

MINISTRY DIRECTIVE

Program: Provincial Highway Management

Directive: B-014

Issuing Authority: Director, Highway Standards Branch

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TO: Assistant Deputy Minister, Executive Directors, Regional Directors, Directors, Regional Managers, Office Managers and Area Engineers

SUBJECT: Ministry of Transportation Drainage Management Policy and Practice

ALTERNATIVE INDEX LISTING (S):

Stormwater Management
Urban Drainage
Municipal Development
Permits
Drainage
Watershed Planning

This Directive supersedes Provincial Highways Directive PHY-B-237, issued 89/11/22.

REFERENCE:

- Public Transportation and Highway Improvement Act, R.S.O. 1990, c. P.50
- Planning Act, R.S.O. 1990 c.P.13
- Drainage Act, R.S.O. 1990, c. D.17
- Ministry Directive B-63, "Drainage Act: Ministry of Transportation Policy and Procedures"
- Ministry Directive B-217, "Private Piped Drains on the Highway Right of Way"
- "Guideline For Highway Improvements Associated With Development"
- Ministry Drainage Management Manual, 1997

Contact Reference

- Drainage and Hydrology, Design Standards Section, Ministry of Transportation

DEFINITIONS:

In this Directive,

“Highway Crossing” means the crossing of a highway via a culvert or bridge excluding all other components of the highway drainage system.

“Highway Drainage Areas” means catchment areas that discharge to the highway drainage system and have been accounted for in the design of the highway drainage system.

“Highway Drainage System” means a system of pipes, ditches, and/or other appurtenances that convey runoff from the Highway Drainage Area to a sufficient outlet.

“Master Drainage Plans” (MDP) are drainage management plans for a specified area within a municipality. Preparation of these plans is the responsibility of the municipality that has jurisdiction over the planning area. The geographical limits of the study area are defined by political boundaries.

“Ministry” means the Ontario Ministry of Transportation.

“Municipal Planning Documents” refers to Official Plans, Secondary Plans, Plans of Subdivision, and Site Plans.

“Natural Flow” refers to the movement of water as stream flow and/or sheet flow from a drainage area that has had no man-controlled modification to land use or topography. The Ministry may also consider stormwater outlets into the highway drainage system that have previously been accepted by the Ministry as similar to natural flow.

“Permanent” refers to third party drainage infrastructure that may be buried in the ground or is otherwise difficult to modify or change. “Permanency” is required in order to ensure that the flows conveyed to the highway drainage system will not increase as a result of third or fourth party alteration to the third party drainage infrastructure.

“Permit Control Area” means the area for which any land use or construction activity is subject to Ministry permit approval, as specified in Sections 34 (2) and/or 38 (2) of the *Public Transportation and Highway Improvement Act*.

“Planned Shared Use” means shared use that is planned and agreed to by both the Ministry and the municipality before the drainage system to be shared is built. Planned shared use may involve a drainage system of a provincial highway or a municipality. The drainage system may include a runoff detention facility.

“Receiver” is a drainage works, or a sequence of drainage works, that convey stormwater runoff.

“Sponsoring Authority” refers to the agency (ies) initiating a Watershed Planning Document.

“Stormwater Management” refers to the control of runoff from development areas to mitigate adverse impacts to receiving drainage systems.

“Sufficient Outlet” means a point at which water can be discharged safely so that damage to lands, roads or the natural environment will either not occur or be minimized to the extent possible.

“Watershed Planning Documents” refers to Watershed, Sub-Watershed, and Master Drainage Plans.

“Watershed/Subwatershed Plans” are plans prepared by the Ministry of Natural Resources and/or conservation authorities. They are broad based and wide-ranging documents. The geographical limits of the study area are defined by natural drainage boundaries.

PURPOSE:

1. To state Ministry policy on drainage management practice in planning and design for provincial highways.
2. To state Ministry policy concerning drainage management for development areas that may have drainage impacts on provincial highways.
3. To provide direction to consultants undertaking planning and design of drainage management for Ministry projects, and projects requiring approval or endorsement by the Ministry.

To achieve the purpose of this directive, the directive is divided into five Policy Areas that outline Ministry policies in five areas of Ministry interest. The Policy Areas are:

1. Drainage of Ministry Owned Lands;
2. Drainage of Lands Owned by Others;
3. Planned Shared Use of a Drainage System;
4. Ministry Involvement in Watershed Planning; and
5. Ministry Involvement in Municipal Planning.

These policy areas are based on an overriding Policy Framework. This Policy Framework is established in accordance with the acts, and policies of the Ministry and principles established through common law related to drainage matters.

POLICY FRAMEWORK:

The following statements are overriding policies for the management of highway drainage systems.

1. The fundamental purpose of the rights of way and drainage systems of provincial highways is to serve the present and future transportation needs of the province. Any use of a right-of-way or drainage system, which inhibits accomplishment of the fundamental purpose will not be permitted.
 2. It is not the fundamental purpose of a highway drainage system to convey collected stormwater from external development areas in excess of water that would naturally flow, in the undeveloped state, from these areas to the highway right of way.
 3. Where a highway crossing of the provincial highway system is located on the flow route of a catchment area, it is not the fundamental purpose of this structure to convey water that would not naturally flow to this structure.
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POLICY AREA 1: DRAINAGE OF MINISTRY OWNED LANDS

This Policy Area applies to ministry owned lands, whenever the Ministry intends to use the right of way or drainage system of a provincial highway for drainage purposes, and the proposed use is not deemed to be planned shared use as defined in this directive. If these lands are determined surplus and/or sold, Policy Area 2 applies.

1. Highway Drainage System Capacity

The capacity of a proposed highway drainage system should be that required to meet the fundamental purpose except when the Ministry has agreed to share the use of the system with a municipality.

2. Use of the Right of Way for Detention

- (i) Use of the right of way of a provincial highway for stormwater detention is not permitted unless it can be demonstrated that:
 - (a) the fundamental purpose of the highway is not inhibited;
 - (b) the use will not cause safety or environmental impacts that cannot be eliminated or satisfactorily mitigated; and
 - (c) unacceptable potential liabilities to the Ministry will not be created.
- (ii) The Regional Director may give permission for the use of a right of way for stormwater detention purposes after being satisfied that all principles contained in this directive are complied with.

3. Conveyance of Runoff to an Outlet

All runoff from Ministry lands or external lands, approved through this directive to be drained to the highway drainage system, must be conveyed to a sufficient outlet.

If a sufficient outlet does not exist, the processes under the *Drainage Act* may be used to create one. The Ministry's Policy with respect to proceedings under the *Drainage Act* is stated in Ministry Directive B-63, "Drainage Act – Ministry of Transportation Policy and Procedures".

4. Conformance of Highway Stormwater Management Plans with Watershed Planning Documents

If the Ministry has endorsed a Watershed Planning Document(s) encompassing a highway, the highway Stormwater Management Plans must conform to it.

If a Watershed Planning Document does not exist or has not been endorsed by the Ministry, the highway Stormwater Management Plan must account for the drainage implications of the proposed development in consultation with all related agencies during the planning and design stages.

Further details on the Ministry involvement in watershed planning is covered under Policy Area 4.

POLICY AREA 2: DRAINAGE OF LANDS OWNED BY OTHERS

Policy Area 2 applies whenever an outside party proposes to use the right of way or the drainage system of a provincial highway for drainage purposes, and the proposed use is not deemed to be planned shared use as defined in this directive.

1. Use of the Ministry Right of Way or Drainage System by an Outside Party

- (i) Use of the right of way or drainage system of a provincial highway for stormwater management will not be considered if:
 - (a) the fundamental purpose of the highway is inhibited,
 - (b) the use will cause safety or environmental impacts that cannot be eliminated or satisfactorily mitigated, and
 - (c) unacceptable potential liabilities to the Ministry will be created.

- (ii) It is the responsibility of the proponent to demonstrate to the Ministry that a proposed use of the right of way or drainage system of a provincial highway is in conformity with the Policy Framework of this Directive. The Ministry reserves the right to reject any proposal, which the Ministry considers harmful to its interests.
- (iii) The Ministry will not accept runoff from lands owned by other parties if the runoff does not meet the requirements of other regulatory agencies.

2. Permission for Use of the Ministry Right of Way or Drainage System by an Outside Party

- (i) Ministry permission to an outside party to use the right of way or a drain of a provincial highway for drainage purposes will only be granted subject to satisfactory fulfilment of the Ministry's conditions. Such permission will be granted to a municipality; except in the case of site plans, where permission may be granted to a landowner. For territories without municipal organization, Ministry policy is outlined in Policy Area 2-5.
- (ii) The outside party's drainage works tributary to a highway drainage system or constructed in a highway right of way, shall not be deemed to be works constructed under the *Public Transportation and Highway Improvement Act*. The outside party shall be responsible for obtaining all necessary approvals for its drainage works from pertinent regulatory agencies. Responsibility for regulating stormwater runoff within the development area and the possible impact of the runoff from the development area to other areas remains with the municipality and other agencies.
- (iii) The Ministry's permission is only for conveying stormwater runoff from a proposed development through the highway right of way to a sufficient outlet. Permission will be conditional upon the outside party demonstrating that stormwater runoff from a proposed development will not negatively impact either the highway drainage system or other areas downstream of the highway.
- (iv) Ministry permission to an outside party to use the right of way or the drainage system of a provincial highway will be granted through an Encroachment Permit. Prior to Ministry permission being given, the proponent must submit a Stormwater Management Plan to the Ministry for review and approval. If the Stormwater Management Plan is approved, the permission for use may be subject to special conditions as outlined in Policy Area 2-3.
- (v) The Stormwater Management Plans shall satisfy the following requirements before Ministry approval is given:
 - (a) demonstrate that there is no feasible alternative;
 - (b) satisfy all requirements under Policy Area 2;
 - (c) conform with Ministry endorsed Watershed Planning Document(s). If a Watershed Planning Document does not exist or has not been endorsed by the Ministry, the Storm Water Management Plan will account for the drainage implications in consultation with all related agencies during the planning and design stages. Refer to Policy Area 4 for details;
 - (d) utilize storm water management controls that are permanent, as defined in this directive. Where the Storm Water Management Plan proposes to outlet to a municipal receiver a portion of the control outlets must be located on municipal property. The extent of the portion on municipal property will be established by guideline and may be modified by each Ministry Region depending on site conditions; and
 - (e) demonstrate that stormwater management controls will have no negative impacts on the highway system or other areas downstream and that all stormwater management controls have records of proven reliability and performance.

- (vi) The Storm Water Management Plan must be documented in a report prepared by a Professional Engineer who stamps the report and certifies that he/she is competent in the area of stormwater management.
- (vii) The local area and regional engineering offices are responsible for the review of the Storm Water Management Reports and approval of Storm Water Management Plans. The Design Standards Section will provide assistance on request.
- (viii) To facilitate application by proponent for approvals of other agencies, the Ministry may at its discretion, give approval in principle to the proponent's proposal, provided always that:
 - (a) final approval shall not take effect; and
 - (b) an Encroachment Permit shall not be issued and an agreement shall not be entered into, until the municipality officially confirms in writing to the Ministry that all necessary written approvals from other agencies have been obtained and that the municipality itself has given either final approval or approval in principle.

3. Special Conditions on Use of the Ministry Right of Way or Drainage System by an Outside Party

Upon fulfilment of Ministry Policy outlined in Policy Area 2-2, Ministry permission for drainage works constructed within the right of way of a provincial highway may be subject to the following conditions prior to issuing the Encroachment Permit:

- (i) The proponent provides a certified cheque or letter of credit to cover any costs associated with cleanout of sediment within the provincial highway drainage system resulting from the construction of this development.
- (ii) The proponent obtains a resolution from the municipality addressed to the Ministry stating that:
 - (a) In the case of Plans of Subdivision:
 - the municipality agrees to assume ownership and operation/maintenance of the proposed stormwater management facilities in the development area;
 - the municipality assumes operation and maintenance of drainage connection to the highway drainage system, and related costs; and
 - assume all related costs upon completion of land transactions of the development.
 - (b) In the case of Site Plans:
 - the municipality agrees to assume responsibility for ensuring that operation/maintenance of the proposed stormwater management facilities in the development area, drainage connection to the highway drainage system are done to municipal and Ministry standards; and
 - assume all related costs upon completion of land transactions of the development.
- (iii) Due to safety and practical reasons, the Ministry will operate and maintain the permitted drainage works located within the highway right of way according to Ministry standards and practice.
- (iv) In addition to an Encroachment Permit, an agreement with the municipality will be required (except for works constructed under the *Drainage Act*), if the proposed drainage works are more than a simple drainage connection. The municipality or the proponent shall be responsible for all the engineering and construction costs of the proposed works, all future replacement costs, and any relocation costs, as specified in the agreement. When replacement of the drainage works is required, the municipality or the proponent shall be responsible for fulfilling the requirements of Policy Area 2-2 prior to re-issuance of an Encroachment Permit for the replacement works.

- (v) The agreement, identified in point (iv) must clearly define the permittee's responsibilities for maintenance, liabilities, relocation of the permitted drainage works whenever required by the Ministry. It should also identify their responsibility for compliance with requirements of other agencies and any Watershed Planning Documents, according to which the proposal would be approved by the Ministry.
- (vi) Depending on the complexity and scope of the project, the Ministry may require additional conditions such as assurance of financial viability, indemnity, proof of liability insurance, naming the ministry as a co-insured, and conformity to the Ministry's engineering standards, in a manner similar to the procedures outlined in the Ministry document "Guideline for Highway Improvements Associated with Development".

4. Conformance with Watershed Planning Documents

- (i) Where a Watershed Planning Document exists, it is in the interest of outside parties to demonstrate that the Storm Water Management Plan is in conformity with the Watershed Planning Documents encompassing the development area.
- (ii) If a Watershed Planning Document has not been endorsed by the Ministry, the proponent will consider the drainage implications with all related agencies in the planning and design of the proposed Storm Water Management Plan.
- (iii) The ministry will take the same approach where a Watershed Planning Document does not exist or has not been implemented into the municipal planning process.
- (iv) If the proposed Storm Water Management Report encompasses an area of disagreement, a meeting between all regulatory agencies is warranted. Unless the disagreement is resolved, the Ministry is not in a position to review the proposed Storm Water Management Report and would be unable to approve the Storm Water Management Report, issue any permits for the proposed land development, or clear any Conditions of Approval.

5. Territory without Municipal Organization

The Ministry may make special provisions to allow relaxation of policies for developments in a territory without municipal organization. Permit conditions stated in Policy Area 2-3 (ii and iv) may be waived at the discretion of the Field Services Engineer according to local situations.

POLICY AREA 3: PLANNED SHARED USE OF A DRAINAGE SYSTEM

Policy Area 3 applies whenever the Ministry and an outside party agree to the planned shared use of a drainage system as defined by this directive.

1. General

- (i) Where the Ministry has agreed to share the use of the highway drainage system with a municipality, it will not be considered a contravention of the fundamental purpose of the highway drainage system.

- (ii) Planned shared use is not a standard practice of the Ministry. They may be considered, on an exception basis, where it can clearly be demonstrated that there are significant tangible benefits to the Ministry and that there are limited drainage alternatives for the outside party.
- (iii) A proposal to use the right of way of a provincial highway for runoff detention will not be considered except in very special circumstances. The proposal must consider potential liabilities to the Ministry and the consequences of future relocation of the detention facility associated with highway improvements.
- (iv) The Ministry's agreement for shared use requires approval of the Regional Director.

2. Shared Use of Municipal Facilities

- (i) If a proposed highway drainage system needs to outlet into an existing drain of a municipality and the drain does not have capacity for this additional discharge, the Ministry will consider alternatives including an offer to enter into an agreement with the municipality to improve the capacity of the municipal drain.
- (ii) The use of this directive and the Ministry's Drainage Management Manual should be encouraged when the planning and design of a proposed highway drainage system is carried out under the *Drainage Act*. Ministry Directive B-63 "Drainage Act – Ministry Policy and Procedures" provides guidance for obtaining drainage outlets under the *Drainage Act*.

3. Shared Use of Ministry Facilities

- (i) If a municipality proposes to share the use of a proposed drainage system of a provincial highway, the Ministry must be satisfied that the proposal is in the Ministry's best interests. The Ministry may enter into an agreement with the municipality for the shared use on the following conditions:
 - (a) Any proposal to discharge stormwater runoff from outside the right of way into a highway drainage system shall not be allowed if the runoff may contravene any regulatory requirements for stormwater discharged into a watercourse.
 - (b) The shared use is for the conveyance of the agreed rate of stormwater discharge only; the responsibility for regulating stormwater runoff from the municipality's tributary areas remains with the municipality.
 - (c) The municipality's drainage works tributary to the shared facility shall not be deemed to be works constructed under the *Public Transportation and Highway Improvement Act*. The municipality shall obtain prior approvals from all pertinent regulatory agencies for the municipality's drainage works.
- (ii) To facilitate application by the municipality for approvals of other agencies, the Ministry may, at its discretion, give approval in principle of the shared use, provided always that:
 - (a) final Ministry approval shall not take effect; and
 - (b) a Ministry/municipality agreement shall not be entered into, until the municipality provides to the Ministry an official written confirmation that it has obtained all necessary written approvals from other agencies.
- (iii) If the municipality undertakes the construction of the shared facility, an Encroachment Permit will be required in addition to the agreement.
- (iv) The drainage system to be shared, including the land on which it is situated, remains the property of the Ministry.

- (v) The Ministry will be responsible for the operation and maintenance of the drainage system within the highway right of way.
- (vi) Erosion and sediment control measures for the proposed development area should be in place prior to removal of soil cover. The municipality agrees to bear any costs associated with cleanout of sediments washed into the shared drainage system from construction sites in the municipality.
- (vii) The municipality pays the agreed cost* in proportion to shared use and benefit.
- (viii) When a municipality proposes drainage works outside the provincial highway right of way and it will be necessary or advantageous for the Ministry to share the use of the drainage works, the Ministry may offer to enter into an agreement with the municipality for shared use of the drainage works, provided the municipality will carry out an appropriate drainage study of the tributary area. The Ministry, through the regional Planning and Design office will, under the agreement, contribute to the cost* of the drainage works in proportion to shared use and benefit.

POLICY AREA 4: MINISTRY INVOLVEMENT IN WATERSHED PLANNING

The Ministry endorses the use of the watershed planning process to achieve coordinated and comprehensive planning for good drainage management. This applies to Ministry projects (Policy Area 1-4), external parties proposing to use a Ministry right of way or drainage system (Policy Area 2-4), and shared use drainage systems (Policy Area 3).

The regional Planning and Design office is responsible for all aspects of Ministry involvement in watershed planning, including participation on committees and review of documents. The assistance of the Design and Contract Standards Office will be provided on request.

1. Involvement in Development of new and updated Watershed Planning Documents

The Ministry involvement in developing Watershed Planning Documents includes the participation, possible financial contribution and endorsement. For details on Ministry endorsement refer to Policy Area 4-3.

- (i) Participation
 - (a) The Ministry's participation will be limited to those studies that encompass existing or proposed provincial highways drainage areas.
 - (b) The Ministry's participation in watershed planning will normally involve the sharing of planning information and data, membership in project committees, provision of technical advisory services and review of Watershed Planning Documents.
- (ii) Financial Contribution
 - (a) The Ministry financial contribution to the development of Watershed Planning Documents is limited to cases where:

- it is a practical option for the Ministry;

*The cost includes those of planning, design, construction, and where applicable, land cost and operation and maintenance costs. The maintenance costs will also include waste management of the materials accumulated in drainage systems including detention ponds.

- the timing of the highway project implementation permits;
 - the highway runoff produces a significant impact on the receiving stream or drainage system; and
 - the Ministry participates in the development of the Watershed Planning Document.
- (b) Provided the conditions in section 4-1 (ii) (a) are satisfied the Ministry will contribute, under agreement, its prorated costs based on all the anticipated development in the study area. Financial contribution requires approval of the Regional Director.

2. Involvement with Existing Watershed Planning Documents

The Ministry involvement with existing Watershed Planning Documents consists of the review and endorsement of these documents. For details on Ministry endorsement refer to Policy Area 4-3.

- (i) The Ministry's review of Watershed Planning Documents will ensure that:
- (a) existing and proposed provincial highway interests are not compromised;
 - (b) the plan does not give rise to new drainage concerns; and
 - (c) the plan will mitigate existing drainage concerns related to provincial highways.
- (ii) The Ministry will take a one-window approach when communicating with planning sponsors and external agencies through the regional office coordinating the review and endorsement of the plans.

3. Endorsement of Watershed Planning Documents

- (i) The Ministry will endorse Watershed Planning Documents that satisfy the conditions stated in Policy Area 4-2 (i). Ministry endorsement means that the Ministry agrees with the goals, objectives and strategies as outlines in the Watershed Planning Document.
- (ii) If a Watershed Planning Document encompassing a proposed highway project or municipal development area has not been reviewed by the Ministry, the Ministry will suggest to review it to determine whether it can or cannot be endorsed by the Ministry.
- (iii) Once the Ministry has endorsed a Watershed Planning Document it will not be reviewed again unless the plan is being updated or new information can justify a new review.
- (iv) An endorsement from the Ministry with respect to a Watershed Planning Document does not mean that Ministry support for an Official Plan, Secondary Plan, Plan of Subdivision or Site Plan will be forthcoming. The Ministry will review these plans, and Ministry comments will be based on all the considerations outlined in Policy Area 2 and Policy Area 5.

POLICY AREA 5: MINISTRY INVOLVEMENT IN MUNICIPAL PLANNING

Policy Area 5 applies to official plans and secondary plans, plans of subdivision and site plans under the Planning Act. Official plans and secondary plans are reviewed to ensure the Ministry's interests are protected. Plans of subdivision and site plans should be circulated to the Ministry if within the area of control of a provincial highway before the issuance of permits under the *Public Transportation and Highway Improvement Act* can take place.

1. Involvement in Official Plans and Secondary Plan

- (i) The Corridor Management and Property Section is responsible for coordinating the Ministry's review

- (ii) of Official Plans and Secondary Plans.
- (iii) Official Plans and Secondary Plans should demonstrate how the drainage related recommendations and requirements of the Watershed Planning Documents have been addressed.
- (iv) In cases where watershed planning has not been done, the Official Plan and Secondary Plan should demonstrate how the principles of watershed planning related to drainage have been adopted into the municipal planning document.
- (v) Plans of Subdivision or Site Plans in conformance with these Official Plans or Secondary Plans must satisfy all the requirements outlined in Policy Areas 2.

2. Involvement in Plans of Subdivision and Site Plans

- (i) The regional corridor control management function is responsible for coordinating the review of Plans of Subdivision and Site Plans.
- (ii) For land development within the Ministry Permit Control Areas, any Ministry concern regarding drainage should be identified at the Plan of Subdivision or Site Plan review stage and a request should be made to the plan approval agency that a satisfactory stormwater management plan be required as a condition of approval.
- (iii) For land development outside of the Ministry Permit Control Areas, the Ministry expects the municipality to ensure that any and all drainage plans it approves do not adversely impact highway drainage systems in accordance with drainage common law. Should the municipality chose to circulate stormwater management plans to the Ministry, the Ministry will review and comment on these plans.