

## Side Setbacks and Lack of Shoring - Challenges and Solutions

### Recommendation:

That the September 28, 2016, Sustainable Development report CR\_3570, be received for information.

### Report Summary

**This report provides information on the challenges created by excavation during construction of residential infill development, as well as practices to address these challenges and information on applicable legislation.**

### Previous Council/Committee Action

At the September 19, 2016, Agenda Review Committee meeting, this report was rerouted to the September 28, 2016, Urban Planning Committee meeting.

At the March 22, 2016, Executive Committee meeting, the following motion was passed:

That Administration work with the construction industry and the Association of Professional Engineers and Geoscientists of Alberta to develop possible solutions to the challenges created by side setbacks and lack of shoring and other related issues, and report back to Executive Committee.

### Report

#### **Background**

Administration, along with its partners in the community and development industry, is working to be proactive, adaptable, and responsive to infill-related excavation issues. These issues can be mitigated through enforcement of existing legislation, continuation of current practices, and implementation of recently introduced initiatives.

#### **Relevant Legislation**

##### **Safety Codes Act, Alberta Building Code**

The *Safety Codes Act* is provincial legislation which enables a number of safety disciplines and associated codes, including the Alberta Building Code. The Alberta Building Code establishes minimum standards for the design, occupancy, construction, and alteration of a building in Alberta. With respect to excavation, the Alberta Building Code regulates some construction aspects of excavation activities, including the design and the supports of an excavation where applicable. Under the Building Code, an owner or contractor must ensure that all work complies with the Building Code and that all work undertaken does not damage or create a hazard to

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adjacent buildings (for example damage to structural components of a building.) Where the stability of an adjoining building may be endangered by an excavation, the Building Code requires that adequate underpinning, shoring, and bracing will be provided to prevent damage to, or movement of, any part of an adjoining building, and the creation of a hazard to the public.

If an owner or contractor contravenes the Building Code, a Safety Codes Officer may take appropriate enforcement action, including issuing Orders or laying charges under the *Safety Codes Act*. Under the *Safety Codes Act*, where there is an imminent serious danger to persons or property, or there is an unsafe condition, a Safety Codes Officer has the authority to take any action necessary to remove or reduce the danger. This may include issuing an Order requiring all work to stop on a site until unsafe conditions are rectified.

### Occupational Health and Safety Act, Regulation and Code

The Occupational Health and Safety Act, Regulation, and Code regulate the health and safety of workers on a construction site. For example, the Act regulates excavation and tunneling in relation to worker safety, including soil stabilization, and appropriate sloping of an excavation.

Depending on the height of the basement, the *Occupational Health and Safety Act* may require shoring to accommodate the depth of the excavation. For example, as shown in Attachment 1 - Excavation Diagram, excavation of a basement with a ceiling height of eight feet may be accommodated within a 1.2 metre setback because the required slope can be achieved. However, a basement depth of nine feet would require shoring in order to be accommodated within a 1.2 metre setback with the required slope.

It is the responsibility of the builder to determine when shoring is required to satisfy the requirements of the Occupational Health and Safety Act. When shoring is required, the builder must ensure shoring is designed by a professional engineer and installed in accordance with the stamped drawings.

The *Occupational Health and Safety Act* is enforced by provincial Occupational Health and Safety Officers. If an Occupational Health and Safety Officer finds that work is being carried out in a manner that is unhealthy or unsafe to workers, the Officer may order the work to stop and may require that the work is carried out in a safe and healthy manner.

### Zoning Bylaw 12800

Zoning Bylaw 12800 currently regulates excavation through Section 56 - Excavation, Stripping and Grading, which specifies additional information requirements where excavation other than for construction or building purposes, such as sand and gravel mining, topsoil stripping, and construction of artificial bodies of water are proposed. Because excavation for residential infill development is done for construction and

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building purposes, the excavation is approved implicitly under the development permit to construct the new residential building and the information requirements of Section 56 are not applied.

Administration has found that the minimum side setbacks for residential development in mature neighbourhoods are largely consistent with, or greater than those in other major Canadian municipalities (see Attachment 2 - Side Yard Setbacks for Low Density Residential). Excavation can be undertaken safely for developments with 1.2 metre side setbacks. Therefore, it is not recommended that minimum side setbacks be increased in order to deal with issues arising from excavation.

### **Solutions to Address Challenges**

Administration has implemented the following initiatives through which challenges associated with excavation will be proactively addressed and applicable legislation can be enforced:

- The proactive Infill Compliance Team that has been created includes a Safety Codes Officer. This team may be able to inspect the quality of the excavation during infill construction. If the excavation does not appear to meet Occupational Health and Safety requirements, the Safety Codes Officer can notify Occupational Health and Safety for subsequent enforcement. The Safety Codes Officer can also issue Orders in instances where there are Code infractions on the building under construction. Administration will continue to monitor complaints to evaluate the effectiveness of recent initiatives to deal with bad construction practices and challenges associated with excavation.
- A Construction Management Acknowledgement Form is now required as part of all applications for low and medium density residential infill development permits. Applicants are required to print, complete and sign this form and attach it with their development permit application. The form provides applicants, contractors, builders and property owners information about their responsibilities, relevant legislation and guidelines for best construction practices. The form includes a section specifically addressing protection of abutting property.
- A requirements checklist has been added to the partial footings and foundations permit (now part of expedited house permits and will be expanded to include all single family, semi-detached, and row housing permits up to four units) to ensure applicants acknowledge the requirement that the applicable subdivision soils report has been read and foundation designed accordingly.
- Pre-application meetings with a Development Officer are now available for small-scale residential infill proposals. Administration can explore the possibility of involving a Safety Codes Officer in these meetings.
- Administration has created a new infill website dedicated to providing information and assisting with common inquiries and complaints.
- The possibility of creating a best practices document for residents when constructing fencing to ensure quality of the construction and correct location is also being explored.
- The Residential Infill Construction Guide encourages good construction practices

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through education and awareness with infill builders including best practices for excavation and shoring.

Administration will undertake the following actions and will report back to Urban Planning Committee as part of Sustainable Development report CR\_3569 - Progress Report - Infill Sites in Mature Neighbourhoods in the First Quarter of 2017:

- Assess the possibility of requiring a plan to mitigate impacts of excavation in situations where there is potential for damage to neighbouring buildings to occur, prior to issuance of a building permit.
- Review the current footing and foundations permitting process to ensure excavation work is not undertaken prior to Safety Codes review.
- Hold discussions with other Canadian municipalities to learn more about their excavation practices relative to development and building permitting procedures, and what practices and procedures are used to mitigate damage to adjacent properties.
- Consider increasing the maximum allowable basement height from grade in Mature Neighbourhood Overlay regulation 814.3.16 in order to encourage shallower excavation depths in infill development.

Administration will continue to support the improvement of infill construction practices through these initiatives, proactive education and enforcement, and encouraging communication between neighbours prior to and throughout the construction process.

### Policy

*The Way We Grow*, Edmonton's Municipal Development Plan:

- Section 3.5.1: Established neighbourhoods gain a greater portion of new growth, accommodating changes and growth with certainty.
- Section 4.2.1: Ensure that redevelopment in established neighbourhoods supports the health and livability of our citizens.

*The Way We Live*, Edmonton's People Plan:

- Section 4: Edmonton is a safe city.

### Public Consultation

The Association of Professional Engineers and Geoscientists of Alberta was contacted, however, the association declined to provide feedback for this report as they are a professional standards association and do not typically offer technical advice.

Administration consulted with individual infill builders to gather perspectives on current challenges with shoring and excavation for infill construction. Infill builders provided the following feedback:

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- Development often requires access to a portion of an adjacent lot at some point in the construction process. Access is requested or negotiated with the adjacent owner as required.
- Building in mature areas involves challenges arising from working in close quarters with existing infrastructure, nearby residents, and can include the need to occasionally re-direct traffic, obtain access across property lines, and necessitate the temporary storage of material.
- Typically issues with neighbouring properties can be mitigated with proper communication from the beginning and throughout the construction process.

### Metrics, Targets and Outcomes

<b>Metrics</b>	<ul style="list-style-type: none"><li>• Minimum side setbacks in Edmonton were compared with those of 11 other Canadian municipalities.</li></ul>
<b>Targets</b>	<ul style="list-style-type: none"><li>• Administration is proactively developing a strong and coordinated response to ensure that negative issues associated with infill construction are minimized and mitigated through awareness, education, and enforcement.</li><li>• The Proactive Infill Compliance Team will conduct random inspections to ensure construction sites and practices are safe and that builders and sub-trades are complying with relevant legislation.</li><li>• Shoring infractions are reported to Occupational Health and Safety when identified by City of Edmonton inspectors/enforcement officers.</li><li>• Tickets and orders are issued where there are infractions to relevant legislation.</li></ul>
<b>Outcomes</b>	<ul style="list-style-type: none"><li>• Administration will have more detailed statistics about infill construction complaints for reporting on an annual basis.</li><li>• Administration is able to respond more effectively to infill construction issues.</li><li>• Increased monitoring and safety of infill excavations.</li></ul>

### Attachments

1. Excavation Diagram
2. Side Yard Setbacks for Low Density Residential

### Others Reviewing this Report

- D. Jones, Deputy City Manager, City Operations
- T. Burge, Chief Financial Officer and Deputy City Manager, Financial and Corporate Services