EME demonstration project Q – March 2014

Why BCC was part of the demonstration project

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Brisbane City Council

Brisbane City Council

Formed in 1925 – 20 Local Authorities / Joint Boards
26 Electoral Wards
Area = 1,367km²
Population (2011) = 1,089,743

BCC ROAD NETWORK

<table>
<thead>
<tr>
<th>Sub-Network</th>
<th>Total Length (km)</th>
<th>Area Coverage (km²)</th>
<th>asphalt</th>
<th>bitumen</th>
<th>seal</th>
<th>concrete &amp; pavers</th>
<th>Total (by area)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A &amp; B – Local Roads</td>
<td>3,980</td>
<td>30.1</td>
<td>3.00</td>
<td>0.55</td>
<td>33.6</td>
<td>62.3</td>
<td></td>
</tr>
<tr>
<td>Collector</td>
<td>596</td>
<td>6.0</td>
<td>0.10</td>
<td>0.01</td>
<td>6.2</td>
<td>11.3</td>
<td></td>
</tr>
<tr>
<td>Suburban</td>
<td>482</td>
<td>5.3</td>
<td>0.03</td>
<td>0.02</td>
<td>5.6</td>
<td>11.7</td>
<td></td>
</tr>
<tr>
<td>Industrial Access</td>
<td>290</td>
<td>3.4</td>
<td>0.02</td>
<td>0.02</td>
<td>3.5</td>
<td>7.2</td>
<td></td>
</tr>
<tr>
<td>Total</td>
<td>5,633</td>
<td>50.3</td>
<td>3.2</td>
<td>0.6</td>
<td>54.1</td>
<td>100.0</td>
<td></td>
</tr>
</tbody>
</table>

Replacement value of road pavements => $3.72B
74% => local roads providing direct property access
• environmental deterioration
20% => sub-arterial & arterial roads
6% = > industrial access
• load induced deterioration

INCREASING TRAFFIC LOADS

Pavements Require Strengthening as Part of Rehabilitation

REHABILITATION CHALLENGES

- Traffic Delays
- Night work
- Limits Options
- Limit Repeat Visits
- Existing CKC
- Limits Overlays
- Existing Services
- Minimum Cover
- Bus Stops

Source: RTM (to be published) - Weight/Massurement and Monitoring in Australia
ASPHALT INNOVATIONS COMMITTEE
Members
Asset Management
- Convenor / Secretary
- 2 Quarries
- 2 Asphalt Plants
- 1 Recycling Facility
City Projects Office
- Pavement Design
Asset Services
- Community Interface

RISK CONSIDERATIONS
• Proven long term technology in France
• Mix designed in France by COLAS
• Boral and SAMI’s Commercial Reputation demands they get it right
• If it doesn’t work main inconvenience is to Boral
• If it performs no better than conventional AC – pavement will still have reasonable life
• Presented as a complete package of mix design, pavement design and construction
• Pavement design, supervision, on-going monitoring and reporting by ARRB

BENEFITS FOR COUNCIL
• Pavement Temperature Profile for Brisbane
• Validated Specification for “EME”
• Pavement Design Methodology for “EME”
• Due to contributions
  – Cost effective rehabilitation of Cullen Ave West
  – Boral is main beneficiary of finished road!
• Leverage the Value of Council R&D Budget
  – “Innovative Tests, Trials and Special Design” Allocation

ADDITIONAL RESEARCH
Known Pavement Construction that will be monitored into the future:
• FWD testing at different layers to validate a number of design assumptions
• Deflection reduction of 30mm MG AC surfacing
  – as a guide to overlay design
• Temperature and seasonal effects on deflection
• USQ/USC thesis projects on the surfacing layer
  – access to performance data as the on-going monitoring is undertaken

Why Was BCC Part of Project?
• Support Council Economic Development Goals
  – Build Brisbane’s international reputation as a place to visit, study, work and do business.
• “This project demonstrates Council’s commitment to innovative solutions by being part of a project of national significance with direct local applications whilst achieving pavement rehabilitation on Cullen Avenue West within the constraints of existing budgets.”