Asset Management

April 23, 2007

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Agenda

- Principles of Asset Management
- Town's Current State
- Status of Town's Pavement Management System
- Next Steps

Principles of Asset Management

1. **Create inventory**
2. **Determine condition**
3. **Identify rehabilitation needs, timing and costing**
4. **Long-term financial affordability**

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1
CREATE INVENTORY

ASSET	QUANTITY
Streets	1,700 lane km
Bridges	23
Culverts	84
Pedestrian Bridges	47
Parking Lots	68
Storm Sewer	703 km
Facilities	120
Signs	20,000
Signals	55
Street Lights	21,000
Fleet & Equipment	640
Parks	183
Storm Water Ponds	84

1
CREATE INVENTORY (WATERWORKS)

	QUANTITY	
Water Network		
Mains	764	km
Hydrants	6,152	
Valves	8,502	
Chambers	5,630	
Sanitary Sewer Network		
Mains	634	km
Manholes	9185	
Pumping Stations	4	

1
CREATE INVENTORY (cont.)

ASSET	TOOLS
Streets	GIS and Hansen
Bridges	Consultant Inventory Software
Culverts	Consultant Inventory Software
Pedestrian Bridges	Consultant Inventory Software
Parking Lots	Hansen
Storm Sewer	GIS Digitization and Hansen
Facilities	Access Database
Signs	Handheld GPS and Hansen
Signals	Hansen
Street Lights	GIS (updates from Powerstream)
Fleet	Fleet Focus
Parks	Excel Spreadsheet
Water Network	GIS Digitization and Hansen
Sanitary Sewer	GIS Digitization and Hansen

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2
DETERMINE CONDITION

ASSET	METHOD OF ASSESSMENT
Streets	Condition survey (at 3 years)
Bridges	Bi-yearly condition survey
Culverts	Bi-yearly condition survey
Pedestrian Bridges	Bi-yearly condition survey
Parking Lots	Inspection by Operations staff
Sewers	Video inspection
Facilities	Detailed survey (at 5 years)
Signs	Age and road patrols
Signals	Yearly inspections
Street Light (poles)	Condition survey in 2007
Fleet	Scheduled maintenance program
Parks	Inspection by Operations staff
Watermains	Based on age, material, # breaks

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3
IDENTIFY REHABILITATION NEEDS AND TIMING

50,000 foot level: long term 25 – 40 year rehabilitation requirements for Reserve Study funding

5,000 foot level: 5 year plan based on age and some condition data

500 foot level: yearly capital program based on condition and identification of actual rehabilitation strategy to use

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4
LONG-TERM FINANCIAL AFFORDIBILITY

Finance, Operations and Asset Management Departments conduct yearly updates to the Life-Cycle Reserve Study and determine long-term funding requirements.

Waterworks and Finance are preparing a long-term reserve funding requirement study for water and sanitary sewer assets and will report to Council in June 2007.

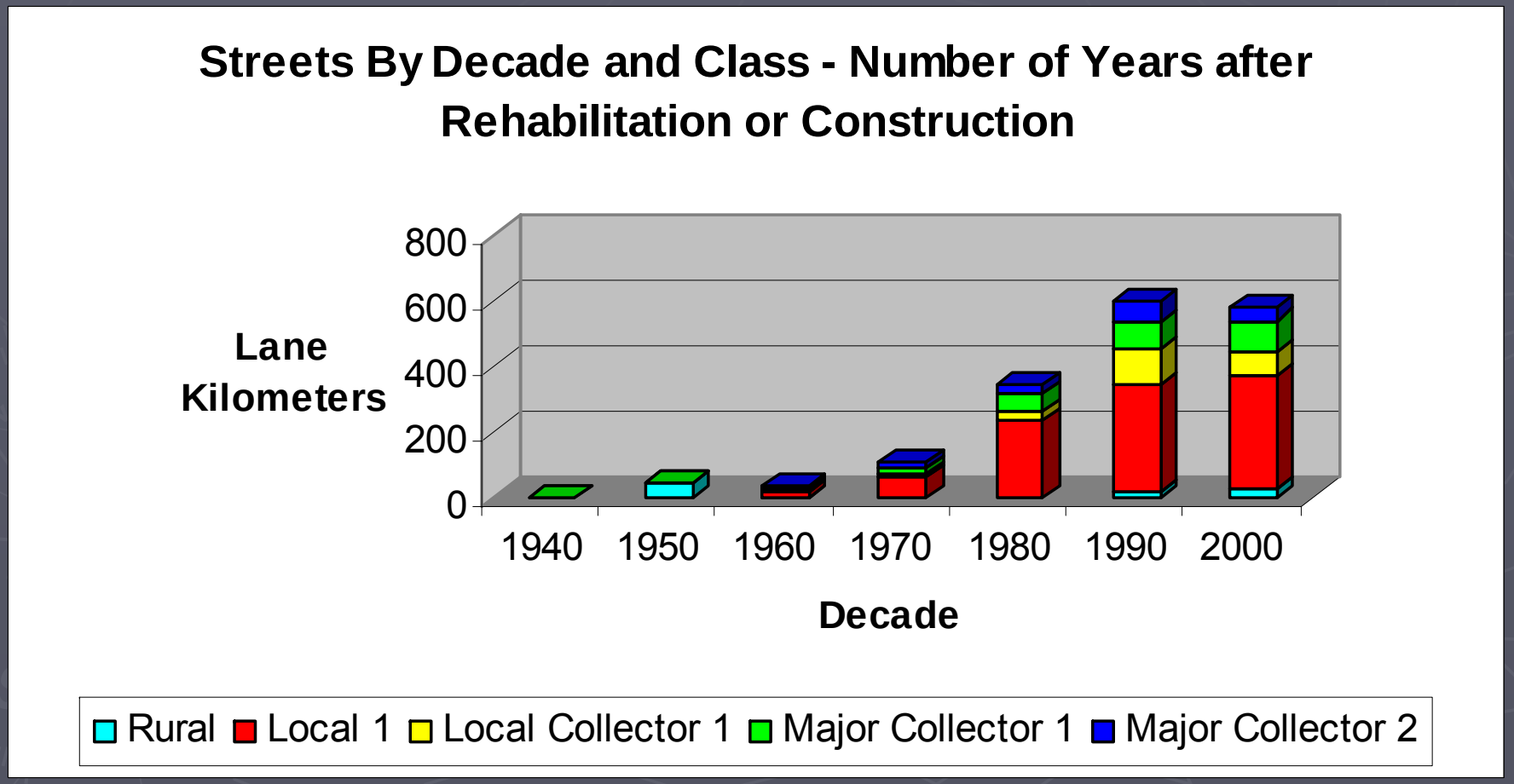
SCORECARD

The Operations and Asset Management Departments will be developing a scorecard to report on the Town's development in addressing and meeting the asset management principles for the various classes of assets.

Presently, overall the inventory data is very good. Conducting and updating condition surveys for assets and improving documentation and models for Life Cycle programming will be a priority over the next few years.

STATUS OF THE TOWN'S PAVEMENT MANAGEMENT SYSTEM

OVERVIEW OF TOWN'S PAVEMENT INVENTORY



Summary of Actual Lane Kilometres of Roadway Rehabilitated / Preserved

2001 - 2006

2001	41
2002	57
2003	44
2004	67
2005	73
2006	65
AVERAGE	**58 : takes 29 years to address all roads**

Condition Assessment

2005 : Road Surface Tester (RST)

Pavement Condition Survey

Survey Technology

The Road Surface Tester uses 11 laser sensors, gyroscopes, inclinometers and accelerometers to measure pavement roughness, rutting, cracking and geometrics. In addition integrated keyboards supplement the collected data for additional distress data elements and quality assurance.

Defects Surveyed

(1038 lane kilometres: roads built or repaired prior to 1996)

- Surface Condition (every 30 meters
  - Longitudinal Cracks
  - Transverse Cracks
  - Alligator and Map Cracking
  - Rutting
  - Patches
- Roughness
- Strength (major roads only)

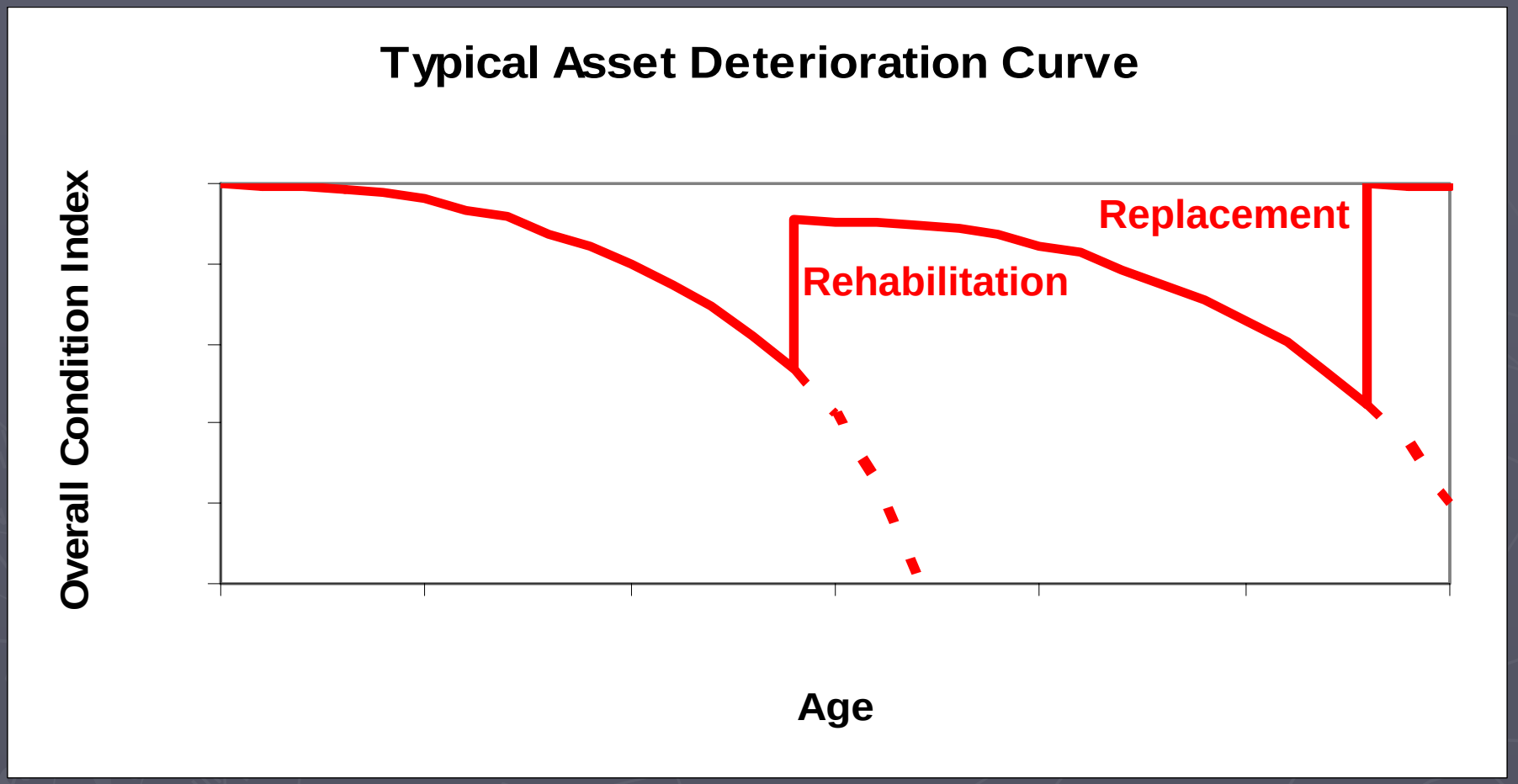
Pavement Condition

The pavement condition survey generated a score for each road segment out of 100 (100 being perfect). The average condition of all segments was 76 in 2005.

The Operations Department has determined that a segment with a score of 62 or less is a candidate for major rehabilitation.

Performance Prediction

The condition of each segment will drop each year due to traffic loads and age. Eventually work will be required. The rehabilitation activity will improve the condition score of the segment back to 100 or near to 100 depending on the type of activity applied.

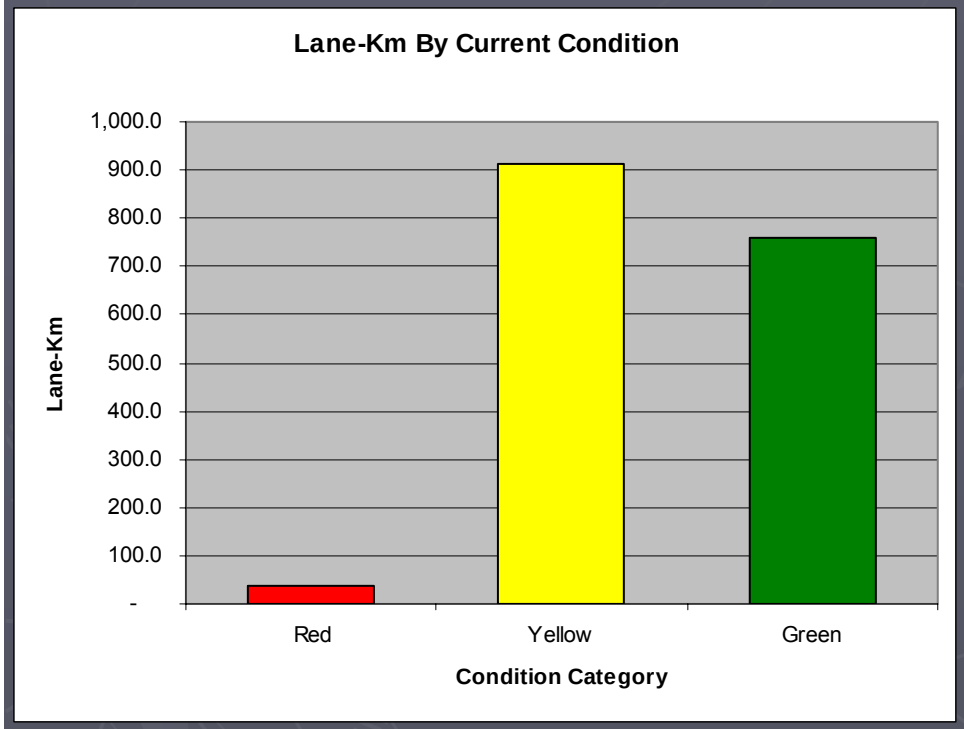

Typical Asset Deterioration Curve
Overall Condition Index
Rehabilitation
Replacement
Age

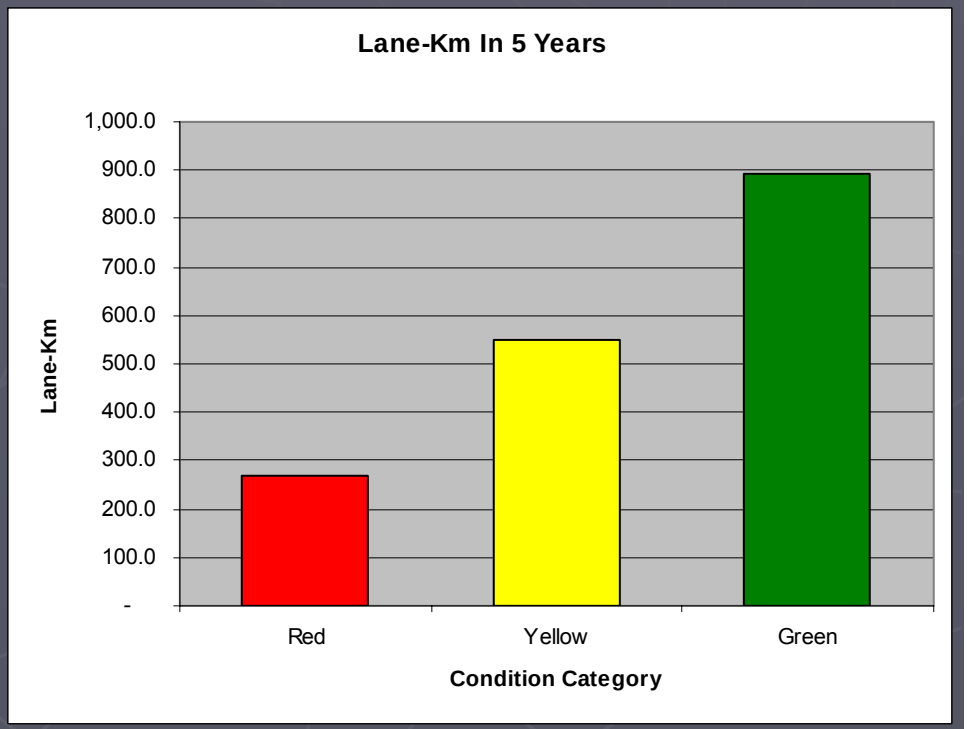
Dollars Identified in Reserve Study Fund for Roads

2007	5,145,000
2008	5,247,900
2009	5,352,858
2010	5,725,217
2011	5,839,722
2012	5,956,516
2013	6,638,727

* these amounts have been adjusted for cost increases due to increased unit costs for asphalt and for inflation

Predicted Network Performance using existing proposed budget over 5 years





Pavement Rehabilitation and Preservation

The Operations and Asset Management Departments are reviewing traditional pavement rehabilitation and preservation activities. In 2005 and 2006 micro-surfacing has already been implemented on a select number of streets including Rodick Road and Bullock Drive. In the coming years more innovative and cost effective methods of treating pavements will be tested. Using life-cycle models and performance prediction the most cost efficient method of managing the Town's pavements will be developed.

Next Steps

Operations and Asset Management will produce a 5 to 10 year pavement preservation / rehabilitation program illustrating anticipated funding levels required to maintain desired service levels later in 2007