Topics for Discussion

1. Overview of the event on July 26
2. Programs implemented to date
3. Looking ahead
Hamilton Mountain
July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator
Upper Ottawa Near Linc
July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator
Kilbride Road

July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator
QEW at Burlington St.

July 26th, 2009 – Storm Event

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QEW at Burlington St.

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Photo submitted by the readers of the The Hamilton Spectator

Presentation to Committee of the Whole – July 30, 2009
East Hamilton Mountain
July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator
Red Hill near Barton St.

July 26th, 2009 – Storm Event

Photo submitted by the readers of The Hamilton Spectator
Red Hill Valley Parkway

July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator
Rosedale Area

July 26th, 2009 – Storm Event

Photo submitted by the readers of The Hamilton Spectator
Rosedale Area
July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator
Rosedale Area
July 26th, 2009 – Storm Event

Photo submitted by the readers of The Hamilton Spectator
Mount Hope
July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator
Mohawk Rd. E.

July 26th, 2009 – Storm Event
Tiffany Falls
July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator
Glen Castle Park
July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator

Presentation to Committee of the Whole – July 30, 2009
Van Wagner’s by Hutch’s

July 26th, 2009 – Storm Event

Photo submitted by the readers of the The Hamilton Spectator
King St. near Centennial
July 26th, 2009 – Storm Event

Photo submitted by the readers of The Hamilton Spectator
Mountain Transit Centre – Mt. Hope

July 26th, 2009 – Storm Event
1. OVERVIEW OF EVENTS
Overview of Events

July 26th, 2009 – Storm Event

- Wet July - rain from July 1 to 23 (84mm)
- Saturated ground
- High Lake / creek levels
- Rain on July 24 and 25
- Severe rain storm on Sunday July 26
- Can be compared to Hurricane Hazel October 15, 1954
Rain Gauge Information

July 26th, 2009 – Storm Event

Figure 1: Stoney Creek Precipitation at Queenston and Stoney Creek Gauge (mm)

The bulk of the rain fell in only 2 hours.
Overview of Events
July 26th, 2009 – Storm Event

1 CSO Tank (75,000 m³) = 1000 Swimming Pools (70 m³)

- One swimming pool would take a full day to fill
- On July 26, one CSO tank only took two hours to fill
Overview of Events

July 26th, 2009 – Storm Event

• Both Minor (pipes) and Major (overland routes i.e. roads) systems were impacted due to the severity of the storm.

Photo submitted by the readers of The Hamilton Spectator
Storm Event Response Group Focus Areas and Impact of the July 26th 2009 Storm
July 26th, 2009 – Storm Event

Emergency Operations Centre

Convoked at 2:30 p.m. on Sunday, July 26
Mayor and City Manager led a group of senior staff and emergency services officials (Fire, Police) to respond to the storm impacts

Three Media Updates were disseminated to provide information on the City’s response, road closures, and health and safety tips for affected residents

EOC was tracking storm that was estimated to bring up to additional 50mm and potential tornadoes

A relief centre was opened at Valley Park Community Centre for affected residents

Fire, Police and Hydro staff went door-to-door for residents who had power and gas turned off to assist homeowners

The EOC was disbanded at 9:00 p.m. that evening
Prior to forecast storm events:
  • Routine inspection of known hot spots from previous storm events

Storm Response:
  • Priority - emergency response - health and safety
  • Forty staff and ten supervisors called in to respond to road flooding conditions
  • Road closures / barricades
  • Removed debris from roadways, catch basins, culverts
  • Repairs to gravel roadways and shoulder washouts
  • Checked escarpment crossings - slides/rocks
  • Monitor traffic signals impacted by power outages
Damage to Corporate Facilities
July 26th, 2009 – Storm Event

- Mountain Transit Centre
- Mountain Community Recycling Centre
- King's Forest Golf Course
- Red Hill Creek Corridor
- Chedoke Trail Bridge
- Rosedale Arena
- Carluke Hall
- Sir Wilfrid Laurier Recreation Centre
- Huntington Park Recreation Centre
- Warburton Park - wading pool
- Mount Hope Hall
- Lawfield Arena
- North Wentworth Arena
- Green Acres Outdoor Pool
- Valley Park
- Stoney Creek Tennis Club
- 95 King Street West
- Chedoke Yard
- Hamilton Police Services - Mountain Station
- CityHousing Hamilton
2. PROGRAMS IMPLEMENTED TO DATE
Independent Community Panel (ICP)

July 26th, 2009 – Storm Event

- Appointed by Council in March 2006
- Consists of five professionals with expertise related to watershed planning, flood prevention, wastewater engineering, stormwater management, landscape architecture and insurance
- 26 recommendations presented to Council in 2006
- In December 2008, City staff initiated a voluntary ICP review to evaluate the City’s progress to date
- Final report presented to Council in June 2009
- According to the Panel, the City achieved all 26 recommendations in their original 2006 Report
- Submitted another 23 recommendations to consider for future planning and work plans
Edgemont Ave.
July 26th, 2009 – Storm Event

- First trunk sewer replaced in the Lower East End
- Replaced all sewers in this area in 2006
- $1.7M
Cannon St. (Gage to Ottawa)

July 26th, 2009 – Storm Event

- Sewers have been replaced; associated road work is being completed now
- Allows local sewer work to proceed
- $5.2M
Various Local and Trunk Sewers

July 26th, 2009 – Storm Event

Lower East End Storm Drainage Study and Stormwater Management Investigation

- Study began in 2005
- Consultation with affected residents and businesses
- Investigating capacity of drainage system to understand flooding causes
- Final report being prepared to recommend solutions
Overview of Program:

• Program offered to 75 pre-selected homes in the Lower East End and Mountview areas in January 2009
• Properties chosen based on flooding history and location
• One-time grant to residents with documented basement flooding problems related to sanitary/combined sewer back-ups
• Maximum of $3,000 towards materials/labour costs for installation
• One-year program
• City to monitor and evaluate the success of plumbing devices throughout the pilot test period
• Plan to analyze results and modify for a potential City-wide program
Pilot Program Status:

- To date, thirty properties agreed to participate in pilot program
- No reported flooding from pilot program participants to date
- Expanding the pilot program to include properties on Mary and Ferrie Streets - PHASE 2
Since 2006 - Inspected and removed any blockages in more than 580km of sewer pipe, areas include:

* Lower East End
* Central Mountain
* Mountainview Neighbourhood
* Dundas
* West Hamilton
* Mary/Ferrie Neighbourhood
Stormwater Rate Based on Permeability of Ground

July 26th, 2009 – Storm Event

Presentation to Committee of the Whole – July 30, 2009
CSO Upgrades (Greenhill, Red Hill, Stroud) $50.0 M

Pipe Upgrades and Replacements: $30.7 M

Inspection and Cleaning: $23.1 M

Pipe Rehabilitation: $13.2 M

Investigation: $1.1 M

Backwater Valve Pilot Project: $0.1 M

Total $118.2 M
3. LOOKING AHEAD
Replacement of Existing Main Pump House

July 26th, 2009 – Storm Event
Storm Infrastructure
July 26\textsuperscript{th}, 2009 – Storm Event

- Beach Strip - 2009 / 2010
- Kenilworth Underpass - 2009 / 2010
- Watercourse upgrades - Ongoing
- Stormwater management ponds - Ongoing
Implementation of Real Time Control System

July 26th, 2009 – Storm Event

[Map showing various CSOs and their volumes]
Full Rollout of Backwater Valve Program

July 26th, 2009 – Storm Event

1. Floor drain or fixture

   Built-in main sewer clean out.

   Fulport normally open design offers no restriction to flow.

   Flow channels on gate and body divert sewage from inlet to outlet preventing sewage buildup beneath gate.

   Gate automatically closes upon reversal flow isolating entire plumbing system from backflow.

   The Maintline Fullport Backwater Valve is virtually self-cleaning. Periodic inspections and maintenance at homeowner’s discretion.

2. Floor drain or fixture

   Model number: 4963
Accelerated Capital Projects

July 26th, 2009 – Storm Event

CSO upgrades/replacement

Storm relief sewers

New storm sewers

Total - $20M
Capital Works Planned for Next 5 Years

July 26th, 2009 – Storm Event

- WWTP Pump House - $75.0 M
- Storm infrastructure - $56.0 M
- Inspection, Maintenance & Investigation - $53.6 M
- Real Time Control - $10.0 M
- Backwater Valves - $3.0 M
- Accelerated Capital - $20.0 M
- Kenilworth Underpass - $4.1 M
- Beach Strip - $2.0 M

Total $223.7 M