

Vertical and Horizontal Clearance Guidelines

City of Ottawa Utility Coordination Committee

Edited: Feb 9, 2024

Infrastructure owner and type		Vertical Clearance (mm)	Horizontal Clearance (mm)
City of Ottawa			
Street Lighting			
Street Lighting Duct (Underground)		0.3m	1.0m (Pref.) 0.3m (Min.)*
Street Lighting Pole (Underground)		0.6m	1.0m (Pref.) 0.3m (Min.)*
Manhole & Handhole Structures (Underground)		0.6m	1.0m (Pref.) 0.3m (Min.)*
Above-ground plant clearance from Streetlighting & Streetlighting/Traffic Power Supply		2.0m	2.0m
Above-ground plant clearance from Streetlight Poles, Arms, Luminaires		0.3m (or per Hydro Authority Clearance Requirements)	2.0m
*If minimum clearances are being proposed by a Utility, please notify Streetlighting Engineering Group. If minimum clearances cannot be achieved, direct resolution with Street Light Engineering Group is required.			
Water Supply			
All Watermain diameters	Sewers & Forcemains	Watermain cross above = 0.25m Watermain Crossing below 0.50m. Demonstrating that there is no additional load on the pipe (for large concrete cables follow standard with 1m flowable fill and extend 1m past the pipe)	2.5m
All Watermain diameters	Linear utility plant	Watermain cross above = 0.25m Watermain Crossing below 0.50m. Demonstrating that there is no additional load on	2.0m

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		the pipe (for large concrete cables follow standard with 1m flowable fill and extend 1m past the pipe)	
All Watermain diameters <600mm	Traffic, streetlight or hydro Poles		2.0m (min) 3.0m preferred
All Watermain diameters >=600mm	Traffic, streetlight or hydro Poles		3.0m
All Watermain diameters	Open structures (CBs)		2.4m (0.9m min) Insulate if less than 2.4m
All Watermain diameters, hydrants & valves	Bell Service wires and service wire repair ducts		0.5m
Valve Chambers	Traffic, streetlight or hydro Poles, Hydro transformer or Bell/Cable pedestal		1.5m (3.0m preferred)
Valve Chambers	Linear utility plant (Bell, Hydro duct..etc)		0.5 (min), 1.0m preferred
Fire Hydrants	Linear utility plant (Bell, Hydro, Gas duct)		1.0m
Fire Hydrants	Streetlight cable		0.3m (min) 1.0m preferred
Fire Hydrants	Hydro transformer or Bell/Cable pedestal		1.5m (3.0m preferred)
Fire Hydrants	Traffic, streetlight or hydro Poles		2.0m (3.0m preferred)
Water service post or valve box	Traffic, streetlight or hydro Poles, Hydro transformer or Bell/Cable pedestal		1.5m (3.0m preferred)
Water service post or valve box	Linear utility plant	0.3m clearance if service crossing below	0.5m (1.0m preferred)
Wastewater - Storm (incl. CB and sub-drain)			
All storm diameters		250 (from outside wall of pipe)	1000 to 2000 preferred
Maintenance Holes and Catch Basins		1000 to 2000	1000 to 2000 preferred
Wastewater - Sanitary / Combined			
All sanitary/ combined diameters		250 (from outside wall of pipe)	1000 to 2000 preferred
Maintenance Holes		1000 to 2000	1000 to 2000 preferred

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*If minimum clearances are being proposed by a Utility, please notify AMS. If Minimum clearances cannot be achieved, direct resolution with AMS is required.		
Traffic Signals		
Traffic Signal Duct		
Traffic Signal Duct (Underground)	0.3m	1.0m (Pref.) 0.3m (Min.)*
Traffic Pole, Traffic Controller & Disconnect Foundations (Underground)	0.6m	1.0m (Pref.) 0.3m (Min.)*
Manhole & Handhole Structures (Underground)	0.6m	1.0m (Pref.) 0.3m (Min.)*
Above-ground plant clearance from Traffic Controller Boxes & Disconnect Cabinets	2.0m	2.0m
Above-ground plant clearance from Traffic Signal Poles, Arms & Heads, Luminaires (on Joint Use Poles)	0.3m (or per Hydro Authority Clearance Requirements)	2.0m
*If minimum clearances are being proposed by a Utility, please notify Traffic Signals. If Minimum clearances cannot be achieved, direct resolution with Traffic Signals is required.		
Structures (Bridges, Tunnels, Culverts, Retaining Walls, Noise Barriers, Miscellaneous)		
Structure clearances to buried utilities	1.0 m	2.0 m
* If Minimum clearances cannot be achieved or utilities are proposed to be attached structure, direct resolution with AMS-Structures is required.		
Forestry		
*There are no specific clearance guidelines where forestry is concerned. In most cases, the Forestry Inspector will meet on site with the group and or individual requesting clearance to determine what is needed. It is situation specific. Site specific clearance specifications are communicated to the operational crews via notes in the long text of the work order.		

Notes:

- Every attempt should be made to achieve these clearances to city infrastructure. If a clearance cannot be met, an explanation of why must be include in cover letter. Applications may be denied without this explanation.
- In the case that this table conflicts with City Standard Details, the Standard Detail shall govern.

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UTILITIES		
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Hydro One Networks		
Minimum clearance for structures, poles, trees, etc, from overhead conductors between 750V – 44kV:	4.8m + Maximum Sag which is calculated based on field conditions.	4.8m from nearest conductor
Minimum clearance for structures, poles, trees, etc, from overhead conductors below 750V:	2.5m + Maximum Sag which is calculated based on field conditions.	1m from nearest conductor
Minimum clearance for structures, poles, trees, etc, from poles & anchors at ground level:	N/A	1m
Minimum clearance for structures, poles, trees, etc, from poles & anchors below grade:	N/A	1.5m
Minimum Clearance for Excavation around Poles and Anchors at Ground Level (Inside these limits Hydro One needs to be notified to support or relocate infrastructure during excavation):	Poles: 1.5m Radius	Anchors: 2.5m Radius
Minimum Horizontal Clearance from padmounted equipment: Buildings/foundations:	N/A	3m
Minimum Horizontal Clearance from padmounted equipment: Trees:	N/A	3m
Minimum Horizontal Clearance from padmounted equipment: All other above ground infrastructure including pedestals, hydrants, streetlights, etc on the Operating Side:	N/A	3m
Minimum Horizontal Clearance from padmounted equipment: All other above ground infrastructure including pedestals, hydrants, streetlights, etc on the Non Operating Side:	N/A	2m

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Minimum Horizontal Clearance from Primary and Secondary Underground Cables: Buildings/foundations:	N/A	3m
Minimum Horizontal Clearance from Primary and Secondary Underground Cables: Trees:	N/A	3m
Minimum Horizontal Clearance from Primary and Secondary Underground Cables: poles and streetlights:	N/A	1m
Minimum Horizontal Clearance from Primary and Secondary Underground Cables: Other buried utility infrastructure:	N/A	0.3m Radius clearance
Horizontal Clearance from edge of sidewalk/roadway from Pad mounted Equipment:	N/A	2m is preferred to avoid the requirement for Bollards. When 2m cannot be achieved, 1.2m is the minimum and Bollards are required.
<p>*General Guidelines:</p> <ul style="list-style-type: none"> • All workers and equipment shall conform with the minimum Limits of approach outlined by the Infrastructure Health and Safety Association and Ontario Occupational Health and Safety Act. • Any underground infrastructure installed by another utility is to be installed at a minimum horizontal offset of 1.5m, either side of Hydro One pole line • No excavation within 1m of any Hydro One padmounted switch and/or transformer equipment • No equipment is to be installed on or in Joint Use trench • All metal parts for streetlight disconnects/communication pedestals within 3m of equipment ground grid shall be bonded to the grid via #4 AWG copper conductor • Gas pipe lines shall maintain minimum 1.3m (1.6m preferred) from Hydro One equipment foundations 		
Hydro Ottawa		
Direct Buried Cable	300, 1000 from LRT	1000 preferred, 600 min. 1000 from root ball of trees, 2500 from LRT

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Direct Buried Duct	300, 1000 from LRT	1000 preferred, 300 min. 1000 from root ball of trees, 2500 from LRT
Concrete Duct bank	300, 1000 from LRT	1000 preferred, 300 min. 1000 from root ball of trees, 2500 from LRT
Maintenance Holes	300	1000 min., 1000 from root ball of trees, 2500 from LRT, 2000 min from Traffic Mast-arms and SL poles
Poles	N/A	600, 1000 from root ball of trees
Padmount Transformers	N/A	1000 from sidewalks*
Pole Anchors	N/A	1500
Ground grid	300, No gas lines under the ground grid	300 min. 1000 from root ball of trees, 2500 from LRT
*Refer to UTS0012 for additional residential clearance around transformers and 3 and 4 party trenches in residential applications		
Enbridge Gas		
Gas main < 400mm (16") diameter	0.3m	0.6m
Gas main >= 400mm (16") diameter	0.6m	1m
Above-ground regulator stations	0.6m	1m
CER-regulated Pipelines and Vital Pipelines	0.6m	1m
Bell Canada		
All buried infrastructure	1m	1m
Above-ground infrastructure	1m	1m
Rogers Cable Communications		
All infrastructure	0.3m	1.0m (Pref.) 0.3m (Min.)
Telus Communications		
All infrastructure	1m for direct. drill 0.3m for hydro vac	1m for direct. Drill 0.6m for hydro vac

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Notes:

- These clearances are provided by each respective utility and is responsible to report changes to their requirements.
- Clearances may be reduced with the written permission of the affect plant owner(s).
- The City is not responsible to enforce these values.
- Clearance above and below to be determined on a case-by-case basis.