

# Roads and Watercourses

**Transportation and Works**



# Who we are

## **Engineering and Works**

194 staff

\$15 million in contracted operational services

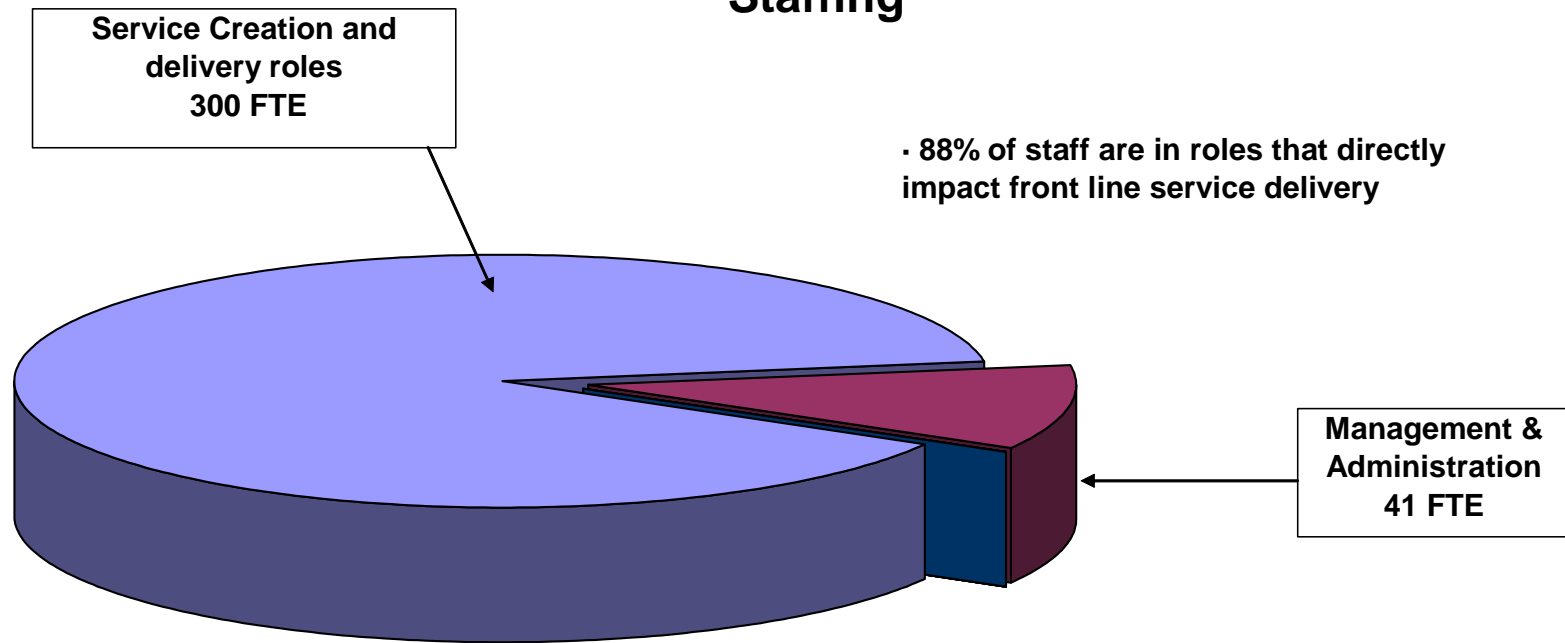
## **Transportation and Engineering Planning**

67 staff plus 190 crossing guards

\$3.0 million in contracted services

# Roads and Watercourses Staffing

## Roads & Watercourses Staffing



### Notes

1. Numbers include Administration Division Staff
2. FTE = full time equivalent position

# What We Do

## Engineering and Works

- Capital Works
- Development Construction and Technical Services
- Service Centre
- Works Maintenance and Operations



# What We Do

## Transportation and Engineering Planning

- Development Engineering
- Infrastructure and Environmental Planning
- Traffic Engineering and Operations
- Transportation Planning



# Traffic Operations

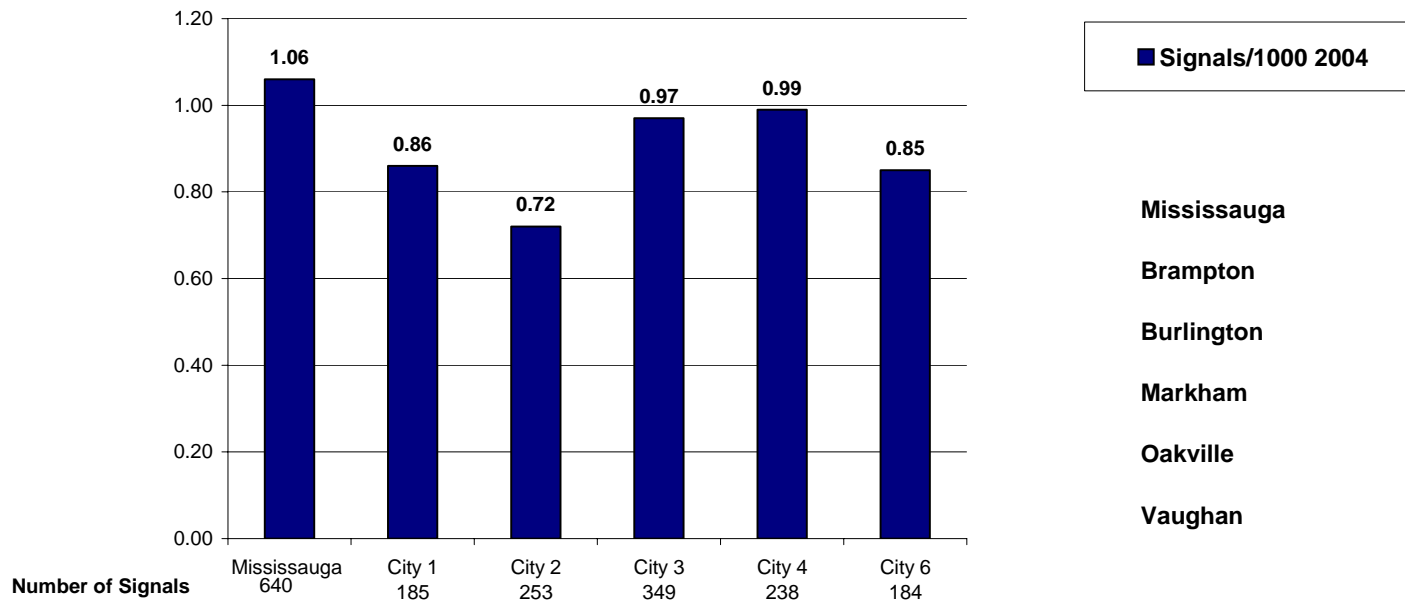
- **Operating budget:** \$8.1 million
- **Capital budget:** \$2.1 million (\$225,000 tax funded)
- **Challenges**
  - growth in infrastructure
  - increasing congestion
  - Safety concerns
  - Changing demands

# Traffic Operations

- **Opportunities**
  - Traffic calming & road safety
  - New pavement marking materials
  - Impact of new technologies
    - fibre optics, monitoring cameras, smart intersections
  - Replacement of traffic computer
  - Photo radar

# Traffic Signals per 1000 Population

## Traffic Signals





# Street Lighting

- **Operating Budget:** \$5.9 million
- **Capital Budget:** \$1.3 million (\$1.3 million tax funded)  
(excludes new D.C. funded)
- **Challenges**
  - growth in infrastructure
  - changing market place
  - aging infrastructure
  - cost of energy

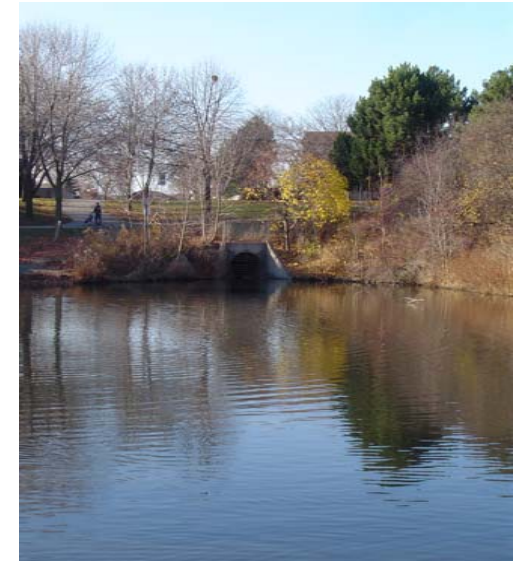


# Street Lighting

- **Opportunities**
  - Off-peak energy consumption
  - New technologies (LED)
  - Asset management & capital rehabilitation
  - Night patrol

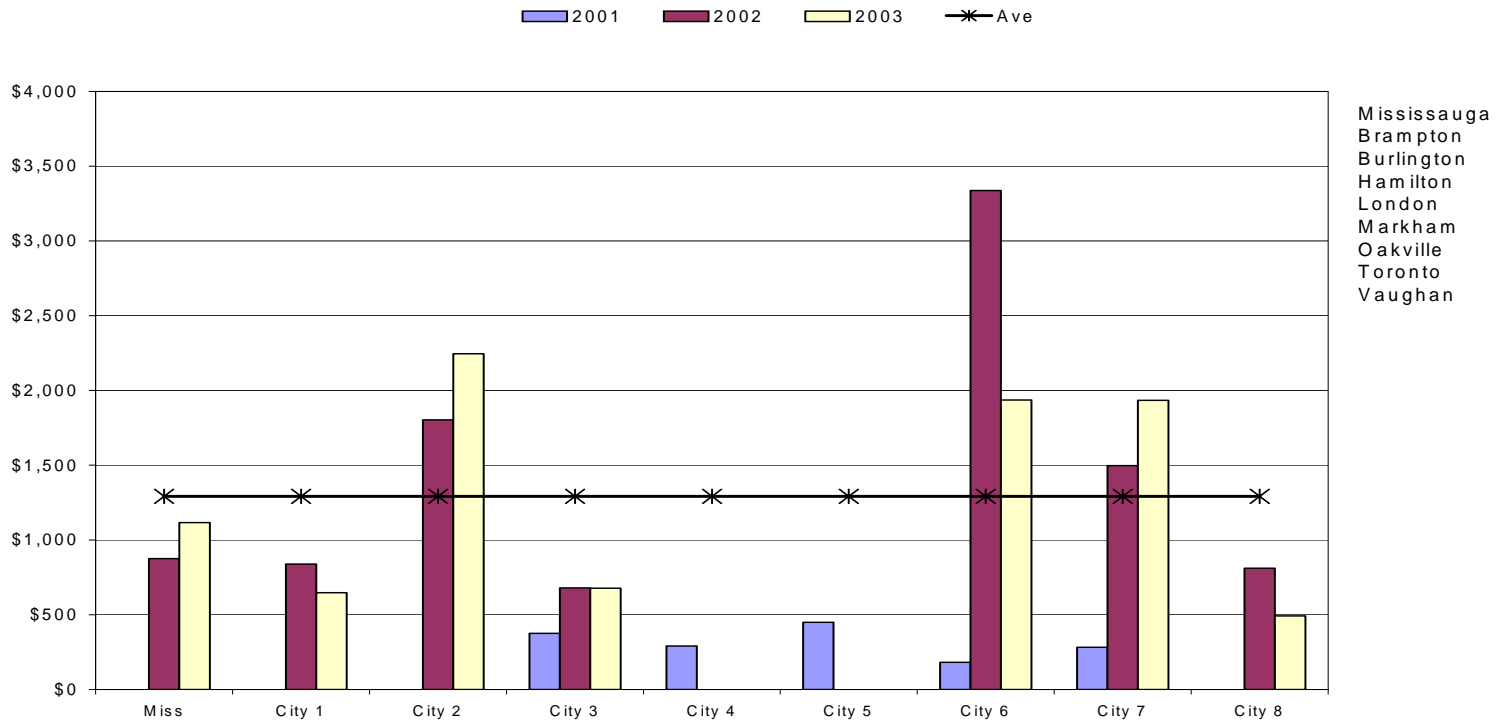
# Storm Water Management

- **Operating Budget:** \$1.4 million
- **Capital Budget** - \$11 million (\$ 2.7 million tax funded)
- **Challenges**
  - growth in up-stream development
  - erosion & flooding
  - maintenance of ponds (51)
  - aging infrastructure (long-term)
- **Opportunity**
  - asset management



# Storm Water Management

**Urban Storm Water Management - Efficiency**  
**Operating Costs for Urban Storm Water Management (collection, treatment, disposal per kilometre of drainage system)**



# Road Construction



- **Capital Budget:** \$37.5 million
  - New Roads: \$10.1 million (\$1.2 million tax funded)
  - Road Rehabilitation: \$ 25.9 million (tax funded)
  - Bridge Rehabilitation: \$1.5 million (tax funded)
- **Estimated Asset Value:** \$3.9 billion (68% of total City assets)

# Road Construction

- **Challenges**

- Growth in road network & traffic demands  
(projected growth 2005-2008 of 1.5% or 75 ln/km  
(47 ln/mi) per year)
- Aging infrastructure
- Bridges (136)
- Lower overall level of service

# Road Construction

**Adequacy of Paved Roads**  
**Percentage of paved lane kilometres where condition is rated as good to very good**



# Road Rehabilitation

- **Opportunities**

- Pay now or pay a lot more later (\$25.9 m/yr growing to \$32 m/yr)
- Bridges



# Winter Maintenance

**Operating Budget:** \$11.4 million

**Services Provided:**

- Salt & plow 3,800 In/km (2,360 In/mi) of priority roads
  - Priority given to arterial and collector roads
- Sand & plow 1,700 In/km (1,060 In/mi) of secondary roads
  - Lower volume – primarily residential roads
- Sand & plow 1,250 km (775 mi) of priority sidewalks (55% of all sidewalks)

# Winter Maintenance

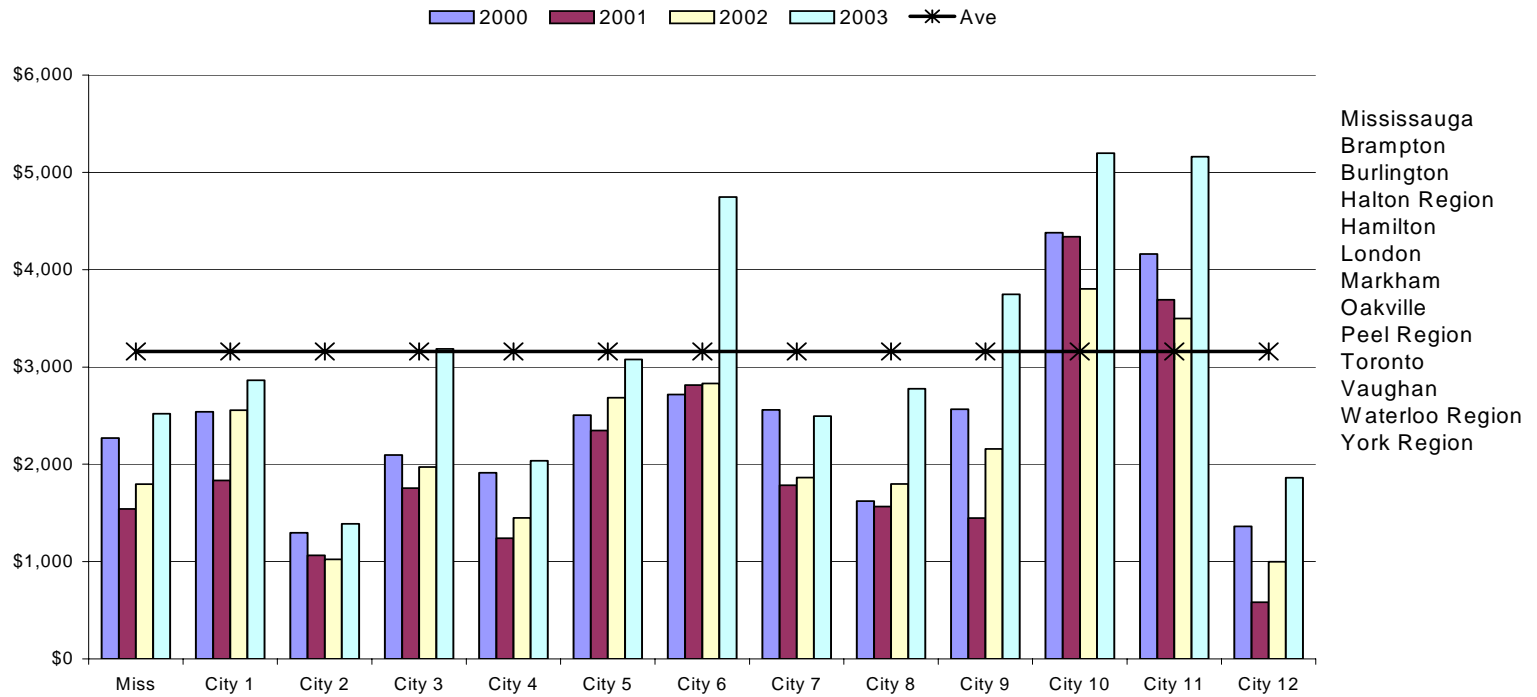
## Services Provided (cont'd)

- Snow removal on bridge decks & major intersections
- Snow removal in Business Improvement Associations (B.I.A.'s)
- Sand & clear 3,200 bus stops



# Winter Maintenance

**Winter Maintenance of Roads - Efficiency**  
**Operating Costs for winter maintenance of roadways per lane kilometer**



# Winter Maintenance

## City Fleet:

- 28 dual purpose trucks
- 1 grader
- 4 loader/back hoes
- 4 loaders
- 21 sidewalk plows
- 3 skid steers with blowers

## Contracted Fleet:

- 77 dual purpose trucks
- 7 truck plows
- 16 graders
- 20 articulating plows
- 53 loader/backhoes
- 13 sidewalk plows
- 10 snow removal crews

# Winter Maintenance

## Challenges

- Windrow clearing alternatives, pay for use service
- Pressures of clearing all sidewalks as opposed to clearing only priority sidewalks
- Maintaining the position of a no sidewalk clearing by-law

# Winter Maintenance

## Challenges (cont'd)

- Maintaining current levels of service in light of rising insurance & fuel costs for contractors
- Meeting accessibility demands from aging residents
- Demand for improved level of service on secondary roads

# Winter Maintenance

## Opportunities

- Operational change will allow City dual purpose vehicles to be operated with one driver while plowing
- Smart vehicle may assist in tracking the progress of sanding, salting, plowing operations and material usage

# Winter Maintenance

## Opportunities (cont'd)

- Piloting & experimenting in the use of salt additives & salt alternatives
- Mobile snow melting equipment potential to lower snow removal expenses
- Expanded use of bridge deck clearing blade developed by City contractor potentially may lower removal costs



# City Cleanliness

**Operational Budget:** \$3.7 million

**Services Provided:**

- Spring clean up
- Street sweeping
- Street flushing
- Graffiti removal



# City Cleanliness

## Services Provided (cont'd)

- Litter pick up
- Emergency spills clean up
- Indiscriminate dumping
- Inlet/outlet drainage structure cleaning
- Catchbasin cleaning
- Leaf Pick Up Program
- Walkway & sidewalk cleaning



# City Cleanliness

## Challenges

- Maintaining current Spring clean up & street sweeping service levels in light of rising contractor costs for fuel & insurance
- Keeping up with current demands for litter pick up
- Dealing with rising indiscriminate dumping due to tightening up & restrictions on waste disposal at Regional landfill site
- Pressures to increase leaf collection program

# City Cleanliness

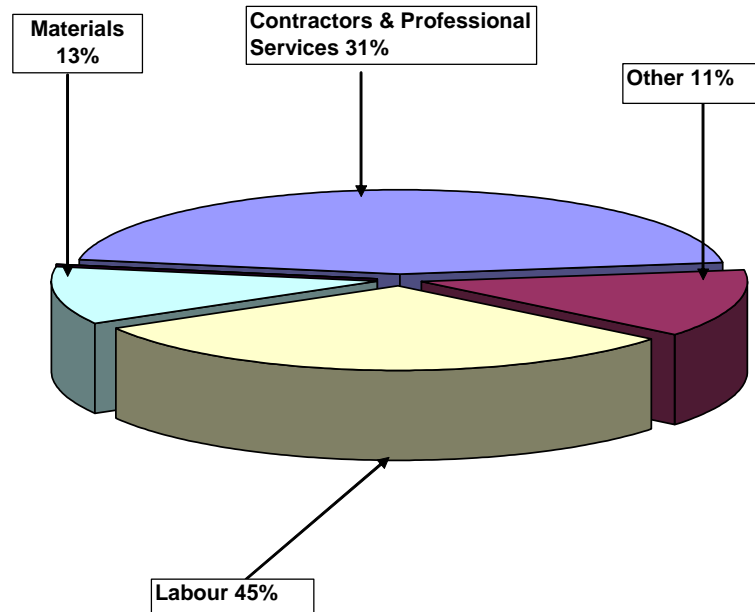
## Opportunities

- Increase public awareness on the litter program
- Enforcement of litter fine

# 2005 Current Budget

## 2005 Current Budget Roads & Watercourses

### Distribution of Expenses



### 2005 Budget Detail

#### Roads & Watercourses (including Administration)

|                                     |                     |
|-------------------------------------|---------------------|
| Labour                              | \$26,269,700        |
| Materials & Supplies                | \$7,478,400         |
| Contractors & Professional Services | \$17,603,200        |
| Other Operating                     | \$6,622,500         |
| <b>Total Expenses</b>               | <b>\$57,973,800</b> |
| Revenues                            | \$(8,823,000)       |
| <b>Total Tax Funding</b>            | <b>\$49,150,800</b> |

# Minimum Maintenance Standards

## Background

- Bill 86, Better Local Government Act (1996)
- Ontario Regulation 239/02
- November 2002, City adopts Minimum Maintenance Standards for Municipal Highways

# Minimum Maintenance Standards

## Applications

- Snow accumulation
- Icy roadways
- Potholes
- Cracks
- Shoulder drop-offs
- Debris
- Luminaires
- Regulatory signs
- Warning signs
- Traffic control signal systems
- Bridge decks

*Standards specify tolerances and repair response time*

# Minimum Maintenance Standards

## Challenges

- Aging roads will mean increase in deficiency rates requiring additional resources
- Streetlighting
- Bridges

## Opportunity

- Planned, pro-active approach in dealing with roadway deficiencies



# Roads and Watercourses

**Thank You!**

**Questions?**