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To: 1. Best Practice Group Asset Management – for the meeting on 23/2/05

From: Greg Arnold, Engineering Policy Manager

**SUBJECT: Trip to Melbourne from 6<sup>th</sup> to 19<sup>th</sup> Feb for Austroads meetings and Transfund Research project.**

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### **Purpose**

To report on travel to Melbourne from 6th to 19th Feb for: Austroads Sprayed Seal Workshop (8th & 9th Feb); Austroads Pavement Technology Review Panel meeting (17th & 18th Feb); Asphalt Perpetual Pavements Seminar and assist Arrb Tr Ltd in a Transfund Research project on triaxial testing of granular materials.

### **Austroads Pavement Technology Review Panel meeting (17th & 18th Feb 2005)**

The Austroads Pavement Technology Review Panel is a high level group represented by all State Road Authorities whom decides on research projects to be undertaken, approves guides, reviews the new Austroads Pavement Technology series. A benefit of the meeting is the sharing of knowledge and project reports from counterparts of other State Road Authorities. Some important points from the meeting were:

- RTA NSW were very keen to be involved in the OECD long life surfacings project that we are participating in and would like me to represent them at the OECD meetings. It is planned through a Transfund research project that Transit will undertake laboratory testing on a low noise Open Graded Porous Epoxy Asphalt materials, while RTA NSW will test high strength concrete surfacing materials as part of the OECD project;
- A foot note is needed excluding Transit New Zealand from Austroads rehabilitation design procedure for granular overlays based on pavement deflection as we currently use a different design procedure based on the old NRB design which has proven to be adequate, the Austroads deflection based method often resulted in granular overlay depths being in excess of 400 mm where the NRB method only required 100mm;
- Arrb completed a project on managing skid resistance for roads in Western Australia and concluded for high speed rural roads the skid resistance found by SCRIM showed no correlation to accident rates. However, surface texture depth of less than 1mm had the effect of increasing accidents by 10% above the average. A TRL report also found the same results. Hence, SCRIM surveys for high speed roads in Western Australia will likely not be conducted in the future. The Arrb report for Western Australia will be

circulated shortly to Austroads members and when received I will forward to the STAG group;

- I was nominated the project manager for a million dollar proposed Austroads project titled, Better Bases for Better Roads which involves developing a performance test for aggregates using the tri-axial testing with some Accelerated Loading Trials. This is effectively the same Transfund project I am currently completing with Arrb and will be continuing next year, it is planned that research efforts will be coordinated;
- Another difficulty is the large number of documents already totalling 700 pages required for review within very tight time-frames. It was accepted that when published the guidelines will be adopted but agreed implementation in terms of aligning specifications, Industry obtaining the necessary laboratory equipment and training will take some time.

### **Austroads National Sprayed Seal Workshop (8<sup>th</sup> and 9<sup>th</sup> February 2005)**

A two day workshop by (special invitation only) was arranged by Arrb for Austroads to decide the future direction of research in sprayed seals undertaken by Arrb.

There was a good attendance from New Zealand (Greg Arnold, Ross McCoy, John Patrick (Opus), Phil Muir (Works); Shaun Bisley? (Higgins), John Vercoe (Fulton Hogan)) which ensured that New Zealand's interest in research needs for sprayed seals was captured at the meeting.

Most of the 70 odd participants were Asset Managers from around Australia and other Industry practitioners. This was a different mix of people to normal Austroads meetings and it was interesting to hear of the various issues of other Australian Road Authorities. Interestingly they are not too dissimilar to Transit New Zealand's issues.

A draft report on the outcomes of the meeting has been circulated and is available from Greg Arnold to anyone interested. Other points of interest were:

- VicRoads decided overnight to cut the annual resealing budget by 25% with the effect of increasing the average seal life from 9 years to 13 years. This was because despite efforts in training the Asset Managers to only re-seal if there is a need, it seemed without fail they spent the same money as last time. VicRoads are monitoring their seals and are so far happy with the results of reduced expenditure;
- One of the Asset Managers admitted that 40% of their re-seals are over seals less than 6 years old after seeing my presentation on seal lives in New Zealand with a high percentage being re-sealed at a young age (based on Opus report, copy is available to anyone interested).

### **Asphalt Perpetual Pavements Seminar (Sydney, 10th Feb 2005)**

AAPA (Asphalt Industry Association in Australia) and Prof. Stephen Brown (University of Nottingham) gave a seminar to promote/discuss Perpetual Asphalt Pavements: Key points noted in the presentations and lengthy discussion were:

- They all agreed perpetual pavements is an inappropriate term and long life or low maintenance pavements is more appropriate;
- UK research found for Asphalt (AC) layers of greater than 160mm then cracking is initiated from the top down rather than the traditional failure mode by fatigue;
- UK design limits the thickness of AC to as little as 300mm regardless of the design traffic loading;
- In the USA the AC thickness is limited to 14 inches (350mm);
- The audience were amazed that in New Zealand we would still consider thin-surfaced unbound granular pavements for motorway extensions;
- In New South Wales they require long-life pavements and allow asphalt and rigid concrete pavements to compete side by side in the tendering process. Interestingly, the rigid concrete pavements come out as the preferred option based purely on initial cost being lower than the full depth asphalt equivalent;
- For pavement designers should the tensile strain at the base of the asphalt be limited to 70 micro-strain then a long life pavement is expected and the depth of asphalt does not need to be increased;
- Stone Mastic Asphalt (SMA) is from studies in the USA and the UK to cost 37% less in terms of whole of life costs compared with Open Graded Porous Asphalt (OGPA).

**Arrb Tr and Transit NZ joint Transfund research project: Predicting In-Service Performance of Alternative Pavement Materials.**

In between the meetings discussed above I worked on a Transfund research project with Binh Voung (Arrb Tr Ltd) to develop a Repeated Load Triaxial (RLT) test to predict in-service performance of alternative pavement materials. This project builds on Dr Arnold's research at the University of Nottingham and research already conducted by Dr Voung at Arrb Tr Ltd. The outcome will be a standard test to determine whether or not an alternative material is suitable for use as a basecourse material in wet/dry and low, medium or high traffic loadings with direct application to assessing industrial by-products and recycled materials.