

PROPOSED WELLINGTON  
V8 SUPERCAR  
STREET CIRCUIT

TRACK ENGINEERING  
REVIEW



PREPARED FOR  
WELLINGTON CITY COUNCIL

PREPARED BY



WEATHERED  
HOWE



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### **1. BACKGROUND INTRODUCTION**

#### **1.1 V8 Motorsport in New Zealand**

New Zealand has a long association with motorsport events and is host to a number of international and domestic championships across all motorsport categories. Particularly famous for its' round of the World Rally Championship, New Zealand also has an enviable reputation for producing some of the world's most talented drivers including a number associated with the V8 Supercar Championship Series.

The V8 Supercar Championship Series has quickly risen to become one of the most hotly contested motorsport categories in the world. The Series is highly accessible to the public given its' basis on production Ford Falcon and Holden Commodore vehicles and excellent television exposure on an international level. Attendance levels at events are also excellent with street circuits such as Adelaide attracting well in excess of 200,000 over a four day period.

#### **1.2 The race for a 2006 V8 circuit**

New Zealand currently hosts a round of the V8 Supercar Championship Series on a semi-permanent circuit at Pukekohe outside of Auckland. Given development pressures, this round will cease following the 2005 event leaving the 2006 calendar open for a new circuit in New Zealand. A bid to host a street circuit event in Auckland City from 2006 was quashed following extensive consultation associated with the Resource Consent process. A number of other regions in New Zealand have also highlighted their desire to develop new or existing circuits in order to bid for the right to host a New Zealand round of the Championship in 2006.

Given the above, Wellington City Council initially commissioned Connell Wagner to undertake an engineering evaluation of a potential street circuit to be held around Wellington City's harbour foreshore precinct from 2006. Subsequently, Weathered Howe was commissioned to undertake a more detailed evaluation of the precinct given the firm's background in engineering project management associated with similar circuit formats including the Lexmark Indy 300 on Queensland's Gold Coast, the GMC 400 V8 Supercar event in Australia's national capital, Canberra, the Bathurst 1000 in New South

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Wales and a range of other street circuit designs under development in Asia and the Middle East.

### **1.3 A natural choice – Wellington City**

The street circuit concept is not new to Wellington City. Indeed, for three consecutive years the City hosted street circuit events for 2 Litre Touring Cars (1994-95) and V8 Supercars (1996). The circuit used during this three year period utilised the harbour foreshore precinct which edges Wellington's CBD - particularly the large, open port / ferry facilities and major roading thoroughfares.

As a vibrant capital city, Wellington is well accustomed to hosting major national and international events whether they be sporting, cultural or community-based. It is noted that Wellington hosts an extremely diverse range of events throughout the year with April the only month which does not currently have a major international event calendered. It is also noted that average occupancy rates for the city's accommodation infrastructure runs at an average of approximately 80%+ with April the only seeming 'trough'. It is expected that, if successful, the Wellington street circuit event will be held during this month.

## **2. OBJECTIVES OF THE ENGINEERING FEASIBILITY REPORT**

The objectives of this report are to provide the Wellington City Council with :

- comments on the circuit layout;
- comments regarding the likelihood of circuit approval (from an engineering perspective only) by AVESCO / MANZ;
- preliminary budget estimates relating to year 1 capital and recurrent costs; and
- an indicative 'bump-in' and 'bump-out' programme

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The report is based on a two day site visit undertaken by Weathered Howe on January 20-21, 2005 and discusses each of the above points to a level of detail necessary to provide the Wellington City Council with enough data to add to the economic impact and stakeholder studies being undertaken in parallel to this report. A number of potential circuit routes were considered during the site visit and these are detailed in Section 5 of the report.

### **3. ROLE OF AVESCO / MANZ**

The Australian Vee-Eight Super Car Organisation (AVESCO) and the Motorsport Association of New Zealand (MANZ) may be viewed as franchise owning and licensing organisations respectively. The owner of the rights to host a V8 Supercar round as part of the Championship Series is the AVESCO organisation which took over the operations of the Series in the late 1990's. The Series has grown impressively under the new stewardship and has seen the Series grow from a relatively poorly attended one with marginal media exposure to the third most popular form of sport in Australia both in terms of attendance and viewership. The Series has now confirmed China as a round and is in negotiations in South Africa, the Middle East and in Asia.

The International Automobile Federation (FIA – based in Paris) is the world governing body of almost all forms of motorsport. The organisation sets the rules and regulations for competition and extends its' reach into individual countries via recognised National Sporting Associations (ASN's). New Zealand's ASN is MANZ and as such MANZ has the on-ground responsibility for inspecting new circuit proposals prior to sending them (in the case of a temporary street circuit) to the FIA for approval. In order to be granted a temporary street circuit license it is imperative that MANZ and the FIA provide their written approval prior to an event taking place. In some instances the FIA will delegate ongoing annual circuit inspections to MANZ for their approval prior to each annual race.

Informal, preliminary discussions have been held with AVESCO delegates regarding the circuit layout and plan with a positive initial response. Much more detailed planning

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### **4. CIRCUIT EVALUATION**

#### **4.1 Critical circuit design elements**

Weathered Howe's experience gained from the design and engineering project management of a number of street circuits held in densely populated urban areas such as that proposed for Wellington, has highlighted a number of critical elements which must be used as antecedents in the circuit design process. The design antecedents adopted by Weathered Howe include the following elements:

1. client rationale ('why?');
2. timing of the event ('when?');
3. siting / location of the event precinct ('where?');
4. geometric / technical design ('how?'); and
5. budgetary / economic considerations ('how much?')

It is the interplay between these elements rather than the elements themselves that provide the design parameters used in coalescing a final circuit layout – each of these are explored below.

##### **4.1.1 Client rationale**

Following discussions with key officers of Wellington City Council, it is understood that the rationale for staging the proposed Wellington V8 street circuit event is based on the capacity of such an event to:

- assist in diversifying and strengthening Wellington's event calendar;
- raise Wellington's domestic and international media profile as a desirable tourism, event and business destination;
- generate new tourism and event-related expenditure in the Region's economy;
- generate new full and part-time jobs in the Region;

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- increase tourist visitation during the traditional trough period of April; and
- underpin the imaging of the harbour precinct as the city's urban tourism and community infrastructure hub

The above points have been taken into consideration in each of the next steps with particular regard to the circuit location and its' utilisation of existing infrastructure, access to facilities such as hotels / restaurants / attractions / transport and capacity to deliver television 'postcard' pictures of the urban and natural environment within which the event will take place.

### **4.1.2 Event timing**

As noted earlier in this report, the demise of the Pukekohe event in Auckland from 2006 has created an opportunity for a new event promoter to propose a new circuit to AVESCO (in New Zealand or elsewhere). Fortuitously, the available April date aligns with the 'trough' tourism / event season currently experienced by Wellington and (at the time of writing this report) does not clash with any other major events thereby minimising any potential 'leakage' from this event to other events and vice versa.

Additionally, the Autumn period is typically Wellington's most aesthetically pleasing and has the second highest average temperatures and second lowest average rainfall days of all the seasons making this time of year ideal from the perspective of event / television presentation, capacity to minimise rain delays during construction and demobilisation and in terms of maximising daily spectator attendance.

At this early planning stage it is assumed the event will take place over three consecutive days (Friday – Sunday).

### **4.1.3 Siting / location of the event precinct**

This element of the circuit design addresses the 'user-friendliness' of the event precinct particularly in relation to the local community, teams, media and spectators. In this phase of analysis the critical success factors of the event are addressed with many of

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these being more closely analysed within the technical and budgetary elements.

Effectively this analysis addresses questions including:

- can a minimum track distance of 2.4-2.5 kilometres be achieved ?;
- can a minimum track width of 10 metres be achieved ?;
- is there enough area to accommodate up to a minimum of 30-40,000 people (corporate, general admission and grandstand patrons) on any given day ?;
- is there a large enough area to accommodate pit and paddock facilities for V8 Supercars and support categories ?;
- what natural and built features are available as a 'backdrop' to the event for television presentation ?;
- are there appropriate areas to provide good television images ?;
- are transport linkages and car parking readily available to service the event ?;
- is there a range of accommodation types either within walking distance or close at hand to service the event ?;
- are there areas to accommodate merchandising, catering and other entertainment operations ?;
- is the precinct well serviced by food and beverage outlets that are within walking distance ?;
- are there alternative traffic routes to those that may be used during the bump-in, bump-out and event phases ?;



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- will (and to what extent will) residential accommodation be affected during the event phase ?;
- will (and to what extent will) commercial business be affected during the event phase ?;
- to what extent can the event be viewed for free from neighbouring buildings or natural features ?; and
- are there storage facilities nearby to store major capital equipment such as concrete barriers ?

It is rare that each of the above examples are all answered positively - this is the nature of creating a street circuit using existing roads, parks, buildings, natural features and facilities. However, it is precisely these existing features which give a street circuit its character and charm. For example, street circuits such as Monaco, the Gold Coast Indy 300, Melbourne Formula 1, Clipsal 500 in Adelaide and the GMC 400 in Canberra all had general constraints, however are extremely well patronised in spite of them. It should be noted that it is street circuit events that draw the largest crowds by many multiples year in, year out.

#### **4.1.4 Technical design of the circuit**

Circuit technical design takes the broad parameters of the precinct location into account in order to 'drill down' into more specific issues that may be placed in five specific categories of investigation:

1. circuit safety;
2. condition / siting of infrastructure;
3. circuit geometry;
4. traffic management; and
5. works scheduling

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### **4.1.4.1 Circuit safety**

Circuit safety for patrons, drivers, volunteers and the local community is paramount when designing any motorsport circuit and surrounding event precinct. Circuit safety incorporates each of the four following points, however of critical importance is the capacity to design a circuit that meets and exceeds FIA and MANZ regulations as they apply to temporary street circuits. Of particular note are the following criteria:

- concrete barrier and debris fence placement and alignment to minimise patron and driver risks in the case of accidents and minimum circuit widths to ensure safe racing;
- appropriate design of run-offs to minimise driver injury in the case of a high speed accident;
- maintenance of road surfaces;
- management of terminal velocities via changes in circuit geometry to minimise constant high speeds and the risk of high speed accidents;
- maintenance of driver and marshall site lines throughout the circuit proper;
- maintenance of at least minimum pit lane and bay widths to minimise congestion in pit lane;
- maintenance of minimum demarcation lines in case of accident-related movement of concrete barriers;
- access and egress paths for event patrons in case of emergency; and
- access and egress paths for emergency services vehicles and personnel in case of emergency

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### **4.1.4.2 Condition / siting of infrastructure**

The condition and siting of existing infrastructure (particularly roads and surrounding services) is taken into account as both a circuit design and budgetary issue. In effect the circuit is broken into permanent (road surface, services, kerb and channel, street furniture, lighting etc) and temporary (grandstands, catering, big screens, merchandising areas, pit garages, barriers etc) infrastructure. Examples are:

#### **a) Permanent infrastructure**

- road condition - massive torsional and abrasive effects applied by the acceleration, turning and braking of V8 Supercars will quickly deteriorate road surfaces under race conditions therefore the design takes account of any re-surfacing necessary;
- street furniture, underground and overhead services – these must be addressed in order to provide minimum safety standards for both patrons and competitors, such as removal or retro-fitting temporary fittings;
- kerb and channel – in order to deliver a useable circuit, some kerbs and channels may need to be temporarily filled to provide smooth transition lines or removed completely to provide correct racing lines or entry / exit to pit lane

#### **b) Temporary infrastructure**

- grandstands and other revenue-generating infrastructure - such as corporate suites, merchandise and catering areas must be sited in order to provide excellent viewing, safe ingress and egress, value-for-money, high profile and visual access to a big screen opposite the facility where possible;
- corporate catering facilities – must be located as close as possible to the area/s they are providing their services to. As such, allowance must be made when siting corporate facilities to allow co-location (where possible) of cool rooms, cooking or re-heating facilities, electrical generators etc;

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- toilet facilities – must be spread throughout the circuit with the number of facilities based on accepted industry practice. Of note is the capacity to 'group' facilities close to high use areas such as on-track entertainment and beverage outlets and to ensure ease of access for pump-out when facilities cannot be plumbed into existing waste lines

### **4.1.4.3 Circuit geometry**

The circuit's geometric layout relates to the 'shape' of the circuit. Obviously with a street circuit there is little choice in this regard, however, it is the way in which the concrete barriers are aligned and run-off areas are calculated to provide an exciting yet safe circuit. Another important component is the ability to provide drivers with sufficient site lines from the apex of one corner to the apex of the next corner. Again, it is the positioning of the barriers etc which assist in this regard.

### **4.1.4.4 Traffic management**

Choosing a street circuit will almost always create a disturbance to the normal operation of traffic in the vicinity of the event and for some distance around it. Traffic disturbances will be experienced in the course of setting up the event, during the event and when removing the temporary infrastructure. It is essential to have well developed traffic management plans including park and ride capability in order to reduce congestion in and around the proposed circuit. As such it is important that the circuit is well serviced by public transport linkages such as rail, buses and ferries.

### **4.1.4.5 Works scheduling**

As with traffic management it is essential to have a well developed schedule of works in order to minimise disruption to normal city operations. Zones are chosen based on their likely impacts and specific road closures that would affect local business / residents are left until the last possible moment in order to provide maximum access and amenity. Often night works are carried out in order to minimise disruption.

## **4.1.5 Budgetary / economic considerations**

Street circuit events require an initial capital injection and ongoing recurrent budget allocations due to their temporary nature. It is important to choose a site that requires

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the least amount of initial capital spent on it in areas such as road widening, road re-surfacing, removal of street furniture etc. It is also imperative that the circuit allows for the optimum mixture and positioning of revenue generating facilities such as grandstands, corporate suites, merchandise and catering sites. As such, large flat areas are important as are natural features such as hills for general admission viewing.

### **4.2 Other options considered**

The Weathered Howe team considered other options in generally the same area as the preferred circuit outlined in this report including the Connell Wagner proposal which is discussed below.

#### **Connell Wagner proposed circuit**

The circuit proposed by Connell Wagner has merit, however does not seem realistic from a budgetary perspective given the extent of civil works that would be required to operate the circuit safely. Of particular note is the section along Waterloo Quay. The area doubles back on itself after from outside the sports arena for a distance exceeding 300 metres. The width of the road in this area, added to the existence of railway lines means that, in order to have the circuit approved by the FIA and MANZ, an additional 5-6 metres of road width would need to be gained. Given the existence of building infrastructure along the harbourside it is not expected that this extra width could be achieved even if a budget could be allocated to it. We note additionally that no run-off areas are highlighted on the proposed circuit. The circuit also 'land locks' the police headquarters which is unacceptable in the context of risk management.

We felt that the pits and paddock areas were correctly positioned as was much of the support infrastructure and temporary facilities. However, given the restrictions of track width it is felt that this option could not proceed.

## **5. PREFERRED CIRCUIT**

The circuit design preferred by Weathered Howe in terms of meeting design criteria is appended to this report. Briefly however, the circuit begins on Waterloo Quay moving in a clockwise direction from the start / finish line down to Jervois Quay until arriving at Taranaki Street where a sharp right hand turn followed by another sharp right hand turn

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is executed back onto Jervois Quay with a left hand turn into Willeston Street and a right hand turn into Victoria Street, briefly back onto Jervois Quay until a sharp left into Panama Street and a right onto Featherstone Street followed by a right on Bunny Street and the final right turn onto Waterloo Quay to complete 1 lap.

The circuit provides an excellent mixture of high and low speed sections, challenging corners and sweeping turns. The location of the pit and paddock facilities on the harbour provides a generous amount of room for the V8 teams and support categories. It is suggested that the existing pit facilities at Pukekohe be purchased by the Wellington City in order to maximise corporate viewing and the 'look' that such facilities provide. The existing bridges over Jervois Quay are extremely handy particularly as one of these caters for disabled access. Some road works will be necessary in order to achieve correct circuit geometry and acceptable road surfaces as is to be expected, however these works have been minimised through considering road selections carefully. Existing facilities are incorporated into the circuit layout in order to assist in minimising annual hire costs or large capital expenditures.

The circuit has a magnificent city backdrop, and the harbour (when combined with support events such as sailing) will become a television-based tourism postcard for the city. The circuit provides for good attendances with a maximum crowd capacity on the circuit in the order of 31,000 people made up of 4,000 corporate guests, 7,000 grandstand seats and in the order of 20,000 general admission ticket holders. The circuit meets the transportation criteria in terms of public transport services with choices of ferries, buses, and the train being available to attendees – thereby minimising traffic congestion.

Overall the circuit is deemed to be one which will need the least amount of capital expenditure, provide incredible visual amenity for television and attending audiences alike and will meet the broad tourism objectives sought by Wellington City Council.

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### **6. INDICATIVE CAPITAL & RECURRENT EXPENDITURE BUDGETS**

The indicative capital and recurrent expenditure budgets are appended to this report. It should be noted that while most items have been included in these budgets, they can be preliminary only at this stage. Key issues for consideration in terms of the budget are:

- traffic management and provision of emergency services personnel is not included in costs – it is assumed that these costs would be borne by Council;
- the purchase and transportation and recurrent assembly / dis-assembly of the Pukekohe pit buildings is included in both capital and recurrent costs in order to ensure corporate numbers are achieved (on top of pit building itself);
- the debris fence has only been costed as a hire / transport item from the Lexmark Indy 300. Other options are fabrication (in the order of \$3 million) or purchase (either from Indy, Melbourne Formula 1 or Adelaide V8 events);
- Weathered Howe's fee does not include office accommodation for its staff as it is assumed this will be provided by Council;
- franchise fees for AVESCO and operational costs such as MANZ fees, insurances and other operational costs have not been included in this report as they are beyond the scope of Weathered Howe's expertise.

A photo report highlighting some examples of major works (which are included in the appended budget) necessary around the proposed circuit is appended to this report.

### **7. INDICATIVE 'BUMP-IN' & 'BUMP-OUT' SCHEDULE**

The indicative schedule is appended to this report. The circuit has been broken into indicative zones with a broad program of works per zone highlighted. Overall it is expected that it will take five (5) weeks to 'bump-in' the event and three (3) weeks to 'bump-out' the event.



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### **8. APPENDICES**

- 1.0 Budgets
- 2.0 Track maps
- 3.0 Works Schedule
- 4.0 Photo explanation of examples of proposed works
- 5.0 Weathered Howe brochure



## APPENIX 1.0

# BUDGETS

- Capital infrastructure expenditure (yr 1)
- Recurrent works infrastructure expenditure



## **APPENDIX 2.0**

# **TRACK DRAWINGS**

- Preliminary Track Layout
- Preliminary Zone Layout



## APPENDIX 3.0

# PRELIMINARY WORKS SCHEDULE

- Construction Zone 1
- Construction Zone 2
- Construction Zone 3
- Construction Zone 4



## **APPENDIX 4.0**

# **PHOTO REPORT**

## **- EXAMPLES OF REQUIRED WORKS**



## **APPENDIX 5.0**

# **WEATHERED HOWE BROCHURE**

**BILL OF QUANTITIES  
FOR  
YEAR ONE (1) - CAPITAL INFRASTRUCTURE EXPENDITURE  
FOR PROPOSED  
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ITEM	DESCRIPTION	UNIT	QTY	AMT	SNZ AMOUNT (ex GST)
<b>SECTION 1.0</b>					
<b>Manufacture or fabrication of on track items</b>					
1.1	Precast concrete barriers (4000 long x 1000 high x 600 base x 300 top), (inclusive of preparation of moulds).	No.	1455		1,093,000
1.2	Precast concrete barriers (4000 long x 1300 high x 600 base x 300 top), (inclusive of preparation of moulds). (Pit signal wall).	No.	83		107,900
1.3	Precast special concrete barriers (1000 high x 900 base x 900 top).	No.	35		45,000
1.4	Fabricated armco gates - hot dip galvanised (4000 long x 1000 high).	No.	30		195,000
1.5	Cast Entry / Exit Point Pin holes into existing asphalt pavement.	No.	12		12,000
1.6	Five Stack - tyre stacks inclusive of strapping, connection chain,	No.	1600		135,000
1.7	18mm conveyor belt (1200 high).	m	250		45,000
1.8	Marshall point laps, concrete barrier chocks.	No.	30		10,000
1.9	Entry / Exit point Armco gates (6000 long x 1000 high), hot dip galvanised.	No.	12		86,400
1.10	Fabricated starters box / platform (enough to accommodate 3 persons) (top of box to be mostly caged against debris contact).	No.	1		6,000
1.11	Demarcation Fence (Powerwebbing and Star Pickets).	No.	7000		35,000
				<b>Sub Total</b>	<b>1,770,300</b>
<b>SECTION 2.0</b>					
<b>Permanent infrastructure installations or conversions (Electrical / Cabling etc)</b>					
2.1	Supply, install and test V8 Supercar timing and securing cable for loops into existing asphalt (inclusive of electrical pits to the side of roads to accommodate the cable tails). Each location requires Balden Cable Part No. 8438, wire size = 14 gauge, Jacket material = polyethylene, outside diameter = 3.53mm, resistance = 8.2 ohms per elm or Olex Part number ZZLM07AA32. Cable to be laid in 3 locations.	m	1000		20,000
2.2	Supply, install and test V8 Supercar timing and scoring cable from timing and scoring loops pits to timing and scoring building (coax).	m	1310		10,000
2.3	Supply of set of double traffic lights -start lights (full supply of switch box and 50m of cable with lights.)	No.	1		7,000
				<b>Sub Total</b>	<b>37,000</b>
<b>SECTION 3.0</b>					
<b>Fabrication of steel work associated item including hot dip galvanising</b>					
3.1	Three (3) temporary pedestrian bridges at 5.7m above existing road surface. Break up of bridge clear spans as follows:-				
	- Pedestrian Bridge 1 30m	No.	1		250,000
	- Pedestrian Bridge 2 20m	No.	1		200,000
	- Pedestrian Bridge 3 22m	No.	1		210,000
3.2	One (1) Overtrack Sign (OT) at 5.7m above existing road surface. Break up of sign locations as follows:-	No.	1		25,000
	- OT 1 - start line = 15m				
				<b>Sub Total</b>	<b>685,000</b>

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ITEM	DESCRIPTION	UNIT	QTY	AMT	SNZ AMOUNT (ex GST)
<b>SECTION 4.0</b>					
<b>Other race items</b>					
4.1	Race Equipment (Backdrop for Podium and Media Centre, master keys and locks, security gate chains, nuts and bolts, shade cloth for other items, water fire hose reels, containers to store equipment, purchase of "kitty litter" and holding containers, vehicle capable plastic porta flooring, stock pile of road scalplings, track direction signage for external times of race i.e. night works etc) etc.	Item			300,000
4.2	Purchase and freight costs for Pukekohe V8 pit building (to be negotiated).	Item			200,000
<b>Sub Total</b>					<b>500,000</b>
<b>SECTION 5.0</b>					
<b>Event civil works associated with asphalt surface</b>					
5.1	Hold down point inserts for V8 Supercar overhead gantrys (three per gantry).	No.	105		31,500
<b>Sub Total</b>					<b>31,500</b>
<b>SUB TOTAL EVENT INFRASTRUCTURE CAPITAL ITEM</b>					<b>3,023,800</b>
<b>SECTION 6.0</b>					
<b>Other Items</b>					
6.1	Billboard Fabrication.	Item			95,000
6.2	Additional Armco Gates for run offs (for traffic management).	Item			20,500
6.3	Environmental Impact Assessment.	Item			10,000
6.4	Race Control.	Item			40,000
<b>Sub Total</b>					<b>165,500</b>
<b>SECTION 7.0</b>					
<b>Civil Works - excluding Asphalt Rehabilitation</b>					
7.1	Convert 30 traffic signal pedestals to demountable items. Including rewiring and lowering all junction boxes (only located on track proper).	No.	30		210,000
7.2	Check and/or convert all manhole covers located on track surface to bolt down configuration. This will include in some instances adjustment to levels as there are some corrections necessary (approximate only).	No.	30		100,000
7.3	Removal of three (3) traffic median islands at intersection of Waterloo Quay and Bunny Street. Converted to demountable kerbs and island infill. Remove base in preparation for concrete surface - rough broom finish.	Item	1		9,000
7.4	Removal of large traffic median islands on Bunny Street - converted to demountable kerbs and island infill. Remove base in preparation for concrete surface - rough broom finish.	Item	1		12,000
7.5	Removal of three (3) traffic median islands at intersection of Bunny Street and Featherstone Street. Convert to demountable kerbs and island infill. Remove base in preparation for concrete surface - rough broom finish.	Item	1		9,000
7.6	Removal of two (2) pedestrian median islands and replace with demountable kerbs and island infills at intersection of Featherstone Street and Whitmore Street. Remove base in preparation for concrete surface - rough broom finish. Include lowering of fire hydrants.	Item	1		9,000
7.7	Removal of two (2) pedestrian median islands and replace with demountable kerbs and island infills at intersection of Featherstone Street and Balance Street. Remove base in preparation for concrete surface - rough broom finish.	Item	1		6,000
7.8	Removal of four (4) pedestrian median islands and replace with demountable kerbs and island infills at intersection of Featherstone Street and Waring Taylor Street. Remove base in preparation for concrete surface - rough broom finish.	Item	1		12,000

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ITEM	DESCRIPTION	UNIT	QTY	AMT	SNZ AMOUNT (ex GST)
7.9	Removal of four (4) pedestrian median islands and replace with demountable kerbs and island infills at intersection of Featherstone Street and Johnstone Street. Remove base in preparation for concrete surface - rough broom finish.	Item	1		12,000
7.10	Removal of four (4) pedestrian median islands and replace with demountable kerbs and island infills at intersection of Featherstone Street and Brandon Street. Remove base in preparation for concrete surface - rough broom finish.	Item	1		12,000
7.11	Removal of four (4) pedestrian median islands at intersection of Featherstone Street and Panoma Street. Convert to demountable kerbs and island infills. Remove base in preparation for concrete surface - rough broom finish.	Item	1		15,000
7.12	Removal of traffic / pedestrian median island at location of Panoma Street and Waterloo Quay. Replace with demountable island infill and kerbing. Remove base in preparation for concrete track surface - rough broom finish. Allowance to be made for the removal and grubbing etc of planter boxes and trees.	Item	1		15,000
7.13	Conversion of electric bus power pole to demountable configuration. Including purchase of iron cover lid, for once pole has been removed for race, pole to be attached to ragbolt footing.	Item	1		5,000
7.14	Removal of traffic / pedestrian median islands at intersection of Hunter Street / Jervis Quay / Victoria Street. Including conversion of existing pedestrian shelter to demountable base. Remove base of islands in preparation for concrete track surface - rough broom surface. Allowance to be made for the removal of plantings to converted to removable planter boxes.	Item	1		20,000
7.15	Removal of four (4) pedestrian median islands and replace with demountable kerbs and islands infill at intersection of Victoria Street and Willestone Street. Remove base in preparation for concrete surface in rough broom finish.	Item	1		12,000
7.16	Removal of two (2) traffic median islands and replace with demountable kerbs and island infills at intersection of Cable Street and Taranaki Street. Remove base in preparation for concrete surface - rough broom finish.	Item	1		6,000
7.17	Replacement of traffic signal sensory loops upon completion of asphalt rehabilitation works.	No.	24		96,000
7.18	Preparation of new V8 pit area including installation of V8 Supercar overhead gantry hold downs.	Item	1		550,000
<b>Estimate Sub Total - One Year Only</b>					<b>1,110,000</b>
<b>SECTION 8.0</b>					
<b>Asphalt Rehabilitation Works</b>					
8.1	Replacement of paver surface to Asphaltic concrete at Bunny Street.	m <sup>2</sup>	3750	60	225,000
8.2	Replacement of paver surface to Asphaltic concrete at Jervis Quay and Queens Wharf.	m <sup>2</sup>	770	60	46,200
8.3	Rehabilitation of existing chip seal asphalt surface including milling of surface and replacement to modified binder mix.	m <sup>2</sup>	440	50	220,000
8.4	Rehabilitation of existing asphalt surface to modified binder mix.	m <sup>2</sup>	4840	50	242,000
<b>Sub Total</b>					<b>733,200</b>
<b>SECTION 9.0</b>					
<b>Contingency</b>					
9.1	Contingency 15%	Item	1		818,000
<b>Sub Total</b>					<b>818,000</b>



**BILL OF QUANTITIES**  
**FOR**  
**YEAR ONE (1) - CAPITAL INFRASTRUCTURE EXPENDITURE**  
**FOR PROPOSED**  
**WELLINGTON STREET CIRCUIT**

ITEM	DESCRIPTION	UNIT	QTY	AMT	SNZ AMOUNT (ex GST)
<b>SECTION 10.0</b>					
<b>Engineering Fees</b>					
10.1	Circuit Design and Documentation (to be converted AUD).	Item	1		165,000
10.2	Infrastructure Design and Documentation (to be converted AUD).	Item	1		220,000
10.3	Tender Documentation and Contract Administration (to be converted AUD).	Item	1		110,000
<b>Sub Total</b>					<b>495,000</b>
<b>TOTAL EVENT INFRASTRUCTURE CAPITAL ITEM</b>					<b>6,345,500</b>

NOTE: 1) ALL COSTS ARE EXCLUDING GST  
 2) NO DEBRIS FENCE PURCHASE OR FABRICATION OPTIONS INCLUDED  
 3) ALL ENGINEERING FEES ARE IN NZ DOLLARS

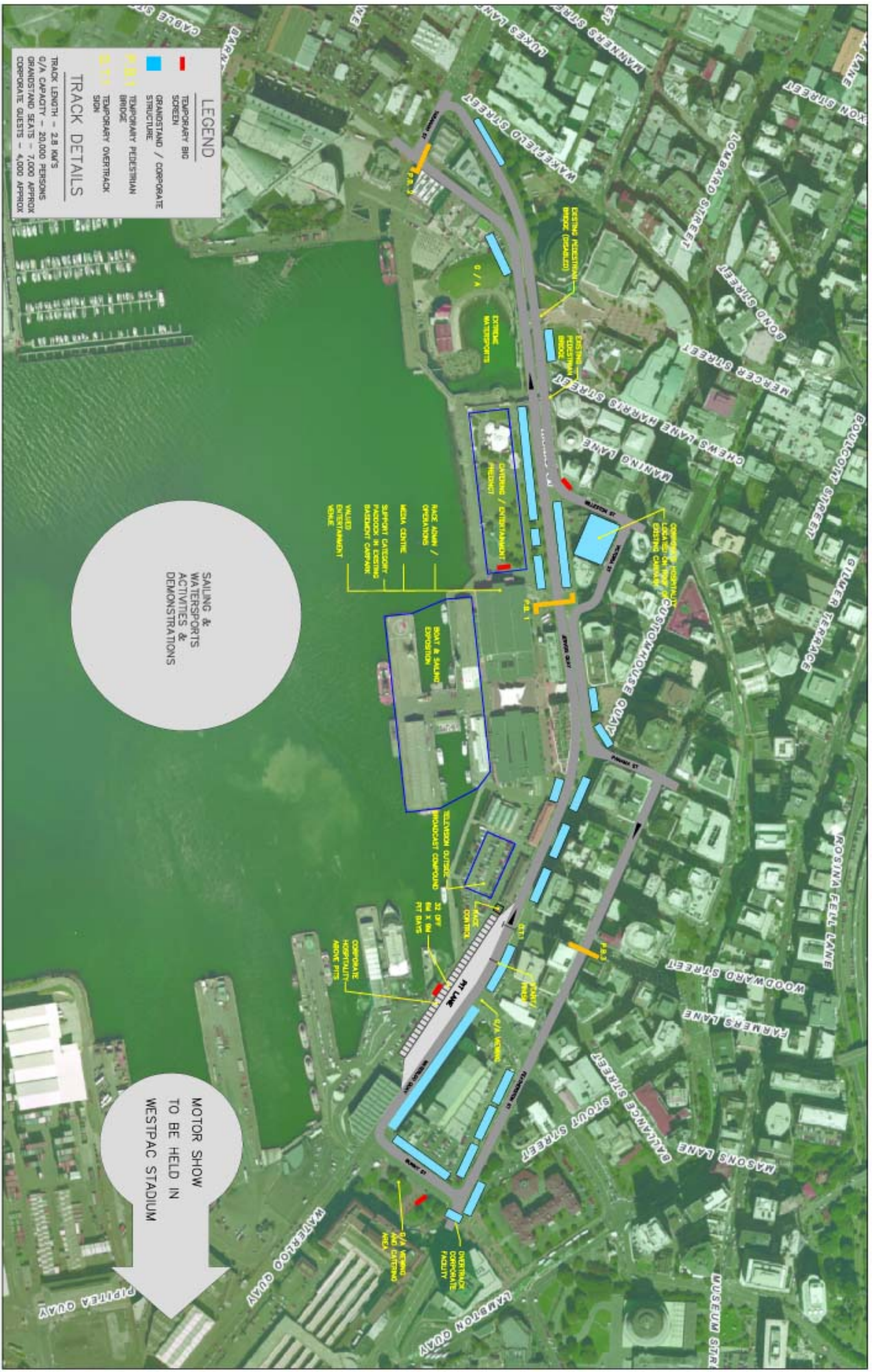
**BILL OF QUANTITIES  
FOR  
YEAR ONE (1) - RECURRENT WORKS INFRASTRUCTURE EXPENDITURE  
FOR PROPOSED  
WELLINGTON STREET CIRCUIT**

ITEM	DESCRIPTION	PROPOSED \$NZ BUDGET AMOUNT (ex GST)
<b>1.0 INFRASTRUCTURE GENERAL</b>		
1.1	Barrier and Debris Fence Install and Remove (1,450 concrete barriers).	432,800
1.2	Big Screen TV Hire (4 screens @ \$26,000 per screen).	104,000
1.3	Billboard Signage Erection / Removal (1 overtrack signs).	20,000
1.4	Circuit Communications (Marshall and TV) installation and removal.	76,000
1.4.1	Circuit communication for Timing and Scoring cable runs (including testing)	4,000
1.5	Civil Works - wet weather and traffic island, removal and installation and contingency.	100,000
1.6	Cleaning and Rubbish Removal.	75,000
1.7	Contract Labour Services (including PC items).	120,000
1.8	Corporate Structures, Hoekers and Fitout (100 corporate facilities).	737,500
1.8.1	Podium and Presentation Dias.	4,000
1.9	Demarcation Fencing - Install / Remove (6000m).	40,000
1.10	Directional Signage (general directional signage for event, including ticket gate entry statements etc).	40,000
1.10.1	Corporate Signage - Setup and Labour.	100,000
1.11	Electrical Reticulation.	75,000
1.12	Fuel Depot Bunding (x 2).	3,500
1.13	Generator Hire (varying sizes x 15 sets, all running and with change over panels and cables).	30,000
1.14	Grandstand Hire (7,000 seats @ \$25.00).	175,000
1.15	Intercom and PA (hire, install maintain and remove).	42,000
1.16	Linemarking (includes reinstatement of existing markings).	50,000
1.17	Maintenance (Pukekohe pit building painting, general repairs, hire water barriers, variable message boards, marshall platforms, purchase of barrier paint, barrier patching, water barriers, kerb infills, debris fence hoarding purchase and install, epoxy road repairs, repairs to debris fence etc.)	150,000
1.18	Pedestrian Bridge Install / Remove (3 bridges).	106,000
1.19	Pit Building Installation - V8 (Pukekohe Structure ? - structure unknown to proposed budget estimation).	100,000

**BILL OF QUANTITIES  
FOR  
YEAR ONE (1) - RECURRENT WORKS INFRASTRUCTURE EXPENDITURE  
FOR PROPOSED  
WELLINGTON STREET CIRCUIT**

ITEM	DESCRIPTION	PROPOSED \$NZ BUDGET AMOUNT (ex GST)
1.19.1	Pit Building Garage Hoekers for V8 Supercar Teams (32 + Network 10).	43,000
1.20	Plumbing and Fire Services.	40,000
1.21	Race Event Communications.	50,000
1.22	Security Fencing (12Klm of fencing hired, installed, maintained and removed).	120,000
1.23	Portable Building Hire (General hire of operational buildings including ticket booths, race support category, radio's, maintenance, supply, building). Race Control, medical centre etc.	50,000
1.23.1	Portable Building Fitout.	10,000
1.24	Starters Platform - steel (install and remove).	1,000
1.25	Toilet Hire (varying types from blocks to singles for 50,000 patrons attendance maximum.	50,000
1.26	Track Sweeper - Contra direct x 2 sweepers.	8,000
1.27	Hire of debris fence.	150,000
1.28	Transportation and handling of debris fence (from AUS to NZ to AUS).	250,000
1.29	Contingency.	283,430
<b>SUB TOTAL INFRASTRUCTURE GENERAL</b>		<b>3,640,230</b>
<b>2.0 OTHER INFRASTRUCTURE RELATED COSTS</b>		
2.1	Environmental Impact Assessment - Consultancy for Heritage, Cultural and Environmental Issues.	10,000
2.2	Noise Monitoring.	5,000
2.3	Media Centre - To hire rooms.	5,000
<b>SUB TOTAL OTHER INFRASTRUCTURE RELATED COSTS</b>		<b>20,000</b>
<b>3.0 ENGINEERING FEES</b>		
3.1	Engineering Project Management (fees to be converted to AUD).	600,000
<b>SUB TOTAL ENGINEERING FEES</b>		<b>600,000</b>
<b>TOTAL - INFRASTRUCTURE GENERAL, OTHER INFRASTRUCTURE RELATED COSTS AND ENGINEERING FEES</b>		<b>4,260,230</b>

**NOTE:** 1) ALL COSTS ARE EXCLUDING GST  
2) TRAFFIC MANAGEMENT COSTS (\$300,000) IS EXCLUDED FROM BILL OF QUANTITIES AND WILL NEED TO BE NEGOTIATED WITH WCC  
3) OPERATIONAL EXPENDITURE NOT INCLUDED  
4) GRANDSTAND HIRE RATE IS BASED ON CURRENT HIRE FOR PUKEKOHE V8 SUPERCAR RACE



### LEGEND

- TEMPORARY BIG SCREEN
- GRANDSTAND / CORPORATE STRUCTURE
- TEMPORARY PEDESTRIAN BRIDGE
- TEMPORARY OVERTAKE SIGN

### TRACK DETAILS

TRACK LENGTH - 2.8 KM'S  
 G/A CAPACITY - 20,000 PERSONS  
 GRANDSTAND SEATS - 7,000 APPROX  
 CORPORATE GUESTS - 4,000 APPROX

SAILING & WATERSPORTS ACTIVITIES & DEMONSTRATIONS

MOTOR SHOW TO BE HELD IN WESTPAC STADIUM

DATE		CLIENT		PROJECT		ENGINEERS	
A1		WELLINGTON CITY COUNCIL		PROPOSED WELLINGTON V8 SUPERCAR STREET RACE		WESTPAC ENGINEERING ENGINEERS	
SHEET NO		SHEET TOTALS		TITL		DRAWING NO	
A1		1 OF 1		PRELIMINARY TRACK LAYOUT		G04288-SK-01	
DATE		DRAWN BY		CHECKED BY		SCALE	
27/11/05		L.H.		S.B.D.		AS SHOWN	



**LEGEND**

- TEMPORARY BIG SCREEN
- GRANDSTAND / CORPORATE STRUCTURE
- TEMPORARY PEDESTRIAN BRIDGE
- TEMPORARY OVERTRACK SIGN

**TRACK DETAILS**

- TRACK LENGTH - 2.8 KM'S
- G/A CAPACITY - 20,000 PERSONS
- GRANDSTAND SEATS - 7,000 APPROX
- CORPORATE QUESTS - 4,000 APPROX

<p><b>PROPOSED WELLINGTON V8 SUPERCAR STREET RACE</b></p>		<p><b>WELLINGTON CITY COUNCIL</b></p>		<p><b>PRELIMINARY ZONE LAYOUT</b></p>	
<p>DATE: 27.11.15</p> <p>SCALE: 1:1000</p> <p>THIS DRAWING IS NOT TO SCALE</p>	<p>PROJECT: WELLINGTON CITY COUNCIL</p>	<p>CLIENT: WELLINGTON CITY COUNCIL</p>	<p>ENGINEER: WESTPAC ENGINEERS</p> <p>DATE: 27.11.15</p>	<p>DESIGNED: S.B.J.</p> <p>DRAWN: L.J.H.</p> <p>DATE: 27.11.15</p>	<p>APPROVED: G04288-ZL-01</p> <p>SCALE: 1:1000</p> <p>DATE: 27.11.15</p>

ZONE 1

DESCRIPTION OF TEMPORARY WORKS	CONSTRUCTION WORKS COMMENCE	CONSTRUCTION WORKS COMPLETED	REMOVAL / DEMOBILISATION WORKS START	REMOVAL / DEMOBILISATION WORKS COMPLETE	REINSTATEMENT COMPLETE
<b>KEY ELEMENTS</b>					
<ul style="list-style-type: none"> <li>This area of the race track is located on Customhouse Quay and Waterloo Quay. It also incorporates the car parks to the east of the road which will be used to house the V8 Pits and associated facilities.</li> <li>The Pit buildings are a temporary steel structure which will be erected in the car park. Corporate hospitality will be located on top of the garages.</li> </ul>					
<b>CIVIL WORKS</b>					
<ul style="list-style-type: none"> <li>Detailed civil works will need to be carried out in the car park which will accommodate the V8 Pits.</li> <li>Were necessary road reseal and resurfacing will be provided.</li> </ul>					
<b>SAFETY BARRIERS, DEBRIS FENCE, SECURITY FENCE, CROWD CONTROL FENCES</b>					
<ul style="list-style-type: none"> <li>Temporary safety concrete barriers, debris fence and demarcation fence to be positioned on top of existing kerb and channel (eastern side) and in centreline of division of each way traffic lane definition.</li> <li>Security fence to be erected on areas to maintain access for patrons as well as external site public (general business access outside venue).</li> </ul>	3 weeks prior	2 weeks prior	2 weeks following	2 weeks following	2 weeks following
<b>CORPORATE FACILITIES/ GRANDSTANDS</b>					
<ul style="list-style-type: none"> <li>Corporate suites will be provided inside on top of temporary steel pit building.</li> <li>Large grandstands will be erected on the western side of Customhouse Quay and Waterloo Quay on the road.</li> <li>Small grandstand to be erected on eastern side of Customhouse Quay and Waterloo Quay next to Queens Wharf.</li> </ul>	2 weeks prior 1 week prior 3 weeks prior	1 week prior week of event 3 weeks prior	3 weeks following 1 week following 2 weeks following	3 weeks following 1 week following 2 weeks following	3 weeks following
<b>BRIDGES</b>					
<ul style="list-style-type: none"> <li>No Bridges to be installed in this zone.</li> </ul>	-	-	-	-	-
<b>SIGNAGE BARRIER BLOCKS</b>					
<ul style="list-style-type: none"> <li>Temporary signage on concrete barrier blocks will be provided.</li> <li>Signage on temporary over-track sign (over-track sign also to support race lights).</li> </ul>	3 weeks prior	Week of event	1 week following	2 weeks following	2 weeks following
<b>CATERING, RESTROOMS, MERCHANDISE, ROAD LINE MARKING</b>					
<ul style="list-style-type: none"> <li>Medical facilities and restrooms will be provided for the benefit of patrons.</li> <li>Restrooms, catering and merchandising facilities will be provided in streets behind the proposed grandstands</li> <li>Road line marking will occur in high levels within pit area including chevrons for Pit In and Pit Out.</li> <li>Large V8 merchandising paddock to south-east of pits in existing carpark.</li> </ul>	1 week prior	Week of event	1 week following	2 weeks prior	2 weeks prior
<b>TRAFFIC MANAGEMENT</b>					
<ul style="list-style-type: none"> <li>Certified Traffic Controllers will be in attendance to manage and control traffic during the re-establishment modifications of the central median, and placement of temporary infrastructure within this area.</li> </ul>					

Timeline indicator								
4 weeks prior	3 weeks prior	2 weeks prior	1 week prior	Week of event	*Event Day*	1 week following	2 weeks following	3 weeks following

ZONE 2

DESCRIPTION OF TEMPORARY WORKS	CONSTRUCTION WORKS COMMENCE	CONSTRUCTION WORKS COMPLETED	REMOVAL / DEMOBILISATION WORKS START	REMOVAL / DEMOBILISATION WORKS COMPLETE	REINSTATEMENT COMPLETE
<b>KEY ELEMENTS</b> <ul style="list-style-type: none"> <li>This area of the race track is located adjacent to Jervois Quay and also incorporates Willeston Street and Victoria Street. The area also uses Queens wharf.</li> <li>Events and Conventoin Building will be used to accommodate race administrations and operations, the media centre and the existing basement car park will be used to for the support category paddocks.</li> </ul>					
<b>CIVIL WORKS</b> <ul style="list-style-type: none"> <li>Were necessary road reseal and resurfacing will be provided.</li> </ul>					
<b>SAFETY BARRIERS, DEBRIS FENCE, SECURITY FENCE, CROWD CONTROL FENCES</b> <ul style="list-style-type: none"> <li>Temporary safety concrete barriers, debris fence and demarcation fence to be positioned on top of existing kerb and channel and in median strip of Jervois Quay</li> <li>Temporary safety concrete barriers, debris fence and demarcation fence to be positioned on top of existing kerb and channel in both Willeston Street and Victoria Street.</li> <li>Security fence to be erected on areas to maintain access for patrons as well as external site public (general business access outside venue).</li> </ul>	3 weeks prior 4 weeks prior	Week of event 2 weeks prior	1 week following 3 weeks following	2 weeks following 3 weeks following	3 weeks following
<b>CORPORATE FACILITIES/ GRANDSTANDS</b> <ul style="list-style-type: none"> <li>Corporate suites will be provided inside on rooftop of existing carpark (corner of Willeston St and Victoria St).</li> <li>Large grandstand to be erected on the western side of Jervois Quay on the road.</li> <li>Small grandstands to be erected on corner of Customhouse Quay and Panama Street</li> </ul>	Week of event Week of event 2 weeks prior	Week of event Week of event 2 weeks prior	1 week following 1 week following 1 week following	1 week following 1 week following 2 weeks following	2 weeks following
<b>BRIDGES</b> <ul style="list-style-type: none"> <li>Temporary pedestrian bridge is to span over Jervois Quay with footings placed in appropriate positions either side of road. The bridge will be constructed over 3 weeks – temporary aboveground footings and support columns week one, stairs and platforms week two and the third week will allow deck platform to be installed.</li> </ul>	4 weeks prior	1 week prior	1 week following	2 weeks following	2 weeks following
<b>SIGNAGE BARRIER BLOCKS</b> <ul style="list-style-type: none"> <li>Temporary signage on concrete barrier blocks will be provided.</li> <li>Signage on temporary pedestrian bridge.</li> </ul>	4 weeks prior	Week of event	1 week following	2 weeks following	2 weeks following
<b>CATERING, RESTROOMS, MERCHANDISE, ROAD LINE MARKING</b> <ul style="list-style-type: none"> <li>Medical facilities and restrooms will be provided for the benefit of patrons.</li> <li>Restrooms, catering and merchandising facilities will be provided in streets behind the proposed grandstands</li> </ul>	Week of event	week of event	1 week following	1 week following	1 week following
<b>TRAFFIC MANAGEMENT</b> <ul style="list-style-type: none"> <li>Certified Traffic Controllers will be in attendance to manage and control traffic during the re-establishment modifications of the central median, and placement of temporary infrastructure within this area.</li> </ul>					

Timeline indicator								
4 weeks prior	3 weeks prior	2 weeks prior	1 week prior	Week of event	*Event Day*	1 week following	2 weeks following	3 weeks following

ZONE 3

DESCRIPTION OF TEMPORARY WORKS	CONSTRUCTION WORKS COMMENCE	CONSTRUCTION WORKS COMPLETED	REMOVAL / DEMOBILISATION WORKS START	REMOVAL / DEMOBILISATION WORKS COMPLETE	REINSTATEMENT COMPLETE
<b>KEY ELEMENTS</b>					
<ul style="list-style-type: none"> <li>This area of the race track is located adjacent to Jervois Quay and loops around Taranaki Street.</li> <li>A large catering and entertainment area will be located in Frank Kitts Park.</li> </ul>					
<b>CIVIL WORKS</b>					
<ul style="list-style-type: none"> <li>Were necessary road reseal and resurfacing will be provided.</li> <li>The temporary works timeline schedule is subject to weather conditions and refinement where required to meet WCC, other relevant agencies future works programs and to meet any existing event commitments.</li> </ul>					
<b>SAFETY BARRIERS, DEBRIS FENCE, SECURITY FENCE, CROWD CONTROL FENCES</b>					
<ul style="list-style-type: none"> <li>Temporary safety concrete barriers, debris fence and demarcation fence to be positioned on top of existing kerb and channel and in median strip of Jervois Quay</li> <li>Temporary safety concrete barriers, debris fence and demarcation fence to be positioned on top of existing kerb and channel in Taranaki Street.</li> <li>Security fence to be erected on areas to maintain access for patrons as well as external site public (general business access outside venue).</li> </ul>	2 weeks prior 2 weeks prior	Week of event 2 weeks prior	1 week following 2 weeks following	2 weeks following 2 weeks following	2 weeks following
<b>CORPORATE FACILITIES/ GRANDSTANDS</b>					
<ul style="list-style-type: none"> <li>No corporate suites will be provided in this zone.</li> <li>Large grandstands to be erected around Jervois Quay in Frank Kitts Park and various other open spaces.</li> <li>Grandstand to be located on Jervois Quay in the northbound traffic lane.</li> </ul>	2 weeks prior week of event	1 week prior week of event	2 weeks following 1 week following	2 weeks following 1 week following	2 weeks following
<b>BRIDGES</b>					
<ul style="list-style-type: none"> <li>Temporary pedestrian bridge is to span over Jervois Quay with footings placed in appropriate positions either side of the Taranaki Street intersection. The bridge will be constructed over 3 weeks – temporary aboveground footings and support columns week one, stairs and platforms week two and the third week will allow deck platform to be installed. This bridge is needed to feed people in and out of a land-locked area.</li> <li>There are two existing pedestrian bridges spanning Jervois Quay in this zone. One of which is a disabled-friendly bridge.</li> </ul>	4 weeks prior	1 week prior	1 week following	3 weeks following	3 weeks following
<b>SIGNAGE BARRIER BLOCKS</b>					
<ul style="list-style-type: none"> <li>Temporary signage on concrete barrier blocks will be provided.</li> <li>Signage on temporary pedestrian bridge and existing pedestrian bridges</li> </ul>	2 weeks prior	Week of event	1 week following	2 weeks following	2 weeks following
<b>CATERING, RESTROOMS, MERCHANDISE, ROAD LINE MARKING</b>					
<ul style="list-style-type: none"> <li>Medical facilities and restrooms will be provided for the benefit of patrons.</li> <li>Large catering and entertainment area to be located in Frank Kitts Park.</li> <li>Catering and merchandising also located in G/A area located next to off-track entertainment (extreme watersports).</li> <li>Restrooms, catering and merchandising facilities will be provided in streets behind the proposed grandstands</li> </ul>	1 week prior	Week of event	1 week after	1 week after	1 week after
<b>TRAFFIC MANAGEMENT</b>					
<ul style="list-style-type: none"> <li>Certified Traffic Controllers will be in attendance to manage and control traffic during the re-establishment modifications of the central median, and placement of temporary infrastructure within this area.</li> </ul>					

Timeline indicator								
4 weeks prior	3 weeks prior	2 weeks prior	1 week prior	Week of event	*Event Day*	1 week following	2 weeks following	3 weeks following



ZONE 4

DESCRIPTION OF TEMPORARY WORKS	CONSTRUCTION WORKS COMMENCE	CONSTRUCTION WORKS COMPLETED	REMOVAL / DEMOBILISATION WORKS START	REMOVAL / DEMOBILISATION WORKS COMPLETE	REINSTATEMENT COMPLETE
<b>KEY ELEMENTS</b> <ul style="list-style-type: none"> <li>This area of the race track is located along Featherston Street and incorporates Panama Street and Bunny Street.</li> <li>This infrastructure in this area will be some of the last installed prior to the event and the earliest dismantled after the event due to the sensitivity and importance of Featherston street as a retail and business hub of Wellington.</li> <li>A large catering and entertainment area will be located in Frank Kitts Park.</li> </ul>					
<b>CIVIL WORKS</b> <ul style="list-style-type: none"> <li>Were necessary road reseal and resurfacing will be provided.</li> <li>Works will be carried out to remove 'pavers' from Bunny Street and replaced with appropriate surface (capital works item).</li> <li>The temporary works timeline schedule is subject to weather conditions and refinement where required to meet WCC, other relevant agencies future works programs and to meet any existing event commitments.</li> </ul>					
<b>SAFETY BARRIERS, DEBRIS FENCE, SECURITY FENCE, CROWD CONTROL FENCES</b> <ul style="list-style-type: none"> <li>Temporary safety concrete barriers, debris fence and demarcation fence to be positioned on top of existing kerb and channel Featherston Street (controls to be put in place to maintain changes pedestrian access conditions and maintain safety to all pedestrians).</li> <li>Temporary safety concrete barriers, debris fence and demarcation fence to be positioned on top of existing kerb and channel in Panama Street and Bunny Street.</li> <li>Security fence to be erected on areas to maintain access for patrons as well as external site public (general business access outside venue).</li> </ul>	1 week prior 4 weeks prior	Week of event 3 weeks prior	1 week following 3 weeks following	1 week following 3 weeks following	3 weeks following
<b>CORPORATE FACILITIES/ GRANDSTANDS</b> <ul style="list-style-type: none"> <li>Corporate Suites will be located along Bunny Street including an over-track facility on the corner of Featherston St and Bunny St.</li> <li>Large grandstands to be erected along the eastern side of Featherston Street in existing carpark.</li> </ul>	1 week prior 2 weeks prior	Week of event 1 week prior	1 week following 2 weeks following	1 week following 2 weeks following	2 weeks following
<b>BRIDGES</b> <ul style="list-style-type: none"> <li>Temporary pedestrian bridge is to span over Featherston Street with footings placed in appropriate positions either side of the Waring Taylor Street intersection. The bridge will be constructed over 3 weeks – temporary aboveground footings and support columns week one, stairs and platforms week two and the third week will allow deck platform to be installed. This bridge is needed to feed people in and out of a land-locked area.</li> <li>There are two existing pedestrian bridges spanning Jervois Quay in this zone. One of which is a disabled-friendly bridge.</li> </ul>	3 weeks prior	1 week prior	1 week following	3 weeks following	3 weeks following
<b>SIGNAGE BARRIER BLOCKS</b> <ul style="list-style-type: none"> <li>Temporary signage on concrete barrier blocks will be provided.</li> <li>Signage on temporary pedestrian bridge.</li> </ul>	3 weeks prior	Week of event	1 week following	2 weeks following	2 weeks following
<b>CATERING, RESTROOMS, MERCHANDISE, ROAD LINE MARKING</b> <ul style="list-style-type: none"> <li>Medical facilities and restrooms will be provided for the benefit of patrons.</li> <li>Restrooms, catering and merchandising facilities will be provided in streets behind the proposed grandstands.</li> </ul>	1 week prior	Week of event	1 week following	2 weeks following	2 weeks following
<b>TRAFFIC MANAGEMENT</b> <ul style="list-style-type: none"> <li>Certified Traffic Controllers will be in attendance to manage and control traffic during the re-establishment modifications of the central median, and placement of temporary infrastructure within this area.</li> </ul>					

Timeline indicator								
4 weeks prior	3 weeks prior	2 weeks prior	1 week prior	Week of event	*Event Day*	1 week following	2 weeks following	3 weeks following

## Proposed V8 Supercar Street Circuit Review – Photo Report



Photo 1

Photo represents the proposed for V8 Supercar Pits entry and the pit straight. Please note that the existing gates and pillars will remain in place and the entry road to the pits will remain clear of these structures. Works will be required to the gardens, crossover and re-leveling.

## Proposed V8 Supercar Street Circuit Review – Photo Report



Photo 2

This area is the proposed new V8 Supercar pits. This area would accommodate the pit garages, pit stop bay and pit through lane. Proposed garages would have corporate suites and associated facilities located above. Please note the ticket dispensing and payment booths would need to be converted to demountable operations for easy removal prior to annual pit garage installations.

## Proposed V8 Supercar Street Circuit Review – Photo Report

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Photo 3

## Proposed V8 Supercar Street Circuit Review – Photo Report



Photo 4

Photo 3 and 4 depicts the proposed area to be used for support category paddock (parking and works area). This area is located under the existing events and convention building. Please note the car park is large enough to accommodate both residential car parking as well as the paddocks. Further, the entry / exit ramps at the car park are suitable for use by most support race categories (excluding V8 Supercars).

## Proposed V8 Supercar Street Circuit Review – Photo Report



Photo 5

Photo 5 depicts the location of the proposed works to Waterloo Quay and Panama Street traffic and pedestrian median island. This will be the area of a major turn from the harbour area into the city centre i.e. Featherston Street. Please note the large electric bus way pole that will need to be converted into a demountable configuration along with the shelter and the traffic light pedestal.

## Proposed V8 Supercar Street Circuit Review – Photo Report



Photo 6

Location of similar works required as noted in photo 5. Please note this area is located at Victoria Street and Hunter Street.

## Proposed V8 Supercar Street Circuit Review – Photo Report

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Photo 7

This photo represents proposed typical works to pedestrian median islands located on Featherston Street. These islands will need to be modified into demountable islands, do as the track width is maintained to minimum requirements.



## Proposed V8 Supercar Street Circuit Review – Photo Report

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Photo 8

Photo 8 shows the existing pedestrian overpass on Jervois Quay. This bridge will play an integral part during the event for access for the disabled patrons. The access is from the city to the proposed events / carnival precinct.

## Proposed V8 Supercar Street Circuit Review – Photo Report



Photo 9



Photo 10

## Proposed V8 Supercar Street Circuit Review – Photo Report

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Photo 9 and 10 show the intersection of Taranaki Street and Wakefield Street. Proposed works will maintain minimum single vehicle lane use eachway on Wakefield Street at the intersection. This is primarily required for the maintenance of the bus route in an attempt to minimize disruption. This intersection is exceptionally wide enough for the bus route on Wakefield Street to be maintained.



Photo 11

## Proposed V8 Supercar Street Circuit Review – Photo Report



Photo 12



Photo 13



## **Proposed V8 Supercar Street Circuit Review – Photo Report**

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Photo 11, 12 and 13 depict the extensive works required on Bunny Street including conversion of existing pavers surface to asphaltic concrete surface and conversion of all traffic medians to demountable kerbs and island infills. The existing plantings could be converted to 'pot-able' vegetation for easy removal and re-installation.