Pavement Challenges: Past, Present and Future

The Challenges for City Government
Pavement challenges

The challenges faced by municipal government

✓ Competing priorities
✓ Keeping up with growth
✓ Maintaining quality
✓ Getting the best value for taxpayers’ dollars
Policy challenge: competing priorities

The Way Ahead

The Way We - Grow, - Green, - Prosper, - Finance, - Live

Transportation Master Plan, The Way We Move

- Effective urban design and land use
- Access and mobility
- Mode shift
- Sustainability
- Health and safety
- Well-maintained infrastructure
- Economic vitality
## Edmonton’s road inventory

<table>
<thead>
<tr>
<th>Category</th>
<th>KM</th>
<th>Lane KM</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arterial roads</td>
<td>883</td>
<td>3,989</td>
</tr>
<tr>
<td>Collector roads</td>
<td>677</td>
<td>2,078</td>
</tr>
<tr>
<td>Local roads</td>
<td>3,991</td>
<td>7,982</td>
</tr>
<tr>
<td>Alleys</td>
<td>1,151</td>
<td>1,151</td>
</tr>
<tr>
<td>Bike lanes</td>
<td>300</td>
<td>300</td>
</tr>
<tr>
<td><strong>TOTAL</strong></td>
<td><strong>7,002</strong></td>
<td><strong>15,500</strong></td>
</tr>
</tbody>
</table>
Edmonton’s road inventory – were not done!

<table>
<thead>
<tr>
<th></th>
<th>Amount</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bridges</td>
<td>155</td>
</tr>
<tr>
<td>Street Lights</td>
<td>83,556</td>
</tr>
<tr>
<td>* Parking Meters</td>
<td>3,237 → 375</td>
</tr>
<tr>
<td>Traffic Signs</td>
<td>137,363</td>
</tr>
</tbody>
</table>
Municipal road networks are growing
Administration challenge: know what needs to be done

Pavement management system

- Inventory
- Rate
- Maintain
- Repair
General Road Structures in Edmonton

Deep Strength Asphalt or Oil Mix

- 10% 200 to 300 mm Hot Mix Asphalt or Oil Mix

Granular/Soil Cement

- 30% 50 – 250 mm Hot Mix Asphalt
- 27% 50 – 250 mm Hot Mix Asphalt

Composite Pavement

- 32% 100-150 mm Hot Mix Asphalt
- 150 to 200 mm Portland Cement Concrete

Unpaved Concrete Pavement

- 1% 225 to 250 mm Portland Cement Concrete
Operations challenge: do the work well

Performance measures

- Pavement quality
  - > 7 on freeways/ expresses
  - > 6 on other roads
- Bridge condition
  - > 7 for all
- 67% of roads in good condition
- <5% of roads in poor condition
Financial challenge: work within a budget

2007 - 2018 Roadways budgets

$ million


Growth
Rehabilitation
Administration challenge: a growing infrastructure deficit
Technical challenge: declining road condition

- Excellent
- Very Good
- Good
- Fair
- Poor
- Very Poor
- Failed

- Simple Grind Overlay: $1 buys 8 - 12 yrs
- Moderate Rehab: $3 buys 10 - 15 yrs
- Major Rehab/Reconstruction: $10 buys 14 - 20 yrs
Simple Grind and Overlay
$1 buys 8-10 Yrs

Moderate Rehabilitation
$3 buys 10-15 Yrs

Major Rehab or Reconstruction
$10 buys 14-20 Yrs
Response: The Neighborhood Renewal Program

Balancing renewal and reconstruction:

• Preventive maintenance
• Overlay
• Reconstruction
Response: The Dedicated Levy

Tax levy
• 1.5% to 2%

Additional grant funding
• Municipal Sustainability Initiative

Predictable, sustainable, ongoing
Reaction to the program has been positive

- Multi-year process
- Three community meetings
- Consultation
- Optional and shared-cost elements
We are seeing progress
Conclusion: Neighborhood Renewal Program meets many of government’s challenges

- Keeps road issues on the public radar
- Focuses on preventive maintenance
- Provides sustainable, predictable funding