



Building Markham's Future Together
Journey to Excellence

Ice Storm Response & Recovery Plan Update April 28, 2014

Presentation to General Committee

Agenda

- Status of on going Ice Storm Clean Up Efforts
 - City Owned Road Allowances
 - Parks, Facilities and Cemeteries
 - Watercourses and Natural Areas
- Tree Removals and Stumping Program
- Tree Replanting
- Communications

Ice Storm Cleanup Efforts Road Allowances

- Crews have completed boulevard tree cleanup and two rounds of debris collection and disposal
- Tree removals ongoing with anticipated completion by May 16
- Estimated total of 1,200 boulevard trees removed
- Homeowners instructed to move all tree debris to boulevard by April 11, 2014
- Crews will complete one more round of boulevard cleanup commencing April 14
- Homeowners responsible for disposal of private tree debris not collected through this final round. Smaller branches may be collected through City's yard waste collection program
- Estimated cost of boulevard cleanup efforts to date - \$2.7M

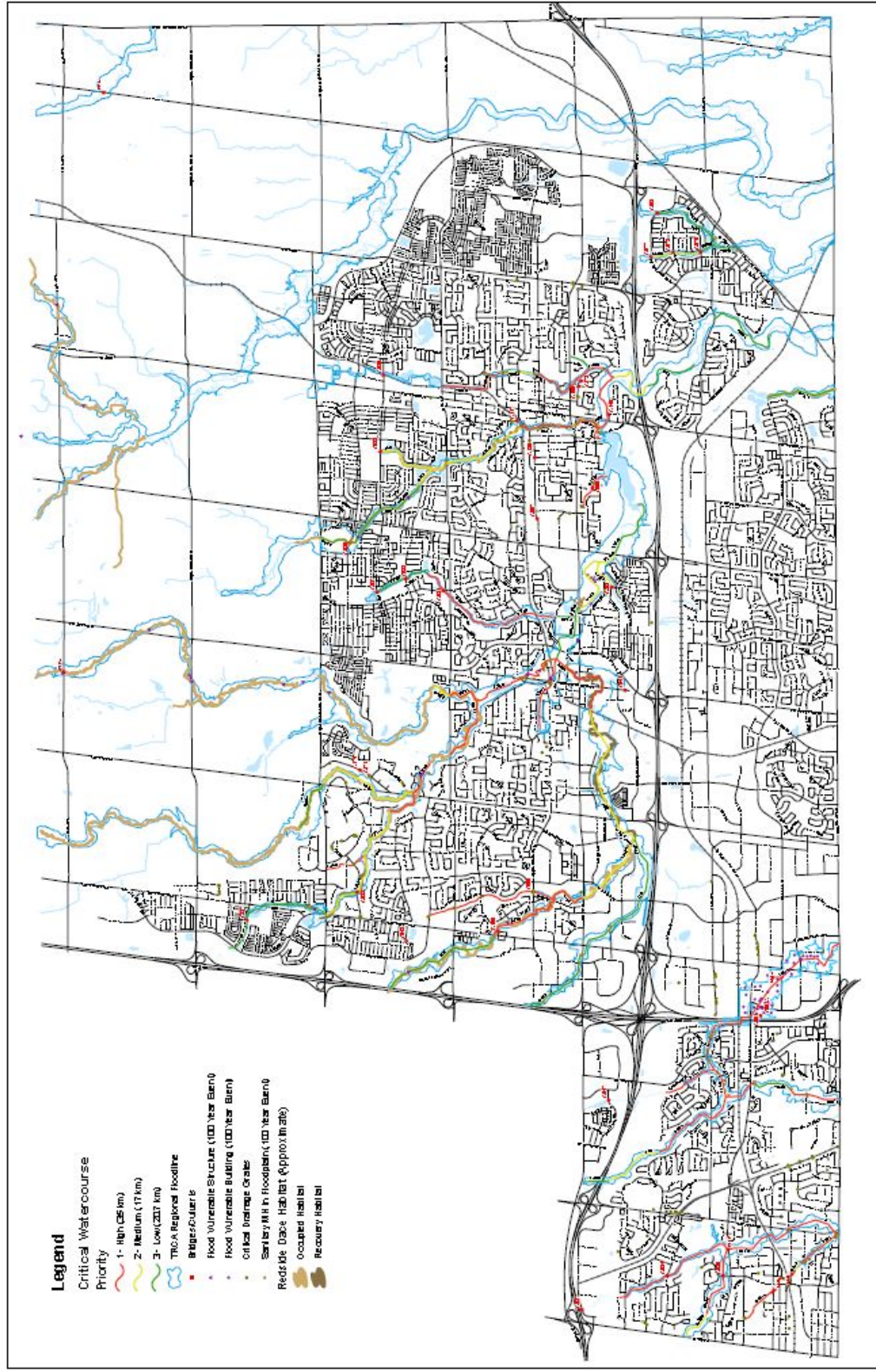
Ice Storm Cleanup Efforts Parks, Facilities & Cemeteries

- City staff are completing damage assessments in parks with most significant tree damage
- Currently 8 contracted crews deployed to complete City wide park cleanup efforts
- Cleanup efforts ongoing to be completed by Aug 31
- Tree cleanup in cemeteries completed in early March
- Community Centres and surrounding parks completed in March, anticipate completion of remaining facilities by April 30
- Estimated cost for park, facility and cemetery cleanup efforts is \$1.5M

Ice Storm Cleanup Efforts Watercourse Assessment and Approval

- Stantec Consultant was retained in January 2014 to complete an assessment of the impact of the December 2013 ice storm on our watercourses.
- Cost of the assessment is \$87,545.
- For efficiency, watercourses were initially prioritized as follows:
 - High priority areas (**Red**) – immediate cleanup is required
 - Medium priority areas (**Yellow**) – cleanup A.S.A.P. is required
 - Low priority areas (**Green**) – lowest risk and immediate action not required

Prioritization

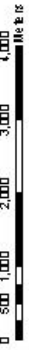


- Legend**
- Critical Watercourse**
- Priority**
- 1- High (65 km)
 - 2- Medium (17 km)
 - 3- Low (202 km)
- 100-A Regional Floodline
- Bridges/Culverts
- Flood Vulnerable Structure (100 Year Event)
 - Flood Vulnerable Building (100 Year Event)
 - Critical Drainage Orator
 - Sand Storage Bin in Floodplain (100 Year Event)
 - Reddish Duck Habitat (Approximate)
 - Occupied Habitat
 - Recovery Habitat

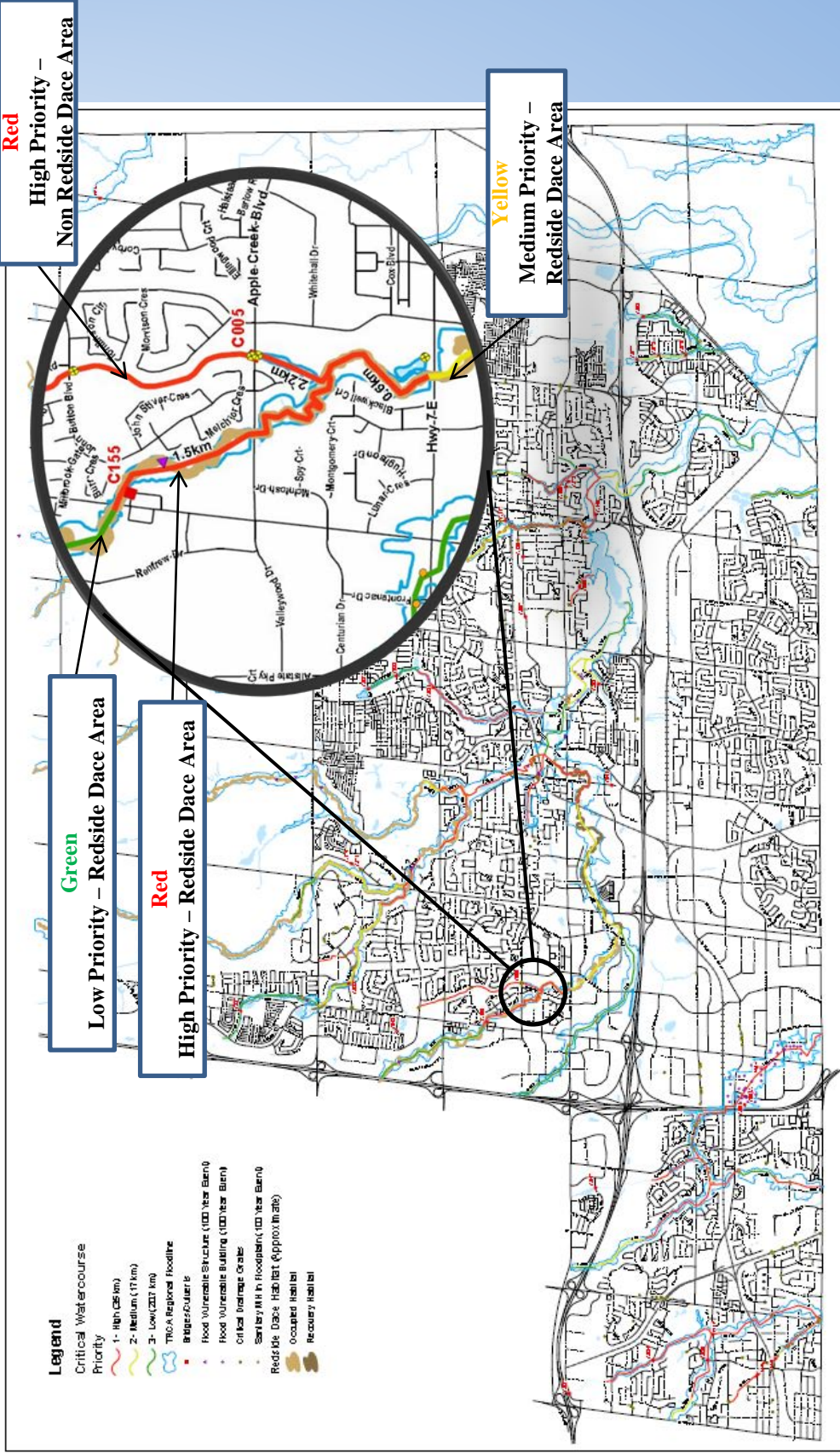
Critical Watercourses for Long-Term Ice Storm Impact Assessment

100 Year Event

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Prioritization



Critical Watercourses for Long-Term Ice Storm Impact Assessment

100 Year Event

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Ice Storm Cleanup Efforts Watercourse Assessment and Approval

- High priority areas were selected based on:
 - Age of development/infrastructure (e.g. Unionville vs. Cornell)
 - Tree density in the flood plain
 - Flood prone areas (based on historical records, service calls. etc.)
 - Shape and hydraulic setup of the watercourse including downstream bridges/culverts
- The prioritization and data collection methods were discussed with, and approved by the Toronto Region Conservation Authority (TRCA) and Ministry of Natural Resources (MNR) prior to commencement of the data collection.
- Ten (10) critical watercourse crossings were identified for immediate cleanup.

Ice Storm Cleanup Efforts

Watercourse Assessment and Approval

- TRCA and MNR approvals
 - ❑ Staff met with the TRCA and the MNR to determine the project scope
 - ❑ TRCA & MNR approvals for the 10 critical culverts were received expeditiously (late February)
 - ❑ Thornhill Area – TRCA & MNR approvals were received in a reasonably short time (early March)
 - ❑ High priority (**Red**) areas – Approved by TRCA. MNR provided partial approval (approx. 75%) and continues its review and approval
 - ❑ Medium priority (**Yellow**) and Low priority (**Green**) areas – Assessment completed and provided to the TRCA and MNR on March 14th. No approval has been received to date
 - ❑ Due to legislated requirements, we cannot proceed with cleanup efforts of the remaining areas until approved by TRCA & MNR- lower risks areas

Ice Storm Cleanup Efforts Watercourse Assessment and Approval

- MNR extended debris removal deadline from March 31 to April 15.
- No debris removal between April 15 – June 1 (fisheries window).
- Completed high priority areas
- Additional removal work for the Medium and Low priority areas to commence after July 1, subject to TRCA and MNR approvals.
- Estimated cost for the watercourse debris removal program - \$600,000

Ice Storm Cleanup Efforts Watercourses

- 4 contracted crews deployed mid-March to commence cleanup efforts in watercourses. All work must fall within the following parameters as set out by the MNR
 - ❑ Only trees and debris that may potentially interfere with flood flows, or pose a risk to infrastructure (e.g. culverts), public safety or public property will be removed;
 - ❑ Debris accumulation is the result of recent flooding or storm events, or there is no accumulation of sediment behind the debris;
 - ❑ Vehicular or construction equipment access and operation will be restricted to existing roadways, or formal trails of sufficient width to accommodate access;
 - ❑ Only small hand-tools and small machinery (i.e. chainsaws) will be used in natural areas;
 - ❑ Access to the bed and banks will be on foot only to facilitate cutting and collection as necessary;
 - ❑ Root structures within the banks will remain in place and no grubbing of the banks will occur;
 - ❑ The flow of water within the watercourses will remain uninterrupted at all times;
 - ❑ Debris will be removed from the site; and
 - ❑ All of the works, including the removal of trees from the site, will be completed by April 15, 2014 or between July 1 and September 15, 2014.

Tree Removal & Stumping Program

- Completion of remaining tree removals by August 31
- Tender for boulevard stump removals has closed with bid submissions under review and evaluation
- Contract split into 4 areas across the City. Contractors required to complete stump removals in bid areas by September 30
- Stump removals in parks to be completed by City staff
- Estimated start date May 15

Risk Management – Tree Health Assessment

Benefits of a tree risk strategy include:

- **It provides a systematic approach to identifying high risk trees and initiates their timely removal or corrective treatment**
- **A greater degree of management efficiency and flexibility**
- **Lower frequency and severity of accidents, injury and damage**
- **Fewer and less expensive claims and legal expenses**
- **Healthier and longer-lived trees – maximizes tree benefits**
- **Fewer trees removed annually enhancing maintenance of tree cover**
- **Reduced liability / increased environmental and social benefits**

Risk Management – Tree Health Assessment

Cost to implement program

- Preliminary estimate for consultant to undertake City wide risk assessment - \$600,000
- Estimated cost to undertake in-house
 - ❑ 7 – 115 day staff (graduate arborists) including salary and benefits - \$145,000
 - ❑ 7 tough book laptop computers - \$35,000
 - ❑ 4 rental vehicles for 6 month period - \$25,000
- Total estimated in-house cost - \$205,000

Replanting Strategy

- Street tree removal inventory to be completed by May 31. Park tree removal inventory to be completed by July 31
- Staff will engage Consultant to undertake a tree replacement strategy including:
 - ❑ Comprehensive street by street replanting plan which ensures biodiversity, healthy growth through soil testing, and the streetscape considerations.
 - ❑ Preferred 60 mm diameter trees for boulevards.
 - ❑ Urban Forest Replanting plan which presents several options based on tree availability and costs.

Replanting Strategy

- 2014 Replanting Plan
 - Commitment to residents to plant approximately 300 trees in spring 2014 to replace boulevard trees removed in 2013
 - Spring ice storm replanting efforts will be focused on 'back-lot' roads such as Denison and Bullock – estimate 300 trees
 - Fall replanting efforts focused on parks areas
- 2015 program will focus on ice storm/EAB street tree replacements with highest priority given to streets that suffered greatest damage.

Financial Implications

- Response Cleanup Efforts
 - ❑ Road Allowances – anticipate total \$2.7M to complete cleanup to mid-May
 - ❑ Parks, Facilities & Cemeteries – anticipate total \$1.5M to complete. Cleanup ongoing to be completed this summer.
 - ❑ Watercourses – total budget \$0.6M. Approximately 50% spent to date. Balance of cleanup to be completed between July 1 and September 30
- Recovery Strategy
 - ❑ Removals and stumping – initial estimate/contract award approximately \$0.5M.
 - ❑ Risk Management – in-house tree assessment approximately \$0.2M
 - ❑ Replanting – Estimate approximately 5000 trees at \$400 - \$500/tree for total estimated cost of \$2.0 to \$2.5M.
 - ❑ Total estimated cost of storm response and recovery in the range of \$7.5 to \$8.0M

Ontario Ice Storm Assistance Program

- Program Timeline
 - May 2014 – Release of Program Guidelines.
 - Detailed guidelines, instructions, expression of interest forms and claim forms will be distributed to municipalities
 - June 16, 2014 – Deadline for Expression of Interest Submissions
 - Submit an expression of interest with evidence to support ice damage and estimates of ice storm costs incremental to regular budgets.
 - Confirm that authority is delegated to the treasurer to submit claims on behalf of the municipality
 - June 22, 2014 – Expenses can be incurred up to June 22, 2014 to be considered eligible (that is 6 months after the ice storm)
 - August 31, 2014 – deadline for Claim Submission
 - All claims must be verified and signed by the municipal treasurer and supported with complete and detailed documentation including copies of invoices, overtime sheets and other materials.

Overview of Eligible and Ineligible Costs

| Eligible Costs | Ineligible Costs |
|---|---|
| <ul style="list-style-type: none"> ✓ Incremental costs of immediate emergency response, such as setting up warming centres. ✓ Clean-up of debris including fallen trees and broken branches on roads, sidewalks and frequently travelled routes to protect public health and safety. ✓ Incremental costs incurred to provide the essential services, equipment, material and labour required to sustain the operability of public infrastructure. ✓ Incremental costs of staff for overtime work and for temporary contract staff to manage ice storm response and clean-up. ✓ Repairs or replacement to pre-disaster condition of municipal and conservation authority infrastructure and related equipment damaged as a result of the ice storm. ✓ Incremental costs of appraising and estimating damage. | <ul style="list-style-type: none"> ✗ Regular public sector salaries. ✗ Normal operating expenses, including maintenance budgets of those involved in the response. ✗ Emergency service costs related to routine incident management functions, as opposed to incremental costs of responding to broader disaster consequences. ✗ Tree replacement or tree canopy restoration. ✗ Costs of restoring or replacing items that were insured or insurable. Under the program, "insurable" means that insurance coverage for a specific hazard for the municipality or conservation authority was available in the area at reasonable cost. ✗ Loss of income, wages, profits and/or revenue, loss of opportunity or inconvenience. ✗ Costs incurred by local electricity distribution companies. |

Next Steps / Recommendations

- Complete road tree debris cleanup efforts – May 16
- Complete tree removals and cleanup in parks and watercourses – September 2014
- Update inventory of tree removals for roads and parks – July 2014
- Complete City wide stump removal program – December 2014
- Tree replanting strategy for roads and parks to be completed by August 31
- Undertake in-house tree risk management assessment at an estimated cost of \$205,000 to be completed by December 2014
- Continue to implement communication plan



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