

Follow-Up on the 2022 Performance Audit:

Ministry of the Environment, Conservation and Parks

Ministry of Natural Resources

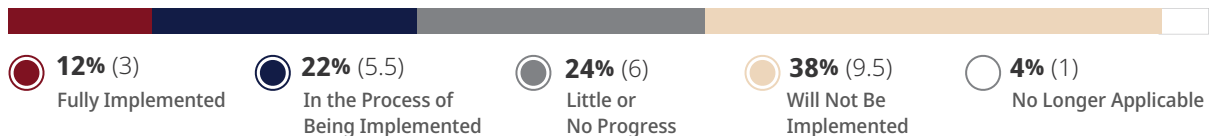
Ministry of Municipal Affairs and Housing

Ministry of Infrastructure

Climate Change Adaptation: Reducing Urban Flood Risk

// Overall Conclusion

25 Recommended Actions



The Ministry of the Environment, Conservation and Parks (Environment Ministry), the Ministry of Natural Resources (Natural Resources Ministry), the Ministry of Municipal Affairs and Housing (Municipal Affairs Ministry), and the Ministry of Infrastructure (Infrastructure Ministry), as of September 1, 2024, have fully implemented 12% of actions we recommended in our 2022 audit **Climate Change Adaptation: Reducing Urban Flood Risk**, and were in the process of implementing an additional 22% of the recommended actions. For 24% of the recommended actions, there has been little or no progress on implementation.

All three of the fully implemented recommended actions were completed by the Environment Ministry, including two to make climate services available for decision-makers (including smaller municipalities) and one to implement procedures to conduct risk-based inspections of stormwater infrastructure. The Infrastructure Ministry has made progress implementing all of the recommendations directed to it, including taking steps to improve the asset management planning process for stormwater infrastructure.

However, a key finding of our 2022 audit was that no one government ministry was assigned responsibility for addressing urban flooding and that a lack of clarity in roles had resulted in gaps in co-ordinating and managing urban flooding. In our follow-up, we found that, while the four ministries have made some progress toward implementing our recommendation to develop a provincial framework for managing urban flooding, no responsibilities had yet been assigned. As a result of this continuing lack of clarity in roles, the Environment, Natural Resources and Municipal Affairs Ministries stated that multiple recommended actions were not within their mandates, and therefore they did not intend to implement them. We found that 38% of the recommended actions will not be implemented, including one made to the Natural Resources Ministry to develop and implement a strategic plan to protect, conserve and restore wetlands.

The status of actions taken on each of our recommendations is described in this report (see [Appendix](#) for more details).

// Standing Committee on Public Accounts

On April 3, 2023, the Standing Committee on Public Accounts (Committee) held a public hearing on our Climate Change Adaptation: Reducing Urban Flood Risk audit. As of October 2024, the Committee had not yet tabled a report in the Legislature resulting from this hearing.

// Status of Actions Taken on Recommendations

We conducted assurance work between March 2024 and September 2024. We obtained written representation from the Environment Ministry, Natural Resources Ministry (which was previously named the Ministry of Natural Resources and Forestry), Municipal Affairs Ministry and Infrastructure Ministry that effective October 14, 2024, they had provided us with a complete update of the status of the recommendations we made in the original audit two years ago.

1. Provincial Roles and Responsibilities

In our original audit, we found that the Province had never clarified provincial roles for addressing and co-ordinating actions needed to alleviate the risk of urban flooding, resulting in ongoing gaps in responsibility and in actions and commitments not being implemented.

Recommendation 1: Action Item 1

To resolve gaps in roles and responsibilities, we recommend that the Ministry of Natural Resources and Forestry, the Ministry of the Environment, Conservation and Parks, the Ministry of Municipal Affairs and Housing, and the Ministry of Infrastructure develop a provincial framework for urban flooding that clearly identifies and assigns roles and responsibilities for urban flood management.

Status:  **In the process of being implemented (ministries could not provide an estimated completion date).**

Details

We found that the Natural Resources Ministry, Environment Ministry, Municipal Affairs Ministry and Infrastructure Ministry formed an Urban Flooding Working Group in fall 2023, which also includes the Ministry of Transportation, the Ministry of Agriculture, Food and Agribusiness, and Emergency Management Ontario. The group is responsible for clarifying roles and responsibilities for urban flooding, developing a provincial framework and identifying new or emerging issues. At the time of our follow-up, discussions among the ministries were continuing but the ministries were unable to provide an estimated completion date for the framework document.

2. Provincial Help to Homeowners to Reduce Flood Risks

In our original audit, we found that the Province had not fulfilled commitments to help homeowners reduce their risks from urban flooding with changes to the building code, financial incentives and education.

Recommendation 2: Action Item 1

To improve the flood resiliency of new homes, we recommend that the Ministry of Municipal Affairs and Housing review the requirements in Ontario's Building Code for the installation of backwater valves, and provide additional guidance to reduce ambiguity and increase uptake.

Status:  **Little or no progress.**

Details

We found that the Municipal Affairs Ministry had not yet begun to provide guidance regarding backwater valve requirements in Ontario's Building Code. The Ministry advised us that work on this commitment was delayed while the Ministry works on transitioning to the next edition of the

Building Code, to be completed in 2025. The Ministry stated that, after that transition is complete, it plans to provide additional guidance about backwater valves, to be completed by fall 2026.

Recommendation 3: Action Item 1

To help homeowners adapt to climate change, and improve the flood resiliency of existing homes, we recommend that the Ministry of the Environment, Conservation and Parks work with the Ministry of Finance in consulting on how to incentivize flood-risk mitigation improvements by homeowners, and based on the outcome of the consultation, work with partner ministries to implement appropriate options as identified.

Status:  **Will not be implemented.**

The Office of the Auditor General of Ontario continues to support the implementation of this recommendation.

Details

The Environment Ministry advised us that it is not planning to pursue options to incentivize homeowners to make flood-risk mitigation improvements. The Ministry noted that some municipalities do offer incentive and support programs, and that any incentive programs offered should be designed to reflect local need.

Recommendation 4: Action Item 1

To improve public awareness of flood risks and encourage homeowners to take steps to reduce the impacts of urban flooding, we recommend that the Ministry of the Environment, Conservation and Parks and the Ministry of Natural Resources and Forestry work with external stakeholders to promptly develop and implement a home flood-protection education campaign.

Status:  **Will not be implemented.**

The Office of the Auditor General of Ontario continues to support the implementation of this recommendation.

Details

We found that neither the Environment Ministry nor the Natural Resources Ministry had worked with external stakeholders to develop and implement a home flood-protection education campaign focused on urban flooding. The Environment Ministry indicated that while it plans to explore opportunities with other ministries, such as the Natural Resources Ministry, regarding public

communications and flooding, it has no plans to lead additional educational activities related specifically to urban flooding. Meanwhile, the Natural Resources Ministry communicated to us that it does not see itself as responsible for education related to urban flooding.

3. Guidance to Help Decision-Makers Understand and Apply Local Climate Data

In our original audit, we found that municipalities were receiving contradictory provincial guidance on climate change data, and that Ontarians lacked reliable access to climate data and tools.

Recommendation 5: Action Item 1

To improve the ability of municipalities to handle future projected rain events and reduce the risks of urban flooding, we recommend that the Ministry of the Environment, Conservation and Parks and the Ministry of Municipal Affairs and Housing provide consistent guidance and direction to municipalities regarding climate change information and the use of projected climate change data in accordance with the government's commitments in its Flooding Strategy.

Status:  **Little or no progress.**

Details

We found that, while the Environment Ministry has taken action to improve access to projected climate change data, the Environment Ministry and Municipal Affairs Ministry have not provided consistent guidance and direction to municipalities on the use of projected climate change data in accordance with the government's commitments in its Flooding Strategy.

In December 2023, the Environment Ministry completed a project with York University to improve access to projected climate change data through the Ontario Climate Data Portal. Despite this improved access to projected data, the Environment Ministry has not updated its storm sewer design criteria to require municipalities to use projected climate change data rather than historical rainfall data.

The Municipal Affairs Ministry, for its part, advised us that no progress has been made on this recommendation as it is awaiting publication of the National Construction Codes. The Ministry indicated that, if changes are made to the National Construction Codes with regard to updated climate data, it may consider including them in Ontario's Building Code.

Recommendation 6: Action Items 1 and 2

To improve Ontarians' understanding of local climate data, and help Ontario decision-makers, including those in municipalities, ministries and health authorities, prepare for a changing climate, we recommend that the Ministry of the Environment, Conservation and Parks:

- confirm potential funding opportunities with the federal government for a climate service organization; and
- make climate services available in Ontario for decision-makers with limited financial resources, such as smaller municipalities.

Status:  **Fully implemented.**

Details

We found that the Environment Ministry and the federal government provided funding to ICLEI Canada (a non-profit organization) to pilot the Ontario Resource Centre for Climate Adaptation, which was launched in September 2023. The centre is to provide services to support communities, including municipalities, First Nation communities and conservation authorities, to plan for climate change. By January 2025, the pilot project will be used to develop recommendations to continue and expand the resource centre to become a long-term resource.

4. Flood Risk Mapping

In our original audit, we found that the majority of municipalities we surveyed were unable to map urban flood risk areas, and that information on urban flood risk was not shared with the public in an accessible manner or at all.

Recommendation 7: Action Items 1 and 2

To enable municipalities to better identify and address urban flood risk areas, we recommend that the Ministry of Natural Resources and Forestry:

- review existing urban flood risk mapping tools to identify whether any could be effectively applied over a wider geographic area; and
- based on this review, make any identified effective urban flood risk mapping tool available to all municipalities.

Status:  **Little or no progress.**

Details

We found that the Natural Resources Ministry was prioritizing mapping flood hazards from lakes, rivers and streams and that, at the time of our follow-up, it had not taken any steps to review existing urban flood risk mapping tools to determine whether any could be applied over a wider geographic area. The Ministry asserted that it does not have responsibility to provide tools to map urban flood risks. However, it has included this as an action item in internal Ministry documents. Further, in response to this recommendation in our 2022 audit, the Ministry had stated that this recommendation was “consistent with commitments in Ontario’s Flooding Strategy to investigate other types of flood mapping formats—including flood risk mapping.”

Recommendation 8: Action Item 1

To inform the public of urban flood risk areas, we recommend that the Ministry of Natural Resources and Forestry develop and implement a plan for the Province and municipalities to share locations at potential high risk of urban flooding with the public, as appropriate, based on provincial foundational data and best available urban flood risk data or maps.

Status:  **Will not be implemented.**

The Office of the Auditor General of Ontario continues to support the implementation of this recommendation.

Details

We found that the Natural Resources Ministry will not be implementing this recommendation as it asserts that its mandate is limited to addressing risks associated with flooding from waterbodies such as lakes, rivers and streams. The Natural Resources Ministry advised us that it does not collect information about areas at potential high risk of urban flooding, and that municipalities are not required to share urban flood risk information with the Province, provincial agencies or the public. The Ministry indicated, however, that it encourages municipalities to share with the public any information or maps that identify areas that may be at high risk of urban flooding.

5. Municipal Asset Management Planning Process

In our original audit, we found that municipal assessment and reporting on stormwater infrastructure and flood resiliency was not standardized, and that municipalities were not given direction on how to consider projected impacts of climate change on their stormwater infrastructure.

Recommendation 9: Action Items 1, 2 and 3

To improve the quality and consistency of municipal stormwater asset management planning, we recommend that the Ministry of Infrastructure:

- in conjunction with its partners, provide additional guidance and direction to enable more standardized and comparable municipal reporting on asset condition, replacement costs, and the flood resiliency metrics for reporting on levels of service for stormwater infrastructure;
- assess data gaps in municipal asset management plans, and work with municipalities to develop approaches to obtain necessary data to improve stormwater asset management planning; and
- provide direction to municipalities regarding consideration of climate change when estimating future levels of service and associated costs for stormwater infrastructure.

Status:  **In the process of being implemented by fall 2025.**

Details

We found that the Infrastructure Ministry hired a third-party consultant in December 2023 to undertake an assessment of the quality and consistency of municipal asset management plans. The assessment is expected to be complete by summer 2025, and will include recommendations to the Ministry for enhancing levels of compliance with reporting requirements and data accuracy. Specifically, the consultant will engage with all 444 municipalities to assess data gaps and opportunities for improvement in how municipalities report on asset condition, replacement costs and flood resiliency metrics.

While the consultant's contract did not specifically include terms related to assessing how municipalities incorporate climate change considerations into their stormwater planning, the Ministry stated that it will review the final recommendations from the consultant and determine next steps regarding guidance to municipalities.

6. Funding to Maintain and Upgrade Essential Municipal Stormwater Infrastructure

In our original audit, we found that billions of dollars were needed to bring municipal stormwater infrastructure assets into a state of good repair, that municipalities could not rely on current levels of provincial and federal funding to fill the shortfall, and that the majority of municipalities did not have reliable sources of funding to fill the shortfall.

Recommendation 10: Action Item 1

To help municipalities sustainably finance necessary investments in stormwater infrastructure and effectively manage the risks of urban flooding, including under future projected climate scenarios, we recommend that the Ministry of the Environment, Conservation and Parks develop and share best practices and guidance to facilitate knowledge sharing among municipalities and assist municipalities in developing and implementing reliable funding models, such as stormwater fee programs.

Status:  **Will not be implemented.**

The Office of the Auditor General of Ontario continues to support the implementation of this recommendation.

Details

The Environment Ministry advised us that it will not be implementing this recommendation. The Ministry acknowledged the importance of effective stormwater management and stated that it is committed to supporting municipal efforts to invest in stormwater infrastructure and enhance climate resilience, but it indicated that assisting municipalities to develop and implement reliable funding models, such as stormwater fees, was outside of its mandate. In particular, the Ministry noted that the municipal authority to implement stormwater fees is provided by another ministry's laws. However, we note that the Environment Ministry could still help share best practices and guidance to facilitate knowledge sharing on funding models and encourage adoption of these models.

7. Green Spaces

In our original audit, we found that provincial land-use planning direction was insufficient to protect green spaces that guard against urban flooding, and that the Province was not tracking loss of green space.

Recommendation 11: Action Items 1 and 2

To reduce urban flood risk through provincial land-use planning that effectively balances the protection of natural features and green spaces with provincial needs for growth and housing supply, we recommend that the Ministry of Municipal Affairs and Housing:

- track and publicly report on the status of indicators of the percentage of area covered by pervious surfaces, natural cover, wetlands and woodlands in each municipality; and

- review the Ministry’s land-use plans and policies and, as needed, include limits on impervious surface area that results from development, in order to improve performance on these indicators.

Status:  **Will not be implemented.**

The Office of the Auditor General of Ontario continues to support the implementation of this recommendation.

Details

We found that the Municipal Affairs Ministry has made no progress in implementing this recommendation, and the Ministry has stated to us that this recommendation is not within its mandate.

However, our Office continues to believe that these actions are within the Ministry’s mandate. The Municipal Affairs Ministry has responsibility for land-use planning. At the time of our audit, this included the operation and implementation of the 2006 Growth Plan for the Greater Golden Horseshoe (the Growth Plan). The Growth Plan had a policy to limit the amount of impervious surfaces within natural areas identified for protection. In 2015, the Ministry developed an indicator to track the percentage of hardened/impervious surfaces, natural cover, wetlands and woodlands in the Greater Golden Horseshoe. The Ministry stated, as a rationale for the indicator, that “good growth planning and management can minimize the loss of natural cover and reduce the amount of new impervious surfaces.”

In October 2024, the Ministry revoked the Growth Plan as well as the Provincial Policy Statement (the primary provincial policy document that guides land-use planning decisions), and combined elements of both into a new Provincial Planning Statement 2024. The Ministry informed us that it is working with 20 partner ministries, including the Natural Resources and Environment Ministries, to develop new land use policies, and that this “could include consideration of an indicator on the percentage of area covered by pervious surfaces, natural cover, wetlands and woodlands across municipalities, should that be considered a priority by government decision makers at the time.” The Ministry also indicated that it would support the Environment Ministry in any initiatives that ministry might lead to place limits on the total area that may be converted to impervious surfaces.

8. Wetlands

In our original audit, we found that southern Ontario had lost nearly three-quarters of its original wetlands, thus reducing natural flood control in urban areas, and that nearly half of southern Ontario’s remaining wetlands were unevaluated and at risk of being lost.

Recommendation 12: Action Item 1

To protect the flood-control benefits afforded by wetlands, to meet relevant goals in Ontario's Flooding Strategy, and to improve urban flood resiliency, we recommend that the Ministry of Natural Resources and Forestry:

- implement a Ministry service standard for approving submitted wetland evaluations within a reasonable time frame;

Status: **No longer applicable.**

Details

We found that, as of January 1, 2023, the Natural Resources Ministry no longer reviews and confirms wetland evaluations. In December 2022, the Natural Resources Ministry changed the Ontario Wetland Evaluation System. Under the new program, a wetland evaluation, re-evaluation or mapping update is considered complete and final once a trained wetland evaluator attests that they have undertaken the evaluation in accordance with the Ontario Wetland Evaluation System. Ministry approval is no longer required.

Recommendation 12: Action Items 2, 3, and 4

- develop and implement interim protections for unevaluated wetlands;
- assess options to protect wetlands that are not designated as provincially significant wetlands with high flood-reduction benefits, including potential improvements to the Ontario Wetland Evaluation System to better recognize flood-reduction values, and implement changes as appropriate; and
- develop and implement a strategic plan to protect, conserve and restore wetlands.

Status: **Will not be implemented.**

The Office of the Auditor General of Ontario continues to support the implementation of this recommendation.

Details

We found that, following the changes made in December 2022 (as outlined under **Recommendation 12: Action 1**) the Natural Resources Ministry is not considering new wetland protection policies or plans, or further changes to the Ontario Wetland Evaluation System. It continues to provide funding for programs that support wetland conservation.

Due to their high flood-reduction benefits, our Office continues to believe that there is a critical need to not only provide interim protection for unevaluated wetlands, but also to develop a plan to further protect wetlands, as committed to in the government's Flooding Strategy.

9. Guidance on Low-Impact Development

In our original audit, we found that the Environment Ministry's delay in developing its guidance manual had affected municipal uptake of low-impact development practices, which help reduce the risk of urban flooding.

Recommendation 13: Action Item 1

To increase the municipal uptake of low-impact development to improve urban flood resiliency, we recommend that the Ministry of the Environment, Conservation and Parks:

- promptly finalize the draft Low Impact Development Stormwater Management Guidance Manual;

Status:  Little or no progress.

Details

We found that the Environment Ministry had not finalized the draft Low Impact Development Stormwater Management Guidance Manual and was unable to provide our Office with a date by which it would finalize the manual.

Recommendation 13: Action Item 2

- facilitate pilot projects and knowledge sharing of best practices and project benefits to assist municipalities in developing low-impact development projects.

Status:  Little or no progress.

Details

We found that, in January 2022, the Ministry implemented a \$15-million program to improve both wastewater and stormwater discharges into Lake Ontario. The Region of Peel is receiving \$1.4 million under the program, a portion of which will be used to implement a low-impact development stormwater retrofit project. However, the Ministry has not taken any steps to implement our recommendation to facilitate knowledge sharing of best practices and project benefits amongst municipalities.

10. Oversight of Municipal Stormwater Management

In our original audit, we found that changes to the Environment Ministry's approvals program had the potential to reduce flood risk through flood-control performance criteria, and increase oversight of municipal stormwater management. However, at the time of our 2022 audit, the Environment Ministry had not proposed any changes to increase the inspection and enforcement of municipal compliance with stormwater approvals.

Recommendation 14: Action Item 1

So that the revised consolidated linear approvals process is effective in ensuring that new or altered stormwater infrastructure is built in a manner that meets all performance criteria and enhances environmental protection, we recommend that the Ministry of the Environment, Conservation and Parks undertake a formal evaluation of the approvals program on a timely basis and incorporate improvements as identified.

Status:  **In the process of being implemented by December 2029.**

Details

We found that, as of March 2024, the Environment Ministry has issued 256 new approvals for stormwater management systems under the new consolidated linear process. Under this process, all existing individual stormwater approvals will be combined into one new consolidated approval. While the Ministry did not indicate plans to undertake a formal evaluation of the new approvals program, it plans to monitor the program by reviewing applications for approval renewals received between January 2026 and December 2029, and work with municipalities to identify challenges, provide guidance and identify areas for improvement. Where issues are identified, the Ministry will consider whether changes are needed.

Recommendation 15: Action Item 1

So that the conditions in Environmental Compliance Approvals for stormwater infrastructure are adhered to and increase oversight and accountability of stormwater management, we recommend that the Ministry of the Environment, Conservation and Parks develop and implement formal procedures with regard to risk-based compliance inspections.

Status:  **Fully implemented.**

Details

We found that the Environment Ministry included formal procedures for risk-based compliance inspections of stormwater management systems in its annual inspection planning process at the start of the 2023/24 inspection year. At the time of our follow-up, inspections of stormwater infrastructure using this approach were underway.


11. Regional Flood Control Facilities

In our original audit, we found that the Province did not regulate the structural design of large purpose-built flood control facilities that are located away from lakes or rivers, which could put nearby residents at risk.

Recommendation 16: Action Item 1

To address the regulatory gap that exists regarding the structural design of large regional flood control facilities, and to reduce the risks they may pose, we recommend that the Ministry of Natural Resources and Forestry and the Ministry of the Environment, Conservation and Parks identify clear roles and responsibilities, and collaborate as needed, on developing regulatory requirements for offline regional flood control facilities.

Status:  **Natural Resources Ministry - In the process of being implemented by May 2025.**

 **Environment Ministry - Will not be implemented.**






Details

We found that the Natural Resources Ministry entered into a contract with an engineering firm in December 2023 to evaluate the use of large regional flood control facilities (among other water-storage structures) and review the technical guidance that the Ministry provides for such structures. The engineering firm provided a draft report to the Ministry in May 2024, and the Ministry plans to consult on potential recommendations in spring 2025.

We also found that the Environment Ministry will not be implementing this recommendation on the grounds that regional flood control facilities are in place for the sole purpose of managing flood hazards, and that the Environment Ministry does not have a mandate to address these types of hazards from lakes, rivers and streams. As such, while the Environment Ministry will continue to issue environmental compliance approvals for facilities that meet the definition of a sewage works under the *Ontario Water Resources Act*, it will not be taking steps to identify clear roles and responsibilities on developing regulatory requirements for these facilities.

// Appendix

Recommendation Status Overview

	# of Action Items	Fully Implemented 	In the Process of Being Implemented 	Little or No Progress 	Will Not Be Implemented 	No Longer Applicable 
Recommendation 1	1		1			
Recommendation 2	1			1		
Recommendation 3	1				1	
Recommendation 4	1				1	
Recommendation 5	1			1		
Recommendation 6	2	2				
Recommendation 7	2			2		
Recommendation 8	1				1	
Recommendation 9	3		3			
Recommendation 10	1				1	
Recommendation 11	2				2	
Recommendation 12	4				3	1
Recommendation 13	2			2		
Recommendation 14	1		1			
Recommendation 15	1	1				
Recommendation 16	1		.5		.5	
Total	25	3	5.5	6	9.5	0
%	100	12	22	24	38	4