The City of Edmonton:

Management and Preservation of Residential Roads
## The City Of Edmonton

<table>
<thead>
<tr>
<th>Construction Decade</th>
<th>Count</th>
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<tbody>
<tr>
<td>1950</td>
<td>23</td>
</tr>
<tr>
<td>1960</td>
<td>94</td>
</tr>
<tr>
<td>1970</td>
<td>84</td>
</tr>
<tr>
<td>1980</td>
<td>36</td>
</tr>
<tr>
<td>1990</td>
<td>28</td>
</tr>
<tr>
<td>2000</td>
<td>30</td>
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### Engineering Services

**Total:** 7,002 Arterial roads, 3,989 Collector roads, 3,991 Local roads, 1,151 Alleys, 300 Bike lanes. Total: 15,500.
Edmonton`s Transformation

DEPARTMENT UPDATE
EFFECTIVE MARCH 1, 2016

Office of the City Manager

Citizen Services

Communications & Public Engagement

Financial & Corporate Services

Integrated Infrastructure Services

Sustainable Development

City Operations
Principle of the Business Model

Clearly defined project scope and concepts consistent with policy and business partner requirements

Infrastructure is delivered efficiently to meet City, stakeholder and citizen needs. Reporting is done in a regular and transparent manner

“Development”

Planning and Programming
Asset Management Planning

“Delivery”

Infrastructure Delivery
IIS: Integrated Infrastructure Services

General Manager
Integrated Infrastructure Services

- Branch Manager
  - Infrastructure Planning & Design
- Branch Manager
  - Infrastructure Delivery
- Branch Manager
  - Integrated Strategy & Business Supports
- Building Great Neighbourhoods (BGN) Program
- LRT Delivery
In 2008; what did we have....
Over 300 neighbourhoods (residential/industrial):  
• 70% constructed before 1980,  
• Average service life is 40-50 years,  
• 160 required renewal (96 recon / 64 rehab)

What caused the problem....  
• Lack of predictable/sustainable funding  
• Lack of Strategic Plan (fail to plan...plan to fail)
Council Direction

- 2008 – Approval of current model
- 2009 – 2018 Dedicated Tax Levy

Initial Funding Goal:
- Fully funded by 2018

Neighbourhood Goal:
- No D-F Condition by 2039
The 2015-2018 Neighbourhood Renewal budget is $622 Million using:

- Neighbourhood Renewal Program property tax levy
- Provincial grants
- Cost sharing on local improvements
- Other general financing sources
Building Great Neighbourhoods

- Great Neighbourhoods Capital Program
- Drainage Neighbourhood Renewal
- Neighbourhood Renewal
Project Types

- Microsurfacing
- Neighbourhood Overlay
- Neighbourhood Reconstruction
- Collector/Local Road Renewal
- Northeast Road Reconstruction
- Rural Neighbourhood Renewal
Neighbourhood Renewal Program - Scope

Project Distribution by Percentage of Funding

- NBD Reconstruction
- NBD Overlay
- Collector / Local Road Reconstruction
- NERP (North East Road Project)
- NBD Reconstruction
- Rural NBD Renewal
Project Selection / Life Cycle Optimization

Year 10: Microsurfacing (preventative maintenance)

Year 30: Roadway overlay, plus repair of sidewalk trip hazards

Year 40: Microsurfacing (preventative maintenance)

Year 60: Reconstruction of roads, sidewalks, street lights
Inventory / Performance Indices

Visual Condition Index (VCI)

Ride Comfort Index (RCI)

Structural Adequacy (SAI)

= Pavement Quality Index (PQI)
Pavement Design

- Asphalt on Soil Cement Base
- Asphalt on Concrete on Gravel Base
- Asphalt on Soil Cement Base
Inputs for Road Design
FDR: Full Depth Reclamation with Foamed Bitumen
Reconstruction
NERP: North East Road Program
Micro-Surfacing
Program Delivery
2009 – 2014

Total Capital/Operating Investment: $657 Million

- 22 NBHD Reconstruct
- 45 NBHD Overlay
- 25 NBHD Reseal
- Another 114 neighbourhoods received other localized road renewal investments.
Total Capital/Operating Investment: $622 Million

- 20 NBHD Reconstruct
- 24 NBHD Overlay
- 20 NBHD Reseal
- Another 70 neighbourhoods received other localized road renewal investments.
Neighbourhood Reconstructions Initiated:

- 2009-11: 8
- 2012-14: 14
- 2015-18: 20
- 2019-22: 21

Total: 63

Lane Kilometres Rehabilitated:

- 2009-11: 900 km
- 2012-14: 550 km
- 2015-18: 800 km

Total: 2,250 km
Collaboration and Alignment

External
- Utilities
- Residents
- Community Leagues
- Developers
- Business Owners
- Consulting Engineers of Alberta
- Alberta Roadbuilders and Heavy Construction Association

Internal
- City Operations
- Citizen Services
- Financial & Corporate Services
- Sustainable Development
- Integrated Infrastructure Services
- Communications & Public Engagement
NRPI: Neighbourhood Renewal Price Index

- Originally used CPI
- Now NRPI considering labour, equipment and material unit rates
- Material unit rates split into 7 categories and assessed weightings

<table>
<thead>
<tr>
<th>No.</th>
<th>Construction Category</th>
<th>Factor Inputs</th>
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<tbody>
<tr>
<td></td>
<td></td>
<td>Labour</td>
</tr>
<tr>
<td>1</td>
<td>Asphalt</td>
<td>20%</td>
</tr>
<tr>
<td>2</td>
<td>Base Work – Sidewalk</td>
<td>30%</td>
</tr>
<tr>
<td>3</td>
<td>Base Work – Full-Depth Reclamation (FDR)</td>
<td>30%</td>
</tr>
<tr>
<td>4</td>
<td>Concrete</td>
<td>50%</td>
</tr>
<tr>
<td>5</td>
<td>Drainage/Underground</td>
<td>35%</td>
</tr>
<tr>
<td>6</td>
<td>Excavation</td>
<td>50%</td>
</tr>
<tr>
<td>7</td>
<td>Landscaping</td>
<td>45%</td>
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Public Engagements for 2017 NBHD Reconstructions

18 Months Before Construction
- Community League Meeting

1 Year Before Construction
- Preliminary Design Public Meeting

6 Months Before Construction
- Preconstruction Public Meeting
Utility Coordination
Delivery
Improvement of Roadway Assets

2008  2009  2010  2011  2012  2013

F/D  F/D  F/D  F/D  F/D  F/D

C    C    C    C    C    C

B    B    B    B    B    B

A    A    A    A    A    A
Thank You !!

Questions ?