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**Public Works Committee**

**April 22, 2013**



**Hamilton**  
Public Works

**Public Works Department  
Operations Division**

# **Road & Maintenance Services Overview**

**April 22, 2013**

***Providing services that bring our City to life !***

# ~ Operations Division ~ Roads & Maintenance Section - Services Overview

- Community
- People
- Processes
- Finance



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## Presentation Content

### 1. Scope of Services

- a) Mission
  - b) Infrastructure
  - c) Activities
- Core & Support*

### 2. Activities Management Model

### 3. Improvement Initiatives

### 4. Challenges & Opportunities



# Transportation - Roadway Access

## Right of Way Infrastructure Maintenance:

### Mission:

To ensure safe public access to municipal transportation infrastructure through planned operating and capital programs and emergency works, efficiently and effectively servicing our inventory of ...

Roads (6,359 lane kms)  
Cycling facilities (140 kms)

Bridges & related structures (390)  
Fence & guard rail systems

Sidewalk (2345 kms)  
Retaining wall structures

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### Core Activities:

#### Safety

Road patrol & inspection  
Removal of roadway hazards (*debris etc.*)  
Minimum Maintenance Standards compliance works  
Emergency Response  
*Accident response & Road Closures (Fire & Police)*  
*Infrastructure failures - bridges, walls, guard rails etc.*

#### Infrastructure Maintenance

Pavement sweeping & flushing \*  
Grass maintenance (*roadsides & blvds*) \*  
Roadside ditch rehabilitation  
Catch basin cleaning

#### Infrastructure Preservation

Catch basin repair  
Pavement repair (*patching, crack sealing, shouldering*) \*  
Concrete repair (*sidewalk, curbs, driveway entrances*)\*

#### Aesthetics \*

Litter & debris removal  
Graffiti removal



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# Transportation - Roadway Access

## Right of Way Infrastructure Maintenance:



### Support Activities:

#### Program/Activity Planning

- Service Levels, delivery models & methods
- Budgets, policies, procurement strategies

#### Program Resource Management

- Staff hiring, development & training
- Labour relations (*i.e. grievances ASMP etc.*)
- Supervision & Oversight

#### Program Performance Management

- Staff & contractor supervision
- Reporting (*OMBI, MPMP etc.*)
- Quality assurance diligence

#### Program Continuous Improvement

- Business Research (*Technology & Practices*)
- Efficiency & Effectiveness Initiatives

#### Work Planning

- Work Identification, prioritization, scheduling,
- Resource coordination, approvals & logistics
- Performance management (*staff & contractors*)
- Procurement of services, equipment & materials
- Contract management & administration

#### Customer Service

- Complaint investigation & follow up
- Claims Investigation & defense support
- Stakeholder liaison, outreach & media
- Compliance (*policies, regulations, MMS etc.*)
- Community engagement support (*events & programs*)

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# Environmental - Storm Water Management

## Storm Water Infrastructure Maintenance:

### Mission:

To ensure the optimal function municipal storm water infrastructure to minimize risks of flooding through planned inspection, maintenance and capital rehabilitation programs effectively and efficiently servicing...

Roadside ditches (1747 kms)  
Outfalls & inlet structures

Storm water management ponds (141)  
Catch basins & connection leads (39,009)

Water courses  
Culverts

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### Core Activities:

#### Safety

Monitoring, inspection & reporting  
Emergency response (*Storm event*)  
Maintain security & warning systems

#### Infrastructure Maintenance

Functional maintenance – (*removal of obstructions*)  
Vegetation management  
Minor structural repairs

#### Drainage Superintendent Function

Municipal Drains administration  
Program advocacy & support (*advice*)

#### Asset Management

Inventory management & condition assessment,  
Capital planning & project management  
- *infrastructure lifecycle replacements*  
- *infrastructure rehabilitation works*



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# Activity Management Model

## Plan – Do – Check - Innovate

### Planning

Work requirements are established through various means including...

- Activity service levels (*cycles per season etc.*)
- Asset condition assessment recommendations
- Road Patrol Reports (*infrastructure deficiencies per Minimum Maintenance Standards (MMS) Regulations*)
- Customer complaints & feedback



To facilitate planning, activities are categorized as either...

#### **Scheduled works**

- Mechanical street sweeping,
- Ditch rehabilitation.
- Grass mowing,
- Catch basin or inlet cleaning
- Mountable Curb Replacement

#### **Unscheduled works**

- Roadway pavement repair (*MMS compliance*)
- Curb & sidewalk concrete repair (*MMS compliance*)
- Roadside debris & litter pick up

#### **Emergency works.**

- environmental spill response
- infrastructure failure response

**“Scheduled works”** are guided by approved service levels defining service areas and service levels or by functional requirements.

**“Unscheduled works”** are reactive to changing conditions (i.e. pavement deterioration, pot holes, sidewalk settlements)

**“Emergency works”** relate to a catastrophic incidents or failures which impart a significant risk to public safety, the environment or property.

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# Activity Management Model

## Plan – Do – Check - Innovate



### Implementation

Activities are performed by “in house” (staff), through service contracts or by a combination of both in order to achieve best results and value.

Services are delivered in compliance with performance specifications, corporate policies and applicable regulations.

Our maintenance management system (**Hansen**) is used to plan work, track costs & accomplishments and provide a history of maintenance performed on identifiable assets.

### ***Applicable Regulations & Statues***

*Highway Traffic Act;*

*Municipal Act (MMS);*

*Drainage Act;*

*Fisheries Act;*

*Endangered Species Act;*

*Species at Risk Act;*

*Navigable Waters Act;*

*Conservation Authorities Act;*

*Occ. Health & Safety Act.*

*Employment Standards Act,*



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# Activity Management Model

## Plan –Do – Check- Innovate

### Quality Assurance

Accountability for service quality is achieved through the use of various means including:

1. Service Levels
2. Corporate Policy
3. Legislative Compliance
  1. Regulations
  2. Certificate of Approvals
4. Contract Specifications
5. Standard Operating Procedures (IMS)
6. Supervision - Work Inspection
7. Customer Feedback & Response

### Accountability

Service delivery accountability is achieved through:

1. Supervisor Accountability
2. Second Level Oversight
3. Performance Management Process
  1. Performance Measures
  2. Performance Targets
  3. Performance Indicators
4. Management Level Oversight
  1. Program accomplishment reconciliation
  2. Operational Audits
  3. Performance Benchmarking
  4. Continuous Improvement focus.



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- Processes
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# Activity Management Model

## Plan –Do – Check - Innovate

### Innovation

Continuous improvement is supported through the engaging and challenging staff and stakeholders to research, identify and develop innovations to program technologies, delivery methods and processes to improve the value of our services.



**People**  
**Process**  
**Delivery methods**  
**Technologies**  
**Systems**

### Recent, Ongoing & Planned Initiatives

**2007/8/9**

- Sidewalk “mud jacking” leveling technology
- Snow melting pilot project
- PM10 dustless street sweeping technology
- Direct Liquid Application – anti icing activity

**2010**

- AVL/GPS installations in program equipment
- Claims Management Strategy

**2011**

- Winter maintenance of cycling infrastructure pilot
- Alleyway Management Strategy

**2012**

- In house asphalt recycling program
- Storm water - asset management system

**2013**

- **Road Patrol System with real time data access**
- Supervisory staff assessment & development

**2014**

- Bulk Materials inventory estimating & tracking pilot
- Service route rationalizations

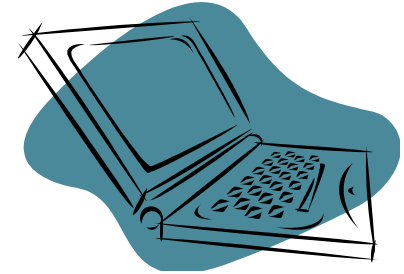
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# Innovation in Operations

## Road Patrol



### **Activity Scope**

- Systematic and scheduled patrol of all roadway classes within the City of Hamilton on a tiered basis (*i.e. frequency*)

### **Deliverables**

- Proactive identification of all roadway deficiencies in accordance with Ontario Regulation 239/02 (Minimum Maintenance Standards MMS) such as...
  - roadway potholes,
  - road shoulder pavement “drop offs”,
  - roadway pavement cracks,
  - roadway debris (hazards),
  - bridge deck spalls,
  - roadway surface discontinuities,
  - non MMS items (*i.e.* graffiti)

### **Innovation:**

- Use of mobile computing technology for “real time” access to Hansen data base to log deficiency reports and expedite response action

### **Value added:**

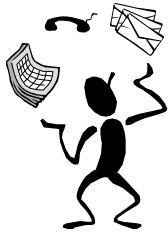
- Proactive identification of deficiencies
  - Improved program efficiency through work planning and organization.
- MMS Regulations Compliance
  - Improved road safety,
  - Reduced claims
  - Improved claims defense capability
  - Optimized infrastructure serviceability

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# Challenges & Opportunities



## Challenges

- Program performance & accountability
- Workforce Optimization
  - Job Competency
  - Lost time (absenteeism, accidents .)
  - Succession readiness
  - Supervision and program oversight
- Sustainable Program Resources
  - Fleet replacement reserve funding
  - Infrastructure growth from development
  - Sustainable Program Funding
- Climate change - program implications
- Aged Infrastructure

## Opportunities

- Program Service Levels
  - Establish & maintain approved service levels for all key services & subservices
- Program performance management
  - Establish, maintain, track & report on key metrics to confirm efficiency of delivery using technology and effective processes.
- Continuous Improvement Culture
  - Promote innovation in service delivery through creativity & diversity of thinking
- Optimize staff performance
  - ASMP administration
  - Health & Safety promotion
  - Performance management
  - Employee development
- Build program capacity & sustainability
  - Optimize value through continuous improvement
  - Address impacts to operating programs related to development approvals.
  - Program budget enhancements...
    - Road & Sidewalk Safety
    - Storm Water Management Facility Maintenance

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Presentation Developed by Members  
of the

**~Operations Division's~**  
Extended Management Team

*Jennifer Atkinson,*  
*Nancy Wunderlich ,*  
*Darrell Smith*  
&  
*Bryan Shynal*