

## Tree Conflict Procedure

### Definitions

Structural Root Zone (SRZ): 0.5 ft per inch of trunk diameter.

Critical Root Zone (CRZ): 1.0 ft per inch of trunk diameter.

Tree Protection Zone (TPZ): The smaller of 1.5 ft per inch of trunk diameter or dripline of tree.

Trunk Diameter: Diameter of main trunk measured 4.5 ft above ground.

Tree Lawn: The area of the public right-of-way between the curb and sidewalk.

Hydro/Air Vac: Method of excavation to reduce root damage, use determined by Office of the City Forester.

Tree Conflicts: Excavation within TPZ.

### Procedure

1. Walk the jobsite in advance and obtain guidance, as appropriate, from the Office of the City Forester (OCF) prior to the start of construction. Recommend marking potential tree conflicts prior to the jobsite walk. When possible, share photos with OCF of potential tree conflicts prior to the jobsite walk. Tree conflicts must be marked so OCF can monitor the trees and plan/inspect for proper excavation.
2. If preferred location of service line and meter pit are outside the dripline and TPZ of the tree(s), then install service line and meter pit to DW Engineering Standards. OCF Tree Protection Zone Fencing Detail OCF-TPZ 1 is included with this procedure for reference.
3. If preferred location of service line and meter pit are in the tree lawn and within the TPZ, then alternate locations must be explored and selected. The following table represents the process for evaluating and selecting alternate locations.

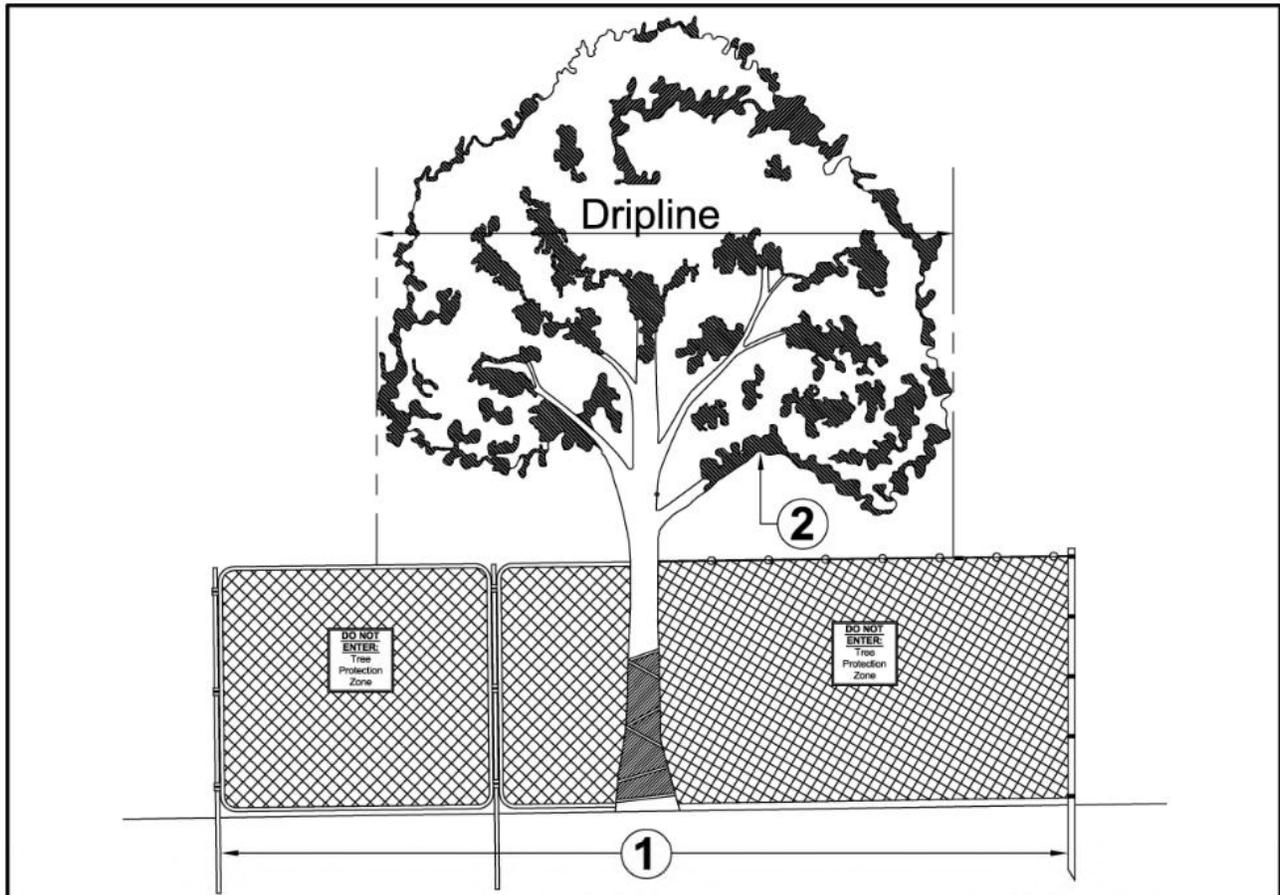
Preferred Location	Are there constraints to moving preferred location?	Alternate Location
In TPZ	No	Choose <u>alternate location</u> in the tree lawn and outside TPZ.
In TPZ	Yes	Choose <u>alternate location</u> in the tree lawn and outside CRZ. Must obtain agreement from OCF during jobsite walkthrough. Jobsite walkthrough will evaluate tree size, tree condition, and tree location. OCF may ask for hydro/air excavation.
In CRZ	Yes	Choose <u>alternate location</u> as far away from trunk as possible in tree lawn and outside SRZ. Must obtain agreement from OCF during jobsite walkthrough. OCF may ask for hydro/air excavation
In SRZ	Yes	Choose <u>alternate location</u> as far away from trunk as possible in tree lawn and within SRZ. Vacuum excavate to expose root system. With approval of OCF (threshold for number/size of roots cut determined by OCF), neatly (clean cut roots with proper saw) cut roots to accommodate service line and meter pit. If this approach is determined to be infeasible, remove tree. Tree will be removed at Denver Water expense. Equivalent canopy of trees will be replanted by the City of Denver at locations of their choice, at their cost, and reimbursed by Denver Water.

Note 1 - If no alternate locations are available in tree lawn and OCF predicts severe tree impact, then move meter pit behind tree lawn to property.

Note 2 - If no alternate locations are available on front property and it's an inside meter set, leave meter in place.

### Excavation Guidelines

1. Begin excavations at point furthest away from trunk and dig towards tree. This will improve the ability to neatly sawcut the roots and avoid tearing roots with the excavator.
2. In some cases, it may be necessary to hand dig or use vacuum excavation to minimize damage to root systems. In some cases, it may be appropriate to soft dig prior to making final decisions regarding the location of the meter.



**Any work in these areas must have written approval of OCF prior to commencement of activity. Contact OCF for instruction.**

**Area 1: Tree Protection Zone and Critical Root Zone Protection**

The Tree Protection Zone (TPZ) shall be equal to dripline or 1.5 feet radially from the tree for every one inch of trunk diameter at breast height (DBH = 4.5' above soil line), whichever is greater.

A. Min 6' in height steel chain link fence is required unless otherwise approved by the Office of the City Forester (OCF). Steel chain link fence panels or rolls are acceptable.

1. When chain link rolls are installed, it shall be fastened to heavy duty steel posts with safety caps at minimum five (5) attachment points with 12-gauge wire, including points at top and bottom. Weave wire through top of roll to eliminate sag.
2. Posts shall be driven 2' to 3' below grade and spaced at max. five to ten foot (5' - 10') o.c. intervals. Fencing must be kept taut at all times.
3. "Tree Protection Zone" signs shall be placed one (1) per each tree protection zone minimum or more per direction of City Forester; maintain in the location and condition in which approved.
4. TPZ, including signage, shall be maintained in the location and condition in which approved.

The Critical Root Zone (CRZ) shall be equal to one foot radially from the tree for every one inch of trunk diameter at breast height.

**Area 2: Canopy Protection**

Contact OCF if potential for damage exists and/or if pruning is needed for any clearance issues prior to performing work.

**Notes**

1. OCF Tree Retention and Protection Specifications shall be followed throughout duration of work.
2. After TPZ is approved;
  - A. TPZ shall not be resized, modified, removed, or altered in any manner without prior written approval. TPZ shall be maintained in place as approved until removal is authorized by OCF.
  - B. Entrance/access to the TPZ is not permitted without prior written approval from the OCF.
  - C. No materials, debris, equipment, or site amenities shall be stored within the TPZ without prior written approval from the OCF.
3. While TPZ fencing is in place, trees shall be deep-root watered at an interval of once every two weeks when temperatures are at or above 40 degrees F. Trees shall be watered at the rate of twenty-five (25) gallons per inch DBH. OCF may ask for proof of watering.
4. Violation of TPZ or damage to protected trees is subject to penalty per City Ordinance.

 <b>DENVER</b> THE MILE HIGH CITY	City and County of Denver Office of the City Forester 101 W. Colfax Ave, Denver, CO 80202	Tree Protection Zone Fencing Detail	Detail: OCF-TPZ 1
			Effective: 2-14-2020