

DESIGN AND APPROVALS
TECHNICAL REPORT GUIDELINES FOR INFRASTRUCTURE PROJECTS
Use in association with Ontario Regulation 166/06 Permit Applications
December 2010

The following checklist is intended for use by proponents or their consultants for permit application submissions related to infrastructure projects. Generally, these applications are related to a completed environmental assessment, or a project that is considered exempt from the environmental assessment process (for example, a Municipal Class EA Schedule A or A+ project).

To be considered complete, the initial submission of the permit application should include the following information. Only complete applications will be reviewed. TRCA encourages pre-consultation or site visits for all applications, particularly for those sites with complex review requirements, prior to submission. TRCA will confirm additional requirements for each project as review of the permit application progresses.

Encl. Submission Details	
Section 1: Flood Control	
	Hydraulic computation using TRCA's latest approved model (HEC-RAS) for proposed new or replacement structures in the flood plain, including bridges, culverts, buildings and parking lots based on a model that will be provided by TRCA upon request to the EA Planner
	Refer to the <i>Watercourse Crossing Design and Submission Requirements</i> in the Planning and Development Procedural Manual at www.trca.on.ca/planning-services-permits/
	Updated floodline model to TRCA specifications
Section 2: Long-Term In-Stream and Valley Slope Erosion Control	
	Refer to the <i>Geotechnical Engineering Design and Submission Requirements</i> in the Planning and Development Procedural Manual at www.trca.on.ca/planning-services-permits/
	Refer to the <i>Channel Modification Design and Submission Requirements</i> in the Planning and Development Procedural Manual at www.trca.on.ca/planning-services-permits/
	In-Stream erosion report including: <ul style="list-style-type: none"> • 100 year erosion rate (extrapolation of historic migration rates) • Meanderbelt analysis (refer to TRCA Beltwidth Delineation Process; include current and historic planform) Refer to the <i>Watercourse Erosion Analysis Design and Submission Requirements</i> in the Planning and Development Procedural Manual at www.trca.on.ca/planning-services-permits/
	Stone sizing calculations
Section 3: Stormwater Management	
	Refer to the <i>Stormwater Management Pond Design Brief/Report Requirements</i> in the Planning and Development Procedural Manual at www.trca.on.ca/planning-services-permits/
	Stormwater Management (SWM) report that demonstrates compliance with established flood, quality, water balance and water quality control criteria. <i>Information to be incorporated in the report includes:</i> <ul style="list-style-type: none"> • Description of work • Storm drainage area plan (existing and proposed) • Proposed strategy to meet established criteria • Detailed Design Calculations and Details • Maintenance Plan • Stormwater Management Facility Design • Stormwater Management Study • Restoration details, refer to the <i>Stormwater Management Pond Planting Guidelines</i> in the Planning and Development Procedural Manual at www.trca.on.ca/planning-services-permits/

	<ul style="list-style-type: none"> Reference to the MOE <i>Stormwater Management Practices and Planning Manual</i> and relevant TRCA documents
	Refer to the <i>Low Impact Development Stormwater Management Planning and Design Guide</i> (www.sustainabletechnologies.ca)
	Completed <i>Stormwater Pond Inventory Form</i> for any SWM pond construction, available from TRCA
	Floodline Delineation Study/Hydraulics (with detailed topographic mapping and modeling)
Section 4: Groundwater System Management	
	Hydrogeological Assessment (Water Balance) - Refer to the <i>Hydrogeological Submission Guidelines for Infrastructure and Development Projects</i> in the Planning and Development Procedural Manual at www.trca.on.ca/planning-services-permits/
	<p>Environmental Management Plan (EMP) report, typically required only for large and complex projects, which includes a detailed monitoring plan and uses adaptive management to effectively manage environmental impacts of groundwater dewatering that is required to facilitate construction. The EMP may be refined as construction proceeds.</p> <p><i>Information to be incorporated in the EMP includes:</i></p> <ul style="list-style-type: none"> Description of work Confirmation of construction technologies Pumping tests to characterize soil hydraulic properties. This may require additional inventory work or analysis depending on how much was completed in the EA stage Duration and implications of groundwater dewatering Conformation of ecological impacts based on ecological and hydrogeological studies, including the evaluation of background and historical data Monitoring plan for impacted features, including fish or fish habitat, and forests and wetlands Mitigation plan for impacted features, including fish or fish habitat, forests and wetlands Reference to the geotechnical report Communications strategy for adaptive management
Section 5: Terrestrial and Aquatic System Management	
	Environmental Impact Assessment detailing how impacts to the terrestrial natural heritage will be avoided limited or mitigated. This may require inventory work or additional analysis depending on how much was completed in the Environmental Assessment Stage.
	Removals and Restoration Plan, including species and quantity
	Edge Management Plan (terrestrial only)
	TRCA Seed Mix Guidelines