

Sediment Control Workshop

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MNR's Role in Fisheries Management

- Protects and manages Ontario's natural resources, including fisheries.
- Leads fisheries management in Ontario
 - allocate, licence and regulate use;
 - fisheries management planning and programs;
 - information management; and
 - fish habitat including rehabilitation, inventory and assessment.
- Issues work permits under LRIA and PLA to protect Crown Land, water and fish.

Guidelines & Criteria for Approvals

Purposes of the LRIA

- preservation and equitable exercise of public rights
- protection of the interest of riparian owners
- use, management and perpetuation of the fish, wildlife and other natural resources
- preservation of the natural amenities
- ensuring the suitability of the location and nature of the improvement including their sufficient and safe maintenance & operation

Ontario Regulation 454/96

Approval Required under LRIA to:

- construct or make improvements to a dam;
- construct a water crossing draining an area > 5 sq. km., unless construction is undertaken by a Ministry, municipality or CA on lands owned by the Crown, the municipality or the CA undertaking the construction;
- channelize a river or stream that may harmfully alter fish habitat or impede the movement of fish in a river, stream or lake, except for the installation or maintenance of a drain, subject to the *Drainage Act*;

Ontario Regulation 454/96

Approval Required under LRIA to:

- enclose or cover a length of river or stream for greater than 20 meters in length;
- install, if the installation may result in damming, forwarding or diverting water, a cable or pipeline into the bed of a river, stream or lake (unless boring underneath);
- No approval is required under the LRIA for a water crossing to which the PLA applies.

Ontario Regulation 454/96

Definitions:

- “channelize” means to alter the alignment, width, sinuosity, conveyance or bed or bank material of a river or stream channel;
- “dam” means a structure constructed as a barrier across a river, lake, pond or stream to hold back water in order to raise its level, create a reservoir to control flooding or divert the flow of water;
- “water crossing” means a bridge, culvert or causeway that is constructed to provide access between two places separated by water but that also holds back, forwards or diverts water

Guidelines & Criteria for Approval *Riparian Interests*

- flooding
- erosion & slumping of land in reservoir areas
- reduced or increased water levels
- reduced ability to drain
- reduced or increased sediment supply
- loss of flow through diversion, withdrawal, taking water into storage
- loss of water through evaporation

Ontario Regulation 453/96 *Approval required under PLA:*

- construct a building on public land;
- construct a trail, water crossing or road on public lands;
- dredge shore lands;
- fill shore lands;
- remove aquatic vegetation from shore lands;
(in accordance with schedules 1 & 2);
- construct or place a structure that occupies more than 15 square meters of shore lands

Ontario Regulation 453/96

Definitions:

- “Shore lands” means lands covered or seasonally inundated by the water of a lake, river, stream or pond;
- “Water crossing” means a bridge, culvert or causeway constructed to provide access to two points separated by water;
- “trail” means a path over public lands that is not used for mineral exploration or extraction;
- “dredge” means to remove or displace material from any shore lands, but does not include removal or displacement relating to the installation of service cables, heat loops or water intakes for private residences.

Lakes and Rivers Improvement Act Permit Requirements			
Project Type	LRIA Approval Requirements		Land Ownership
	R= Permit Required NR= Permit Not Required	>Greater Than <Less Than	Crown Municipal Private
Bridges			
Drainage Area < 5 sq. km	NR	NR	NR
Drainage Area > 5 sq. km	NR	NR	R
Culverts			
Length <20m & Drainage Area < 5 sq. km	NR	NR	NR
Length <20m & Drainage Area > 5 sq. km	NR	NR	R
Length >20m	NR	NR	R
Other			
Dams, Weirs or Dam Removal	R	R	R
In-Stream Ponds (on-line)	R	R	R
By-Pass Ponds (off-line)	R	R	R
Channelizations, Diversion	R	R	R
Erosion Control Works	R	R	R
Pipe Enclosures >20m	R	R	R
Buried Pipe Lines or Cables	R	R	R
Agricultural Drains (Maintenance and New)	NR	NR	NR
Trenching to Install Heat Loops, Water Intakes and Service Cables for Private Residences if holding back or stopping up water	R	R	R

Guidelines & Criteria for Approval

Erosion & Sediment Control

- Sediment introduction into streams can be harmful to fish habitat (MNR lead for Section 36 Fisheries Act)
- Construction in streams requires implementation of erosion and sediment control procedures
- Onus on owner to exercise due diligence
 - using appropriate designs
 - materials
 - construction practices
 - mitigation techniques
 - monitoring

Guidelines & Criteria for Approval

Erosion & Sediment Control

Sediment Control Planning

- Benefits:
 - plan preparation promotes advance thinking
 - may allow more flexibility as to timing of work
 - ensures clear instructions are provided to workers on site
 - defines performance criteria that can be monitored
 - review and approval of plan helps establish “due diligence” defence
 - assurance that administrative controls are in place to keep environmental impacts within expected levels

Guidelines & Criteria for Approval Channelizations

DEFINITION:

An alteration to the alignment, width, depth, conveyance, bed material or bank material of a river or stream.

EG: Diversions, Excavated Ponds, Bypass Ponds, Retaining Walls and Embankments or other structures that encroach into the stream channel.

Guidelines & Criteria for Approval Erosion & Sediment Control Best Management Practices

- In Construction Administration
 - assign accountability for sediment control
 - use experienced contractors
 - get contractors input
 - conduct training for workers
 - contingency plans in place
 - weather considerations
 - work in continuous manner
 - regular inspection and maintenance

Guidelines & Criteria for Approval

Erosion & Sediment Control

Best Management Practices

- On Land Stormwater Erosion & Sediment Control
 - maintain existing vegetation
 - select appropriate techniques
 - divert flows from exposed soils
 - reduce velocities of flowing water
 - direct flows from larger drainage areas into protected channels
 - coarse granular material for placement near water
 - grade disturbed surfaces to a stable angle then seed, fertilize and mulch
 - install soil coverings for immediate erosion control

Guidelines & Criteria for Approval

Erosion & Sediment Control

Best Management Practices

- For Construction in Water
 - minimize time in water
 - where work in water is expected to last more than a day or two, isolate the work site from flowing water
 - materials to be placed in stream should be coarser than existing streambed soils
 - clean diverted water from dewatering operations in a settling basin or filter bag prior to discharge to the watercourse

Guidelines & Criteria for Approval

Erosion & Sediment Control

General Principles

- BMP's used to reduce sediment during construction to the lowest practical amount
- Long term impacts eliminated through site stabilization
- Erosion two part process
 - loosening and transporting of particles
- Influencing factors:
 - precipitation, soil characteristics, topography, ground cover, types of materials brought to site, equipment used, knowledge of contractors

Guidelines & Criteria for Approval

Erosion & Sediment Control

Best Management Practices

- In Planning & Design
 - include sediment control in all project stages
 - reduce cut and fill grading
 - identify construction methods and erosion and sediment control issues that may arise
 - managing streamflow
 - provide permanent end of construction erosion and sediment measures for long term stability
 - scheduling of grading and construction

Due Diligence

- Discuss work plans with Ministry district staff to determine stream habitat type, appropriateness of location, mitigation options, or compensation plan;
- Follow current design & construction standards;
- Site Supervision & reporting.







