Cost Savings for Local Governments

Presented to 2007 Purdue Road School
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Tips for Stretching Your Paving Dollars
Allow / Promote the Use of RAP & ARS

- INDOT Sec. 402: up to 25% RAP
  - 0-15% > PG64-22
  - 15-25% > PG58-28
- RAP does not compromise quality with a proper mix design
- APAI recommends RAP in Surface up to 10 million ESALs (< 45mph)
- Cost Savings=

Approximate Material Cost Savings of Using RAP (per ton of mix)

<table>
<thead>
<tr>
<th>Mix Type</th>
<th>No RAP</th>
<th>15% RAP (PG64-22)</th>
<th>15-20% RAP (PG58-28)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Base 25.0mm</td>
<td>-</td>
<td>$2.50</td>
<td>Varies</td>
</tr>
<tr>
<td>Intermediate 19.0mm</td>
<td>-</td>
<td>$3.50</td>
<td>Varies</td>
</tr>
<tr>
<td>Intermediate 12.5mm</td>
<td>-</td>
<td>$3.50</td>
<td>Varies</td>
</tr>
<tr>
<td>Surface 9.5mm</td>
<td>-</td>
<td>$6.00</td>
<td>Varies</td>
</tr>
</tbody>
</table>
Other Recyclables- Any Savings?

- Glass
- Crumb Rubber
  - Athletic surfaces
  - Dry process
  - Wet process
- Carbon Black

Specify the Appropriate PG Grade

- Higher grades cost more
- Performance Grading System (PG)
  - PG64-22 - High temperature properties (stiffness)
  - PG64-22 - Low temperature properties
- Higher grades may not give better performance for low volume applications
- Estimated cost difference for a one grade bump from PG64-22 to PG70-22 ≈ $3 per ton of mix @ 5% binder
Use Current Systems and Technologies

- No need to re-invent the wheel

APAI Guide Specifications for Local Governments

- Assurance of Quality
- Current INDOT Specifications Sec. 402 (with some modifications)
- Appropriate lab mix designs (Superpave®)
- System of QC testing and acceptance (no outside testing costs)
- Certified aggregates, PG binder, plants & technicians (assurance of materials and process)
- Type “D” Certified HMA
Consider “Ultra Thin” Overlays for Certain Applications

- 4.75mm surface
- Approximately ¾” thickness
- Less cost per mile than 1.5” overlay
- Structural

Example: $/ton $/Sys
- 9.5mm Surface - -
- 4.75mm Surface +$2.50 -$1.70

Re-examine “Open-end” bidding for furnish, deliver and place

- Practice is high risk for agency and contractor
- High risk = high cost
- Location unknown / Trucking costs
  - Example: 40mi./25mph X $75/20 ton
    =$6.00/ton
- Lay rate & widths unknown / operating costs
- Specific plan=less risk=less cost
- Use current mix designations
Eliminate Extreme Penalty Structures in Specifications

- Extreme penalties ≠ better performance or better value
- Extreme penalties = higher prices (penalties bid into job)
- APAI Guide Specifications = Certification = assurance of quality

Materials and Workmanship Warranties
Buyer Beware

Any Questions?

Thank You