

41 E. Main Street Tree Preservation Plan – TREE-13098

November 3, 2025

Tom Kiepora, City Arborist ISA #OH-6684A *TMK*

City of Hudson



LOCATION: 41 E. Main Street – TREE-13098 (Tree is located in right-of-way on Division Street

SPECIES: Red Oak *Quercus rubra*

SIZE: Approx. 65 feet tall, crown spread of approx. 60 feet, 33 inches DBH

AGE: *Mature* – Best Guess is 80-120 years old

CONDITION: Appears to be vigorous and healthy. Very good crown structure. No major defects.

CALCULATED TPZ: 49.5' Radius

$33'' \text{ DBH} \times 1.5 = 49.5'$ (Matheny and Clark 1998 methodology, multiplication factor 1.5)



TREE PRESERVATION PLAN

The proposed building addition at Village Dental, located at 41 E. Main Street, is likely to cause decline in the red oak (TREE-13098) located in the right-of-way on Division Street without adequate tree protection measures. Red oaks are known for being very sensitive to damage caused by construction activity. To mitigate the negative impact of this construction, I have put together a tree preservation plan that will give the tree the best chances of survival. If no tree protection measures are taken, I would expect the tree to decline slowly over a period of 3-5 years and eventually die.

After reviewing the revised construction plans with the applicant, property owner, and Community Development staff onsite on October 23, 2025, I have determined the tree to be a good candidate for tree preservation. The tree has very good structure and the canopy is full and vigorous. Various models predict the tree to be anywhere from 80 to 120 years old, possibly even older. Red oak has the potential to live 200-300 years given the right circumstances, although in an urban environment, this tree is likely closer to the end of its life. Tree preservation measures are especially important in old trees.

The tree measures approximately 65 feet tall and has an irregular crown spread of approximately 60 feet. The diameter measured at breast height (DBH) is 33 inches. The soil appears to be a silty loam, which has moderate potential for compaction. The species, *Quercus rubra*, is susceptible to oak wilt (*Bretziella fagacearum*), a destructive and fatal fungal pathogen.

Under ideal circumstances, no construction activity should take place within the calculated tree protection zone (TPZ). TPZ can be calculated by several different methods – height, crown spread (dripline), or DBH. The Matheny and Clark method, which uses DBH, has different multiplication factors based on age of tree and tolerance to construction damage. Using this method, the **calculated tree protection zone is 49 feet in radius.**

The proposed construction, according to the revised plans submitted to the Arborist, would require excavation and removal of topsoil within the limits of the calculated TPZ. Specifically, a trench would be dug for the footer for the proposed building, and topsoil removed for the installation of a paver patio. It should be noted that most of the fine roots that provide water and nutrient uptake exist in the uppermost soil profile and will be removed along with the topsoil. It is presumed that this excavation would then be backfilled with a limestone base. The proposed patio is approximately 135 square feet.

In an effort to preserve the tree, **I recommend both a low-nitrogen fertilizer and phosphorus acid formula (such as Forti-phite) be injected into the soil under the tree up to the dripline via deep root fertilization between late fall and early spring.** This application should be made before any other tree protection measures. In addition, **I recommend the area around the root flare in a 6-foot radius be cultivated with an air knife and the soil amended with biochar, organic mulch, arborist wood chips and C20 Soil Builder.** Forti-phite, fertilizer application, and soil amendments will help prepare the tree for stress induced by loss of root volume. These applications are to be made by a Certified Arborist.

I propose that at the limits of disturbance, prior to construction, any roots that are to be cut shall be exposed with an air spade and cut cleanly with a saw. This root pruning should take place

between November 1st and March 1st. These cut roots shall be promptly backfilled with soil to prevent desiccation. This work is to be performed by a Certified Arborist.

I also propose a tree protection barrier be installed prior to any construction activity. This barrier (a fence) excludes access to areas within the calculated tree protection zone that are outside of the limits of disturbance. **There shall be no soil cuts or fills, or otherwise change of grade within this tree protection barrier. No construction activities, staging, storage, or otherwise utilization of this space shall occur for the duration of project. This includes trucks, heavy equipment, and construction materials. The deep root fertilization, root invigoration, root pruning, and installation of the tree protection barrier shall be subject to inspection by the City Arborist.**

I also propose that the landscape plan be revised to include as much mulch area (instead of lawn) as possible under the dripline of the tree. Turfgrass competes for resources (water and nutrients) and a reduction in lawn area will reduce said competition. The area underneath the dripline of the tree should be irrigated with an appropriate amount of water (1 inch per week) during times of drought so as not to further stress the tree. Irrigation should be deep and infrequent. This practice should continue until the tree has adjusted to any root loss it has experienced. This can take several years.

Additionally, some limbs will need to be removed above the proposed structure. This pruning shall be done by a Certified Arborist between October 15th and April 15th to minimize the chances of oak wilt infection. Pruning shall be kept to a minimum and only remove what is necessary.

This tree preservation plan has been prepared with guidance from the ISA's *Managing Trees During Site Development and Construction, Third Edition*, as well as input from the Barlett Tree Expert Company. It should be noted that this tree preservation plan is not guaranteed to protect the tree against decline as a result of construction. Over the course of a few years I would expect to see some degree of dieback in the canopy following construction, but I think the tree has good chances of survival if the tree preservation plan is executed as proposed.

V
DIVISION STREET

Prop. Tree Protection Barrier (Yellow)

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Prop. Root Invasions (Red)

Cancelled TPZ (Green)

Prop. Root Pruning (Purple)



