projects (such as the SBRMP).
31. The approach adopted by BWG employs:
- a. Explicit means for estimating opportunity costs;
 - b. Explicit means to assess the impacts (if any) of transfers; and,
 - c. A conservative approach at each step of the data gathering and the analysis so as to accumulate a conservative view throughout the analysis.
32. As noted the SBRMP is a private initiative funded through private investment thus the standard public policy critique of government investment in event based economic stimulation do not apply. I note that the Long Term Community Plan contemplates some support for a motorsport facility at some point but this would be by way of loan⁴. In the absence of certainty regarding such support the initiative is planned as if fully funded privately.

Estimating Economic Effects

33. The analysis of economic effects and their characteristic multiplier effects are well known and documented. However it is useful to briefly explain the components of the economic effects assessed in my evidence and the multipliers used, before describing the outcome of my analysis.
34. The analysis involves estimating economic effects for the capital component (typically initial infrastructure provision and construction) and the operating component (the on-going day to day undertaking of the activity) component. In the present case this amounts to estimating the economic effects of establishing and developing the motorsport facility (capital) and operating it (operating).

⁴ The commercial nature of such a loan means that the issues arising with public subsidy do not necessarily apply.

35. The economic effects are those referred to as direct, indirect and induced effects.

Direct Effects

36. Direct effects are those effects created by construction, development and operation of the project itself. In this case the direct effects are the dollar outputs, defined as forecast cash expenditure as estimated for spectators, participants and support staff, and the jobs directly generated by the Project.
37. Both of these effects (output in dollars and jobs generated) are estimated using the methods discussed below.

Indirect Effects

38. Indirect effects are in turn those effects created by the need to support and service all of the activity which the project involves. Examples of indirect effects include provision of fuel for vehicles, provision of plant and equipment, and provision of administrative or like services. As with direct effects, indirect effects take the form of jobs generated and dollars output.
39. Indirect effects are estimated through input-output transaction table manipulation and associated statistical techniques. These techniques produce estimates (not observed numbers) and the forecasts are the result of applying accepted econometric techniques to appropriate data.

Induced Effects

40. Finally, induced effects are the effects created by the fact that households (of all descriptions) associated with direct and indirect expenditure and employment consume and produce as a result of the project, thus generating further economic activity in the form of dollar output and jobs generated. Examples include consumer expenditure by suppliers of plant and services. Consequently there are beneficial effects on social, personal and community services arising from the SBRMP Project.
41. Induced effects are the most difficult to estimate because high quality data measuring transactions involving household consumption do not exist in suitable

form (some data are not collected, there are compatibility issues and some data are simply not produced in usable form). Various estimation techniques are used to produce forecasts.

42. In summary, the multipliers associated with the three types of effects assessed in my analysis are as follows:

Effects and Multiplier Terminology

ECONOMIC EFFECT	MULTIPLIER TYPE
Direct effect	No multiplier – direct effect
Indirect effect	Type I multiplier (direct plus indirect)
Induced effect	Type II multiplier (indirect plus induced)

Output, Value Added and Employment Multipliers

43. As well as measuring different types of economic impact it is also common to measure effects from more than one perspective. Three perspectives are typically recognised, each giving a different view of effects. These are:

Output Multipliers

44. Output multipliers provide estimates of direct, indirect and induced effects based on the expenditure incurred by a project and the spin-off effects of that expenditure through the economies (district, regional, national and international) in which it takes place. The term “expenditure” refers to all capital and operating expenses associated with a project over its life. Output multipliers thus give an expenditure based perspective on economic benefit.

Value Added Multipliers

45. Value added multipliers provide estimates of direct, indirect and induced effects based on the wages, salaries and surpluses (together called value added) generated by a project and their spin-off effects through the economies (district, regional, national and international) in which they occur. The term “surplus”

typically refers to profit but may include other forms of income which do not derive from the core activity⁵. Value added multipliers thus give a view of economic benefit more narrowly focussed on profit than on gross expenditure.

Employment Multipliers

46. Finally, employment multipliers provide estimates of direct, indirect and induced full time equivalent (FTE) employment positions generated by a project and the spin-off effects through the economies (district, regional, national and international) in which they occur. Employment multipliers are estimated from expenditure based output multipliers.

DIFFERENCES BETWEEN OUTPUT AND VALUE ADDED MULTIPLIERS

47. Output multipliers focus on total impact as evidenced by expected total expenditure. Value added multipliers focus only on the narrower expected effects from compensation of employees (wages and salaries), and proprietary income or profits.
48. Each provides a different perspective on economic effects. Unsurprisingly the economic effects estimated by output multipliers are generally higher than those estimated by value added multipliers.
49. I have used both output and value added multipliers in my analyses undertaken for the SBRMP Project so as to give both views of likely effects⁶.

⁵ An example would be a grant or subsidy. These forms of surplus do not apply in the case of SBRMP.

⁶ I note that these methods are consistent with other economic impact reports I have prepared, for example for the many resource consents for mining activities in Waihi where such reports and evidence were accepted as far back as the then Planning Tribunal, during the hearing for the Mining Licence in 1987, and have also been accepted by the Environment Court in subsequent hearings.

METHODS AND DATA

50. The data I used to estimate output, value added and employment multipliers themselves were drawn from the standard sources for economic impact analyses. In New Zealand these are the Department of Statistics Inter-Industry Studies series coupled with the Census of Population and Dwellings.
51. I used estimates of multipliers for output and employment made by NZIER, while value added multipliers were estimated directly from the input output tables contained in the Department of Statistics Inter-Industry Studies. These three measures cover the commonly used indicators. Output multipliers for expenditure tend to be larger than value added multipliers because an element of “double counting” can be argued to be present and thus I derived both output and value added results.

ESTIMATING MULTIPLIERS

52. Bearing in mind the previous discussion, output, value added and FTE employment multipliers were derived for the SBRMP as follows:

The aggregate multiplier estimated for the construction sector was adjusted to exclude inappropriate activity. The main exclusion was “DIY building” activity category which is not relevant to commercial construction activity; and,

The motorsport and related multipliers were taken from the Australian Federal Government multiplier study which isolated sport specifically. Checks against other multipliers from the studies quoted in this report confirm the magnitude as within the ranges commonly estimated. The BWG estimate for recreation in N.Z. was used as the FTE multiplier.

53. In order to assess the magnitude of any transfer impact – whereby an absence of businesses in the region to take up demand created might lead to significant leakage beyond the region a location quotient assessment was undertaken⁷.

⁷ See *Location Quotient Technique*, Florida State University Department of Urban and Regional Planning Methods III: Forecasting. <http://mailer.fsu.edu/~tchapin/garnet-tchapin/urp5261/topics/econbase/lq.htm>

54. The location quotient, used in this context, measures the extent if any to which a given region or district is under represented in any given industry or sector of activity. In the present case if demand for a particular good or service was not available in the Nelson / Tasman area then the economic "value" of the demand would leak beyond the regional borders and be felt elsewhere.
55. Where location quotients have a value of "less than 1.0" leakage is likely to occur and multipliers need to be adjusted otherwise raw multipliers are appropriate. This was the case for the Tasman / Nelson regions and no adjustment was made.
56. Multipliers and their derivation for the construction sector are shown in the following table:

Area	Tasman	Nelson	N.Z.
Construction sector	1,929	1,725	149,373
Labour market	23,316	22,020	1,985,844
Proportions	0.08	0.08	0.08
Location quotient	1.10	1.04	N/A
Output multiplier	3.20	3.20	3.20
Value added multiplier	2.67	2.67	2.67
FTE multiplier	3.14	3.14	3.14

57. Multipliers and their derivation for the motorsport sector are shown in the following table:

Area	Tasman	Nelson	N.Z.
Recreation sector	408	426	32,679
Labour market	23,316	22,020	1,985,844
Proportions	0.02	0.02	0.02
Location quotient	1.06	1.18	N/A
Output multiplier	2.82	2.82	2.82
Value added multiplier	1.39	1.39	1.39
FTE multiplier	2.29	2.29	2.29

THE SBRMP PROJECT

58. The immediate subject of my analysis is the net cashflow expected to be generated by the development and operation of the SBRMP project. The cashflows consist of:

- Expected net capital expenditure (cash outflows for capital items as set out in the application and accompanying documents); and,
- Expected net year by year cashflow generated by anticipated motorsport and related activity operations as estimated by BWG using the methods discussed below.

59. My results are expressed in the following terms:

- i. Year by year net capital and operating expenditure along with the multiplier effects of that expenditure in \$NZ millions;
- ii. Net Present Values including multiplier effects (thus incorporating direct, indirect and induced economic effects) for both output multipliers and value added multipliers to provide a single number simple estimate of effects in today's dollars;

- iii. Year by year FTE employment generated along with the multiplier effects of that employment for the construction and operational component of the project.; and
- iv. An annual average of FTE employment likely to be created by the SBRMP which has been calculated to give a summary view of employment effects.

INPUTS

- 60. A prime input into the estimation of economic effects is impact of participant expenditure. Such expenditure is important in generating direct, indirect and induced effects. A first issue is to estimate direct effects.
- 61. Both convenience and prior research suggest that participants can be grouped into spectators and participants (including their support personnel). Estimates of likely expenditure need to be made having regard to:
 - The pattern of events expected at the SBRMP;
 - The types of event and the markets they draw from; and,
 - The type and quantity of spending which might be expected.

SPECTATOR SPEND

- 62. Estimated spectator spend is a critical input. While a significant number of economic impact assessments have been undertaken (most notably in N.Z. for V8 Supercar specific events⁸) there is little or no existing reliable general data on this and thus methods for estimation must be developed having regard to particular circumstances. The following two step process was used for the SBRMP:
 - a. An analysis of the literature enabled international data to be gathered from broadly comparable motorsport events which have been studied. In this case studies of economic impacts for five major motorsport events were examined. A wide variety of adjustments were made to data and

results so as to adapt those to N.Z. conditions and one estimate of likely spend was derived; and,

- b. A direct analysis of price components – notably ticket prices – in the current (2012) N.Z. context was made. Estimates for other components of spend (for instance food and drink) were added. Adjustments were made to take account of what is proposed for SBRMP and thus a second estimate of likely spend was derived.
63. This approach allowed at least an element of independent confirmation of estimated spend.
64. It should be noted that while the information used to estimate spectator spend was drawn from the activities of auto racing and stock car or drag racing, these activities and the spend associated with them are regarded as suitable proxies for the full spectrum of activity (which includes motor cross, motor cycle based motorsport, go karting and related sports).
65. References to “events” then covers a wide range of motorsport activity but involves similar spending patterns.

COMPARABLE EVENTS: ESTIMATE FROM INTERNATIONAL EXPERIENCE

66. The British Motorsport Industry Association in conjunction with the East Midlands Development Agency in the UK undertook an extensive analysis of the impact of the British Grand Prix in 2002. The value of that work in the present context is the examination of types of expenditure, ratios of attendance to spending and like information gathered in respect of a range of motorsport events (including one in N.Z.).

⁸ See for example *V8 SUPERCARS EVENT:RESOURCE CONSENT APPLICATION ASSESSMENT OF ENVIRONMENTAL EFFECTS* Bloxham, Burnett, Olliver, Hamilton 2006 and *Wellington V8 Car Race*, McDermott, Miller 2005.

67. A series of adjustments were made to take account of:
- i. Exchange rate and inflation factors. These adjustments allowed data to be expressed in 2012 N.Z. dollars;
 - ii. The “team spend” component was adjusted downward because in F1 racing very significant expenditure on vehicle preparation, tuning, part replacement and various types of auto engineering which is not applicable outside such events takes place and involves significant expenditure;
 - iii. Merchandise spend was also adjusted because Grand Prix and like very high profile events create a platform for sales of high value merchandise. Very high value sales of merchandise are unlikely to be of great relevance in the case of the SBRMP; and,
 - iv. The overseas literature – including the British study – identified significant expenditure reduction through what that literature terms leakage . This refers to expenditure of relevance to the event (including preparation) but not occurring on or immediately adjacent to the site for the event.
68. Adjusting for each of these factors on the basis of past research and consideration of the NZ situation allowed a per spectator per event expenditure of some \$115.00 to be derived. Annex I provides a worksheet for the derivation.

COMPARABLE EVENTS – LOCAL DIRECT ESTIMATES

69. An alternate estimate was developed in a more direct fashion using local data. The key input to the estimate was the currently advertised prices for tickets for the Hamilton based 2012 ITM 400 event to be held later this year. In line with a conservative approach and the likely lesser stature of the SBRMP in early days the lower end of ticket pricing was adopted (\$105 for the event).
70. Identical logic in respect of merchandise sales to that explained above was used to establish a ratio and then a price for event merchandise and other sales. The result is an estimated per spectator per event expenditure of some \$135.00.

COMPARING THE ESTIMATES

71. Considering that only some \$30.00 is allowed for the non-ticket component of the local direct estimate and the considerably higher international spend ranges (upwards of \$200), the estimate of \$135 may seem unduly conservative. On the other hand, factors of relevance to the SBRMP alone – for example the likely “unknown” status of its profile in early years suggest that the spend derived from adjusted international data (\$115) is entirely plausible.
72. A single figure is required to assess economic effects and the following factors were taken into consideration in selecting that figure⁹:
- The events to be staged at SBRMP will not, at least initially have the stature of F1 type events although stature is likely to grow over time;
 - Ability to charge top of the range prices on a sustained basis throughout a 10 event annual calendar is likely to be limited. Again this may change subsequently but initially it may even be that various forms of discount pricing will be required.
 - Similar remarks apply to the sale of merchandise and related sales.
73. For these reasons along with the range established by the two methods a major event spend figure of \$120.00 was adopted.

MINOR EVENTS

74. Events of lesser size are expected to form a major part of the activity at the SBRMP. These will include events such as so called “Drag Racing” and “Stock Car” racing. While drawing smaller crowds such events are to be held more frequently and will form the bulk of the on-going activity.
75. Spend by spectators for these events consists again of direct ticket spend plus expenditure on other items such as food and drink and to a much lesser extent

⁹ The need to establish a range of effect estimates discussed above is dealt with as a later step in the procedure and is discussed below.

merchandise. Direct examination of prices at existing venues was used to establish an estimate for the spend.

76. Ticket prices for these events were priced for 21 venues in NZ used for stock and “mini” car racing and at seven drag racing venues for the present season. Merchandise sales were regarded as negligible while food and drink expenditure is expected to be similar – at least on average – to that at other venues.
77. The combination suggested that a reasonable all up spend estimate is \$25 being \$15.00 minimum for tickets plus an additional amount for sundries. Early days might see discounts to these prices but the long run may also see capacity to charge a slight premium over other venues to the extent that facilities are a significant improvement over other venues¹⁰. At the same time these events operate in the strongly competitive market for ad hoc entertainment which includes movie attendance and like activity so that ability to charge premia is limited.

PARTICIPANTS

78. Ratios of spectator to participant spend were drawn from the overseas literature and research on super car events in N.Z. to derive an estimate of likely participant spend. The advantage of using total spend data in this manner is that it overcomes comparability problems where participant numbers include support crew attendances before events, during events and in differing numbers for differing events.
79. The typically observed ratios see spend at a discount of some 20.5% to spectator spend and thus an estimate of \$96 and \$20 per person per event was adopted for major and minor events respectively.

SUMMARISING EVENTS AND SPEND

80. The results of applying the methods discussed are shown in the following tables.

¹⁰ Existing drag races for instance are held at the Motueka air strip rather than a dedicated venue. Such improvisation is common throughout the country whereas the SBRMP will be a dedicated facility.

81. For estimated spectator spend:

Spectators	Major	Minor	TOTALS
Events	10	20	30
Per event	1,550	388	1,938
TOTAL (and major plus minor)	15,500	7,750	23,250
Spend	\$ 1,937,500	193,750	\$ 2,131,250

82. For estimated participant spend¹¹:

Participants	Major	Minor	TOTALS
Events	10	20	30
Per event	320	80	400
TOTAL (and major plus minor)	3,200	1,600	4,800
Spend	\$ 307,200	\$ 32,000	\$ 339,200

83. Bringing together the spend estimates gives:

Spend	Major	Minor	TOTALS
Per event Spectators	\$ 125	\$ 25	\$ 150
Per event Participants	\$ 96	\$ 20	\$ 116
TOTAL (and major plus minor)	\$ 221	\$ 45	\$ 266

84. It was noted above that the facility at SBRMP will extend well beyond motorsport in terms of its activities with general outdoor recreation facilities being provided along with a conference centre and camping ground. These activities will undoubtedly have an economic effect.

85. It is however unclear what the nature and magnitude of that effect will be – especially once opportunity costs (for example impact on use of other facilities) is taken into account.

¹¹ Participants in major events are expected to number 80 involving four persons per participant. Minor events 40 involving two per participant.

86. In line with the stress on not over estimating benefits and given the proportionately small level of economic effect a separate analysis of these impacts was considered unlikely to be meaningful.
87. Instead, the spinoffs of the many activities related to but not directly involving motorsport (for example club administration, facility promotion and on site catering) were considered to capture these benefits (and avoid double counting)¹².

EMPLOYMENT

88. Employment effects, like dollar output effects involve FTE jobs created through direct employment (those working in the business hosting motorsport activity and events), indirect employment (those working in businesses and activities supporting the events and activities) and induced effects (those working in jobs supporting households created through association with the direct and indirect effects of the activity).
89. Employment associated with the events and hosting of motorsport activity has two components:
- That associated with full time permanent employment administering and operating the business which hosts events; and,
 - The much more variable part time based labour associated with operating and supporting events on a case by case basis.
90. Numbers in the former category tend to be relatively low while numbers in the latter tend to be high on the occasions employment occurs but low when expressed as FTE on an annual basis.

¹² A number of activities are likely to be “non-commercial” (cycle trails etc) or breakeven (for example public camping grounds) with benefits captured in the indirect and induced analysis for motorsport. Thus a “conference centre is likely to be used by a wide variety of groups but primarily by those associated with motorsport.

91. Estimates of full time permanent persons running the operation in the first year of full operation stand at six. This is expected to rise to 10 or so over a period of time. These numbers represent the expectation for operating the facility with only limited time spent on other activity.
92. Other activity which is likely to generate employment (direct, indirect and induced), such as marketing and promotion is to be undertaken by clubs and organisations affiliated with the SBRMP, industry bodies, nationwide sports bodies associated with the codes and so on. Some of this employment will be “picked up” by the multipliers some perhaps not.
93. Part time based work is somewhat deceptive in that common observation suggests that there are a significant number of “officials” and other workers employed at such events. That is correct but the translation of such numbers to FTE jobs reduces the apparently large labour force to much lower numbers.
94. The British Grand Prix week long events for example involve 5,600 marshals, litter wardens, police and others but this translates to some 82 FTE positions only. Intuitively these orders of magnitude seem unlikely in N.Z.
95. The following table shows the calculation for part time work converted to FTE positions for the first year of operation with per event totals based on the full time numbers expected, the types of event and numbers reported in the literature:

Event type	Persons Per Day	Days per Event	Hours	Person Hours per event	Events per Year	Total Hours per year
Major	50	3	8	1,200	10	12,000
Minor	20	1	8	160	20	3,200
						15,200
FTE hours per year		1,920				
FTE positions		8				

96. It is clear that the estimation of FTE employment is difficult and estimates are liable to large swings depending on event schedules and conditions prevailing in

any one year. That is the experience worldwide. For the present analysis the emphasis has been on avoiding over estimation.

CAPITAL EFFECTS

97. The following table sets out the estimated economic effects of the capital investment in the development of the SBRMP for both the full concept and the smaller scale version:

Economic Effects - capital investment: Full Scale					
\$000	2012	2013	2014	Sum	
Capital	\$ 9,000	\$ 9,000	\$ 9,000	\$ 27,000	
FTE employment	40	40	40		
Output Multiplier	3.20	3.20	3.20		
Total	\$ 28,800	\$ 28,800	\$ 28,800		
Opportunity cost factor	0.85	0.85	0.85		
Net effect	\$ 24,480	\$ 24,480	\$ 24,480		
PV at cost of capital	\$ 22,054	\$ 19,869	\$ 17,900	\$ 59,822	
Value Added multiplier	2.67	2.67	2.67		
Total	\$ 24,030	\$ 24,030	\$ 24,030		
Opportunity cost factor	0.85	0.85	0.85		
Net effect	\$ 20,426	\$ 20,426	\$ 20,426		
PV at cost of capital	\$ 18,401	\$ 16,578	\$ 14,935	\$ 49,914	
FTE Multiplier	3.14	3.14	3.14		
Total	126	126	126		
Opportunity cost factor	0.85	0.85	0.85		
Net effect	107	107	107		

98. The table is to be interpreted as follows:

- i. The first two rows show the annual capital investment in today's dollars and the expected FTE employment involved in the development work;
- ii. The Output Multiplier, derived as discussed above is the factor to be applied to the dollar investment and shows the full, gross, output once indirect and induced effects are taken into account;
- iii. The next row labelled "Total" shows the gross dollar output for each year;

- iv. The row labelled "Opportunity cost factor" shows that it is expected that investment in the SBRMP development can be expected to divert some 25% of investment from other areas of the economy thus reducing the gross effect;
 - v. This gives a net effect shown in the row so labelled; and,
 - vi. The "PV at cost of capital" row shows the value of the net effect in today's dollars.
 - vii. The PV at cost of capital for the entire project is shown in the column headed "Sum" and expresses in a single figure the economic effect of the capital component of the development.
99. An identical interpretation is to be lent to the following rows in the table which use a value added multiplier for the reasons discussed above. As noted the value added result gives the more conservative but more conceptually sound view. The size of economic effect estimated is accordingly lower (through the removal of potential double counting in the value added method).
100. The cost of capital used in discounting to obtain the PV figures is estimated using the capital asset pricing model. This ensures that the discount rate reflects the risk associated with the development. Other parameters in the model reflect the expected performance of the economy over the development period¹³.
101. The interpretation of FTE employment is identical except that, PV of FTE employment not being a meaningful concept, an annual average is used showing the number of FTE positions which are sustained for each year of the project.

OPPORTUNITY COST

102. As noted above investment in developments such as the SBRMP means that some portion of investment which would otherwise take place in alternative

¹³ The riskfree rate used is 5% being the approximate rate for government five year bonds expected to prevail over the investment period. The beta of 1.0 reflects an average of beta values for projects such as this determined with reference to the Bloomberg data set and the Value Line data for N.Z. and Australia as at January 2012. The equity risk premium is the standard 6% cited in the literature.

opportunities is reduced. Deriving an appropriate amount by which to reduce gross impacts so as to recognise this is a difficult exercise.

- 103.** The literature provides some clues. In a well acknowledged study Haveman and Krutilla¹⁴ conclude that net benefit accrues to somewhere between 6% and 31% (versus 100%) of economic effects. In N.Z. at present investment opportunities actually attracting investment are sparse and seem likely to remain so for some time.
- 104.** A significant discount for opportunity costs does not therefore appear to be justified. In my view the 25% value adopted (appearing therefore as 85% of total in the table above for calculation purposes) would seem to ensure that only a conservative estimate of effects is produced. At present all such discounts are subjective and to an extent arbitrary thus the important point is for the estimate to lie well within the appropriate range (in this case a relatively conservative figure so as not to exaggerate benefits).
- 105.** In the case of FTE employment the logic is the same. It should be noted that as at the end of January 2012 unemployment in N.Z. stood at some 150,000 and thus it seems unlikely that opportunity costs imposed by the SBRMP would be significant at all.
- 106.** It is this logic which has been applied throughout the analyses.
- 107.** The following table shows an identical analysis applied to the smaller \$9m (total) version of the development.

¹⁴ Haveman, R.H. and J.V. Krutilla *Unemployment, Idle Capacity and the Evaluation of Public Expenditures*, National and Regional Analysis, Baltimore, John Hopkins University Press 1968.

Economic Effects - capital investment: Small Scale				
\$000	2012	2013	2014	Sum
Capital	\$ 3,000	\$ 3,000	\$ 3,000	\$ 9,000
FTE employment	14	14	14	
Output Multiplier	3.20	3.20	3.20	
Total	\$ 9,600	\$ 9,600	\$ 9,600	
Opportunity cost factor	0.85	0.85	0.85	
Net effect	\$ 8,160	\$ 8,160	\$ 8,160	
PV at cost of capital	\$ 7,351	\$ 6,623	\$ 5,967	\$ 19,941
Value Added multiplier	2.67	2.67	2.67	
Total	\$ 8,010	\$ 8,010	\$ 8,010	
Opportunity cost factor	0.85	0.85	0.85	
Net effect	\$ 6,809	\$ 6,809	\$ 6,809	
PV at cost of capital	\$ 6,134	\$ 5,526	\$ 4,978	\$ 16,638
FTE Multiplier	3.14	3.14	3.14	
Total	44	44	44	
Opportunity cost factor	0.85	0.85	0.85	
Net effect	37	37	37	

108. The interpretation of the table is identical to that of the full concept as set out above.

OPERATING EFFECTS

109. Applying the methods discussed the economic effects of the expected operations can be estimated and are shown for in the following table. The analysis uses data as discussed and shown above.

110. A growth rate set at the expected long run growth rate (real, i.e. inflation adjusted) for the N.Z. economy as a whole. Given the growth in attendances at motorsport events (at 27% average p.a. - to the extent that this is a reasonable indicator), expected long run economy wide growth may be regarded as conservative.

	Year 1	Year 2	Year 3	Year 4	Year 5	
Spectator spend	\$ 2,131,250	\$ 2,184,531	\$ 2,239,145	\$ 2,295,123	\$ 2,352,501	
Participants spend	\$ 339,200	\$ 347,680	\$ 356,372	\$ 365,281	\$ 374,413	
TOTAL spend	\$ 2,470,450	\$ 2,532,211	\$ 2,595,517	\$ 2,660,404	\$ 2,726,915	
FTE Full time	6	8	9	10	10	
FTE from part time	8	11	11	14	14	
TOTAL FTE	14	19	20	24	24	
<i>Output Multiplier</i>	2.82	2.82	2.82	2.82	2.82	
Total	\$ 6,966,669	\$ 7,140,836	\$ 7,319,357	\$ 7,502,341	\$ 7,689,899	
Opportunity cost factor	0.85	0.85	0.85	0.85	0.85	
Net effect	\$ 5,921,669	\$ 6,069,710	\$ 6,221,453	\$ 6,376,989	\$ 6,536,414	
PV at cost of capital	\$ 5,334,837	\$ 4,926,313	\$ 4,549,073	\$ 4,200,720	\$ 3,879,044	\$ 22,889,987
<i>Value Added multiplier</i>	1.39	1.39	1.39	1.39	1.39	
Total	\$ 3,433,926	\$ 3,519,774	\$ 3,607,768	\$ 3,697,962	\$ 3,790,411	
Opportunity cost factor	0.85	0.85	0.85	0.85	0.85	
Net effect	\$ 2,918,837	\$ 2,991,808	\$ 3,066,603	\$ 3,143,268	\$ 3,221,850	
PV at cost of capital	\$ 2,629,583	\$ 2,428,218	\$ 2,242,274	\$ 2,070,568	\$ 1,912,011	\$ 11,282,653
<i>FTE Multiplier</i>	2.29	2.29	2.29	2.29	2.29	
Total	32	44	46	55	55	
Opportunity cost factor	0.85	0.85	0.85	0.85	0.85	
Net effect	27	37	39	47	47	39

111. The following should be noted:

112. The table shows only five years operation on a line by line basis since this is believed to offer an adequate view of economic effects. Naturally the facility can be expected to operate for many years beyond year five. Attempts to model effects in detail involves, beyond year five speculation rather than reliable analysis in our view and simple views which see the effects continuing at their year five level or doubling over the subsequent decades are likely to be as plausible as views developed from more complicated approaches; and,

113. The interpretation of each component of the analysis is identical to that shown above for the capital effects. In particular the reasoning behind the estimation of opportunity costs applies to economic effects of the operation, and the values in the last column to the far right of the table shows a present day dollar estimation of the economic effects.

SMALL SCALE OPERATIONAL IMPACTS

114. It is much more difficult to establish estimates of economic effects for the smaller scale operation implied by slower development. The reason for this is that at the

smaller scale it is likely that a different path to full development might be chosen and thus economic effects may differ in terms of sequence.

- 115.** For this reason a simple linear “scaling down” of the analysis presented above while feasible in the case of the capital effects (since that is largely a matter of the “same tasks” being performed over a longer time period), is likely to be mechanistic and perhaps misleading in the case of operations.
- 116.** Two key issues are:
- The need to build critical mass for some events. At too smaller scale it would not, for example, be possible to draw international crowds to certain events. On the same basis certain types of events (for instance various classes of auto competition) may not be feasible unless and until a given level of facility is provided because of safety requirements, preparation area infrastructure needs and so on; and,
 - The profile of the facility and events held there will be an important determinant of ability to run the operation at varying levels. Again that is likely to depend upon critical mass and reputation built over time.
- 117.** A more useful way to think of the small scale economic effects is likely to be in terms of extending the time taken to reach the level of effects set out for the full concept. Thus to gain an impression of the impact of the smaller scale investment it may be more appropriate to consider that the time scale of effects is likely to be extended to a 10 year horizon rather than the three and five year shown above.
- 118.** In adopting this approach to considering slower rates of development the significance of the non-motorsport activities should not be lost. While it might take some time for the commercial scale of the motorsport activity to build up, the benefits of other infrastructure could (depending on development sequencing) be available at much the same time for the smaller and fuller versions of the concept.

FORESTRY OPERATIONS

- 119.** Outside of the opportunity costs accounted for in assessing the economic effects of motorsport and related activity the effect on existing forestry operations on an adjoining property and part of the site for the proposed SBRMP.
- 120.** In respect of forestry operations on adjoining properties possible impacts include:
- I. Possible additions to cost of management should workloads rise through any need to have forestry management plans make allowance for fire breaks and possibly from increased traffic occasioned by additional activity; and,
 - II. the possible need once every 20 – 30 years in the forestry cycle to plan harvesting timetables around events at the SBRMP.
- 121.** Neither of these disruptions to existing operations seem likely to be of material economic significance. Moreover there are gains in risk management and cost control through having significantly improved access and roading along with water availability for fire fighting which are likely to arise from the development of the facility.
- 122.** There is also likely to be some lost opportunity for planting land in the subject property because of the need for fire breaks. I understand arrangements for compensation which neutralises any economic detriment are able to be made to cover any loss through this means.
- 123.** In my view the economic opportunity cost imposed by the proposed development in terms of both adjoining properties and the subject site are negligible or slightly positive on a net basis.

SUMMARISING RESULTS OF ANALYSIS

- 124.** The following table sets out the range of estimated economic effects. A relatively broad range has been chosen to recognise the considerable noise involved in the analysis arising from the several unknowns discussed throughout the analysis:

Range of Economic Effects			
Lower			
	Average		Year 5
FTE	31		37
	Output basis		Value added
Capital	\$ 47,857,709	\$	39,931,276
Operation	\$ 18,311,989	\$	9,026,122
TOTAL	\$ 66,169,698	\$	48,957,398
Upper			
	Average		Year 5
FTE	47		56
	Output basis		Value added
Capital	\$ 71,786,563	\$	59,896,914
Operation	\$ 27,467,984	\$	13,539,184
TOTAL	\$ 99,254,548	\$	73,436,098

125. For the purposes of ready communication the midpoint estimates of the ranges are shown in the following table:

Present Day Dollar Effects - Range Midpoints			
	Average		Year 5
FTE Employment	39		47
	Output basis		Value added
Capital	\$ 59,822,136	\$	49,914,095
Operation	\$ 22,889,987	\$	11,282,653
TOTAL	\$ 82,712,123	\$	61,196,748

CONCLUSION

126. It is expected that the SBRMP will generate, in the first five years of establishment and operation an annual average of 39 FTE jobs growing to 47 FTE positions, economic effects from capital investment of some \$59.8m on an output multiplier basis and \$49.9m on a value added basis, and in terms of operations, to have an output estimated impact of some \$22.9m and a value added impact of \$11.3m.

Philip Brent Wheeler

12 February 2012

Annex I: Derivation of Spectator Spend Estimates

International Data - Derivation of Spend Estimate		
Motorsport average NZD (historical exchange rates)	\$ 481.06	From analysis of economic effects of Grand Prix events.
Adjust for team	70%	Expenditure split between spectator and participant.
Net spectator spend	\$ 337	
Remove part merchandise	50%	Leaves
	\$ 168.37	
Leakage	50%	
Adjusted	\$ 84.19	
Inflation adjust	1.37	
2011 spend NZD	\$ 115.33	

Local Data - Derivation of Spend Estimate			
	Tickets	Other	Total
Hamilton	\$ 105.00	\$ 30.00	\$ 135.00
flexi tickets	\$ 135.00		
grandstand	\$ 159.00		
		\$	135.00

Small events	\$ 30.00	\$ 15.00	\$ 45.00
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