

Trees and Construction

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Urban Forestry Division

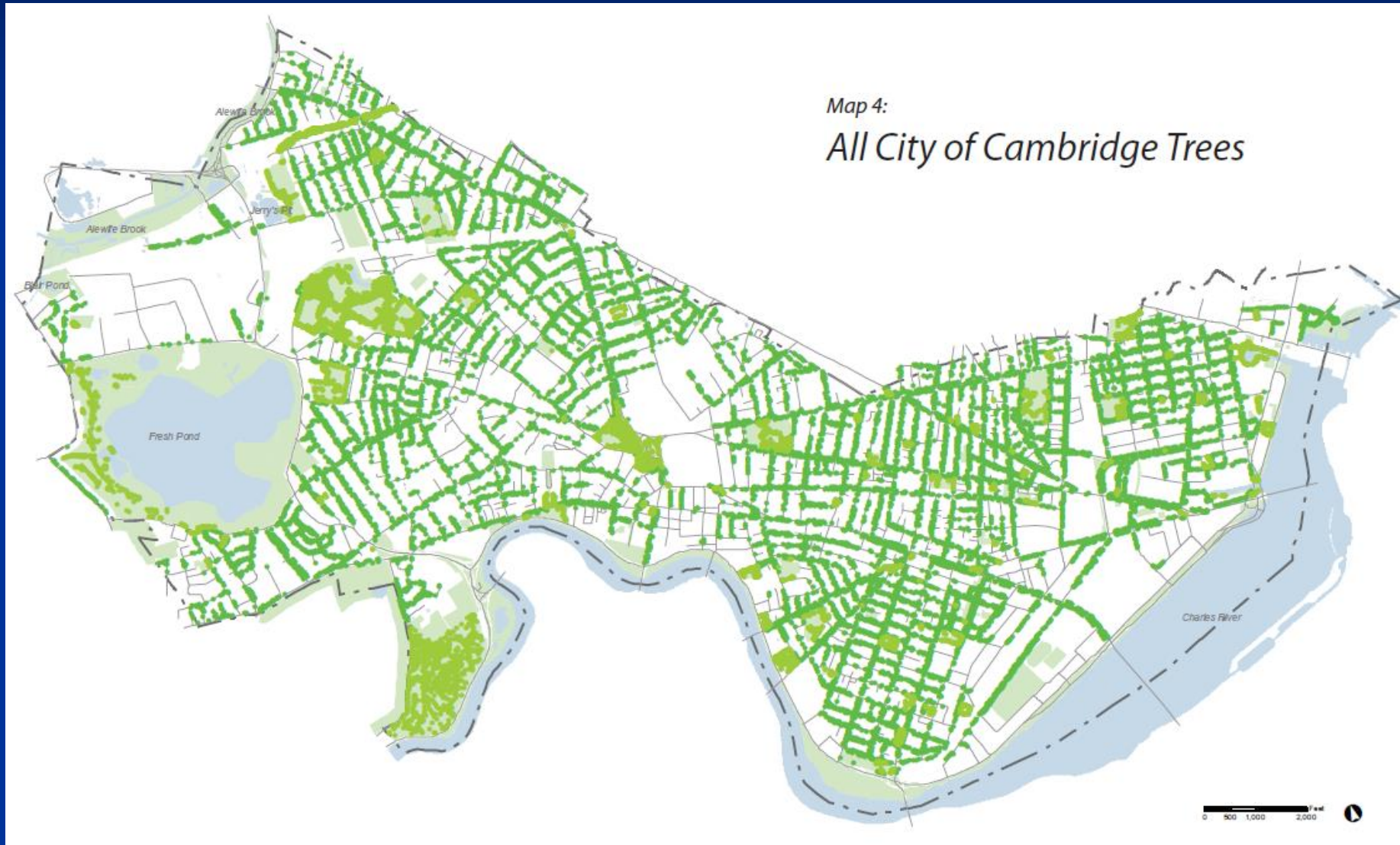
City Arborist/Tree Warden

Benefits of a Healthy Street Tree

- Improve Air Quality
- Increase Property Value
- Increase in Pedestrian Use
- Reduce Traffic Noise
- Helps Calm Traffic
- Reduces Wear and Tear on Catch Basins and Combined Sewer Systems
- Help Reduce Heat Island Effect
- Help Extend the Life of Infrastructure (Roads and sidewalks)



Urban Forestry Division maintains over 19,000 trees throughout the city.



Facts

- Between 2009 and 2014, the overall canopy coverage in Cambridge dropped from 30% to 28%
- The average lifespan of a city street tree in Cambridge is 30 years
 - If it can survive the first 5 years after installation
- Over time, the value of a tree increases while the value other city assets decrease

Protect street trees

- Avoid the Following When Working Around Trees:
 1. Wounding the tree
 2. Exposing Roots to Elements for Long Periods
 3. Cutting or Ripping Roots
 4. Compacting Rooting Soil with Materials and Equipment
 5. Breaking Branches
- Failure to do so will result in permits being revoked or fines



2 x 4's help protect trunks
from injury

Installing Tree Protection Around Trees



Snow fencing helps minimize soil compaction and storage of materials and equipment



2 x 4's help protect trunks from mechanical injury

Wounding the Tree During Construction



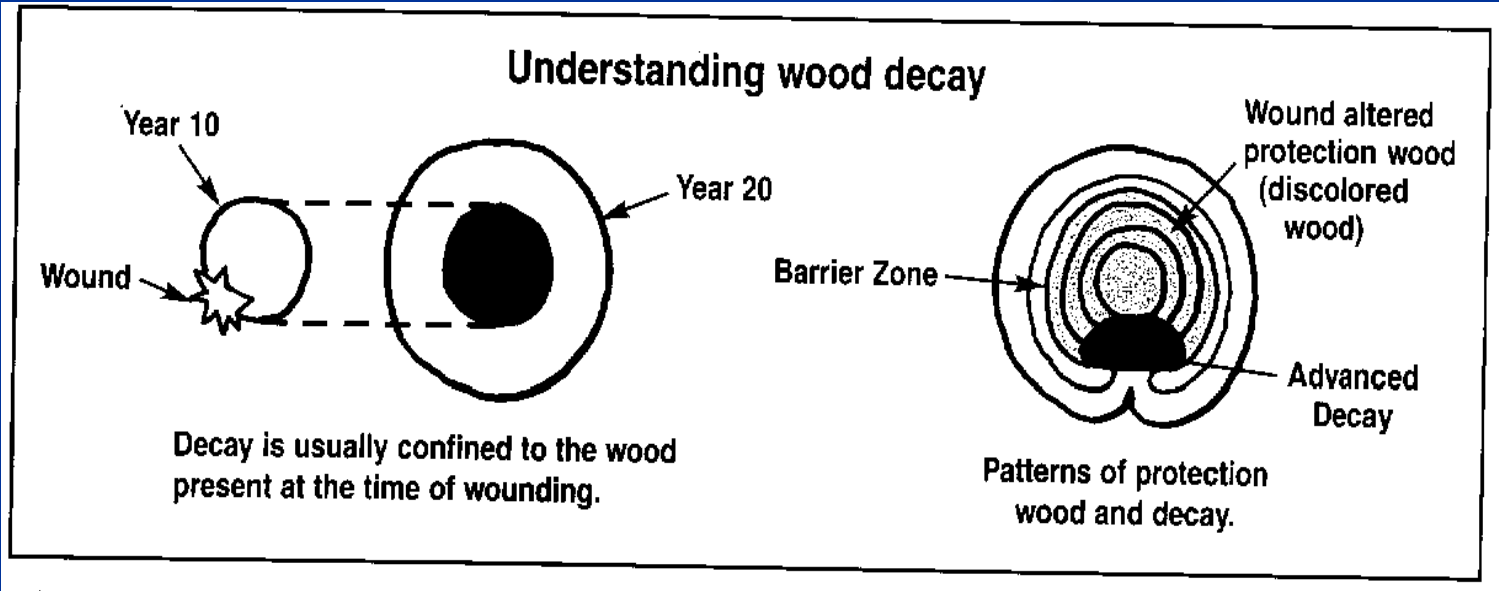
Small wound at first



May develop into large cavity



Small wound increased the chance for failure years down the road



Exposed Roots

The majority of tree roots reside in the top 24"-36" inches of the soil

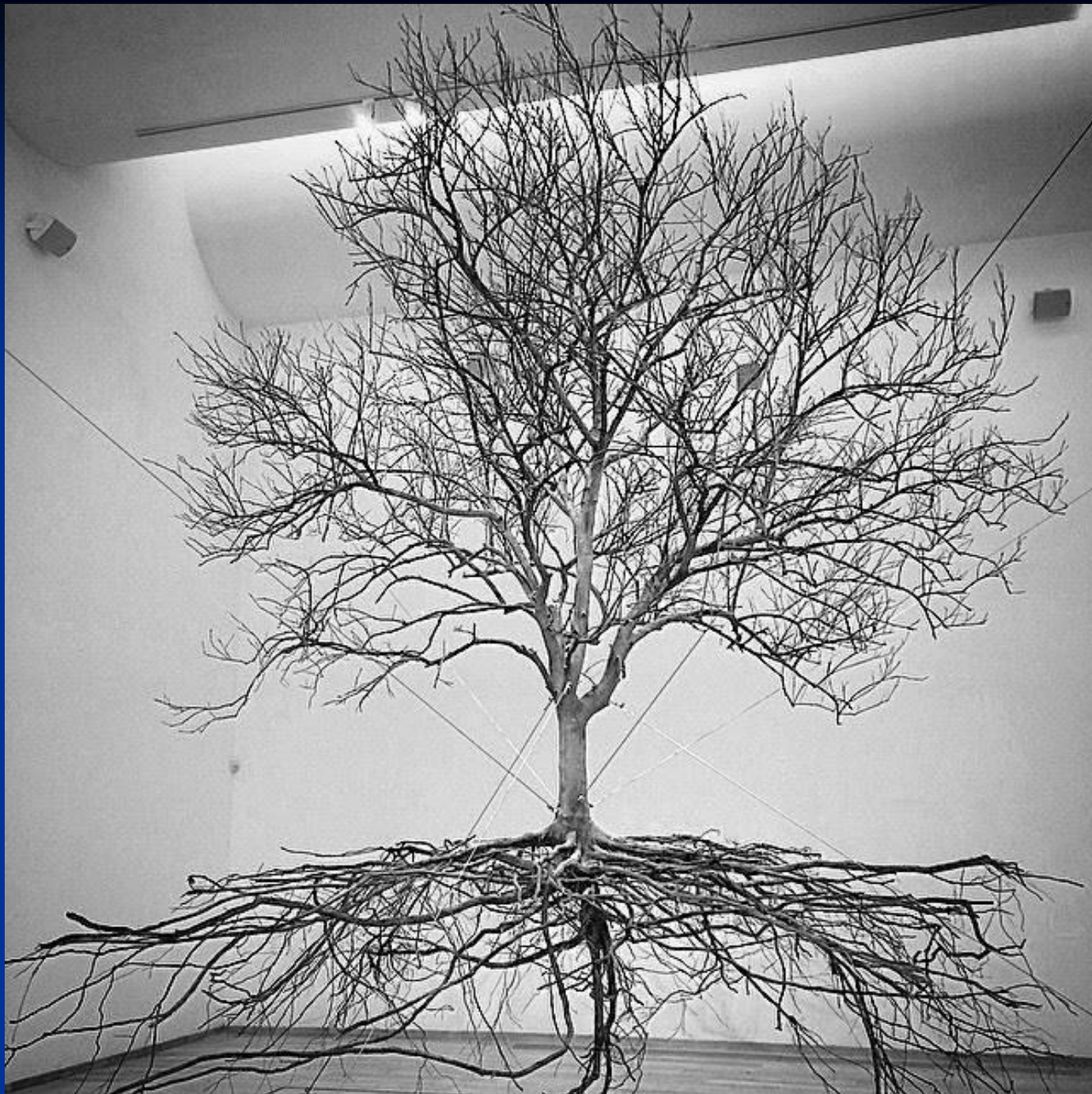


Structural Roots: help support trunk and canopy and anchor tree in soil

Roots were only exposed for a week and drought stress is already present in canopy

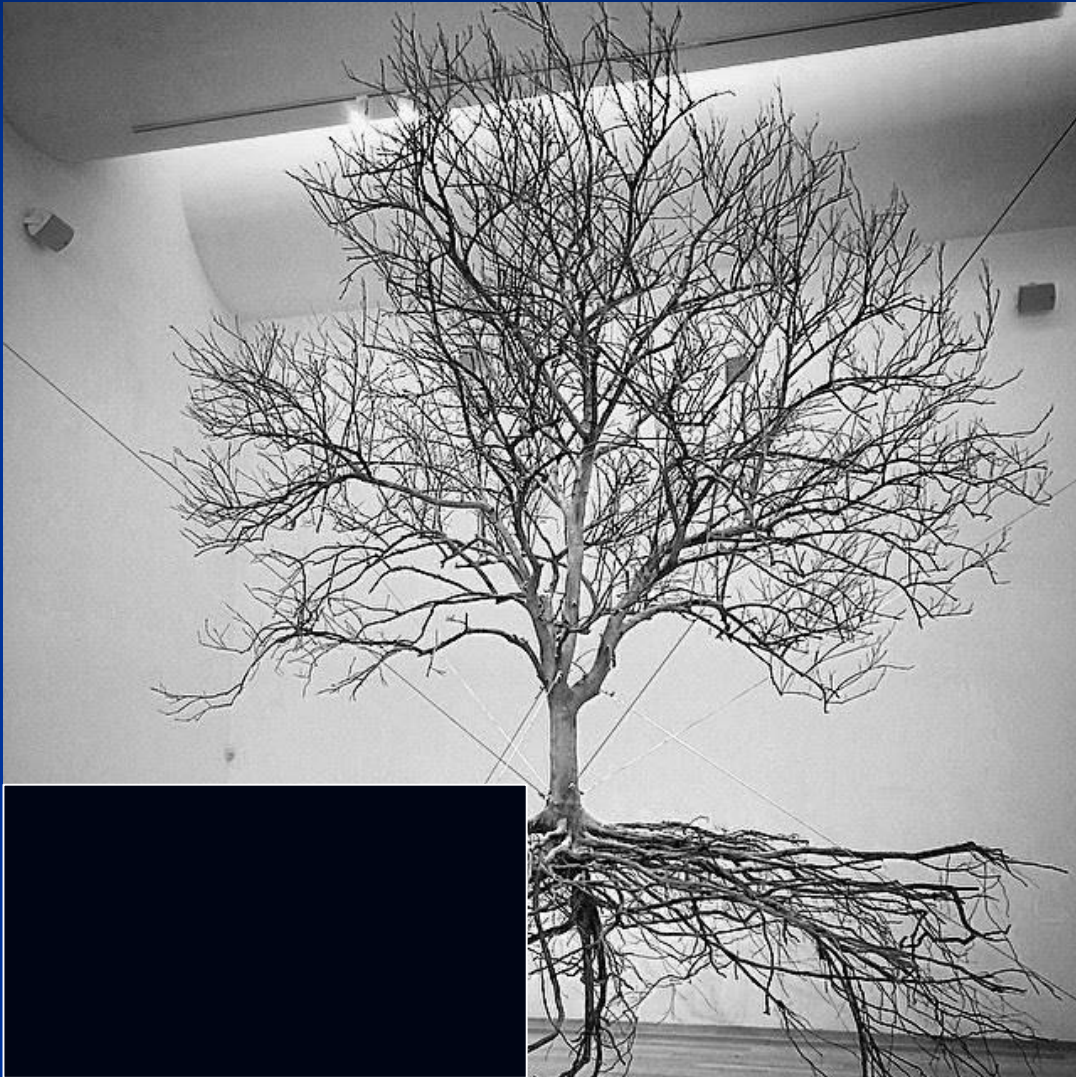
Feeder Roots: uptake water and nutrients for tree





- **Roots typically grow within the top 24"-36" of the soil**
- **The root system usually extends 2-3 times the width of the canopy**

Damage to Structural Roots May Increase the Likelihood of Tree Failure



Tree would have been ok if original gas line was replaced



Tree Roots

If you cannot wrap your index finger and thumb around a root, do not cut!

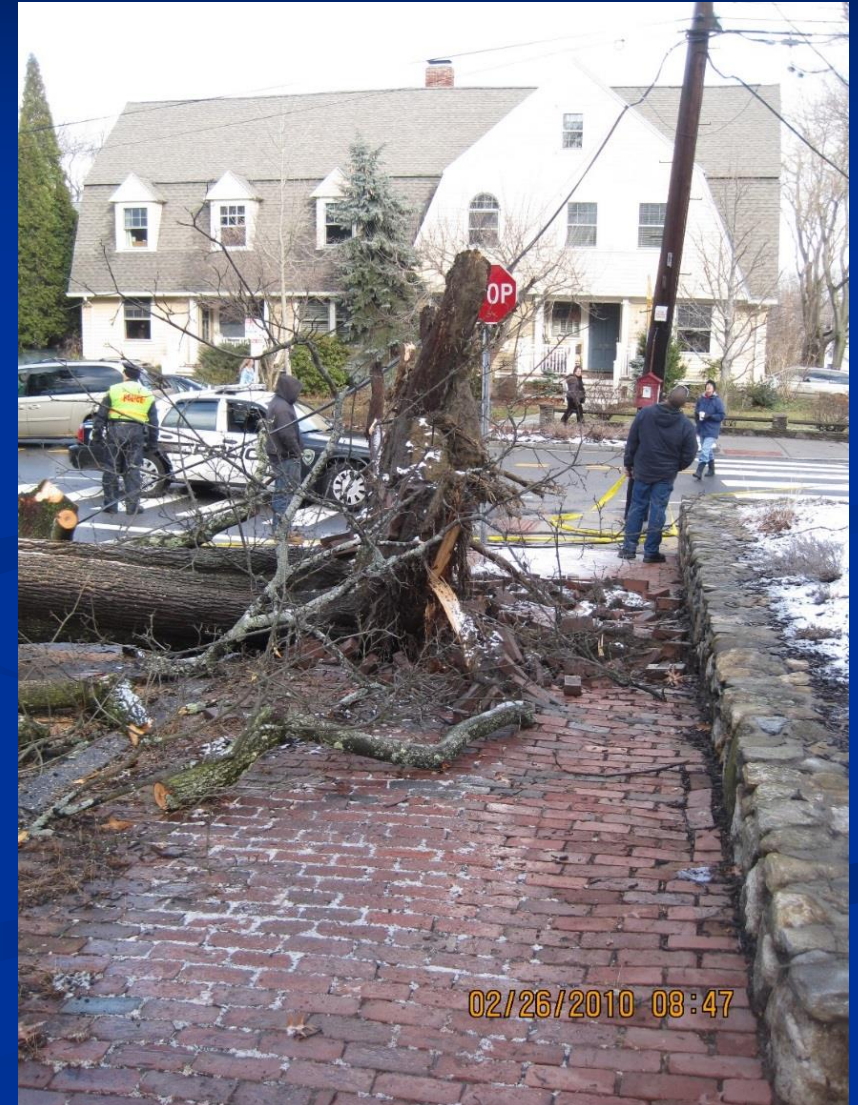
– Call the City Arborist



Tree failure during storm event



Tree failure due to severed roots years after construction of private property rock wall



Tree Failure Years after Root Damage from Construction

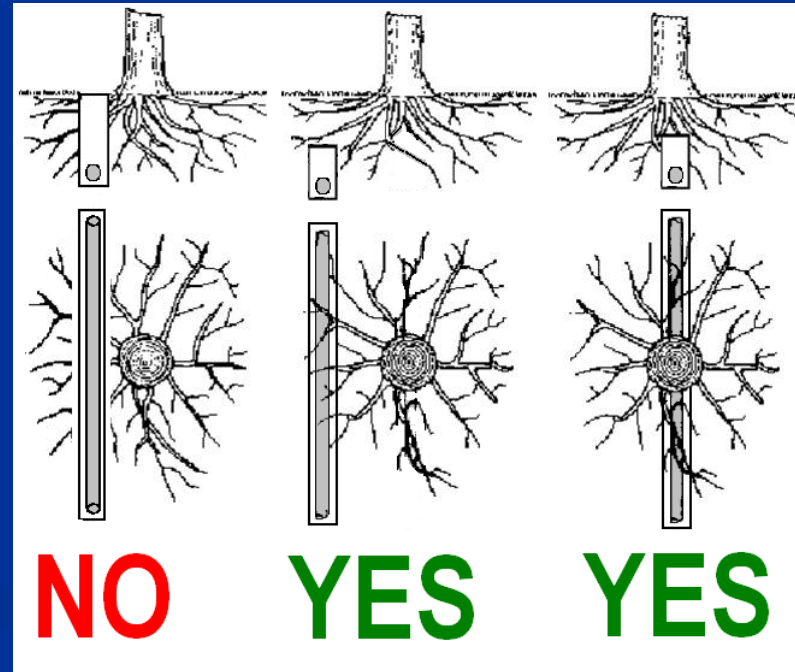


Tree failed in storm due to the lack of structural roots

Excavating around trees



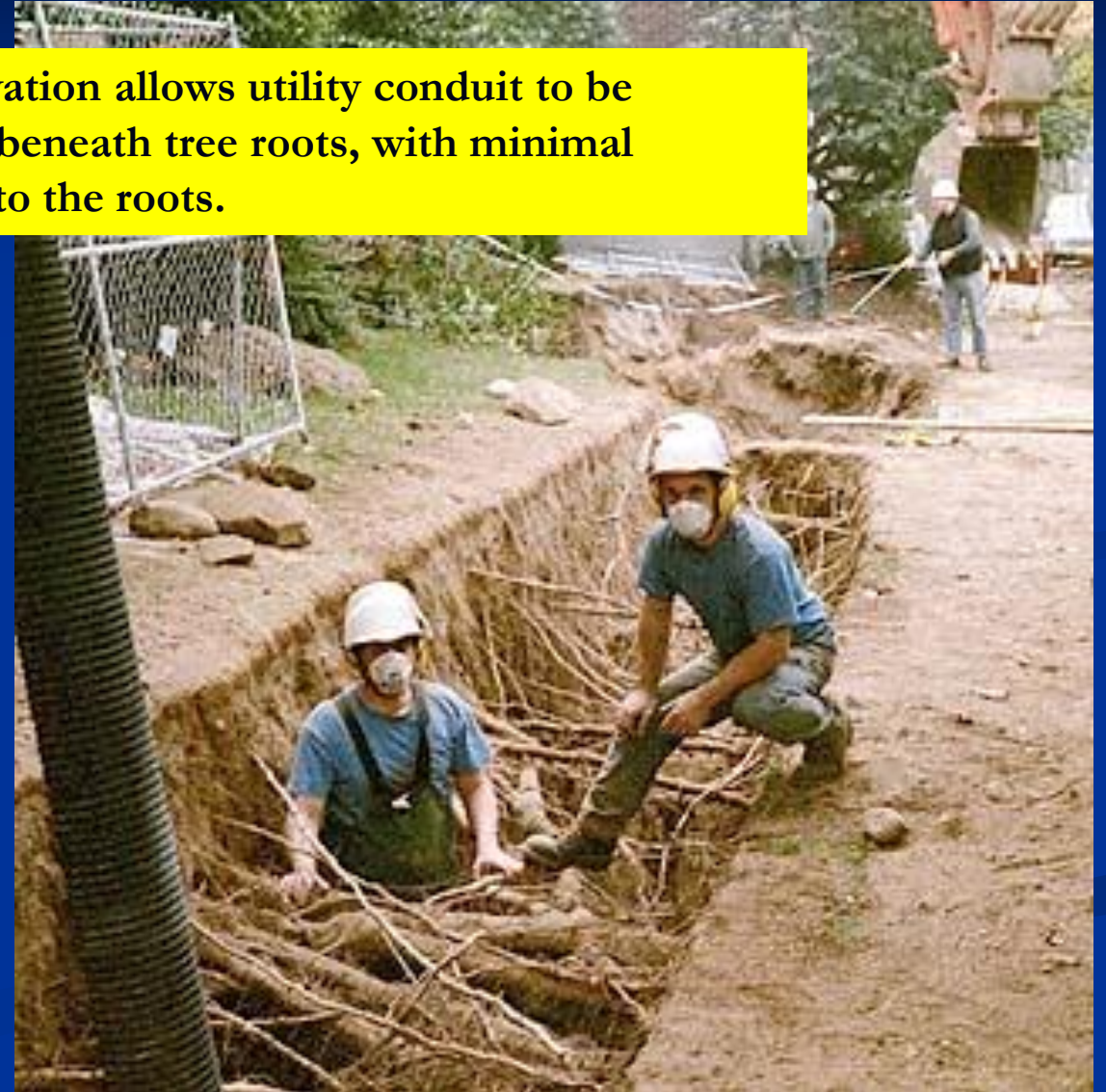
Less damage is done to tree roots if utilities are tunneled under or further away from tree rather than across the roots.



Excavating around trees



Air excavation allows utility conduit to be inserted beneath tree roots, with minimal damage to the roots.



Storing Materials/Equipment on Roots



Tree protection should have been installed to protect roots from construction materials and soil compaction

Mechanical Injury



Look out for low hanging branches when working with construction equipment (i.e. backhoes, large trucks)



Trees need to be protected during all phases of construction

Wires/String Around Trees



Remove all wires, tape or strapping used to hang signage. If left on, wire or strapping will girdle (strangle) tree and restrict water and nutrient movement, eventually causing tree to die.



CERTIFIED ARBORIST

Any contractor hired to do tree related work involving City owned trees shall have a certified arborist on board

If the construction may result in damage to a tree

Call the City Arborist

Questions?

David Lefcourt, City Arborist/Tree Warden
617-349-6433 / dlefcourt@cambridgema.gov

Jim Wilcox, Director of Engineering Services
617-349-6426 / jwilcox@cambridgema.gov

24-Hour DPW – 617-349-4800

cambridgema.gov/tree