

# Single Exit Stair: Ontario Building Code Feasibility Study

**Date:** June 26, 2024

**To:** Planning and Housing Committee

**From:** Chief Building Official and Executive Director, Toronto Building

**Wards:** All

## SUMMARY

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The purpose of this report is to respond to City Council direction that the Chief Building Official and Executive Director, Toronto Building, in consultation with the Fire Chief and General Manager, Fire Services, engage a Building Code Consultant to study the feasibility of supporting a single means of exiting multi-residential buildings of up to four storeys, including additional life safety and other measures which would meet the objectives and intent of the Ontario Building Code.

Exits are a fundamental and essential component of a building's fire and life safety system. Some designers and others have advocated that the Ontario Building Code threshold for requiring a second exit stair in small multi-unit residential buildings is too high compared to other jurisdictions in North America, Europe and around the world. They suggest that a single exit staircase would support innovation in the design and construction of higher density small multi-unit buildings on constrained sites in higher density urban areas resulting in more missing middle housing.

Building regulators and emergency responders have identified that there are potential impacts on safety that need to be considered in developing Ontario Building Code changes in this area which are complex and significant. Any code changes to allow a single exit in a building need to be based on current research and take into consideration the impacts for both building occupants and first responders. Any potential changes must also provide an equivalent level of protection to that of a building having at least two means of egress, while also ensuring timely access to responding Firefighters and the deployment of the associated firefighting equipment into the building when a fire occurs.

This report provides an overview of a technical study undertaken for the City of Toronto by a third-party Building Code Consultant with expertise in fire protection engineering, to consider the feasibility of an alternative solution to the single egress issue.

As the Province of Ontario and the Canadian Board for Harmonized Construction Codes continue to consider potential changes to the provincial and national codes, the study will help provide certainty to designers and others preparing submissions to the city where a single exit is being considered and to expedite and facilitate the approval of missing middle projects in the City of Toronto. The report also contains recommendations to provide a copy of the report to the Ministry of Municipal Affairs and Housing and the Canadian Board for Harmonized Construction Codes to support research and code development in this area.

This report has been written in consultation with Toronto Fire Services and City Planning.

## **RECOMMENDATIONS**

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The Chief Building Official and Executive Director, Toronto Building recommends that:

1. City Council request that, the Minister of Municipal Affairs and Housing and the Secretary Canadian Board for Harmonized Construction Codes consult directly with the City of Toronto, including the Chief Building Official and Executive Director Toronto Building, and the Fire Chief General and Manager, Toronto Fire Services in considering any potential Ontario Building Code and/or National Building Code of Canada changes related to single means of egress in residential buildings up to four storeys and address safety considerations for both building occupants and first responders.
2. City Council forward this report including the "Single Exit Stair: Ontario Building Code Feasibility Study" to the Minister of Municipal Affairs and Housing and the Secretary, Canadian Board for Harmonized Construction Codes, to inform the development of any specific Ontario Building Code/National Building Code of Canada proposals in this area and address safety considerations for both building occupants and first responders.
3. City Council request that the Chief Building Official and Executive Director, Toronto Building develop a public-facing guideline for building permit applicants to access the "Single Exit Stair: Ontario Building Code Feasibility Study" to assist in the preparation of alternative solution proposals under the Ontario Building Code where a single means of egress is proposed.

## **FINANCIAL IMPACT**

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There are no direct financial implications associated with the recommendations contained in this report.

## **DECISION HISTORY**

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At its meeting of July 19, 2023, City Council adopted item "2023.EX6.14 - Expanding Housing Options in Neighbourhoods - Beaches-East York Pilot Project: Status Update and Directions Report". In considering that report, City Council directed the Chief

Building Official and Executive Director, in consultation with the Fire Chief and General Manager, Toronto Fire Services and the Chief Planner and Executive Director, City Planning to facilitate the design and construction of missing middle housing forms, while meeting Building Code objectives, in support of the City's housing strategy and the Expanding Housing Options in Neighbourhoods initiative by:

a. hiring a Building Code Consultant for technical consulting services to study the feasibility of supporting egress in multi-residential buildings of up to four stories, including additional life safety and other measures which would meet the objectives and intent of the Ontario Building Code, and report back on these findings to the Planning and Housing Committee in the first quarter of 2024; and

b. working in partnership with the Chief Planner and Executive Director, City Planning, incorporate any alternative options for compliance into the "Expanding Housing Options in Neighbourhoods" initiative and other missing middle projects in the City of Toronto.  
<https://secure.toronto.ca/council/agenda-item.do?item=2023.EX6.14>

At its meeting of September 30, 2020 City Council adopted item 2020.PH16.10- "Laneway Suites: Fire Access Requirements" and requested that the Chief Building Official and Executive Director request that the Ministry of Municipal Affairs and Housing amend the Ontario Building Code to provide clarity for designers and homeowners by providing a broader range of fire access options to comply with the Ontario Building Code requirements that apply to Laneway Suites.  
<https://secure.toronto.ca/council/agenda-item.do?item=2020.PH16.10>

## COMMENTS

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### Ontario Building Code Act and the Ontario Building Code

Ontario's Building Code (the Code) is a regulation made under the Building Code Act (the Act). The Code sets out province-wide technical and administrative requirements for the construction, renovation, change of use and demolition of buildings in Ontario. The Act and the Code are developed and administered by the Ministry of Municipal Affairs. Ontario and other provinces are in the process of harmonizing requirements with the National Construction Codes. The Canadian Board for Harmonized Construction codes is responsible for the development of Canada's National Model codes.

Ontario municipalities are responsible for enforcing the Code within their boundaries. Ontario Municipalities, including Toronto, are not permitted by the Act from passing by-laws which conflict with the Code, such as setting standards for building construction, or exceeding the Code requirements. In the absence of an Ontario Building Code amendment to allow for single exits in small multi-unit buildings, permit applications must propose an "alternative solution" under the Ontario Building Code.

Alternative solutions are a tool whereby a permit applicant proposes to use a different solution to a Building Code requirement while still meeting the objectives of the Code.

Toronto Building has a process whereby applicants propose an alternative solution for review. Toronto Building then makes a determination as to whether the proposal meets the objectives set out in the Ontario Building Code and is comparable to the prescriptive requirements. Alternative solutions can be a valuable tool where an innovative building design may present challenges for achieving Code compliance through a prescriptive path.

In the case of single exit stairs in buildings over two storeys, stakeholders have proposed provincial and model national code changes to reduce costs for site specific alternative solutions as well as provide clarity and efficiency in the permit approvals process for both applicants and building officials. In 2015, similar efforts led to expanded permissions for the use of wood frame construction in buildings up to six storeys in an effort incentivize and reduce costs for the construction of mid-rise buildings up to six storeys.

### **Provincial and Federal Announcements**

The Federal and Provincial governments have announced intentions to consider code amendments to expand permissions for the use of single exits. For example, in 2022, the Ontario government identified an intention to amend the Building Code to allow for a single means of egress in four to six storey residential buildings as part of its Housing Supply Action Plan. However, no specific Building Code amendments were proposed at that time or included in the 2024 Ontario Building Code released earlier this year.

In January 2024, the Province of British Columbia issued a request for proposals announcing its intention to understand the potential for single exit stairs in the British Columbia Building Code. The request for proposals identified the need to protect safety, access and egress of occupants while citing potential benefits such as flexibility for multi-bedroom apartments and the potential to increase density within areas of transit-oriented development.

Most recently, in April 2024, the Federal Budget announced that the National Research Council will launch consultations with provinces, territories, industry, and fire experts to address regulatory barriers including point block access and single egress designs and streamline the inspection process.

### **Expanding Housing Options in Neighbourhoods (EHON): Beaches-East York Pilot Project**

The property at 72 Amroth Avenue is the site of the Beaches-East York pilot project within the City's larger missing middle EHON initiative. In its preliminary work to develop the site, the Pilot Project team prepared and analyzed architectural massing concepts to assess the feasibility of several pilot principles including: sustainability and resiliency; replicability; accessibility; compatibility and, cost-effective design. Through this work, the Pilot Project team [identified](#) that on small and narrow lots, a single access/egress stair option for buildings up to four-storeys or taller, would allow for more efficient building designs and improved unit configurations, thereby supporting more functional/liveable unit layouts. On constrained sites, such small and/or narrow lots, single access, as

opposed to requiring a second egress for buildings three-storeys or taller, may be critical for overall project viability.

In considering "2023.EX6.14 - Expanding Housing Options in Neighbourhoods - Beaches-East York Pilot Project: Status Update and Directions Report" City Council directed staff to hire a Building Code Consultant to study the feasibility of supporting egress in multi-residential buildings of up to four stories.

### **Summary: Ontario Building Code Feasibility Study**

Toronto Building engaged the services of a Building Code Consultant to review and assess the level of fire protection and life safety with respect to the minimum applicable fire protection and life safety requirements of the Ontario Building Code to determine the feasibility of supporting four-storey residential construction where the storeys above grade are served by a single exit stair. The study determined that an alternative solution to address a single exit stair is feasible if the provision of a single exit is determined to be an acceptable risk as it relates to the exit being blocked or obstructed in an emergency, impacting evacuation from the building and emergency response operations. This conclusion is significant as it also identified the importance of adequate building maintenance to support occupant safety and fire fighting operations where a single exit stair is employed. Building maintenance is typically not part of the building permit approvals process.

To reach their conclusion, the Building Code Consultant undertook an analysis and evaluation of Ontario Building Code requirements, Ontario Fire Code companion requirements as well as associated building elements (such as dead-end corridors) related to the number of exits in a building. The report also analyzed comparative jurisdictions where a specific regulatory framework has been established to permit buildings that exceed three or four storeys to be provided with a single exit.

While the report concludes that an alternative solution is feasible, the Building Code Consultant identifies that the fundamental challenge is that any alternative solution related to the provision of a single exit in a building is required to demonstrate that the performance of the proposed building would be at least the same as a building with two exits, where both buildings have generally been designed to include the same fire protection and life safety features. To achieve this performance and mitigate the risk associated with a single exit stair, the report provides potential mitigating features for an alternative solution to include, such as:

- Sprinklered building
- Restrictions on the number of suites per floor that are served by a single exit
- Maximum area of suites
- Travel distance limitations
- Maximum occupant load
- Limits on occupancy types served by a single exit
- Increased exit stair width
- Additional provisions/enhancements for fire protection and life safety systems

A caution is provided that these measures may not necessarily address every type of emergency that would require the evacuation of a building (e.g., release of hazardous substances or the presence of intruders).

A component of this study included identifying additional considerations for the City of Toronto. For Toronto Fire Services, it was noted that it may be necessary to develop new, or modify existing operations and/or procedures, and to retrain staff to respond to incidents at four-storey residential buildings served by a single exit stair. For Toronto Building, additional staff training would be required to facilitate the approval process for these buildings.

The summary of the feasibility study contained in this report is intended to provide Planning and Housing Committee with an overview of the Code Consultant's primary conclusions. The full Code Consultant report is attached for information and to support permit applicants in the development and proposal of alternative solutions. Toronto Building staff will be working with City Planning staff to identify how the report can help address challenges with missing middle projects as part of the Expanding Housing Options in Neighbourhood program.

## **Next Steps**

The development of Code changes to allow a single exit stair in a building is complex and significant. The feasibility study that is the subject of this staff report was undertaken by a Building Code Consultant with expertise in fire protection engineering and considered impacts on both building occupants and first responders. As the province considers any potential changes to the Ontario Building Code, it should also consider these impacts. The study was clear that the Code needs to provide an equivalent level of protection to that of a building having at least two means of egress, while also ensuring timely access to responding Firefighters and the deployment of the associated firefighting equipment into the building when a fire occurs.

To support the code development work underway and anticipated to occur at the provincial and federal levels, this report recommends that any consultations on Ontario Building Code and/or National Building Code of Canada changes related to single means of egress in residential buildings up to four include the Chief Building Official and Executive Director Toronto Building, and the Fire Chief and General Manager, Toronto Fire Services. To facilitate these discussions and expedite work already underway, the report recommends that the staff report and a copy of the study be shared with the Minister of Municipal Affairs and Housing and the Secretary, Canadian Board for Harmonized Construction Codes, to inform the development any specific Ontario Building Code/National Building Code of Canada proposals.

## **Conclusion**

Toronto Building has undertaken several initiatives to identify and help provide clarity for code-related challenges in the design and construction of different building forms which have the potential to expand housing options and increase the number of rental units in the city. These initiatives are intended to increase the efficiency, clarity and transparency of the building permit approvals process. In consultation with Toronto Fire

Services, for example, Toronto Building engaged a third-party Building Code Consultant to develop compliance options to address fire access requirements for laneway suites. These options have been available for the public's use since 2020, and a code request was made to the Ministry of Municipal Affairs and Housing to provide a broader range of fire access options for laneway suites. Amendments have not occurred to date.

Earlier this year, the Division reported to Planning and Housing Committee with an evaluation of Ontario Building Code requirements for multi-tenant houses. Toronto Building will be reporting to Planning and Housing Committee this fall on the results of similar work with a Building Code Consultant detailing acceptable options along with mitigating measures to achieve compliance with the Ontario Building Code for fire access to Garden Suites. The Division is also working with City Planning to evaluate the performance of garden suite by-law as it pertains to the permit process. In the meantime, Toronto Building will continue to work with City Planning and other divisions to support initiatives such as EHON to identify challenges and support the efficient and timely permit approvals for other housing forms.

## **CONTACT**

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Dylan Aster, Director, Policy and Strategic Support (A), Toronto Building  
416-338-5737, [dylan.aster@toronto.ca](mailto:dylan.aster@toronto.ca)

Larry Cocco, Deputy Fire Chief & Director, Toronto Fire Services  
416-338-9052, [larry.cocco@toronto.ca](mailto:larry.cocco@toronto.ca)

## **SIGNATURE**

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Kamal Gogna, P.Eng.  
Chief Building Official and Executive Director, Toronto Building

## **ATTACHMENTS**

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Attachment 1: Single Exit Stair: Ontario Building Code Feasibility Study