ARRB is pleased to offer a two-day training workshop on the latest practices in the management of unsealed roads including practical aspects during a site inspection.

The workshop will be a practical ‘hands on’ presentation with group participation, worked examples, and a field inspection of various unsealed roads sites.

Attendance at the popular workshops will be invaluable to learn and share knowledge and experience with other participants.

Key learning outcomes

- Understanding the basics of road engineering and an update on latest developments
- The importance of road design to improve safety and lower maintenance costs
- Drainage requirements and their proper application
- Development of a road safety strategy to improve safety within available resources
- Pavement design and material selection
- Gaining better value from locally available materials often of marginal quality
- Suitable stabilisation techniques for unsealed roads
- Ways to minimise dust emissions
- Road construction practices
- Road maintenance techniques by understanding the causes and cures
- Routine and periodic maintenance operations
- Grader operations and techniques for light, medium and heavy grading
- Maintenance practices of unsealed shoulder on sealed roads
- Environmental considerations to minimise any adverse impacts
- When to seal and unsealed roads taking into account economic considerations
- Maintenance specifications types and selection considerations
- Asset management activities and intervention levels for unsealed roads
- Confirmation of good practices during field site inspections

Course enquiries

For further information about this course, please contact the Events Coordinator on 03 9881 1680, or via email training@arrb.com.au

You can also visit our website www.arrb.com.au/workshops
Unsealed Local Roads

The presenter’s

**Peter Kadar is a Principal Consultant, ARRB Group**
Peter commenced with ARRB Group Ltd in early 2007, and brought his extensive experience in materials and pavement technology - in particular asphalt technology - and in asset management. Throughout his professional career Peter has maintained his interest in research. He has covered a range of topics from quality control, accelerated pavement testing, pavement performance modelling, asphalt characterisation, polymer modified bitumens, asphalt recycling to asset management and business processes.

**Riaan Burger is a Principal Engineer: Low Volume Roads for the Sustainable Infrastructure Management group, ARRB Group**
Riaan Burger joined ARRB Group Ltd in 2011, with specific emphasis on Low Volume Roads. He brings with him expert knowledge in pavement asset management and pavement engineering – he holds a master’s degree in both areas of specialisation. Riaan has extensive experience working in southern Africa and Australia and is a Registered Professional Engineer (equivalent to Chartered status).

What to bring on the day:

For the field trip component of this course, participants are required to bring:

- High visibility safety vest
- Safety boots
- Hat, sunglasses and sunscreen or wet weather gear (depending on the weather)
- Clipboard

Who should attend?

Anyone involved in the construction and maintenance of unsealed roads, including, but not limited to, the following:

- Local road authority managers, engineers and plant operators
- Road consultants (engineers and supervisors)
- Road contractors (contract managers, road engineers, supervisors and grader operators)
- Local council officers, elected councillors and council CEOs
- Forest owners and forestry consultants (operations staff)
- Mining companies (operations staff)
- Quarry owners (operations staff)

Additional information:

To get better value from the workshop, delegates are advised to have access to a copy of the 2009 edition of the Unsealed Roads Manual – Guidelines to Good Practice. If you are unable to bring your own copy of the Manual to the workshop, please indicate that you require a Manual on the registration form (at an additional cost of $275 inclusive of GST).
ARRB Group released in Mar 2009 an updated and expanded edition of the very successful Unsealed Roads Manual, initially issued in 1993. This edition provides the latest research and developments worldwide to address issues identified by practitioners. It also includes the New Zealand Supplement to the 2000 edition of the Manual and the latest requirements and practices to make it an Australasian Manual on unsealed roads.

This updated and expanded edition of the Manual is recommended reading for practitioners in local government, state road authorities and other agencies responsible for the care, maintenance and management of unsealed roads.

**The new features of the upgrade include:**

- details on the latest research findings, new developments and applications of world best practice
- increased content to respond to comments made by delegates attending previous workshops held across Australasia
- equipment developments that provide objective data on unsealed road performance and the better use of often marginal pavement materials
- a new chapter covering ways to improve safety on unsealed roads
- applications for logging and haulage routes
- case studies highlighting how the application of good practice has resulted in significant cost savings or improved operating conditions
- greater emphasis on asset management requirements.

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**This course is endorsed and supported by:**

**Institution of Engineers, Australia (IEAust):**
This course is recognised by ENGINEERS AUSTRALIA for Continuing Professional Development

**Institute of Transportation Engineers ANZ Section (ITEANZ):**

**Australian Local Government Association (ALGA):**

**Engineers Australia** members can choose to record **CPD hours** for attendance at this event in their personal CPD logs. Members should refer to Engineers Australia’s CPD Policy for details of requirements and conditions.
# Unsealed Local Roads

## Workshop Program (subject to change)

<table>
<thead>
<tr>
<th>Time</th>
<th>Day 1</th>
<th>Time</th>
<th>Day 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>8.00am</td>
<td>Registration, Tea and coffee Networking opportunity for delegates</td>
<td>8.00am</td>
<td>Tea and coffee (take to table for prompt start)</td>
</tr>
</tbody>
</table>
| 8.15am | Introduction:  
• Workshop Purpose  
• Housekeeping  
• Role of ARRB  
• Course overview  
• Introductions  | 8.00am | Works Delivery:  
• Road Construction: an introduction  
• Stabilisation: an introduction |
| 9.00am | The Life-Cycle of Road Management:  
*Here’s the network, what do we do next?* | 9.00am | Works Delivery:  
• Road Maintenance: an introduction  
• Dust Control: an introduction |
| 10.00am| Morning tea break                                                    | 10.00am| Morning tea break                                                  |
| 10.15am| Road Network & Reference Definition:  
*Which roads, how classified & how referenced?* | 10.15am| Field Trip: including issues such as:  
• Briefing for field trip  
• Observations of local construction and maintenance practices.  
• Geometry, X section, alignment.  
• Determination of safe operating speeds by on-site measurements.  
Discussion in field of local issues. |
| 10.45am| Road Network Inventory: what have I got?:  
• Road Geometry: X-Section & Alignment | | |
| 11.15am| Drainage & Water Crossings                                           | | |
| 11.45am| Pavement & Subgrade Type                                             | | |
| 12:15 pm| Lunch break (lunch provided)                                         | 12:15 pm| Lunch break (packed lunch provided)                                  |
| 1.00pm | Road Network Condition: what state is it in?:  
• Surface Condition / Roughness (IRI) | 1.00pm | Field Trip, continued: (return at afternoon tea)  
• Pavement surface drainage issues, erosion, flat spots, potholes.  
• Side drains, culverts, environmental runoff, siltation and erosion.  
• Interface with sealed roads, cattlegrids, creek crossings. |
| 1.30pm | Structural Condition / Gravel thickness                               | | |
| 2.00pm | Road Network Condition: service delivered?:  
• Road Safety Issues | | |
| 2.30pm | Environmental Impact                                                 | | |
| 3.00pm | Afternoon tea break                                                  | 3.00pm | Afternoon tea break                                                 |
| 3.15pm | Verification, Select Option :  
*When to Seal Gravel: Life-Cycle Cost Analysis* | 3.15pm | Summary and Recap of learnings:  
• Local issues  
• Discussions  
• Feedback |
| 3.45pm | Project Preparation:  
• Road Geometry: an introduction | 3.45pm | Open Forum:  
• Local issues  
• Discussions  
• Feedback |
| 4.15pm | Project Preparation:  
• Materials Testing: an introduction  
• Pavement Design: an introduction | | |
| 4.45pm | Open Forum: Discussion of local issues | 4.45pm | End of Workshop |

Enrolment form
Unsealed Local Roads Bathurst 27 & 28 February 2014
Venue TBA

Registration fee (Australian dollars)
Registration fee includes morning and afternoon refreshments and lunch

<table>
<thead>
<tr>
<th>REGISTRATION FEES</th>
<th>Price (pp)</th>
<th>GST</th>
<th>Total</th>
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<td>Student fee registration</td>
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<td>123.20</td>
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<tr>
<td>Full fee registration</td>
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<td>$154</td>
<td>$1694</td>
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<tr>
<td>Early bird registration (Must register prior to C.O.B. 27/1/14)</td>
<td>$1360</td>
<td>$136</td>
<td>$1496</td>
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<tr>
<td>Unsealed Roads Manual (2009 edition)</td>
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</table>

Where Do I Register and Make Payments?

To register for this workshop and make payments please go to the following link:

[Register Online Now]

ARRB's Privacy Statement
Personal information provided by you may be held on a database and may be shared with others both nationally and internationally. Sometimes your details may be obtained from, or made available to external companies for marketing purposes. If you do not wish us to hold your details, please write to Privacy Officer, ARRB Group, 500 Burwood Highway, Vermont South, Vic 3133 or email on privacy@arrb.com.au If you choose to ask us not to hold your details, we may not be able to provide you with the services you require. A copy of ARRB’s Privacy Policy is available upon request.

Cancellations
If you are no longer able to attend this event a substitute attendee may take your place. However, if you wish to cancel your registration a full refund, minus a $220 (incl GST) service fee, will be given provided you have notified us in writing, by email, letter or fax, at least 10 business days before the start of the workshop. No refund is available for cancellations under 10 days.

Please note
On receipt of this registration, an email will be sent to you confirming this. If you do not receive confirmation, your registration may not have been received.

ARRB Group supports the Helmets for Kids school program
For information about the Global Helmet Vaccine Initiative visit: [http://helmetvaccine.org/](http://helmetvaccine.org/)

Nationally recognised training
ARRB is progressively obtaining formal accreditation for many of its workshops. For further information visit: [www.arrb.com.au/workshops](http://www.arrb.com.au/workshops)

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