

# ENERGY

## breakthrough

MARYBOROUGH  
VICTORIA

ISSUE ONE  
AUGUST 2013



# MENTORS LEAD THE WAY

The 2013 Holden Mentor Program is now in full swing with 22 mentors assisting 18 primary schools in their Energy Breakthrough preparations.

The program kicked off with a meet-up at Holden HQ in Port Melbourne in May. Team managers and Mentors heard from two of Holden's enthusiastic mentors, Revathi Krishnamoorthy and Adrian Purnell, on their past experiences of the program and to share some insights into some of the great opportunities the mentor program offers students, teachers and the Holden staff.

Adrian presented on his time with Frankston Primary School in 2012, where the students learnt about crash test programs, racing lines and aerodynamics.

"Being part of the Holden Mentor Program has been a wonderful experience for our students. (and our teachers and

parents)." Morry Rubinstein, Principal at Frankston Primary School explains.

"The kids in the team were able to work closely with Adrian, who was always willing to help out and share his knowledge and expertise wherever he could. Adrian gave us advice on the most effective way to design and build the fairing or canopy of our vehicle. He worked with the team to teach them about aerodynamics and organised a trip to the wind tunnel at Monash to test out our vehicle when it was built."

"Adrian also worked with the team to teach them how to corner properly and arranged a session at a go kart track to reinforce this. We had a look at the Holden Volt and discussed the importance of conserving our fuels and doing more research into alternative energies."

"Adrian also supported us at Maryborough where he became one of our Pit Crew for the event."

In the Display & Presentation component, one of our students Oscar summed it up best when he said: "It has been great working with Adrian. We are so thankful for everything he has done for us and we really appreciate it."

"That is why we have signed up again for the Holden Mentor Program."

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NOV 21-24 2013

## Display & Presentation

Did you know Display & Presentation is worth 25% of the overall score for HPV and 20% for Try-athlon. Here are some important points:

1. Read the School's Handbook  
Schools are reminded to read the School's Handbook for the judging criteria so that the maximum score can be obtained.

2. 20 minute presentation

Each school is to present for up to 20 minutes and then the balance of the time is to allow the judges to ask questions.

3. Recorded Music

Any recorded music used should be kept at a volume so as to not interfere/disturb the nearby panels. Schools needing to use music as part of their Display and Presentation should seek approval before hand.

4. Use of aids

There will be up to 12 panels judging at the one time and therefore schools are reminded that no PA systems are allowed. Experience has shown that video projectors and the use of computers are not very effective in the outdoor judging area.

5. Practice

Practice is an important aspect of a well groomed presentation. Schools however, will not be allowed to practice in the judging area while other schools are being judged.

## NO wheeled sleeping vehicles on site

Those wishing to bring a Wheeled Sleeping Vehicle to the event should contact the Maryborough Harness Racing Club.

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## ENERGY BREAKTHROUGH EXPANDS WITH THE DEMAND

We really don't like students missing out on participating in the Energy Breakthrough. We don't like having 50 teams sitting on Waiting Lists. We know that you don't like missing out or being on Waiting Lists either.

The Energy Breakthrough Executive recently met to discuss immediate solutions to the overwhelming demand we have seen for this year's event. (<http://www.racvenergybreakthrough.net/2013/04/15/entries-soar/>). *(There is also a larger project underway exploring the future development of the Energy Breakthrough program, but more on that another time.)*

### 21 NEW PLACES OPENED UP, AS TRACK LIMITS HAVE BEEN EXPANDED

We are pleased to announce that we have increased the ratings of our two endurance trial circuits, the RACV Track and Holden Track, for this year's event. The RACV Track limit has been expanded from 90 to 105 teams per event and the Holden Track from 79 to 85 teams per event.

The discussions covered a range of considerations, including:

- ▶ ensuring that the safety of participants remained paramount,
- ▶ avoiding overcrowding to maximise the on track enjoyment for the students,

- ▶ the rise in quality and reliability of the vehicles and rider skill levels in recent years, and
- ▶ the potential bottlenecks and particularly challenging corners on each track.

With this increased field size, there is a flow on effect with growing demand on camping space and scrutineering, as well as the judging of the Design and Construction and Display & Presentation elements.

### THREE TEAMS WILL SHARE TWO PITS

To support this expansion, we will be allocating schools with three teams entered in an event two pit spaces for the event. This is commonplace at other HPV events across the country and had been suggested to the Executive by a number of team managers.

The teams affected will be notified via email of this change and we appreciate their assistance in allowing more schools

This increase in field limits is a great outcome for many of the schools who were previously on the Waiting Lists.

### YOU CAN STILL ENTER

There is still space left for new entries in the Energy Efficient Vehicle, Pushcart and Innovations in Technology categories, so if you are yet to enter or still on a Waiting List, we recommend you consider one of these categories today!

Important dates	August	October	November
	<p><b>29</b> EEV conversion workshop, see page 6 of this newsletter</p>	<p><b>15</b> Rider, Camping, and Pit Requests details to be completed. Please feel free to complete prior to this date.</p>	<p><b>8</b> Information Kits to be posted by mail and on the website. Team numbers and pit numbers will be issued in this document.</p>
	September	<p><b>20</b> Have you read the School's Handbook, you can download this from the RACV Energy Breakthrough website</p>	<p><b>21 - 24</b> <b>2013 RACV Energy Breakthrough</b> Remember you can arrive as early as Wednesday and leave as late as Monday</p>
	<p><b>14 &amp; 15</b> RACQ Technical Challenge Maryborough Queensland</p> <p><b>21-22</b> Murray Bridge HPV Super Series</p>	<p><b>31</b> Issue Two Newsletter released</p>	<p><b>25</b> Provide online feed back directly to us</p>

## ENERGY EXPO

### It's back brighter than ever

The Expo this year will again focus it's energies on providing participants and spectators a chance to explore and experience the latest trends in green energy and sustainable living.

Equipped with delicious food and interactive displays, the Expo will once again be a hive of activity. Children and adults alike can wander through the expo with a compelling feeling of amazement at the variety of different experiences stimulating their senses.

Many of our generous sponsors who share the same philosophies as the Breakthrough also provide informative and

interactive stalls that make the expo a welcome relief from the hustle and bustle associated with track life.

As well as having many of last year's popular exhibitors such as Scarsdale Park Segways, Goldfields Sustainability Group, and Trisled, we are proud to welcome Melbourne Heart Football Club Representatives to the Expo on Friday the 22nd who are looking forward to getting out and playing some games by burning some energy the old fashioned way.

If you're an individual or company looking for a platform to launch your latest sustainable idea, the 2013 RACV Energy Expo may be the perfect channel to do so. If you are interested contact with Daniel McLinden on 5461 0678 or [danielm@cgoldshire.vic.gov.au](mailto:danielm@cgoldshire.vic.gov.au)



### Holden Mentor Program *continued from front page*

"Holden's mentors come from across the organisation, from Program Management, Purchasing, Finance, Corporate Affairs and Engineering, which means that each mentor will bring their own unique skills to their mentorship." Adrian Purnell, Holden Mentor added.

"We love the Holden Mentor program and believe it offers a window into the automotive industry for the students and teachers involved." Energy Breakthrough Convenor, John Stafford said. "They have a chance to meet regularly with a member of the Holden team and often the messages delivered by the Mentors can really support

the work the teachers are doing with their students each day."

School's participating in the 2013 Holden Mentor Program: *Avoca Primary School, Beaconsfield Upper Primary School, Buchan Primary School, Elphinstone Primary School, Frankston PS, Haileybury College, Heywood and District Secondary College, Jells Park Primary School, Kennington Primary School, Kingswood Primary School, Lockwood Primary School, Spring Gully Primary School, St Patrick's Primary School, St Therese's PS, St. Mary's Primary School, Talbot Primary School, Wooranna Park Primary School.*

To stay in the loop register your details on our News page at [www.racvenenergybreakthrough.net](http://www.racvenenergybreakthrough.net)

or

Follow us on our Facebook page [www.facebook.com/RACVEB](http://www.facebook.com/RACVEB)



# Upgrades

2013  
ONSITE  
UPGRADES



## ENERGY BREAKTHROUGH SITE RECEIVES A FACELIFT

The Central Goldfields Shire Council has been busy undertaking upgrade works for the RACV Energy Breakthrough in the Princes Park Precinct in 2013.

Capital works to Corner No.3 and Corner No.4 on the RACV Track will create improved driving and handling on these corners.

The new asphalt seal provides a smooth surface for the HPV's and Pushcarts to pass through these corners with ease.

These works will improve the movement of vehicles around the track

assisting all teams to complete their endurance events. See photos below.

Works have also commenced on a new amenities block at the Maryborough Caravan Park.

The new block will provide improved camping conditions for all the school communities who are planning to utilise this wonderful asset in the Princes Park Precinct during the 2013 RACV Energy Breakthrough.

In another exciting development for the Princes Park Precinct the installation of a new boardwalk and fishing platform.

The boardwalk, to be completed prior to this year's event, will not only beautify the Lake Victoria area, directly behind the Maryborough Outdoor Pool, but just as

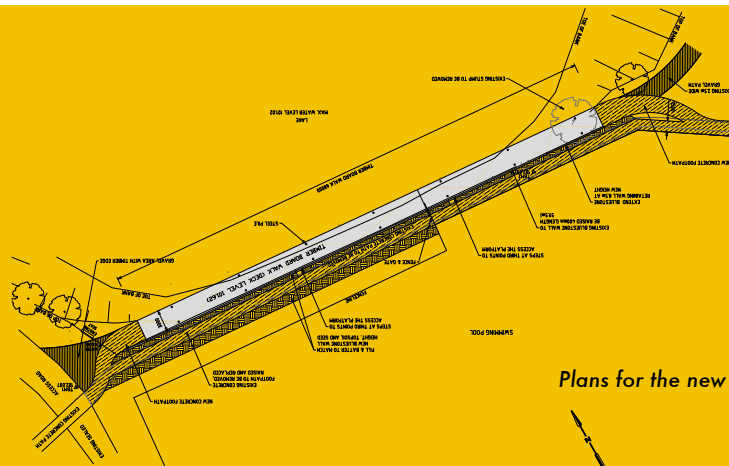
importantly will make this area safer and more functional for the many participants and spectators who use this pathway throughout the event. See plans for the boardwalk below.

The Central Goldfields Shire Council and the RACV Energy Breakthrough Local Planning Committee pride themselves on presenting not only the Princes Park Precinct but Maryborough and district in an outstanding condition for our visiting participants and spectators, and 2013 will be no exception.

We look forward to providing everyone with an exceptionally satisfying, fulfilling, and exciting experience again in 2013.



New asphalt on RACV to assist with vehicle handling



Plans for the new boardwalk



New design for the Vehicle ID numbers in 2013

## IMPORTANT VEHICLE DEVELOPMENTS

### Vehicle ID numbers

This year teams will be provided with Vehicle ID numbers that have a white backing sticker. This means that you will not have to provide a white area on your vehicle for the numbers as has been the case in the past. The white background will be 250mm x 300mm which is the same size as the white area has been in the past.

Teams must allow for three areas on their bodywork that can accommodate this sticker. One sticker is to be stuck to the front of the vehicle and one on each side of the vehicle. The side stickers should be as far back as possible as per the diagram on page 51 of the School's Handbook.

The intention of this is to make the numbers more consistent and easier for track marshalls to read as the vehicle travels past and away from the marshall.

### Lock stops

The rules around lock stops have also been changed this year to be less prescriptive than in the past. We have seen

many different designs that meet the intended aim of the lock stops without necessarily meeting the wording of the previous rule.

The intention is that the rotating tyre/wheel should never be able to come into contact with any other part of the vehicle. If a rotating tyre jams against the frame of the vehicle then it will stop the tyre quickly and potentially spin the vehicle.

It is still our preference that the stopping mechanism acts against the actual hub or steering arm as this will prevent the wheel from turning too far even if the steering linkage breaks.

In addition, there should always be at least 100mm clearance between the riders hand and any rotating part of the vehicle (tyre/wheel/spokes). Where there is insufficient clearance or any chance that the riders hand may contact the tyre a guard is required to prevent this.

Vehicles are also required to have at least 50mm of clearance between the hand controls and any part of the frame or bodywork. In the event of an accident the steering controls may push past the full-lock position and jam the riders hand against the frame. This clearance aims to avoid this situation.

## SOME CLUES FOR "TRY"ING

The entries have come in and it is pleasing to welcome some new schools to the Try-athlon event.

For those who have completed your vehicle, hopefully it has come up to your expectations. A special component to consider when practising with your vehicle is the turning capacity as we have quite a few tight corners in the Obstacle course and in the Time Trial the ability to negotiate the corners when travelling fast has proved to be a vital factor!

We shall include the rumble strips and ramp in the Obstacle course so please do allow for adequate clearance on your vehicle.

Please make note of the Display & Presentation notes in this Newsletter too as this

component can make quite a difference to your overall score, and this event relies on the scores of ALL THREE activities.

Any enquiries – particularly for the new schools – an email will usually answer the question.



## Sustainability @Energy Breakthrough

### Bravo! Waste Reduction Achieved!

The 2012 waste data report showed total waste = 22.5 tonne, this is an 8% reduction in total waste generated from the 2011 data.

Congratulations to all the teams who helped us achieve this result. Recycling rate has remained stable at 22% which is also good.

The Energy Breakthrough committee has a long term goal to achieve a 40% recycling rate your continued support will help us to reach this goal.

### Handy Hints - Plan ahead to Reduce Waste.

Most of the waste will be **packaging** or **food**. Keep these simple tips in mind.

#### 1. Plan

Plan your meals including portion control so you don't have leftovers to throw away. Saves money too!

#### 2. Buy in bulk

Saves money and packaging.

#### 3. Know your recyclables

Plastics 1 -7, paper, bottles and cans - all accepted in Maryborough

#### 4. Educate others

Make sure parents and support crew know about the importance of waste reduction and recycling and what they can do to help.

#### 5. Keep what you can still use

Don't just throw everything out at the end when you pack up, take back unused food and distribute it between team members

#### 6. MOST IMPORTANT

Don't forget to include the actions that your team has taken to reduce waste and increase recycling as part of your Display & Presentation.

**Good Luck for 2013 and keep recycling!**

# PUSHCARTS TO GET 'BUZZING'



Honey will be on the menu when the Capilano Honey Pushcarts hit the track in 2013.

As one of the largest honey packers in the world, Capilano Honey has had a long affiliation with the Maryborough area. Now even sweeter is their relationship with the Energy Breakthrough.

The pushcarts are a popular category for primary schools wanting to introduce themselves to the Energy Breakthrough. Based on the humble Billycart design, the pushcart is a fun and

practical event for all to use their creativity – maybe your cart could have a 'Bee' theme this year?

Capilano Honey is a great all natural sweetener and one of the best sports performance fuels you can use for your body, just what is needed for those little legs pushing the carts around the track all day.

Entries are still open for the Capilano Honey Pushcarts; do you have a team that would like to participate? Contact the RACV Energy Breakthrough Office 5461 0610

## HOW CAN WE PARTICIPATE?

### Innovations in Technology

What is better – solar, springs, compressed air or rubber bands? Or any other propulsion method? This is a great activity to design an environmentally friendly craft to travel 8m in a water tank.

At this early stage, the Committee is still accepting entries for the Innovations Section of the RACV Energy Breakthrough. This section offers more than it appears on the surface. The challenge of moving recycled material carrying a can of soft drink 8 m in a water tank, has more to it than you think.

How do you make it look like a water creature, float, go in a straight line and actually move? Plus more!!! There are quite a range of different propulsion methods that students can investigate.



The 2 pm sail-off on Saturday has a real buzz so if you have students who are not involved in HPVs etc then this is an

opportunity to challenge them.

Why not read the handbook and find out the details?

Late entries are still being accepted so please contact the RACV Energy Breakthrough

### Junkyard Challenge (Innovations in Technology)

How many students do you have in your class who are love those 'hands on activities'? The Junkyard Challenge is the area where they will thoroughly relish the chance to work in their group (of four) thinking and

devising ways to solve the problem.

Last year the groups worked flat out for 2 hours planning, choosing the 'most



appropriate' pieces of junk in the pile provided, (old bike tyres, spokes, wood off-cuts, chains, plastic strips etc) and THEN drilling/hammering/taping the pieces together to have a bridge which spanned a 1 metre distance & would hold a 2 litre bottle of water without collapsing.

The judges enjoyed the opportunity to listen to the challenges faced and overcome, sharing thoughts and ideas as well as considering the most aesthetic construction.

Yes! We are still taking entries for this year's challenge. Please contact the RACV Energy Breakthrough Office to enter.

### EEV entries

We have seen an increase in the number of teams registered in the Energy Efficient Vehicle (EEV) event this year but there are still more places on the grid. Teams who are stuck on the waiting list for the Tryathlon or HPV events should consider converting their vehicle to an EEV so that they can participate in the Energy Breakthrough this year.

The easiest method of entry into the EEV class is the Hybrid 1 category, where vehicles must be powered by pedal plus one other power source. These vehicles are not as challenging and do not require the sophistication of a Hybrid 2, petrol-

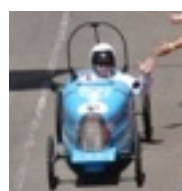
only or electric-only vehicle as the team can revert to pedalling if they run out of fuel/batteries. Converting to Hybrid 1 will also make it easier to convert your vehicle back to HPV in subsequent years.

A workshop recently held at Holmesglen Institute in Melbourne demonstrated the ease with which a HPV can be converted to Hybrid 1 using a hub motor.

A report on this workshop is on the next page.

A second free workshop will be held on Thursday 29th August.

The workshop will explore different types of electric motors,



controllers, battery technologies, and battery chargers.

The workshop will look at both pedal +electric conversions and full electric

conversions. REV Bikes will conduct the morning demonstration, followed by Niubike the afternoon session.

### EVENT DETAILS

**Who:** Year 9 to Year 12 students,

Team Managers, Vehicle builders

**When:** Thursday, 29 August, 2013

Arrive from 8:30 am – 4:00pm, including 1 hour lunch break.

**Where:** Holmesglen TAFE, Moorabbin Campus, 488 South Road Moorabbin. Meet at the Electrical/Engineering office (M4.1.404) which is at the rear of building 4.

Registrations close Thursday, 22 August, 2013.

<http://www.racvenergybreakthrough.net/about/eev-workshop/>

# workshop

CONVERT TO  
AN ELECTRIC  
VEHICLE



## Electric Motors - Making the change is easy!

The exciting world of electric bikes and Energy Efficient Vehicles (EEV's) was on display at the Holmesglen TAFE workshop last month.

Rebecca and Dean from REV Electric Bikes took time to explain some of the chemistry, mechanics and science behind what powers an Electric motor.

The program was a valuable experience for the students from Ballarat Christian College, who were shown how to make the most from this technology.

For this year's RACV Energy Breakthrough, the students were given

helpful advice about charging batteries and efficient driving techniques using electric powered vehicles.

REV Bikes operates from their workshop in Warrandyte, where they specialize in converting existing bikes into electric bikes and HPVs.

The team have a good record with the Energy Breakthrough, having their motors used by Holmesglen and Seymour, both taking line honours in their respective classes last year.

The guys again will be at the 2013 Energy Breakthrough, ready to assist any teams with complications or issues throughout the event.

At the core of Dean's demonstration was an important message about climate change and how electric motors play a big

role in combating the unsustainable use of fossil fuels.

"What you've seen here today, is the technology everybody will be using in the future."

As for going fast, Rebecca said, "You won't have a problem with our motors!"

Steve from Niubike also talked to the students and demonstrated the practicalities of using this technology in this year's race.

Glen, a teacher from Ballarat Christian College had praise for the workshop, saying "For these guys to learn about electric technology, it's great education they'll have for our future transport needs."

For more information on hybrids, all-electric and all-petrol classes, visit our categories of entry page.

## A Coles Gift Card for all schools entered in 2013

COLES Maryborough is a loyal supporter of the Energy Breakthrough and will again assist the event and the participating schools in 2013. As part of their support COLES Maryborough will provide a \$20 Gift Card for ALL schools that sign up to their COLES Customer Account Identification Card.

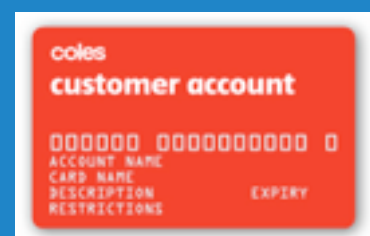
This is a charge card system that provides a convenient, cost-effective way to better manage your supermarket expenditure. You'll find more information on the card at [www.colescustomeraccount.com.au](http://www.colescustomeraccount.com.au)

Schools attending this year's event that have a COLES Customer Account Identification Card can simply phone in their order (Ph 03 5460 3000) and the COLES team will arrange the stock and have it ready to be picked up a convenient time for the school.

To apply for the COLES Customer Account Identification Card simply contact COLES Client Services on 1300 651 425.

To obtain the your COLES Maryborough

\$20 Gift Card please present a copy of this article with your COLES Customer Account Identification Card at the COLES Maryborough store either before or during the event.



# Things to see & do

Why not stay a few days and see the spectacular sights in and around Maryborough?

**MARY B Mini Golf** - 18 hole mini golf, Lazer Tag Zap Zone, Jumping Castle, 35ft Drop Slide, 45ft Inflatable Obstacle Course, Party bookings plus much more

**WALKING tour of historic buildings** - touring majestic buildings, beautiful gardens and sporting grounds in Maryborough

**CENTRAL Goldfields Art Gallery** - a cultural facility of the Shire. The art gallery is situated in the picturesque historic fire station built in 1861, a short walk from the CBD.



**CYCLE tracks** - Explore the old gold towns of the region

**SPORTS & Leisure Centre** - 25m indoor heated pool, toddler pool and play structure, hydrotherapy pool, spa and sauna, gymnasium, group fitness/ program room, cafe, two court stadium, massage clinic, skate park, and a 400m running track.

**SKATE Park** - A short walk from Princes Park; grind rails a very small bank 2x 5ft quarter pipes and a three stairs

**REDHOUSE Funhouse** - Children's indoor play centre catering for ages 1 - 12. \$6 entry for all day while you sit and enjoy bakery café style foods & coffee.

**GOLDFIELDS Reservoir** - An enjoyable 1.5 km walk through bush around the perimeter of the reservoir.

**MARYBOROUGH Flour Mill Gallery** - Deco Gecko; Art Deco and Retro furniture and collectibles display. Sew What Display; A century of sewing, a display of over 250 vintage antique and toy sewing machines. Art Exhibitions; display of local artists. Historical Display addressing the regions diverse history.

**MARYBOROUGH Railway Station** - Historic railway station, built in 1890. Mark Twain remarked when visiting "A station with a town attached". The station is reported to have the longest platform in country Victoria. Admire the highly polished timber ceiling and beautiful tessellated floor in the main entrance.



The station is complemented by an Antique Emporium and cafe.

## Rich in History and Opportunity...

A testament to a rich past shows in the region's grand buildings, historic cottages, and gracious homes. Today, many a visitor comes to walk in the footsteps of the prospectors of the goldmining era.

Maryborough has a splendid cluster of heritage buildings centred around the Maryborough Civic Centre. The elegant architecture of The Court House, Town Hall, Post Office and Old Fire Station display the fine workmanship of a bygone era.

Today's visitors come for many reasons: to wander through the lovely box-ironbark forests with its wildflowers, birds and superb display of Wattle in the spring, to research family history, to visit nearby wineries or explore markets, galleries and museums.

No visit is complete without experiencing the award winning tourist attraction, the Antique Emporium, which is housed in the historic Maryborough Railway Station dating back to the 1890s. You can browse 372 square metres of antiques, treasures, old wares, collectables and memorabilia or simply marvel at the grandeur of the architecture. There is also a café/ restaurant, where visitors can relax and enjoy the historical ambience.



FOR ACCOMMODATION AND TRAVEL INFORMATION CALL 1800 356 511 OR VISIT

[www.visitmaryborough.com.au](http://www.visitmaryborough.com.au)



RACV

# ENERGY

## breakthrough

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VICTORIA



### ONSITE PARKING

The Local Planning Committee places an important emphasis on the traffic management aspect of the event by providing schools with pre-event information (maps and parking permits), directional signage throughout Maryborough guiding people to the site, and providing traffic management attendants to greet you once arrive.

To those travelling by car, a yellow car parking receipt is issued to all paying vehicles for a \$10 fee, this entitles that vehicle to be parked in any of the 'non-restricted' allocated event car parks.

Each school staying on Princes Park Oval will be issued with ONE red parking area permit prior to the event. This entitles that vehicle to be parked in any of the event car parks, including the restricted car parking areas. This will ensure that one of the school's cars can be left in close proximity to their camp. It is vital that this

guideline is followed as the access around the Princes Park oval is critical to the emergency management plan being implemented effectively.

Due to the event's extreme popularity, the event continues to grow in terms of entries and subsequently visitors, we'd still like to encourage all

those attending to make use of buses and/or car pools. This will not only make it a fun trip but it will also reduce the total traffic impact on the event and most importantly save petrol therefore reducing associated costs, number of vehicles on the road, and greenhouse gas emissions.

The 2013 Access Plan will be made available through the Schools Information Kit, which will specify appropriate signage and entry points. For more information contact Daniel McLinden on (03) 5461 0678 or [danielm@cgoldshire.vic.gov.au](mailto:danielm@cgoldshire.vic.gov.au)

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