



County of Essex

Flood Management Plan

Annex B

Revised: 2025

Emergency Management Division

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Flood Management Plan

1.0 Purpose

The County of Essex Flood Management Plan describes the methodology the county will utilize for coordinating activities to assist with managing a regional flood event. The plan clarifies the roles and responsibilities of the departments involved in flood management during an integrated municipal response event. It sets out a concept of operations that fosters collaboration among multiple organizations active in managing the consequences of a flood emergency.

2.0 Scope

This plan focuses on the readiness and response activities of the County of Essex as an upper-tier municipality. While the main focus is on the actions at the county level, this plan will also acknowledge the responsibilities of the province and municipalities in flood response. This is a hazard-specific annex to the County of Essex Emergency Management Plan (EMP) and aligns with the Ontario Emergency Response Management System and should be used alongside the core EMP for a complete understanding of structure and responsibilities. This is a living document that will get updated as needed, requiring the engagement from all relevant county stakeholders, and supersedes previous versions.

3.0 Context

The County of Essex, its municipalities, and the City of Windsor can be vulnerable to different types of flooding year-round, including localized rainfall events, rain-on-snow, spring freshet, shoreline storm surges, and infrastructure failure. Flood response is primarily led by the local municipalities along with the Essex Region (ERCA) and Lower Thames Valley (LTVCA) Conservation Authorities, with provincial support as needed. With floods being a low-predictability event, as a flood can trigger with no warning, a coordinated and scalable flood response is important.

4.0 Planning Assumptions

This annex builds on the general emergency management planning assumptions seen throughout the county's EMP. The following assumptions are specific for flooding emergencies:

- Residents and businesses may take their own self-protective actions

(moving belongings, sandbagging, etc.) if there is time and it is safe to do so

- Local municipalities are responsible for initial response and will coordinate with the conservation authorities to assess and manage local flood risks
- The County will activate its EMP to support affected municipalities and coordinate any regional response and recovery efforts
- The County will work closely with ERCA, LTVCA, and the Windsor Essex County Health Unit (WECHU) to monitor hazards and communicate any public health risks (contaminated water, sewage exposure)
- The County will liaise with the Ministry of Emergency Preparedness and Response (MEPR), the Provincial Emergency Operations Centre (PEOC), and any other relevant ministries to ensure provincial situational awareness and to request assistance if needed
- Conservation authorities have established risk assessments and emergency response plans that they can implement if necessary

5.0 Flood Specific Risks and Considerations

Flood events pose a range of hazards and operational challenges that must be anticipated throughout the response and recovery phases:

Widespread Impact:

- Floods may affect large or multiple areas at the same time, causing a potential for local and county resources to be overwhelmed

Variable Time Warning:

- Floods may occur with notice (spring freshet) or without notice (flash flooding)

Health Hazards:

- Floodwaters can contaminate drinking water supplies, damage sewage systems, and create environments conducive to waterborne illnesses

Hazardous Debris:

- Floods can dislodge debris or hazardous materials that can pose public health or environmental risks

Public Safety and Infrastructure:

- Floods can be damaging to roads, bridges, utilities, buildings, and much more, which poses an immediate threat/danger to residents and responders

Sandbag and Damming Operations:

- Deployment of sandbags and/or damming solutions could be required to mitigate a flooding event. The handling and disposal of sandbags after a flooding event could pose health and safety risks, such as bacterial concerns

Disaster Financial Assistance (DFA):

- Overland flooding is uninsurable, and residents may qualify for provincial DFA, but only if declared eligible by the MEPR and the Ministry of Municipal Affairs and Housing

6.0 Advance Preparations

In response to high water levels, wind direction, and weather forecasts, the County of Essex has implemented advanced measures to assess and protect critical infrastructure from floods. Priority for sandbagging operations and distribution is given to critical county infrastructure. Sand and sandbags are stored by Infrastructure and Planning Services.

Preparedness measures include:

- Ongoing monitoring of shoreline conditions, major watercourses, and drainage infrastructure for signs of flood risk or erosion
- Regular assessment of road networks for potential flood related impacts
- Confirmation of the operational status of key equipment, availability of key personnel, and emergency resource readiness
- An existing stockpile of sandbags is available, with access to additional supplies on short notice
- Continued coordination with the PEOC for weather and environmental updates and situational awareness and to submit requests for provincial assistance if required

7.0 Resource Requirements

In support of the municipalities and their flood response operations, the following resources may be required:

- Subject matter experts to forecast and analyze river and waterway behavior
- Field assessors and technical specialists to report conditions to the activated Emergency Operations Centre (EOC)
- Access to Geographic Information System (GIS) tools and floodplain mapping
- Aerial reconnaissance capabilities for situational awareness and planning
- Ministry of Transportation (MTO) support for provincial infrastructure protection
- Sand, sandbags, and damming solutions for public works and infrastructure protection
- Sandbag-filling machines
- Heavy equipment and qualified operators
- Mutual aid personnel or field crews to support sandbag operations when local resources are exceeded

8.0 Coordination & the County Control Group

During a major, or complex, flood event, the County Control Group (CCG) may be activated to provide strategic support, assess regional impacts, and coordinate cross-jurisdictional support. Activation will be determined by the Warden, Chief Administration Officer (CAO), and Community Emergency Measures Coordinator (CEMC) based on flood forecasts and emerging risks. The CCG will work closely with the conservation authorities, municipal officials, provincial partners, and relevant technical advisors that can support the county and any affected municipalities. For a full breakdown of details, structure, and roles, refer to section 3.0, "County Control Group," in the County of Essex EMP.

9.0 Provincial Authorities

The PEOC, operated by the MEPR, may be needed to activate and support municipal flooding response. The MEPR coordinates cross-governmental resources, provides situational awareness, and may deploy provincial personnel such as Incident Management Teams (IMTs), flood assessors, or technical specialists to support the county's or municipal EOCs. All provincial support is coordinated through the PEOC and gets prioritized based on risk and need.

10.0 Flood Emergency Management Overview

10.1 Readiness

Flood readiness activities are initiated when conditions suggest there is an elevated flood risk. The province of Ontario, through the PEOC, constantly monitors snowpack, weather, and river levels, sending out flood forecasts and advisories as needed. Based on any of these advisories, the County of Essex may initiate preparedness measures, such as activating the CCG, activating the EMP, or getting support from the Flood Incident Management Group.

Planning throughout the year may involve ERCA, LTVCA, and other stakeholders to identify risks to infrastructure, transportation, and vulnerable communities. GIS, floodplain mapping, and municipal tools like the municipal 511 platform help support situational awareness and public communication.

10.2 Response

Flood response is guided by advisories from both ERCA and LTVCA, using a three-tiered warning system:

Water Conditions Statement:

- High lake or river levels expected; minor flooding possible for low-lying areas

Flood Watch:

- Flooding is possible as water levels are approaching or exceeding the limit of its capacity

Flood Warning:

- Flooding is imminent or already occurring

Flood responses will be scaled based on the severity of the flood advisory and dependent on the potential impact it can have on critical infrastructure, public safety, and continuity of services. The conservation authorities notify stakeholders and officials through email alerts or website updates, sometimes up to 72 hours in advance.

10.3 Shoreline/Water Conditions Statement Response

When a “Shoreline/Water Conditions Statement” is issued, the CCG may activate to coordinate preparedness activities and support any to-be-affected municipalities. This could include preparing public information, pre-positioning resources like sandbag filling machines, and monitoring shoreline risks.

Local municipalities are encouraged to deploy their own shoreline condition observer to assess vulnerable areas. Public information regarding flood prevention, infrastructure protection, and personal safety should be distributed through established communication channels. Municipalities should also review and update any evacuation plans to account for at-risk areas as a precaution.

10.4 Flood Watch Response

In cases when a “Flood Watch” is announced and response actions are warranted, the County of Essex, through several of its departments, will proactively monitor and assess lake/river/major watercourse levels and shorelines on a priority basis or as conditions dictate. Monitoring may include all flood protection works and should specifically observe and assess for the appearance of instability or deficiencies. Dam/berm owners should increase the monitoring of their structures, ensuring that spillways and drainage systems are clear and the structure(s) are in working order. County of Essex Roads/Highways will provide the primary monitoring along County of Essex roadways where any road’s critical infrastructure may be at risk and assist municipalities with road detour signage and barricades where requested or required.

10.5 Flood Warning Response

“Flood Warnings” are issued when the river/lake stage (water height) is expected to reach or exceed lake/river/major watercourse capacity or when flooding is actively occurring along waterways. The range of response can vary dramatically depending on the magnitude and potential consequences due to flooding. If response actions are warranted, the EOC will be activated with staffing levels and operational hours that reflect the level of response

required. Flood warnings along populated waterways indicate there is a high probability of damage or risk to public safety due to flooding.

10.6 Response to No-Notice Events

No-notice flood events are unpredictable and offer no time for pre-planning or pre-positioning of resources or the completion of mitigation activities. Examples include flash flooding due to intense rain events and the physical failure of flood protection works or natural or human-made dams/berms.

No-notice events may be indicated by weather warnings, but the severity of flooding cannot be predicted. In no-notice flood events it is not guaranteed that there is sufficient time to issue advisories or for emergency response agencies to complete the necessary preparedness activities.

In severe no-notice flooding events, coordination and response will begin during the flooding event and the activation of the emergency operation centre. The primary focus of the response will be responder and public safety and timely, accurate public flood emergency information.

10.7 Recovery

Recovery refers to activities and programs designed to return a situation to an acceptable pre-emergency condition. Recovery activities may be carried out at the local, county or provincial level as is required by the complexity of the flood event. This may potentially include the formation of a joint Flood Recovery committee.

The Essex Windsor Solid Waste Authority (EWSWA) has, in the past post-flood events, extended its landfill operation hours to facilitate receiving the increased debris and refuse that may be generated by these incidents.

11.0 Provincial Support Roles

Flood response in Ontario involves coordinated action amongst ministries, with the MEPR, along with the PEOC, supporting municipal efforts. Key roles include:

Ministry of Natural Resources and Forestry (MNRF):

- Leads provincial flood forecasting, issues advisories, and provides technical support

Ministry of Environment, Conservation & Parks (MECP):

- Offers guidance on safe handling and disposal of hazardous materials

and flood debris

Ministry of Municipal Affairs and Housing (MMAH):

- Administers Disaster Recovery Assistance for Ontarians (DRAO) and Municipal Disaster Recovery Assistance (MDRA), which can include field assessments and application support

Ministry of Transportation (MTO):

- Assists with road condition assessments and infrastructure protection

Ministry of Emergency Preparedness and Response & PEOC:

- Coordinate inter-ministry support, deploy incident management teams, and manage provincial resources

12.0 Local Authority Responsibilities

Under the Emergency Management and Civil Protection Act (EMCPA), municipalities and counties are the responsible ones for managing an emergency within their jurisdiction. In the event of a flooding emergency, the County of Essex will:

- Activate its EMP and EOC as needed
- Coordinate with and support local municipalities
- Work with conservation authorities and health partners
- Collect and document damage for potential claims

Local municipalities may:

- Monitor flood risk areas and initiate flood protection measures
- Provide public safety information
- Activate their own EOCs and Municipal Emergency Control Groups
- Coordinate evacuations and emergency social services in partnership with volunteers, community-based organizations, and non-government organizations
- Maintain regular communication with the MEPR and the PEOC and submit situation reports or financial documents as required

partners, and community stakeholders to protect lives, property, and minimize environmental damage. This will be a living document; it will be reviewed and updated regularly to incorporate lessons learned, best practices, and emerging risks, keeping the county ready to meet any future flooding challenges.