

Council Presentation – May 2nd, 2016

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PLAN ORIGINS



Driven by Council's vision contained in the Corporate 2015-2018 Strategic Plan

<u>Goal 9</u>: "Become greener with protected and enhanced natural areas."

Strategy 9.1:

"Improve surface water management and educate /assist residents and business on protecting their new and existing properties from flooding."

PLAN ORIGINS



Driven by Council's vision contained in the Corporate 2015-2018 Strategic Plan

Goal 8:

"Become a leader in climate adaptation."

Strategy 8.1:

"Plan for climate-resilient infrastructure and services."

- climate change impacts in asset management
- LID and green infrastructure

PLAN ORIGINS



To be aligned with other local, regional, and federal planning efforts – including critical integration with the Lakehead Region Conservation Authority

- 2015 Climate Adaptation Strategy
- 2014 Draft of Updated Plan and the 2002 Official Plan
- 2014 McVicar Creek Protection
 & Rehabilitation Plan
- 2014-2020 EarthCare Sustainability Plan
- 2013 Lake Superior Lakewide
 Management Plan Annual Report
- 2012 Urban Design & Landscape Guidelines
- 2011-2014 Strategic Plan
- 2011 Urban Forest Management Plan

- 2011 Stormwater Management Plan Scoping Study, Phase 1
- 2008 EarthWise[®] Community Environmental Action Plan
- 2008 Recreation and Parks Master Plan
- 2007 McVicar Creek Stewardship Plan
- 2000 Current River Greenway Master Plan
- 1999 Pollution Prevention Control Plan
- Thunder Bay Remedial Action Plan
- Thunder Bay Site Plan Control

MAIN OUTCOMES



Guides decisions on sustainable surface water management over the next 20 years including:

- ✤ Capital Infrastructure
- * LID and Green Infrastructure
- Changes in Standards and By-laws

Protects the health of watersheds and the quality of resources

Promotes a healthy and vibrant community

Supports community resilience in the face of climate change

COMMUNITY CONSULTATION AND ENGAGEMENT





June, 2014 – Division Staff Presentation

Stakeholders/Participants

Steering Committee (8 participants)

- 20 meetings

Public (about 100 participants per open house)

- 2 public open house presentations
- 4 press releases
- public survey forms (85 responses)

Aboriginal Communities

- 7 meetings

City Council

- 1 Non-business + 2 upcoming presentations

Special Interest Groups (about 20 participants) - 5 meetings/presentations

Divisions/City staff (about 30 participants)

- 10 meetings/presentations

COMMUNITY CONSULTATION AND ENGAGEMENT





UP NORTH | Thunder Bay council gets first look at storm water management plan

20-year storm water management plan encourages city to take a 'big picture' view CBC News Posted: Mar 10, 2015 12:55 PM ET | Last Updated: Mar 12, 2015 3:38 PM ET







Public Engagement & Communication

- Thunder Bay Project Website
- Social Media Facebook, Twitter
- Project Surveys
- City's E-News
- Public Open House Flyer
- The Chronicle-Journal
- The Source

D

- Real Estate News
- TB Seniors
- The Walleye
- MyTBay Citizen Newsletter
- The Argus
- CBC News
- InfoSuperior
- LU Radio
- Acadia Broadcasting
- Dougall Media

KEY DELIVERABLE 1: WATERSHED ASSESSMENT





- Overall climate, precipitation and physical geography
- Land use and land cover
- Watersheds (7 + Waterfront)
 - Physical characteristics
 - Water quality data
 - Pollutant concentrations and loads
- Wetlands

 (within and outside the City)
 - Type, sizes and location
 - Impact susceptibility
- Stormwater infrastructure
- Gap analysis

KEY DELIVERABLE 2: ASSESSMENT OF PRIORITY NEEDS





- Evaluation of stormwater infrastructure
 - Base models
 - Feasibility level models
- Establishing water quality targets and ranking
- Climate change assessment
 and IDF curves development
- Climate change adaptation
- New stormwater measures and retrofit opportunities
 - Identify BMP opportunities (552) and cost analysis
 - BMP Type, size and location recommendations

BMP RETROFIT OPPORTUNITIES



THUNDER BAY STORMWATER MANAGEMENT PLAN FOR SUSTAINABLE SURFACE WATER MANAGEMENT





THUNDER BAY STORMWATER MANAGEMENT PLAN FOR SUSTAINABLE SURFACE WATER MANAGEMENT



New paradigm in stormwater mgmt. is the importance of green infrastructure

For each <u>Goal</u> → objectives & actions

The Stormwater Mgmt. Plan content provides guidance and support for the action items

• <u>Goal 1:</u>

To maintain the ecological integrity, function and value of water, groundwater and natural resources

• <u>Goal 2:</u>

To improve and maintain the quality of streams, rivers, lakes and wetlands

- Physical, bacterial and chemical pollutants





• <u>Goal 3:</u>

To manage the quantity and delivery of runoff to protect the health and safety of residents, infrastructure and the environment

- Enhance infrastructure
- Manage floodplains
- Improve system understanding through modeling
- <u>Goal 4:</u>

To sustainably maintain, manage and operate stormwater systems

- Inspections
- Operation/maintenance
- Infrastructure replacement
- Staffing
- Detailed stormwater AMP





• <u>Goal 5:</u>

To support a healthy watershed through effective monitoring and data management

• <u>Goal 6:</u>

To manage the impact of new development and redevelopment activities

- Development/modifications of By-Laws & engineering standards
- Enforcement of engineering and development standards
- LID incentive programs
- LID design guidance materials
- Program evaluation





• <u>Goal 7:</u>

To improve stewardship of water resources by education and outreach to residents, businesses and institutions

• <u>Goal 8:</u>

To adequately finance the implementation of an effective, integrated SMP

- Administration and staffing
- Funding/Financing
- Multi-jurisdictional coordination

• <u>Goal 9:</u>

To incorporate climate change to build system resiliency and adaptation strategies that will result in long-term cost savings

KEY DELIVERABLE 4: CORRECTIVE ACTIONS & IMPLEMENTATION PLAN





Existing Structure and Responsibilities

 Engineering, roads, environment, parks, planning, licensing and enforcement, and financial divisions

Proposed Structure and Responsibilities

- Stormwater section or single area responsible for stormwater mgmt.
- Evolution (timing)
- Roles and responsibilities
- Staff requirements
- How is it done in other similar communities/regions (Ontario, Alberta, Minnesota?)

KEY DELIVERABLE 4: CORRECTIVE ACTIONS & IMPLEMENTATION PLAN

CORPORATION OF THE CITY OF THUNDER BAY



ENGINEERING
AND
DEVELOPMENT
STANDARDS

2015 EDITION

INFRASTRUCTURE AND OPERATIONS DEPARTMENT ENGINEERING DIVISION OFFICE THUNDER BAY, ONTARIO

- Recommendations for By-laws
 - Site plan control By-Law
 - Zoning By-Law
 - Site alteration By-Law
- Recommendations for Engineering Standards
 - Stormwater infrastructure/BMPs and site design
 - Stormwater quantity/quality
 - Wetlands and watercourses
 - Coldwater streams

KEY DELIVERABLE 4: CORRECTIVE ACTIONS & IMPLEMENTATION PLAN

Grandview Park LID



- Identification of **Partnership Opportunities**
- **CIP & Implementation Plan (20 yrs)**
 - Studies/inventories, capital projects and programs

THUNDER BAY

STORMWATER MANAGEMENT PLAN

AINABLE SURFACE WATER MANAGEMENT

- Timing, cost, what goal/objective does each item in the list achieve?
- **Funding/Financing Sources** Advantages/Disadvantages
- **Stormwater Utility Fee**
 - How is it done?
 - Examples of 25 communities in Ontario, Canada & Minnesota, USA

KEY DELIVERABLE 5: SAMP FRAMEWORK





Detailed Guide for a More Comprehensive Stormwater Assessment Management Plan (SAMP)

- Assets Included:
 - Pipes, culverts, MH/CB
 - Outfalls, ditches/open channels
 - Ponds, infiltration basins, bioretention and rain gardens
 - Sand filters, filter strips, dry swales
 - Tree trenches, pervious pavers
 - Oil-grit separators, fish ladders, etc.
- Inspection protocols for each asset
- Maintenance and replacement
 protocols for each asset



- Wetland protection incorporated into Official Plan
- More rigorous standards for development/redevelopment to reduce runoff peaks and runoff volume - City-wide site plan control
- Creation of a single area responsible for stormwater management as a mid-term goal
- Adaptable Capital Improvement Plan and LID implementation for the next 20 years
- Create stormwater utility fee and a development area charge to fund full cost of stormwater projects/programs

THANK YOU!





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