Current situation

In some municipalities, unfortunately, the practice remains that the storm and sanitary sewer lines are installed before and under the road, boulevard, or sidewalk, with lateral extensions taken off each line to provide service to each building in the development. These lateral extensions are typically terminated and capped underground at the property line or lot line.

Main utility lines, such as natural gas, telephone, hydro, cable television, and fibre optics, are then installed, and will eventually provide service to each building. Their location is typically much closer to the surface than the sewer lines and connection, since they are not adversely affected by frost, and very close to the street side of the property line or lot line.

Proximity to the lot line is maintained so as to minimize potential damage to the road and disruption of traffic if the utility lines need to be accessed after the development work is complete.

The problem

Proximity to the lot line of the utility services creates at least two hazards for contractors accessing the capped lateral extensions when the time comes to make the connection to the buildings.

First, since the utility services are virtually above the capped lateral extensions, there is a high risk of their being struck during excavation. While damage to utility services can be financially costly, they can have fatal consequences as well.
Second, this intersection of buried services often results in an excavation with a very steep bank, a situation made even more dangerous by the fact that the soil has previously been excavated and is therefore not predictably stable. Increasing the excavation slope would, in the vast majority of cases, lead to completely exposing many—if not all—of the utility services. The capped lateral extensions will be at least 1.5 m away from the intersection point with the underground utilities. This will allow them to remain undisturbed during excavation, and it will allow the banks of the excavation to be cut with sloped sides.

This photo above illustrates the safe conditions under which the machine operator was able to perform his excavation and the worker was able to dig and expose the capped lateral connections in a properly sloped trench, in relatively undisturbed soil, and 1.5 m away from the utility infrastructure.

This photo illustrates how the capped laterals are positioned almost directly under the utility infrastructure. This close proximity makes it difficult to attain the proper slope. It also shows the typical and potentially dangerous situation the machine operator and the concrete and drain worker are confronted with on a daily basis when excavating to expose the laterals that were terminated at the property line.

This is the inherent problem with the standards that some municipalities still provide to the consulting engineers and which their design must follow. These standards unfortunately are what the sewer and watermain contractors must adhere to even though they could easily extend their scope of work and eradicate the problem by implementing the following solution.

The solution
Extending the laterals for the storm and sanitary drains to 1.5 metres inside the lot line when the storm and sanitary sewer lines are installed will greatly reduce hazards when the time comes to bring the connection into the building.

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The OCDCA is committed to progress and providing safe work environments for its workforce. The standardization of this method of installation throughout all municipalities would achieve this safety goal.

How IHSA can help
IHSA has several products that support safety in sewer and watermain work. These are some of them:

- W154—Health and Safety Advisory: Gas Line and Sewer Service Line Conflicts
- IHSA051—Call Before You Dig brochure
- P027—Call Before You Dig Poster
- FD031—Introduction to Trenching Hazards DVD
- Trenching and Excavation topic page (ihsa.ca/Topics_Hazards/Trenching_Excavation.aspx)

Visit the IHSA.ca website to learn more.