



CUSTOMER CONNECTION GUIDE:

# HOW TO POWER UP YOUR SMALL BUSINESS OR DEVELOPMENT

Electricity services for low-rise condominiums / small commercial and industrial / subdivisions



This guide has been designed to help **small business customers and general contractors** who are planning to renovate, install or replace their electricity services, such as:

- **New service installations** (including brand new service or rebuilds)
- **Upgrades to existing electricity service** (including supply voltage and service panel upgrades)

Each type of supply is distinct and suitable for different customer classes and geographic areas. Toronto Hydro will determine, at its sole discretion, the customer's type of supply based on factors that include (but are not limited to) reliability, capacity, and operational and system design considerations.

Refer to this guide for a quick overview to help you get started. It highlights key information you should be aware of regarding electrical service connections and upgrades, including your responsibilities and requirements to help ensure safety.

Detailed information regarding connection obligations is available in our Conditions of Service, the document governing Toronto Hydro's connection responsibilities to customers, at [torontohydro.com/conditionsofservice](https://torontohydro.com/conditionsofservice).

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# TIPS FOR GETTING STARTED

## Service costs

Depending on the scope of work, the cost of the Service Request will vary. Toronto Hydro has a list of services with standard charges as defined by our regulator, the Ontario Energy Board. You can find this list at [torontohydro.com/servicecharges](https://torontohydro.com/servicecharges).

## Service connection times

The length of time it takes to connect electricity varies based on the type of service and where your home is located. Service connections can take anywhere from a few weeks to several months, so it's best to submit your Service Request at [torontohydro.com/servicerequest](https://torontohydro.com/servicerequest) as soon as possible.

## Underground versus overhead systems

Toronto Hydro has both underground and overhead systems. If you want underground electrical service in an overhead area, you must contact us first to determine whether that's possible before hiring a contractor to perform the work. If it's possible, customers requesting this switch will be required to pay additional costs and may be required to complete work on their private property.

Customer equipment receiving electrical service (see page 5) needs to be installed within Toronto Hydro defined limits on your property, allowing sufficient access for work and maintenance. We'll work with you to determine the optimal location or placement of the equipment to meet Toronto Hydro's requirements.

## Temporary disconnections (isolations)

Examples of work that may require a temporary disconnection are: major renovations (e.g. constructing an addition to your home), panel changes or upgrades, tree trimming around service wires and roofing. Applicable fees will apply. You can find a list of standard charges at [torontohydro.com/servicecharges](https://torontohydro.com/servicecharges).

Standard isolations not involving design are typically scheduled two weeks in advance. Timelines may vary depending on scope of work.

## Line covers

Covered lines draw attention to the danger of live powerlines (e.g. cranes working close to Toronto Hydro powerlines). However, line covers don't prevent electrocution and aren't required by Toronto Hydro. For line cover installations, please contact Toronto Hydro for more information.

## Call before you dig

Before you dig or excavate on your property, obtain proper clearances and approvals from utilities, including Toronto Hydro. Calling before you dig is not only about getting permission from utilities — it helps ensure your safety. The customer will be liable for any damages caused to Toronto Hydro assets. If you're digging, contact Ontario One Call at least five days before work begins at 1-800-400-2255, or submit a request online at [ontarioonecall.ca](https://ontarioonecall.ca) to get a free locate — it's the law.

## Additional meters

One meter is typically required for each customer. Depending on the existing supply arrangement, customer electrical panel upgrades and/or modifications to the existing service may be required to support the additional meter installations.

If you'd like to install additional meters, please submit a Service Request.

## Tree trimming

When trees are close to overhead powerlines, public safety and the uninterrupted supply of electricity can be compromised. Customers are responsible for trimming trees on private property around overhead lines. Clearances must conform to the Ontario Electricity Safety Code (OESC).

Prior to performing tree trimming close to powerlines, you'll need to contact Toronto Hydro for a temporary disconnection (and reconnection) of the electricity supply. Applicable fees may apply.

For tree trimming on City property, call 311.

## Equipment installation placement

Electrical equipment needs to be placed in a location on your property that allows sufficient access for work and maintenance. We'll work with you to determine the optimal location or placement of the equipment to meet Toronto Hydro's requirements.

## Generator connections

Prior to connecting any generator (portable or permanent), you must ensure all applicable criteria of the OESC are met and that the generator doesn't back-feed into Toronto Hydro's electrical system. Visit [torontohydro.com/grid-connections/connection-process](https://torontohydro.com/grid-connections/connection-process) to submit a Service Request for review and approval prior to the installation of any generator connections.

## Have questions?

We're here to help. Please contact us at 416-542-8000 (press 4, then press 1 for services east of Yonge Street or 2 for services west of Yonge Street), Monday to Friday, between 8 a.m. and 4 p.m., or visit us online at [torontohydro.com/serviceconnections](https://torontohydro.com/serviceconnections).

# 10 STEPS TO GET YOU CONNECTED

To help ensure a smooth process, the following steps\* must occur in sequential order:

## CUSTOMER STEPS

### 1 Submit Service Request

- Complete and submit an online Service Request at [torontohydro.com/servicerequest](https://torontohydro.com/servicerequest)
- You'll need to include all required project information, including the site plan, proposed electrical drawing, building permits, zoning certifications and load calculations, in order to proceed

### 4 Sign agreement and return it with payment

- Sign and return the job quote or offer to connect, along with required payments as instructed on the documents

### 6 Prepare site for connection

- You or your general contractor will need to complete all applicable civil and electrical construction on your property, and make sure the site is safe for us to begin work
- It's important that you provide clear access to the property, especially leading to and in front of the meter location

### 8 Schedule Electrical Safety Authority (ESA) inspection\*\*

- After the electrical and civil installation is done, you're required to schedule and complete a safety inspection with the ESA
- You or your contractor can contact the ESA and submit a request on their website at [esasafe.com](https://esasafe.com)

## TORONTO HYDRO STEPS

### 2 Review project details

- One of our representatives will contact you to review the details within five to ten business days, depending on the type of project
- We may require a design pre-payment that must be paid prior to commencing design work. This design pre-payment will be credited towards your financial obligations for the project

### 3 Provide a job quote or offer to connect

- We'll complete the design and estimate to determine the course of action once we receive all the required project information
- Our representative will provide a job quote or offer to connect. This will specify the project details, timelines and financial requirements to proceed with the application request

### 5 Complete design, arrange for permits and order material (if applicable)

- We'll complete the detailed design, apply for the required permits, order materials and issue the project for construction

### 7 Begin construction (if applicable)

- We'll begin civil and electrical construction work where the responsibility resides with Toronto Hydro (e.g. civil construction work on road allowance)

### 9 Complete final inspection\*\*

- Once we receive ESA connection authorization, we'll conduct a final site inspection to ensure it meets our standards and conditions as set out in the agreement

### 10 Connect you to the grid

- Upon successful completion of the site inspection and receipt of any outstanding project information, we'll schedule and complete the service connection within five business days for services 750 V or less, or ten business days for services greater than 750 V

\* Costs and durations vary greatly depending on location, type of request, amount of construction involved, etc. For a list of standard service charges, visit [torontohydro.com/servicecharges](https://torontohydro.com/servicecharges).

\*\* This step is not applicable for relocations or demolitions.



# TORONTO HYDRO'S SUPPLY OFFERINGS

Depending on your needs and existing infrastructure, your building or development can connect to our electrical system in a number of different ways.

## FROM THE ROAD

Toronto Hydro has both overhead and underground electrical systems. How power is brought to your property depends on which system is nearby, property conditions and the electrical demand loads being requested. Toronto Hydro can supply your electricity needs from the road, as long as your electrical demand loads are below the following thresholds:

TABLE 1

SUPPLY VOLTAGE	MAXIMUM DEMAND LOAD	MAXIMUM SERVICE SIZE
120/240 V (1ph, 3w)	76 kVA	400 A
120/208 V (3ph, 4w)	115 kVA	400 A
347/600 V (3ph, 4w)	83 kVA	100 A
120/240 V (1ph, 3w) 347/600 V (3ph, 4w)	100 kVA	N/A

ph = phase w = wire

If you're requesting electrical demand loads that exceed the thresholds in Table 1, you're required to pay for a Toronto Hydro-owned transformer (pad-mounted or in a building vault) and must accommodate this on your private property. See pages 8 to 14 of this guide for additional information on Toronto Hydro-owned transformer offerings.

Depending on system availability, customers located in the downtown core seeking an electrical demand load greater than 400 A (115 kVA) at 120/208 V may have the option of being supplied from our secondary network distribution system. Customers are expected to contact Toronto Hydro to discuss the feasibility of such connections.



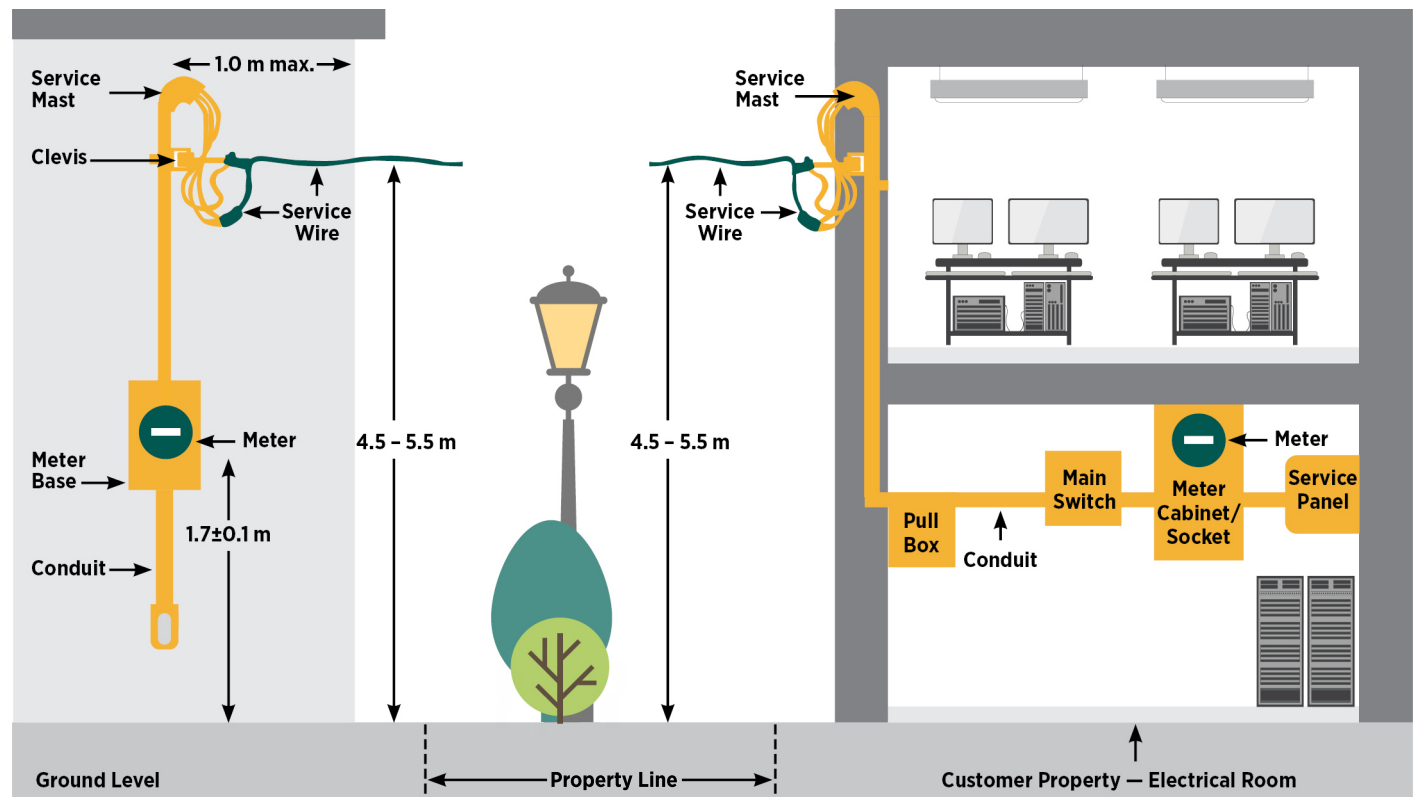
# TORONTO HYDRO'S SUPPLY OFFERINGS

## FROM THE ROAD Overhead electrical service

If you have existing overhead service or are requesting this type of connection, refer to the following diagrams and details for information about who owns what in terms of infrastructure and responsibilities.

■ Customer's responsibility   ■ Toronto Hydro's responsibility

### Outdoor metering



For reference only. Drawing is not to scale.

For reference only. Drawing is not to scale.

### IMPORTANT NOTES

- Ownership demarcation point is at the top of customer's service mast
- Configuration/layout may vary. Please refer to a qualified/licensed electrician for the layout that works best for your service
- Meters are owned by Toronto Hydro



**NOTE:** Overhead supply arrangement is dependent on the existing system infrastructure in the vicinity.



# TORONTO HYDRO'S SUPPLY OFFERINGS

## FROM THE ROAD

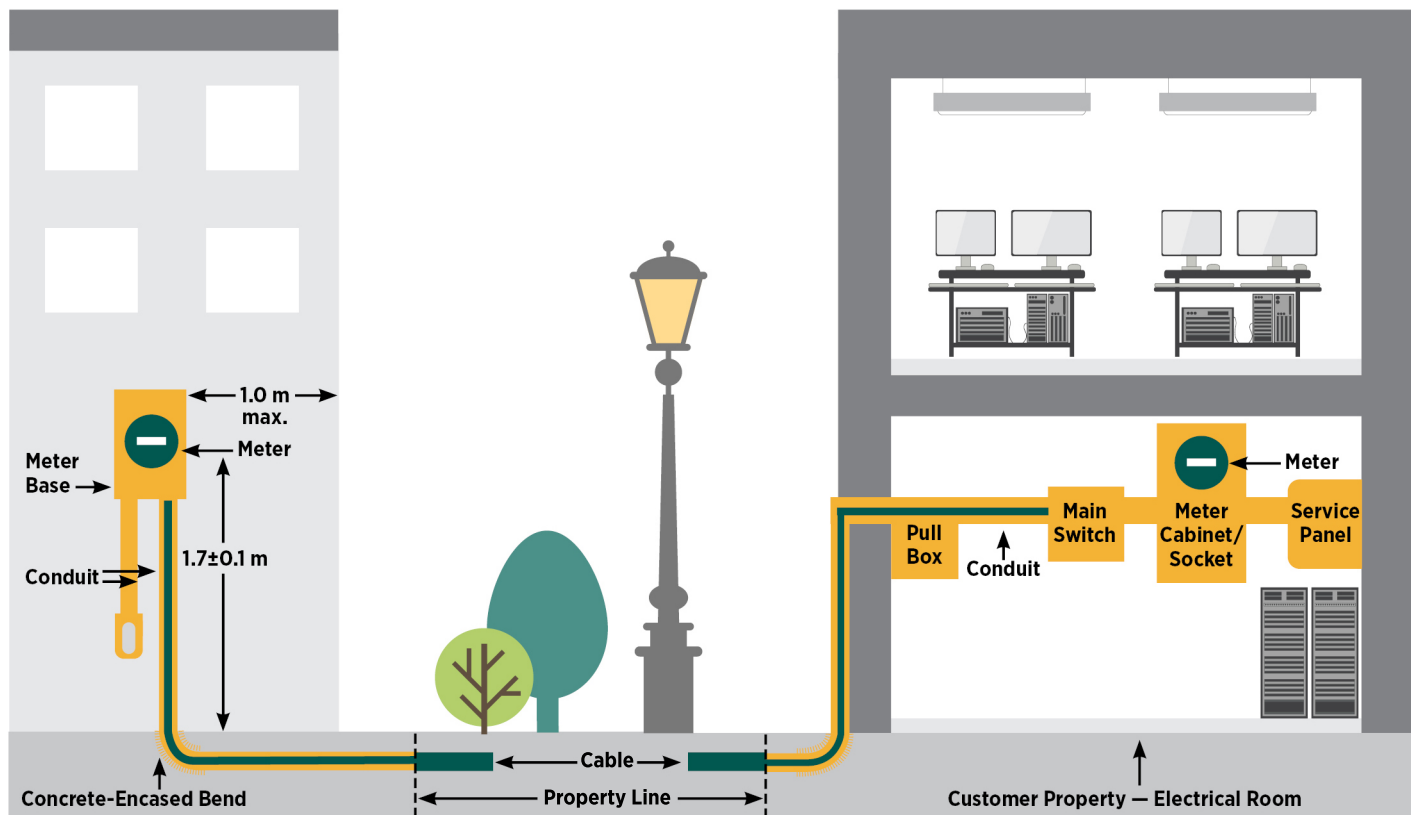
### Underground electrical service

If you have existing underground service or are requesting this type of connection, refer to the following diagrams and details for who owns what in terms of infrastructure and responsibilities.

■ Customer's responsibility

■ Toronto Hydro's responsibility

#### Outdoor metering



For reference only. Drawing is not to scale.

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#### IMPORTANT NOTES

- Customer owns the civil duct from the property line to the building
- Configuration/layout may vary. Please refer to a qualified/licensed electrician for the layout that works best for your service
- Electrical demarcation point is at the line side of the customer meter base or the line side of customer's main disconnect switch
- Meters are owned by Toronto Hydro





# TORONTO HYDRO'S SUPPLY OFFERINGS

## TRANSFORMER ON PRIVATE PROPERTY

Customers requesting electrical demand loads exceeding the available supply offerings from the road are required to pay for a Toronto Hydro-owned transformer (pad-mounted or in a building vault) and must accommodate this on customer/private property. Read through this section to learn about Toronto Hydro's transformer offerings.

Customers requesting peak demand loads exceeding the transformer offerings outlined in Table 1 are required to pay for and provide a customer-owned high voltage substation on private property in order to receive supply of electricity from Toronto Hydro\*. Please refer to the *Requirements for the Design and Construction of Customer-Owned High Voltage Substations* (Conditions of Service reference document #4) for details, available online at [torontohydro.com/conditionsofservice](https://torontohydro.com/conditionsofservice).



TABLE 2

PRIMARY VOLTAGE	SUPPLY VOLTAGE	PAD-MOUNTED TRANSFORMER		BUILDING VAULT TRANSFORMER	
		MAXIMUM SERVICE SIZE	MAXIMUM TRANSFORMER SIZE	MAXIMUM SERVICE SIZE	MAXIMUM TRANSFORMER SIZE
All	120/240 V (1ph, 3w)	—	167 kVA	—	167 kVA
13.8/8 kV	120/208 V (3ph, 4w)	1,600 A	500 kVA	—	1,500 kVA
	347/600 V (3ph, 4w)	600 A	500 kVA	2,500 A	2,500 kVA
27.6/16 kV	120/208 V (3ph, 4w)	2,000 A	750 kVA	—	1,500 kVA
	347/600 V (3ph, 4w)	3,000 A	3,000 kVA	2,500 A	2,500 kVA

ph = phase w = wire

\* If the electrical demand load requested exceeds the above-noted thresholds and cannot accommodate the requirements (i.e. don't have sufficient space or clearances) indicated, we'll review on a case-by-case basis to consider alternative options.

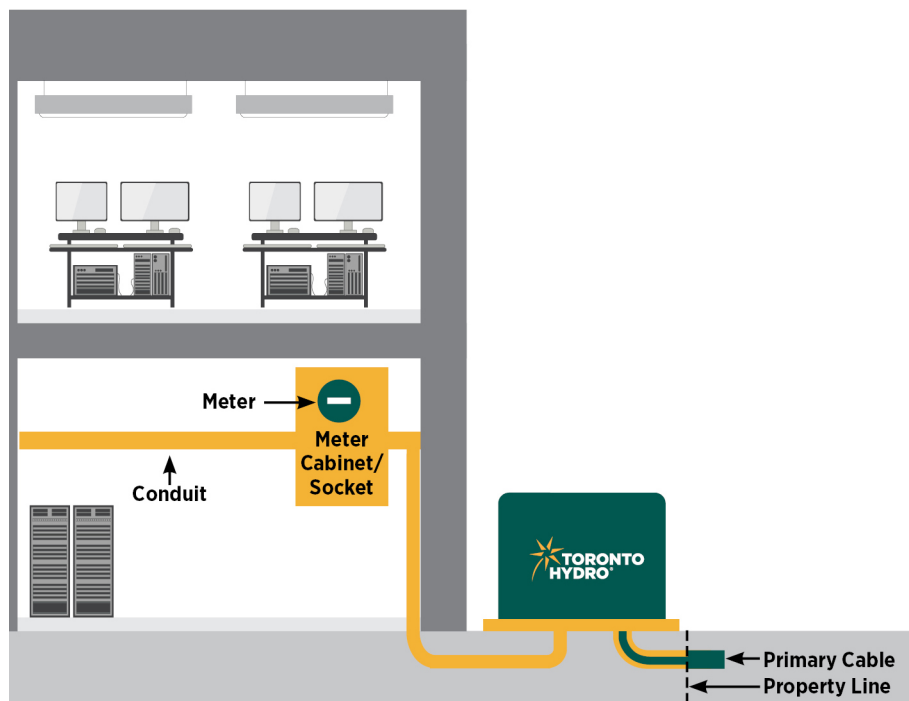
\*\* Depending on system availability, customers located in the downtown core seeking an electrical demand load greater than 400 A (115 kVA) at 120/208 V may have the option of being supplied from our secondary network distribution system. Customers are expected to contact Toronto Hydro to discuss the feasibility of such connections.

# TORONTO HYDRO'S SUPPLY OFFERINGS

## TRANSFORMER ON PRIVATE PROPERTY Pad-mounted transformer supply

■ Customer's responsibility ■ Toronto Hydro's responsibility

### Indoor electrical room



For reference only. Drawing is not to scale. Actual configuration/layout may vary.

### Pad-mounted transformer



### Pad-mounted transformer connection

This is an underground service with Toronto Hydro transformation placed at grade/ground level on private property.

#### CUSTOMER'S RESPONSIBILITY\*

- Complete civil work on private property. This typically includes, but is not limited to, all civil work required to bring the Toronto Hydro feeder in from the property line to and including the pad-mounted foundation
- All electrical work past electrical demarcation

#### CIVIL DEMARCATION POINT

- Property line
- Customer owns all civil infrastructure on private property and is responsible for all construction, installation and maintenance

#### TORONTO HYDRO'S RESPONSIBILITY

- Complete all work on City property
- Supply and install transformers and primary cables to the customer pad-mounted foundation
- Supply and install meter

#### ELECTRICAL DEMARCATION POINT

- Secondary terminations of the pad-mounted transformer. Customer owns and is responsible for the secondary cable connecting from the transformer to the electrical room

\* The pad-mounted transformer foundation, along with any other civil structures, shall be designed and constructed in accordance with the latest editions of the applicable codes, standards and by-laws referenced in the *Toronto Hydro Requirements for the Design and Construction of Customer-Owned Structures*. See Conditions of Service Reference 5a and 5b for details, available at [torontohydro.com/conditionsofservice](https://torontohydro.com/conditionsofservice).

# TORONTO HYDRO'S SUPPLY OFFERINGS

## TRANSFORMER ON PRIVATE PROPERTY Pad-mounted transformer supply

TABLE 3

PRIMARY VOLTAGE	SUPPLY VOLTAGE	AVAILABLE TRANSFORMER SIZES*
All	120/240 V (1ph, 3w)	100 kVA 167 kVA
13.8/8 kV	120/208 V (3ph, 4w)	150 kVA 300 kVA 500 kVA
	347/600 V (3ph, 4w)	150 kVA 300 kVA 500 kVA
27.6/16 kV	120/208 V (3ph, 4w)	150 kVA 300 kVA 500 kVA 750 kVA
	347/600 V (3ph, 4w)	150 kVA 300 kVA 500 kVA 750 kVA 1,000 kVA 1,500 kVA 2,000 kVA 2,500 kVA 3,000 kVA

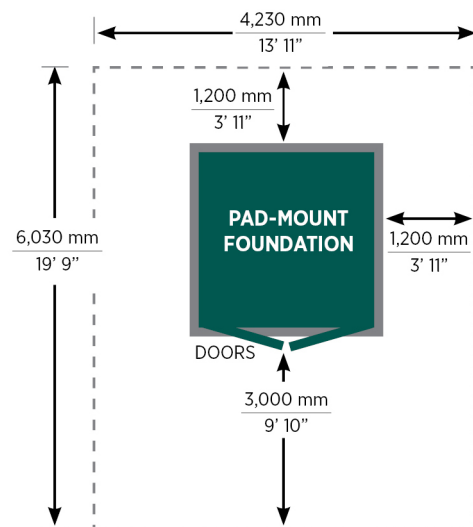
ph = phase w = wire

\* Depending on the supply arrangement and vault setup, the available transformer sizes may be limited.

### About Toronto Hydro pad-mounted transformers:

- Transformer foundation should be as close as practicable to Toronto Hydro's supply source and placed at grade/ground level
- Required clearance for pad-mounted transformers is indicated on the right
- Pad-mounted transformers should not be placed on top of underground parking lots, walkways or basements
- Pad-mounted transformer foundations should be located on a higher/elevated area to avoid the possibility of flooding
- Overhead clearances and access routes, truck access and crane operation facilities must be considered. Contact Toronto Hydro for more information on required location and clearances
- Guard posts or bollards should be installed where frequent vehicular access occurs near the pad-mounted transformer foundation
- For more information, please refer to the *Requirements for the Design and Construction of Customer-Owned Structures* (Conditions of Service reference documents 5a and 5b), available online at [torontohydro.com/conditionsofservice](https://torontohydro.com/conditionsofservice).

### Top view — pad-mounted transformer



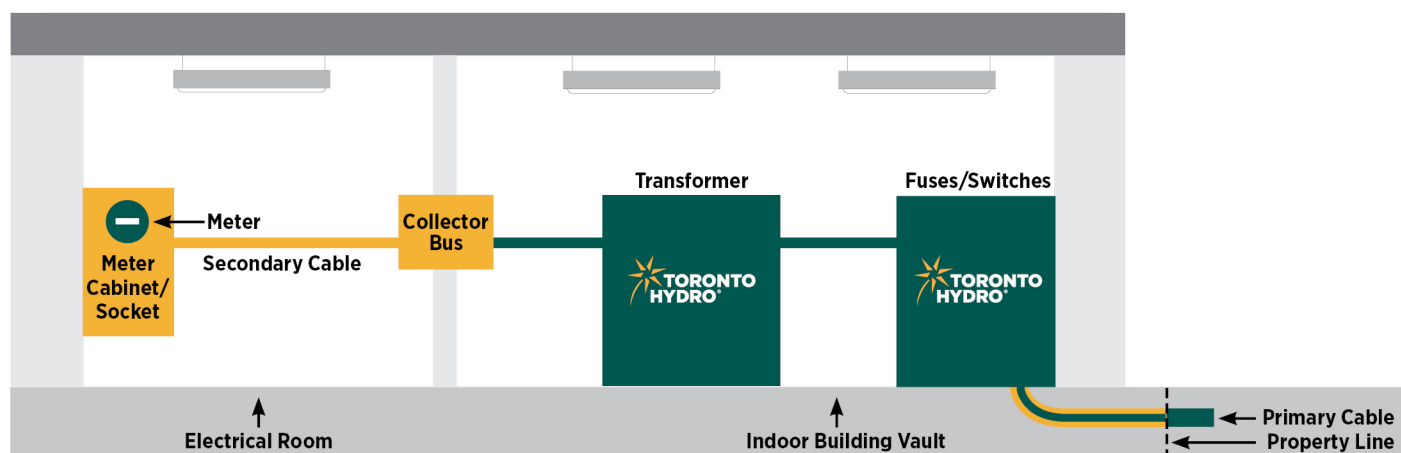


# TORONTO HYDRO'S SUPPLY OFFERINGS

## TRANSFORMER ON PRIVATE PROPERTY Vault transformer supply

■ Customer's responsibility ■ Toronto Hydro's responsibility

### Indoor electrical room



For reference only. Drawing is not to scale. Configuration/layout may vary.

### Building vault connections

These are underground services where Toronto Hydro's transformation is housed in a customer-owned building vault on private property.

#### CUSTOMER'S RESPONSIBILITY\*

- Complete civil work on private property. This typically includes, but is not limited to, all civil work required to bring the Toronto Hydro feeder in from the property line up to the building vault
- All electrical work past the electrical demarcation point

#### TORONTO HYDRO'S RESPONSIBILITY

- Complete all work on City property
- Supply and install transformers, primary and secondary cables to the electrical demarcation point

#### CIVIL DEMARCATION POINT

- Property line
- Customer owns all civil infrastructure on private property and is responsible for all construction, installation and maintenance

#### ELECTRICAL DEMARCATION POINT\*\*

- Line side of the collector bus inside the vault

\* The building vault shall be designed and constructed in accordance with the latest editions of the applicable codes, standards and by-laws referenced in the *Toronto Hydro Requirements for the Design and Construction of Customer-Owned Structures*. See Conditions of Service Reference 5a and 5b for details, available at [torontohydro.com/conditionsofservice](https://torontohydro.com/conditionsofservice).

\*\* Depending on the supply arrangement and vault setup, the electrical demarcation point may vary.

# TORONTO HYDRO'S SUPPLY OFFERINGS

## TRANSFORMER ON PRIVATE PROPERTY Vault transformer supply

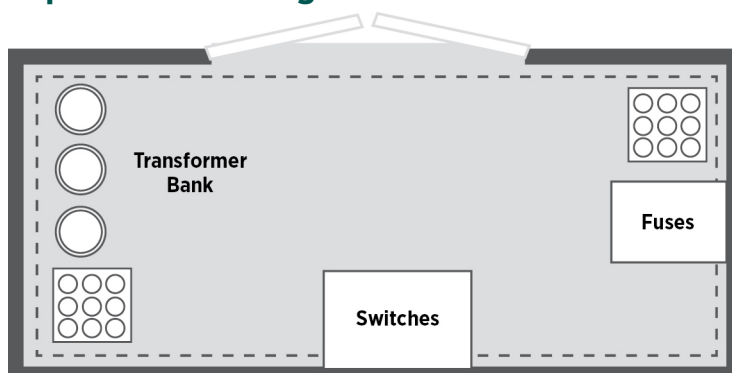
TABLE 4

PRIMARY VOLTAGE	SUPPLY VOLTAGE	AVAILABLE TRANSFORMER SIZES
<b>All</b>	120/240 V (1ph, 3w)	167 kVA
<b>13.8/8 kV</b>	120/208 V (3ph, 4w)	150 kVA 300 kVA 500 kVA 750 kVA 1,000 kVA 1,500 kVA
	347/600 V (3ph, 4w)	300 kVA 500 kVA 750 kVA 1,000 kVA 1,500 kVA 2,000 kVA 2,500 kVA
<b>27.6/16 kV</b>	120/208 V (3ph, 4w)	150 kVA 300 kVA 500 kVA 750 kVA 1,000 kVA 1,500 kVA
	347/600 V (3ph, 4w)	150 kVA 300 kVA 500 kVA 750 kVA 1,000 kVA 1,500 kVA 2,000 kVA 2,500 kVA

ph = phase w = wire

\* Depending on the supply arrangement and vault setup, the available transformer sizes may be limited.

### Top view — building vault



For reference only. Drawing is not to scale. Configuration/layout may vary.

TABLE 5

BUILDING VAULT SIZES (MINIMUM)			
TRANSFORMER SIZE (kVA)	LENGTH (mm)	WIDTH (mm)	DOORS (mm)
Up to 2,000	8,000	6,000	1,200 x 2,400
2,000 to 2,500	10,000	8,000	1,200 x 3,000

# TORONTO HYDRO'S SUPPLY OFFERINGS

## TRANSFORMER ON PRIVATE PROPERTY Vault transformer supply



■ Building vault option

### About Toronto Hydro building vault transformers:

- Vaults housing Toronto Hydro-owned equipment within a building must be placed at grade/ground level
- Vaults adjacent to or below units occupied by tenants should be avoided
- Immediate access to the vault must be provided on a 24-hour basis. Doors leading to the vault must be equipped with Toronto Hydro locks. If this is impractical, the customer must provide Toronto Hydro with appropriate access keys or magnetic cards to enable entry from outside (e.g. street)
- In flood-prone or low floor plain areas, customers are expected to locate building vaults in higher elevated areas, or to seek preventative and mitigation methods to reduce the risk of flooding (e.g. drainage connections, retaining walls)
- Guard posts or bollards should be placed to protect entrances (e.g. doors and hatches) to help ensure security and prevent blocked access — this is particularly important for walk-in building vaults, where the vault is accessed through parking lots
- For cases of power outages or emergencies where access to the vault/electrical rooms is required by Toronto Hydro personnel, all routes must be sufficiently lit and labeled so our crews can address the issues as quickly as possible

If your project cannot accommodate the requirements in Toronto Hydro's Conditions of Service or the criteria specified above, you're required to provide justification to support the request for deviation. Toronto Hydro will review all deviations on a case-by-case basis.

For more information, please refer to the *Requirements for the Design and Construction of Customer-Owned Structures* (Conditions of Service reference documents 5a and 5b), available online at [torontohydro.com/conditionsofservice](https://torontohydro.com/conditionsofservice).

\* Below-grade vault installations are considered on a case-by-case basis and must be submitted to Toronto Hydro for approval. These installations aren't the preferred option due to concerns including, but not limited to, risk of flood, communication issues and access limitations in below-grade structures.



# TORONTO HYDRO'S SUPPLY OFFERINGS

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## TRANSFORMER ON PRIVATE PROPERTY

Please review the following information for important tips and insights about Toronto Hydro transformers.

### General

- Where the building vault or pad foundation isn't situated in a location where grounding can be applied directly below, external grounding in close proximity to the structure will be required, and is reviewed and accepted by Toronto Hydro on a case-by-case basis
- Structure and equipment stenciling must follow conventions set out by Toronto Hydro
- Customer civil structures containing Toronto Hydro assets are reviewed, inspected and accepted by Toronto Hydro prior to beginning connection work
- Customer building structures (new or rebuilt) must ensure proper clearance to Toronto Hydro infrastructure (e.g. pole lines) on the public road allowance

### Inspection

- Civil inspections, including but not limited to all civil structures housing or supporting Toronto Hydro assets (e.g. ducts, pad-mount foundations, rebars, grounding), must be reviewed and accepted by Toronto Hydro prior to pouring concrete
- Customers must provide a minimum of two business days' notice to arrange for civil inspection or re-inspection with Toronto Hydro
- Toronto Hydro has the right to refuse energization until inspections are performed and work is approved
- If deficiencies are found in existing customer-owned structures through inspection or other activities, they'll be documented and a Customer Action Form (CAF) will be issued to the customer to identify the deficiencies requiring attention

### Maintenance

- Customers are expected to inspect and maintain their civil structures on private property — at a minimum, the customer should perform inspection and maintenance on an annual basis
- Customers are restricted from accessing building vaults containing Toronto Hydro equipment. For access, contact Toronto Hydro to arrange for a qualified crew member to accompany you for your safety. To schedule access, visit [torontohydro.com/for-business/vault-access](https://torontohydro.com/for-business/vault-access)

## Learn more about customer connections

For further details, please refer to our Conditions of Service at **[torontohydro.com/conditionsofservice](https://torontohydro.com/conditionsofservice)**.

Alternatively, you can speak to a Customer Service Representative directly by calling 416-542-8000 (press 4, then press 1 for services east of Yonge Street or 2 for services west of Yonge Street) from Monday to Friday, 8 a.m. to 4 p.m.

### Additional connections

- For Distributed Energy Resource connections (such as solar panels and back-up generators), please visit **[torontohydro.com/gridconnections](https://torontohydro.com/gridconnections)**
- For information on electric vehicles and charging stations, visit **[torontohydro.com/electricvehicles](https://torontohydro.com/electricvehicles)**



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