

**Stormwater Management in the New Millennium
Building on Success
October 27th-29th, 1999
London Convention Centre
London, Ontario**

**Abstract:
“Public Interest Expectations About Stormwater Management”
Theresa McClenaghan
Counsel, Canadian Environmental Law Association**

Stormwater management is more than the prerogative of public water and infrastructure managers. Decisions are made throughout the entire cycle of stormwater management that have significant impacts on ecosystems, natural heritage, riparian waters, aesthetic , recreational and cultural uses and many other aspects of public interest. This presentation will demonstrate some of the links between the decisions made at various points in the cycle, (whether up-front in land use planning decisions; mid-way in utility corridor siting decisions, or in the course of individual stormwater management decisions), and their respective impacts on public interest issues. Ecological issues of concern include pollution prevention, groundwater recharge, treatment siting, channel impacts and many others. The perspective of this presentation is that of a public interest environmental lawyer. Involvement of the public in decision making, monitoring, and evaluation throughout the process of stormwater management will be stressed. The need for constant re-evaluation of the environmental impacts of previous decisions will be argued.

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INTRODUCTION

Stormwater management is more than the prerogative of public water and infrastructure managers. Decisions are made throughout the entire cycle of stormwater management that have significant impacts on ecosystems, natural heritage, riparian waters, aesthetic , recreational and cultural uses and many other aspects of public interest. I will discuss some of the links between the decisions made at various points in the cycle, (such as up-front in land use planning decisions; mid-way in utility corridor siting decisions, or in the course of individual stormwater management decisions), and their respective impacts on public interest issues. Ecological issues of concern include pollution prevention, groundwater recharge, treatment siting, channel impacts and many others. The perspective of this presentation is that of a public interest environmental lawyer. A critical element is the involvement of the public in decision making, monitoring, and evaluation throughout the process of stormwater management. Past decisions must be continuously re-evaluated as to their environmental impacts and modifications or new decisions made as indicated.

1. LAND USE PLANNING DECISIONS

- Land use planning decisions might constrain ecosystem protection possibilities

- More creative, whole-system perspective of stormwater management components
– for example, plan for a range of functions and goals; not merely flood control
- Try to retain water where it would normally fall or flow
- Try to retain more “natural” (slower) speeds of distribution of water following rain or storm events than is commonly the case now with so much impervious surface and central collection approach
- Integrated approach to utility location; treatment location; ecosystem functions

2. UTILITY CORRIDOR SITING DECISIONS

- Keep utility corridors out of stream channels
- Take account of impact of utility location on future development
- Locate so that future land use planning will not impinge on important ecosystem functions and values that the community wants to protect
- Utility siting may be a source of intra-basin diversions – keep watershed hydrology intact

3. INDIVIDUAL STORMWATER MANAGEMENT DECISIONS (SITE BY SITE)

- Standards should be updated – e.g. less stormwater retention ponds approach; more “natural” release to the environment approach
- Plan ahead for standards for the community so that individual decisions do not undermine the overall approach “piece-meal”

4. TREATMENT SITING DECISIONS

- Future land use planning decisions will be driven by facility siting decisions
- Short term economic advantages may be serious mistakes if longer term ecosystem protection cannot be pursued because of “cheapest” or “easiest” siting

decisions

- Major concerns from storm sewer pollution; from combined approaches which are being overtaken by recent large rainfall and flood events

5. SPECIFYING THE GOALS

- Public participation in all of these decisions is essential
- Considering some decisions as “technical” or as just another “Class EA” project may lose community vision
- Implications of decisions need to be accepted by informed public
- Of major importance is to arrive at publicly supported goals for stormwater management
- Examples of possible goals include the following:

POLLUTION PREVENTION

- A myriad of sources of pollution from stormwater management arise
- Surface run off over contaminated surfaces; direct discharges to storm sewers, both residential and industrial; combined overflows
- Contamination to streams, rivers may arise from the inability to treat all of the components of storm sewer contaminants

GROUNDWATER RECHARGE

- Local municipal supplies; individual domestic wells; even larger scale uses may be seriously impaired by loss of groundwater recharge from stormwater management that diverts water sources away from recharge areas
- Wetlands; ecosystem functions; habitat may also be seriously impaired

from these diversions

- Water quality for recharge is also a major concern

INTRA-BASIN DIVERSIONS

- Maintain water balance – more than just quantity – also quality; temperature; location; storage
- Intra-basin diversions discouraged (see interim IJC report)
- Ecological effects may be poorly understood at the time a decision is made; and such effects may be felt far away from the location of the diversion decision

HABITAT PROTECTION

- Avoid water quality or quantity impacts that alter habitat (pollution; sediment; thermal effects)
- Maintain water table & water storage levels
- Avoid impacts on wetlands from stormwater management decisions; such impacts may not necessarily be anticipated unless the local flows are very well understood

CHANNEL PROTECTION

- Avoid erosion from increased flow rates or altered channel courses
- Maintain habitat; vegetation; species
- Sometimes provide recreational access – trails; fishing
- Maintain ecosystem functions in & along banks and stream valleys, including water quality protection; food sources; water storage

FLOOD CONTROLS

- Discourage building in flood plains; even with “controls” or alterations to pre-existing natural system
- Maintain use of flood plains for water storage, habitat and other ecosystem functions
- Retain flexibility in future as rain fall; storm events; other systems continue to change
- Avoid risk to property and homes

6. ACCOUNTABILITY (MEASUREMENT, REPORTING & ADJUSTMENT)

- There must be a mechanism for monitoring impacts from the myriad of land use and storm water management practices and decisions made
- Impacts must be assessed against publicly supported goals (such as pollution prevention; water quality; wetland protection; habitat protection & others)
- Goals and impacts must be defined so as to be measurable and reportable
- Impacts must be publicly reported
- A mechanism for adjusting practices or decisions must be established in advance, in case public goals are not being met
- The decision maker or body responsible for ensuring those adjustments must be specified clearly

7. CONSTANT RE-EVALUATION (GOALS, ONGOING DECISIONS & RESULTS)

- Past decisions have continuing impacts; together with other decisions, have cumulative impacts; changed circumstances may change the impacts from those originally anticipated

- A paradigm in which past decisions are constantly re-evaluated against the public goals must be pursued
- The goals themselves must be re-evaluated periodically
- Standards, science, and public goals will evolve; the public must have an opportunity to request improvements as to the goals and as to the impacts; we must avoid continuing practices just because they become entrenched
- Flexibility must be maintained

CONCLUSION

Many of our impacts on the ecosystem were unanticipated. As our appreciation for the extent of our interference with natural ecological functions and resources becomes apparent, it is incumbent upon us to respond with more appropriate practices and with more appropriate decision making paradigms. Integrated approaches with more ability to sustain themselves must be pursued. We ought not to be relying on constantly engineering control mechanisms or engineering solutions to the problems that we have created. Our underlying assumptions and reasons for standard practices need to be constantly re-visited. Public values, including water quality, pollution prevention; wetlands protection and others are of critical importance. The liveability of our communities will depend upon the kinds of solutions that we fashion to the problems we have created. The long term values of natural ecosystems and their functions must be appreciated.

Theresa McClenaghan

Contact information:

Telephone at work: Canadian Environmental Law Association 416-960-2284

Fax at work: CELA 416-960-9392

Email tmcclena@web.net

BIOGRAPHY

Theresa graduated from the University of Western Ontario in 1984 with an LL.B. She was called to the Bars of the Provinces of Manitoba and Ontario. Theresa has just completed the requirements for an LL.M. in Constitutional Law from Osgoode Law School as of the fall of 1999 and obtained a Diploma in Environmental Health from McMaster University Institute of Environment and Health in May, 1999.

Theresa practised in private practice firms in Kitchener and Paris from 1985 until joining the Canadian Environmental Law Association as counsel in May 1998. Her responsibilities at CELA include client representation in environmental issues, environmental law reform and public legal education.

Theresa has focussed on environmental law practice since 1988, almost exclusively for public interest advocacy groups, citizens groups and First Nations. Her practice has included Environmental Assessment Board, Environmental Appeal Board, Ontario Energy Board and Ontario Municipal Board hearings, as well as Court challenges and environmental litigation in the Courts of Ontario. She represented the Plaintiffs in the Nuclear Liability Act Court challenge and has been counsel in several Federal Court matters of national concern, including CELA's challenge to the federal-provincial Harmonization Accord.

Her expertise includes public interest advocacy in water protection, environmental land use and planning, waste management, Ontario's nuclear and energy industries, contaminated sites clean up, environmental aboriginal issues and constitutional law issues.

Theresa lives in Paris, Ontario with her husband and three children, ages 6, 4 and 2.