



Integrated Watershed Planning Guidance for Urban Sustainability

H₂Ontario - Integrated Watershed Management
Symposium - May 21-22, 2009





An integrated approach



- Multi-stakeholder led
- Interdisciplinary studies – broader range, advanced tools
- Future looking
- More implementation specific (science to policy)
- Communication with target audiences; social marketing
- Lessons learned



Multi-stakeholder led

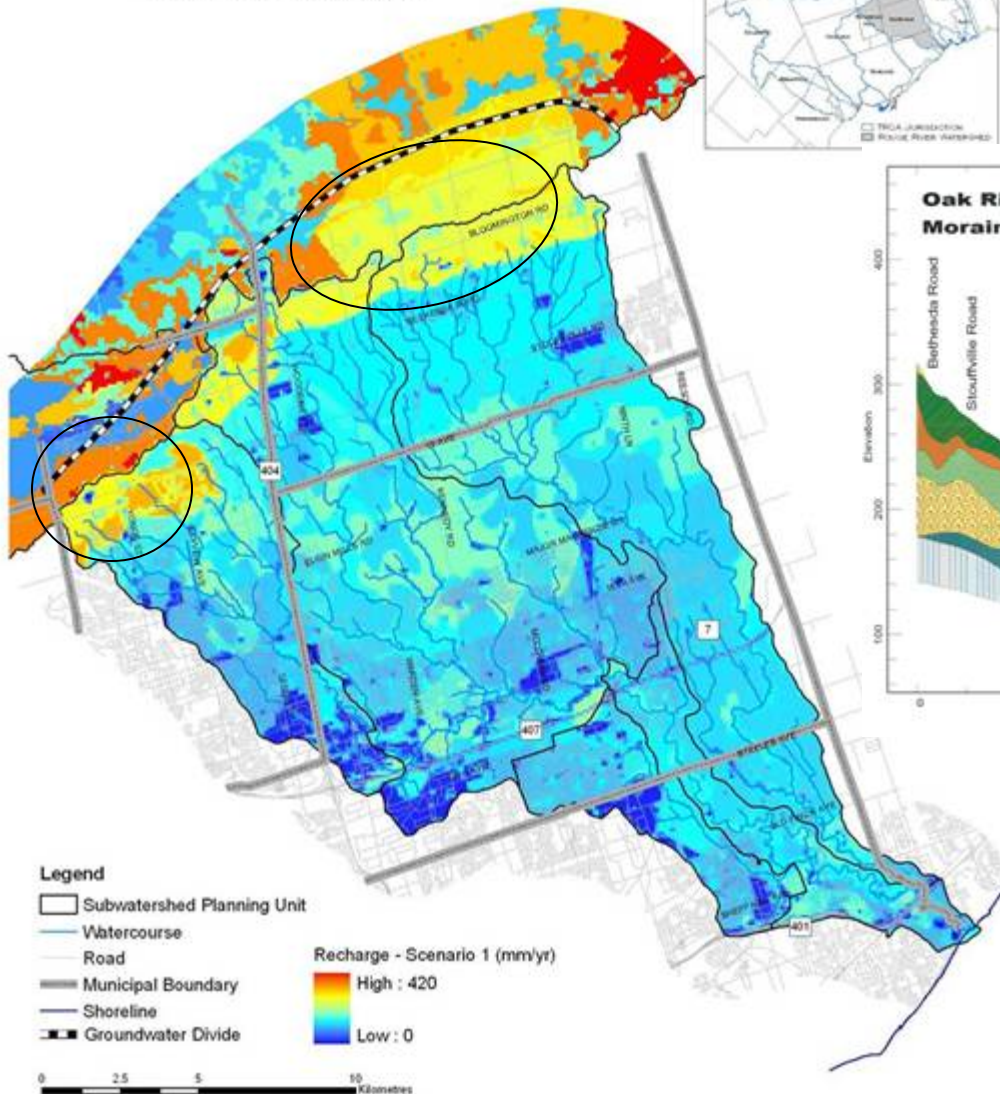
e.g. Rouge Watershed Task Force

- Municipal Councillors
- Watershed residents
- Interest group representatives:
 - Toronto Zoo*
 - Rouge Valley Foundation*
 - Friends of the Rouge Watershed*
 - Milne Park Conservation Association*
 - Richmond Hill Naturalists*
 - Ontario Archaeological Society*
 - Agricultural Sector*
 - Golf Course Sector*
- One rep from each lead group:
 - Rouge Park Alliance*
 - Toronto and Region Conservation Authority*
- Government representatives:
 - Environment Canada*
 - Transport Canada*
 - Ontario Ministry of Natural Resources*
 - Ontario Realty Corporation*

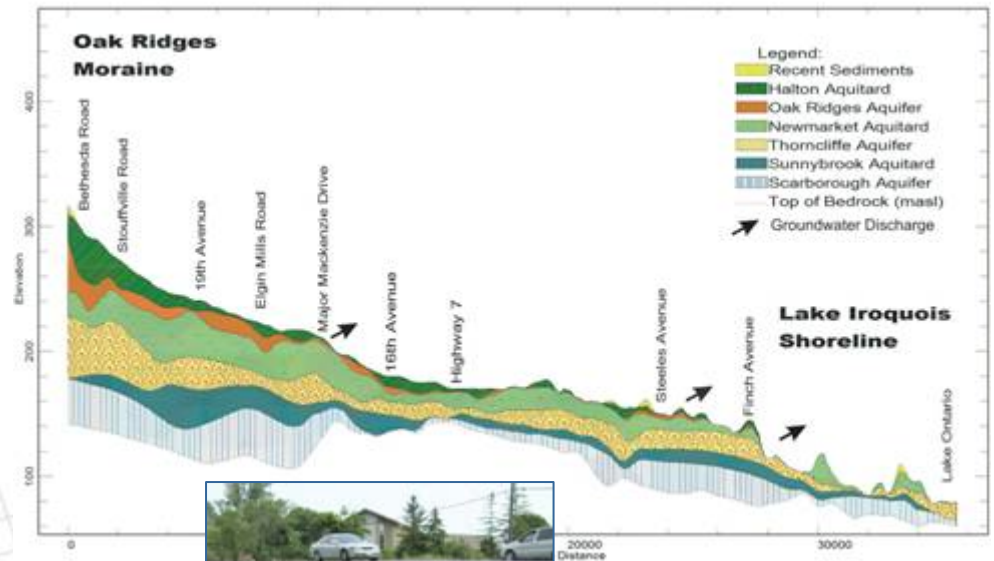


Interdisciplinary Studies

ROUGE RIVER WATERSHED
Groundwater Recharge

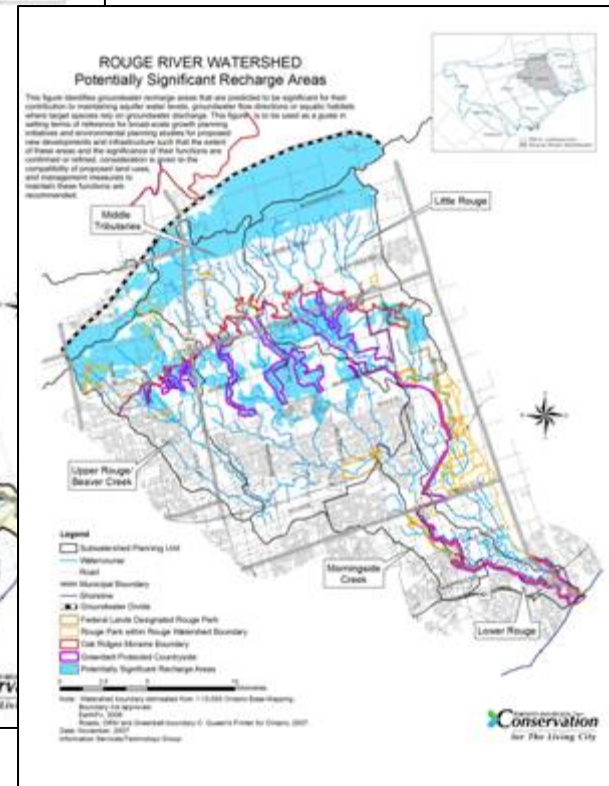
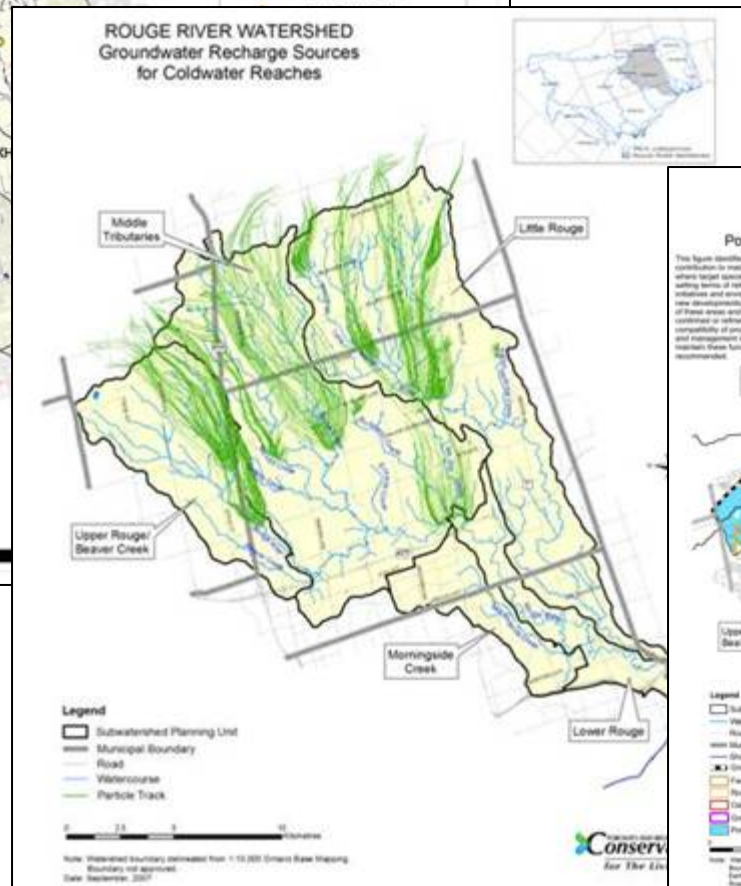
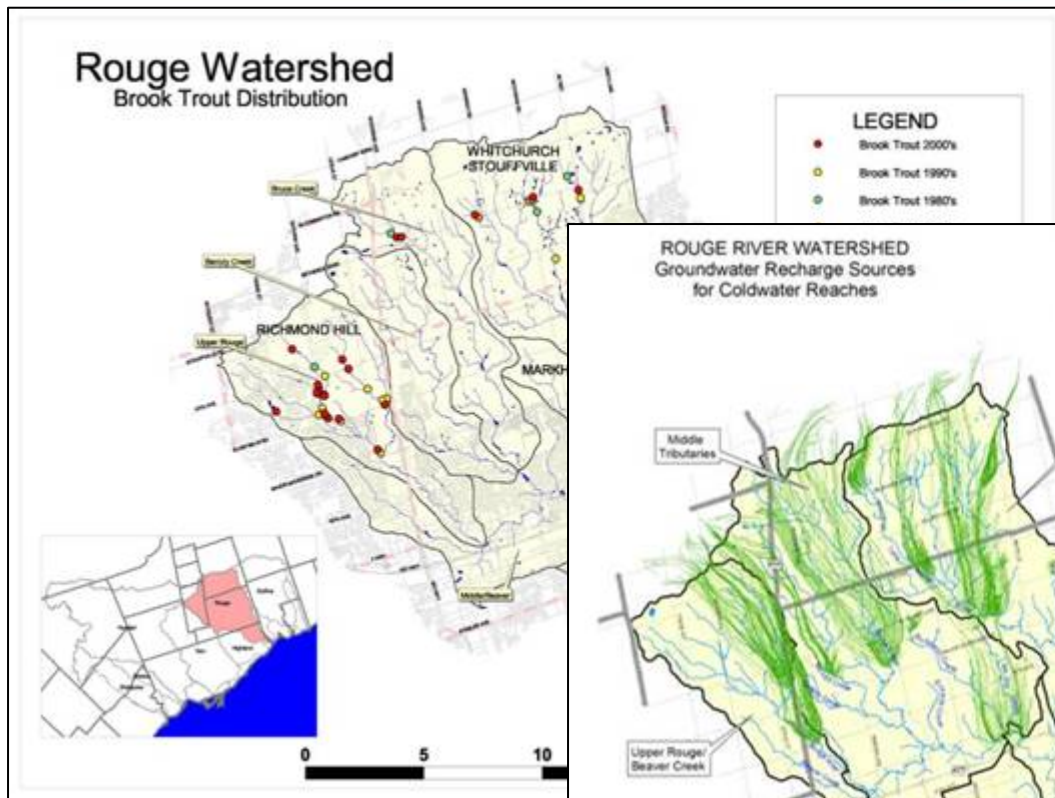


Cross section along Main Rouge

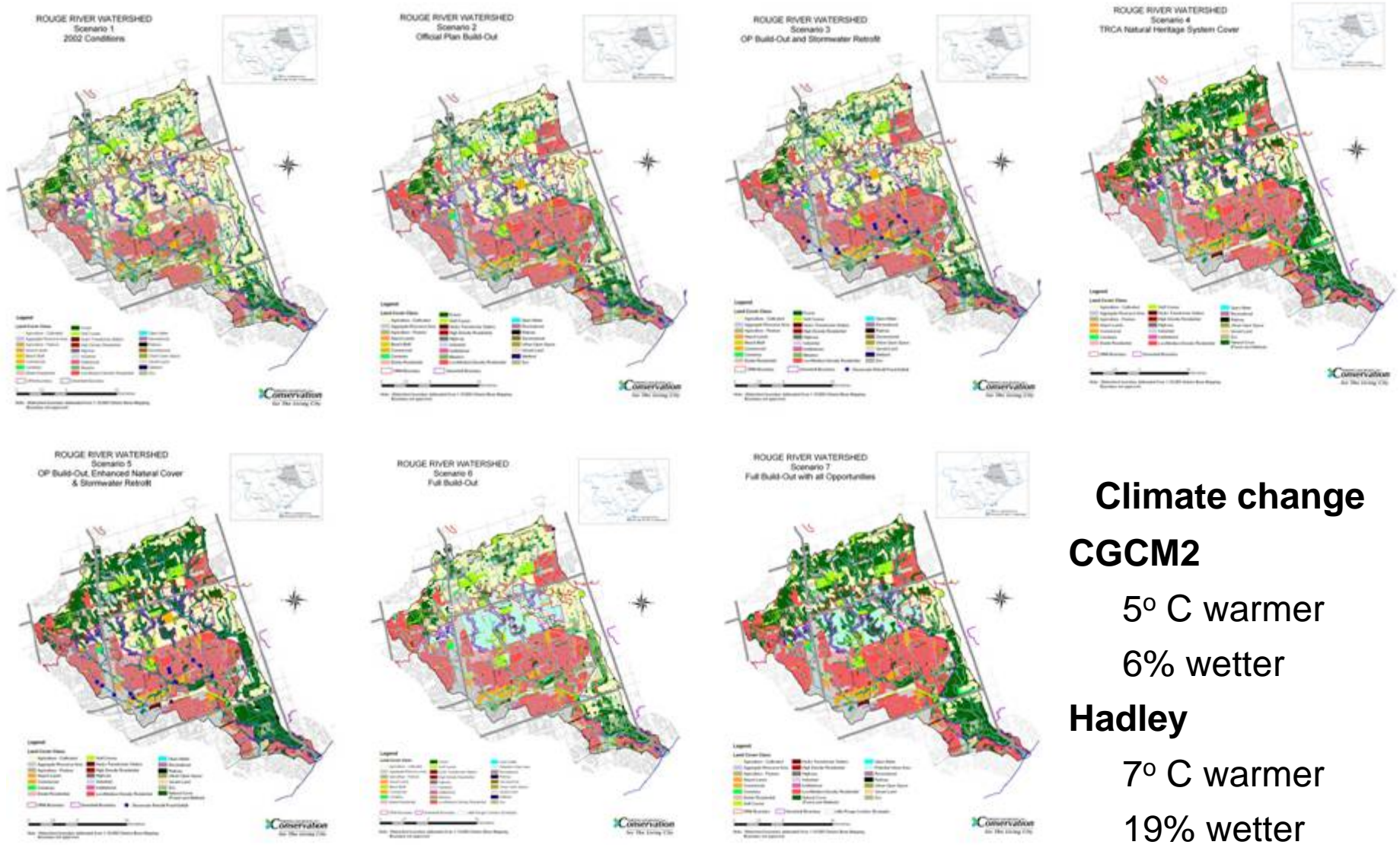




Sensitive Aquatic Habitats and Species



Future Scenarios – Rouge Watershed



Climate change
CGCM2
 5° C warmer
 6% wetter
Hadley
 7° C warmer
 19% wetter



Stream erosion is a key concern



- Affects water quality, aquatic habitats, infrastructure
- Streams are still responding to current levels of urban development
- Research suggests current SWM approaches are not adequate
- Similar findings from our scenario modelling studies

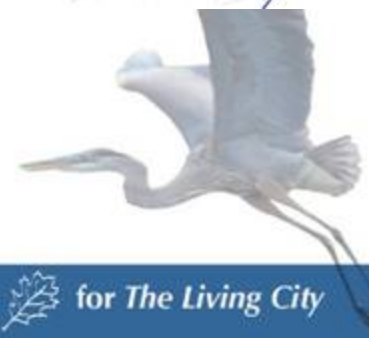
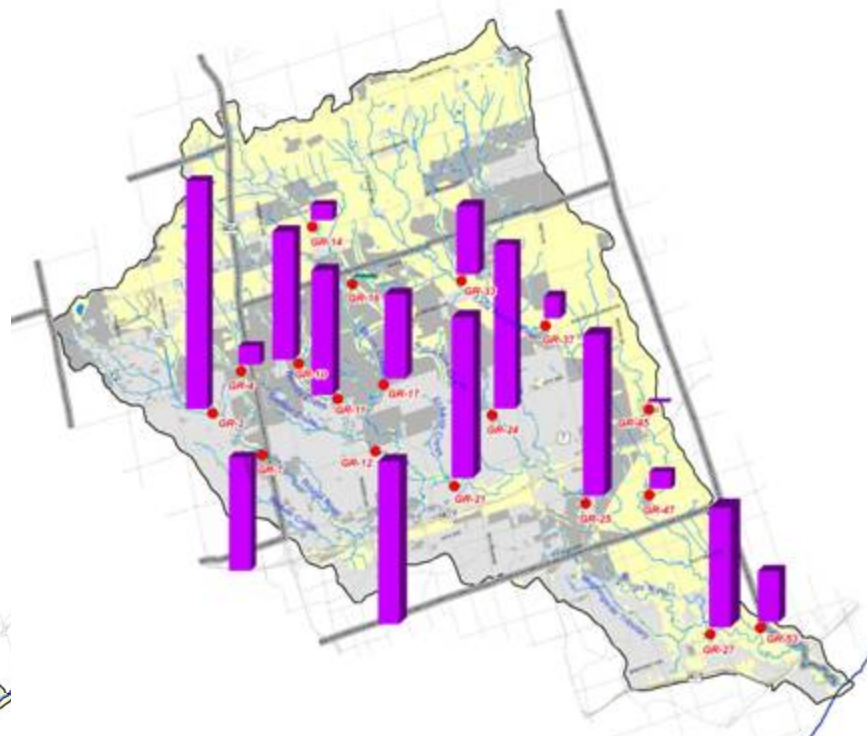
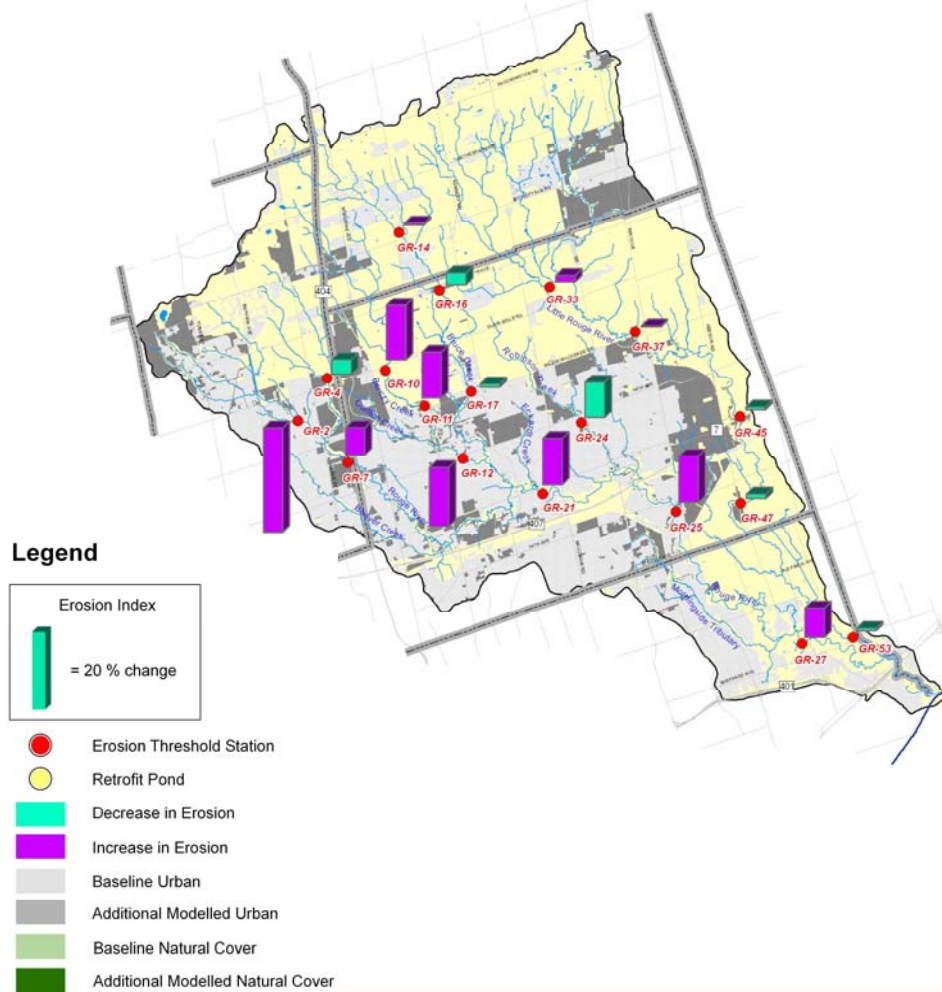




Effect of build out on erosion potential

Effect of Official Plan Build-Out (2002 baseline)

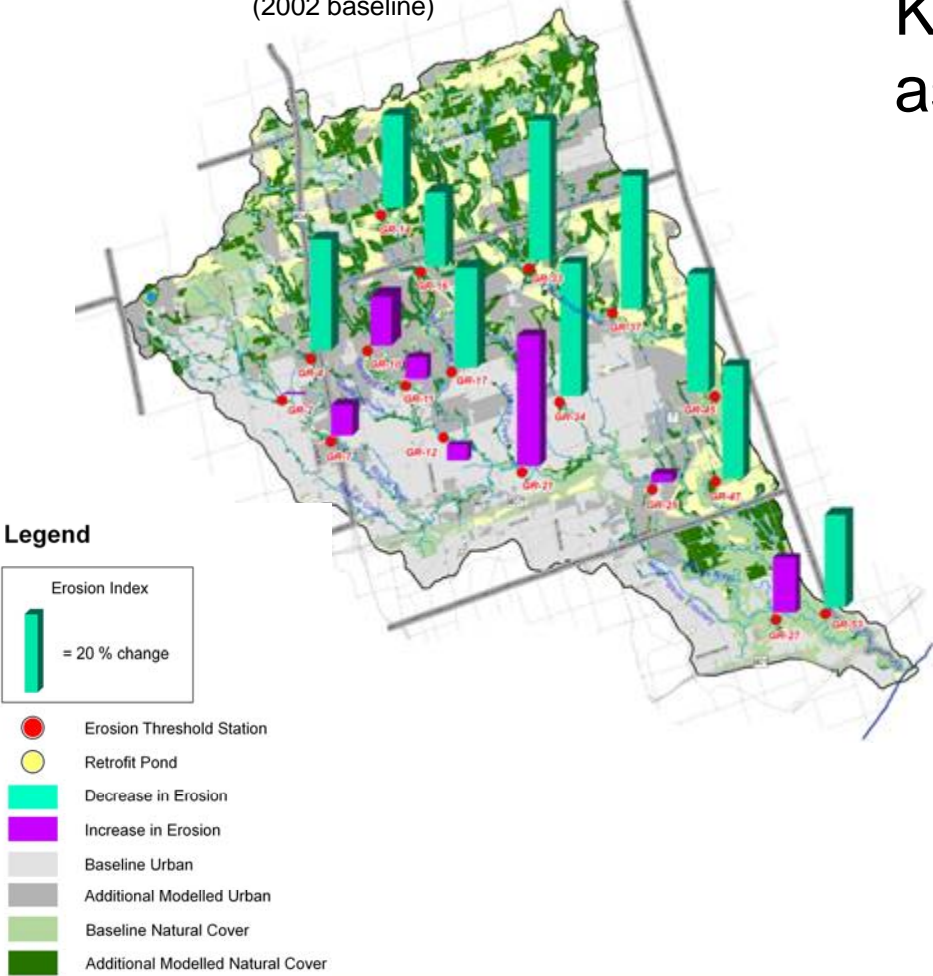
Effect of Full Build-Out Current Practice (2002 baseline)





Effect of “sustainable communities”

Effect of “Sustainable Community”
(2002 baseline)



Key water management assumptions:

- Increase natural cover
- Manage water balance in new communities
- Retrofit stormwater management practices in existing urban areas
- More “sustainable” community designs and practices overall





3 Key Strategic Watershed Management Directions



1. Increase natural cover
2. Build sustainable communities (new and retrofit) – manage water balance and promote more sustainable practices overall
3. Recognize and develop the regional open space system





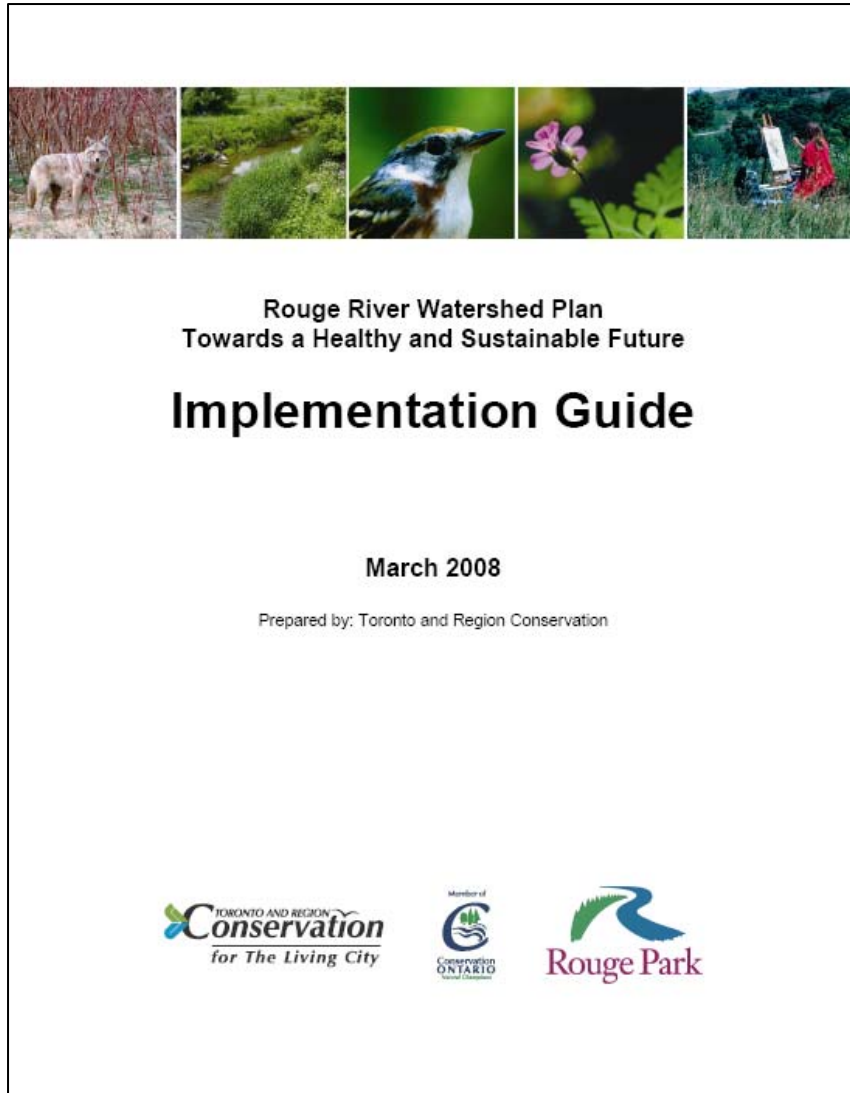
These 3 strategies have resonating benefits



- Regional biodiversity
- Fish habitat protection
- Nature-based recreation
- Resilience to climate change
- Drinking water source protection
- Flood control
- Human health
- Energy savings
- Air quality
- Economic



More implementation specific

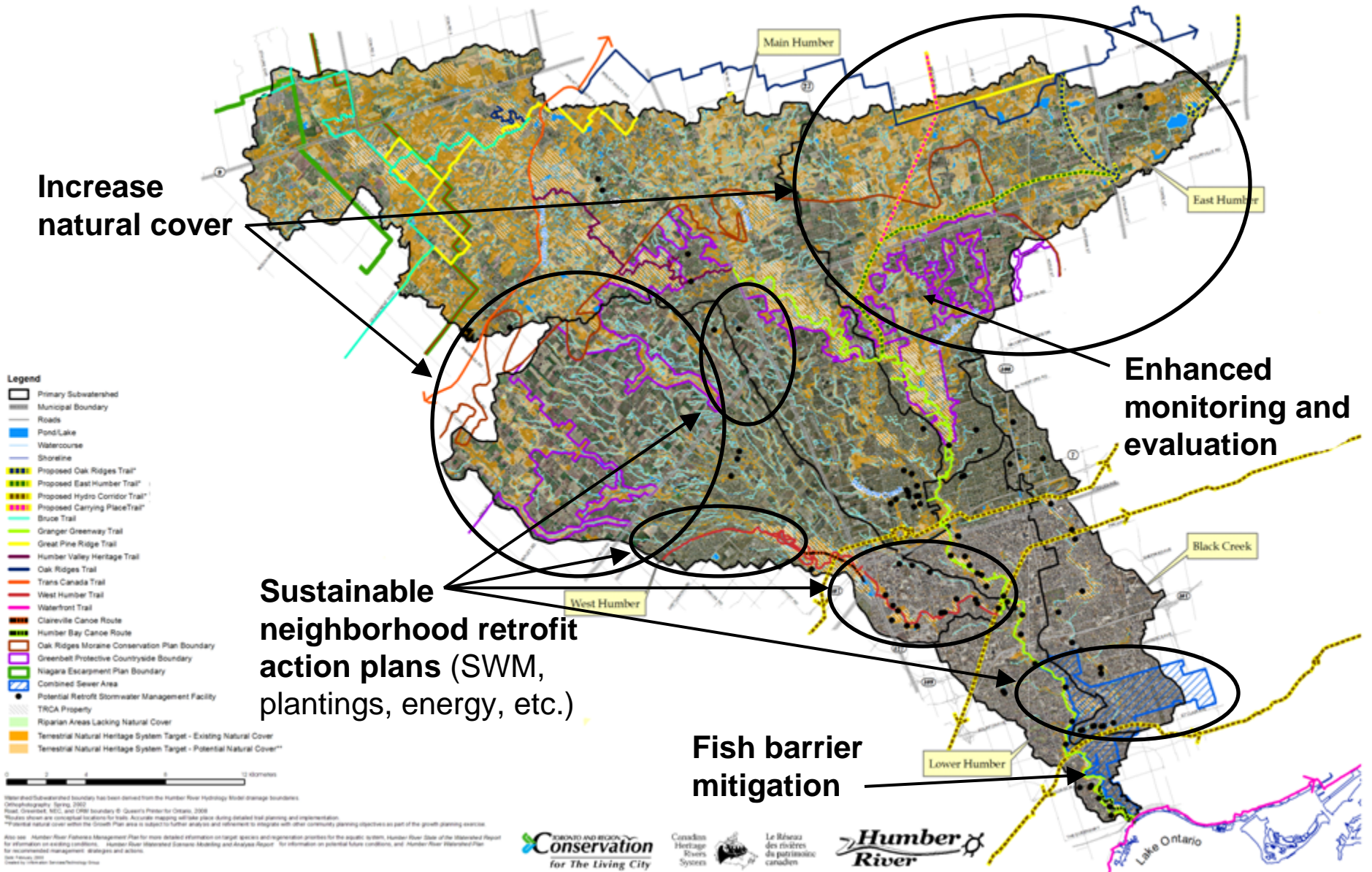


Framework of Implementation Tools

- Policy
- Regeneration
- Land Securement
- Stewardship and Education
- Operations and Maintenance
- Enforcement
- Monitoring and Research



Regeneration priority areas and projects



Communication with target audiences



Social marketing study

1. Identify barriers to the adoption sustainable practices:
 - Lot level stormwater management
 - Water conservation
 - Backyard naturalization
2. Develop an action plan for overcoming barriers.





Ideal



Naturalised



TYPE 3 – Chaotic (26/121 or 21%)





Ideal



Naturalised



TYPE 4 – Nature positive (12/121 or 10%)





Responses to photos

- 84% would consider partial naturalization
- 88% would encourage rainwater infiltration
- Participants split on appeal of streetscape





Lessons Learned

Integrated watershed planning works!

1. Interdisciplinary studies:
 - Foster improved science
 - Improve watershed understanding within team
 - Take more time (more meetings, delays trickle down)
2. Future scenario modelling and analysis:
 - Allows analysis of cumulative effects
 - Allows understanding of relative sensitivities within watershed
3. More specific implementation details “engage” interest!
4. Involving implementers during the study leads to better buy-in and success at implementation.
5. Watershed approach makes sense.





Opportunities for Implementation Success

- **Great Lakes** – agreement renewal, strategic regeneration programs for watershed and Great Lakes benefits
- **Greenfield, Redevelopment** – guidance for Growth Planning, Official Plan updates
- **Public Infrastructure** – net gain approach to planning, EAs, maintenance
- **Existing urban** - sustainable neighbourhood retrofit action plans, business case
- **Individual behaviour** – “Go green” revolution, connect with watershed
- **Monitoring** - optimization and enhancements
- **Science** - research needs, context for interim decisions





Acknowledgements

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funding partners*



Canada

