



11333 N. Cedarburg Road
Mequon, WI 53092
Phone:
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www.ci.mequon.wi.us

TREE BOARD
Monday, March 13, 2023
5:30 PM
North Conference Room

Agenda

- 1) Call to Order, Roll Call
- 2) Approval of Meeting Minutes
Action requested: review and approve
 - a. February 17, 2023 Minutes
- 3) Discussion and Possible Action
 - a. Swan Ridge Farms Street Tree Approval
 - b. Specimen Tree Value Amendment to City of Mequon Policy Manual for Tree Protection and Preservation
- 4) Adjourn



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TREE BOARD
Friday, February 17, 2023
4:30 PM
North Conference Room

Minutes

1) Call to Order, Roll Call

Meeting was called to order by Chair Bangs at 6:30 PM

Present:

Chair Carol Bangs

Vice Chair Cheryl Brickman

Board Member Ann Dredge

Board Member Nancy Szatkowski

Alderman Robert Strzelczyk – **Absent**

Also present were Park and Forestry Superintendent Gies and Forester Herlache.

2) Approval of Meeting Minutes

a. 8/19/2020 & 1/25/2023 Minutes

RESULT: **Approved by Voice Acclamation [Unanimous]**

MOVED BY: Board Member Brickman

SECONDED BY: Board Member Szatkowski

AYES: Bangs, Brickman, Dredge, Szatkowski

ABSENT: Strzelczyk

3) Discussion Items

a. The Greens Street Tree Approval

Proposed Species	Number of Trees	Percentage %	Approval
Harvest Gold Linden	2	5%	Approved
Exclamation London Planetree	2	5%	Approved
Espresso Kentucky Coffee Tree	2	5%	Approved
New Horizon Elm	2	5%	Approved
Northern Catalpa	1 → 0	2.5% → 0%	Replace with (1) Common Hackberry

Attachment: 2-17-23 (8285 : February 17, 2023 Minutes)

State Street Maple	2	5%	Approved
American Sentry Linden	3	7.5%	Approved
Mystic Vision Buckeye	1	2.5%	Approved
Bur Oak	1	2.5%	Approved
Hackberry	1 → 2	2.5% → 5% due to amendment	Approved
Schuetti Oak	1	2.5%	Approved
*Norway Spruce	4	10%	Approved
*Homestead Buckeye	3	7.5%	Approved
*Eastern White Pine	1	2.5%	Approved
*Star Power Juniper	10	25%	Approved
# Golden Glory Dogwood	3	7.5%	Approved
# Seven Son Flower	1	2.5%	Approved
	Total: 40		

RESULT: Approved as Amended [Unanimous]
MOVED BY: Board Member Dredge
SECONDED BY: Board Member Brickman

AYES: Bangs, Brickman, Dredge, Szatkowski
ABSENT: Strzelczyk

- 4) Adjourn
 - a. Motion to Adjourn at 7:07 PM

RESULT: Approved by Voice Acclamation [Unanimous]
MOVED BY: Board Member Brickman
SECONDED BY: Board Member Bangs

AYES: Bangs, Brickman, Dredge, Szatkowski
ABSENT: Strzelczyk

Respectfully Submitted,

Ren Schlereth
 Administrative Secretary

Attachment: 2-17-23 (8285 : February 17, 2023 Minutes)



11333 N. Cedarburg Road
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Office of Tree Board

TO: Tree Board
FROM: Nathan Herlascher,
DATE: March 13, 2023
SUBJECT: Swan Ridge Farms Street Tree Approval

Background

The street tree plan for Swan Ridge Farms is up for review. The property is located west of Swan Road and north of County Line Road. The proposal is being submitted by Joseph Bukovich of Point Real Estate.

Swan Ridge Farm street tree plan contains 398 total trees. 313 trees are to be placed within right-of-way, 23 along Swan Road, and 62 on walking paths.

Native trees were encouraged, with emphasis on at least native based cultivars. Hardy urban tolerant alternatives are also acceptable.

Analysis

The plan submitted by Joseph Bukovich of Point Real Estate meets general requirements for spacing (excluding vision triangles). However, we suggest amendments on planting of certain species. Suggestions for amendment include:

1. Replace **Emerald Queen Maple**. This is a Norway Maple cultivar. Norway's have proven to be unsuccessful urban environments with shallow root systems that can crack and heave drives and sidewalks. They also girdle easily. We suggest replacement with Tulip, Buckeye, Plane Tree, or Crabapple species.
2. Substitute **Fire King Musclewood** or move off roadway. Can place along walkway. Musclewood tends to be low branched, requiring ample upkeep along roadway. More of an understory tree. Also sensitive to soil compaction, salt, and high alkalinity. Musclewood Could be replaced with a crab species.

Fiscal Impact

There is no cost to the city associated with the recommendation.

Recommendation

Staff recommends approval of Swan Ridge Farm's street tree plan provided amendments are made. The approval is based on the installation of 313 street trees, 23 frontage trees, and 62 walking path trees. Mulching, staking, and a watering plan will be required. A watering schedule must be submitted. . Trees are to be watered once a week during summer months, totaling 20 waterings from late May until the end of September. Each tree is to be equipped with irrigation bags. The City Forestry Department will inspect the nursery stock prior to planting and approve the crews handling, planting depths, and mulching practices. Staking will be necessary due to lack of other

vegetation that would normally act as a wind block. Also required is a **planting schedule/approximate date for planting**. It will be the responsibility of the developer or contracted installer to arrange with the Parks and Forestry Superintendent for inspection.

Attachments:

SWAN RIDGE FARMS TREE PERCENTAGES (DOCX)

SWAN RIDGE FARMS TREE PERCENTAGES

Below are breakdowns of tree species at Swan Ridge Farms. Table (A) represents species and percentage of ROW STREET TREES. There are 313 total trees within ROW. Table (B) Represents ALL PLANTED TREES, a combination of all trees within project scope. This is a combination of trees within the ROW, trees along Swan Road, and trees along the proposed walking path. There are 398 trees total. It is important to note that linear footage requirements are met (excluding vision triangles) and the total number of trees planted is indicative of footage requirements ($11,932' / 30 = 398$)

(A) STREET TREES

SPECIES	NUMBER OF TREES	PERCENTAGE %
Autumn Fantasy Maple	18	5.7%
Emerald Queen Maple	16	5.0%
Fire King Musclewood	20	6.3%
Prairie Pride Hackberry	35	11%
Katsura Tree	9	2.8%
Autumn Gold Ginkgo	37	11.8%
Skyline Honey Locust	34	10.8%
Kentucky Coffee Tree	31	9.9%
Swamp White Oak	4	1.2%
Chancellor Linden	27	8.6%
Redmond Linden	28	8.0%
New Horizon Elm	22	7.0%
Regal Elm	32	10.2%
	Total: 313	

(B) TOTAL TREES (ROW, SWAN ROAD, WALKING PATH)

SPECIES	NUMBER OF TREES	PERCENTAGE %
Autumn Fantasy Maple	18	4.5%
Emerald Queen Maple	16	4.0%
Fire King Musclewood	20	7.0%
Prairie Pride Hackberry	51	12.8%
Katsura Tree	9	2.2%
Autumn Gold Ginkgo	37	9.2%
Skyline Honey Locust	34	8.5%
Kentucky Coffee Tree	42	10.5%
London Plane Tree	23	5.7%
Swamp White Oak	35	8.8%
Chancellor Linden	27	6.7%
Redmond Linden	28	7.0%
New Horizon Elm	22	5.5%
Regal Elm	36	9.0%
	Total: 398	

NOTES/SUGGESTIONS

1. Replace **Emerald Queen Maple**. This is a Norway Maple cultivar. Norway's have proven to be unsuccessful urban environments with shallow root systems that can crack and heave drives and sidewalks. They also girdle easily. We suggest replacement with Tulip, Buckeye, Plane Tree, or Crabapple species.
2. Substitute **Fire King Musclewood** or move off roadway. Can place along walkway. Musclewood tends to be low branched, requiring ample upkeep along roadway. More of an understory tree. Also sensitive to soil compaction, salt, and high alkalinity. Musclewood Could be replaced with a crab species.
3. Discuss the high percentages of lindens, as well as elms along ROWs.



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Office of Tree Board

TO: Tree Board
FROM: Nathan Herlascher,
DATE: March 13, 2023
SUBJECT: Specimen Tree Value Amendment to City of Mequon Policy Manual for Tree Protection and Preservation

Background

Since the adoption of the Policy Manual for Tree Protection and Preservation, the identifying, preserving, and protecting specimen trees has been a definitive standard followed by the Mequon Tree Board, Department of Community Development, the City of Mequon Forestry Department, and more. The objective of the Policy Manual is to maintain trees and woodlands, preserve old growth forests, with the intent of allowing reasonable improvement of land within the City of Mequon. Amongst the multi-step process of protecting specimen trees on developing land (initial inspection, site meetings, etc.), occasional removals of specimen trees take place. Removal of specimens come in multiple forms. When all options are exhausted in placing proposed construction around specimen trees, specimen trees may be removed approved by the Planning Commission and with the City Forester's or associate's knowledge in accordance with Chapter 60 of the Tree Preservation Ordinance. Negligent damages can also occur. Damages to trees often occur when protected zones are disturbed or not properly marked or protection zones are not followed. Storage of heavy equipment on root plates, drainage discharges, contact wounds, and heavy ground disturbance around root plates often leads to decline and ultimate failure of specimens. Specimens can be negligently removed as well, whether it is from lack of awareness of Tree Preservation manual or species being removed, or removals by development companies without approval from planning commission and consent of the Mequon Forestry Department. In both instances, the owner/developer shall replace any specimen tree removed or contribute adequate funds to the Mequon Tree Fund. If specimen trees are approved for removal by planning commission and owner/developer chooses to replant on site, the applicant would be responsible for replacing 75% of the diameters of the specimen trees after construction is completed. For example, if 100 caliper inches of specimen were removed on a site, 75 inches of caliper would need to be replaced, equating to 28 (2") replacement trees. In lieu of planting, the owner could donate to the Mequon Tree Fund, which in this example would be \$7,500.00, which would be used for Urban Forestry projects. Whether the owner decides to replant or not, the \$7,500 would be put into a non-lapsing escrow account before a building permit is issued. The money would then be returned after the tree planting is completed and inspected by the city forester.

If a tree is negligently removed, owner/developer would be responsible for 100% of caliper inches lost. For example, if a homeowner removed a 20-inch specimen tree without consent, they would be fined \$2,000.00. If a 40-inch specimen tree was negligently removed, the cost would be \$4,000.00. Upon recent discussion within prior Tree Board meetings, there is consensus that the appraisal of specimen trees to represent monetary value more accurately is imperative.

Analysis

While ample effort is put towards to preservation of trees, it is among the consensus of Tree Board and the Mequon Forestry Department that specimen trees shall be more accurately appraised to reflect their value and contributions aesthetically, environmentally, and economically.

To represent specimen tree value more accurately in the Policy Manual, the Mequon Forestry Department has begun to research different appraisal methods through peer reviewed studies, University studies, and functioning tree appraisal methods from surrounding municipalities. After doing research on many methods for appraising trees and running case studies into multiple formulas, we have found that tree appraisal using the CTLA Trunk Formula method may be the most efficient and accurate method to evaluate specimen trees. The methods used to appraise trees are published in The Guide for Plant Appraisal, 9th edition, authored by all major arboriculture, horticulture, and real estate industry organizations (Purcell, 2018). The appraisal process is used to develop a supported estimate of current value based on multiple factors.

While appraising specimen trees, 4 main values will have to be considered:

1. Tree Size
2. Tree Species
3. Tree Condition
4. Tree Location.

The tree size will be calculated with a standard diameter tape measure at breast height. The species rating is a comparative value given to the tree or plant based upon species characteristics. Species is represented by a percentage, state by state, based upon hardiness, durability (structural integrity), longevity, and biotic tolerance (Purcell, 2018).

Tree condition is a subjective determination based on root structure, trunk health, branch structure, pest infestation, and overall health/vigor. This factor is also represented by a percentage.

The location of a tree involves the landscape value of tree to specific ecosystem. Its function and aesthetic are also represented by a percentage.

The City of Cedarburg uses a specific formula to calculate condition and location rating percentages that could be applicable to the rating of our specimen trees. Cedarburg's formula factors in root health, trunk condition, branching structure, and current growth based on small branches and twigs. Cedarburg's location rating factors in market value of site, contribution to climate control and aesthetic, and placement.

The University of Steven's Point's Tree Appraisal Using the CTLA Method 2011 has been valuable in providing field procedures for appraising trees. We believe similar appraisal methods would accurately represent specimen trees and may be an efficient tool in our appraisal process.

After primary plant and site assessments have been completed, the Trunk Formula Method can be used to determine monetary value of subject tree.

Appraised Value= Installed Plant Cost x Species % x Location % x Condition %

Trunk Formula Method: Calculation of following steps determines appraised value. See case study below.

- a. Determine species%, condition%, and location % as well as diameter. (species % to be determined by current ISA guide)
- b. Determine replacement tree size. (staff suggested 2" diameter replacement trees)
- c. Determine replacement tree cost (we propose gathering data from 3+ area nurseries)
- d. Determine installation cost.
- e. Determine total unit tree cost.
- f. Appraise trunk area.
- g. Appraise trunk increase.
- h. Basic tree cost
- i. Appraised value

An example case study is shown below with a 28" Northern Red Oak conducted by UWSP. It is important to note that replacement size would differ from what staff suggests in case study.

Obtain the Appraised Value of a 28.0-inch-diameter Northern Red Oak tree growing in an open landscape. The Replacement Tree Cost (wholesale cost) of a 3.5 inch Northern red oak is \$275 and the Replacement Tree Installation Cost is \$550. The Species and Condition ratings are 90% and 80% respectively. The Site, Contribution, and Placement ratings for Location are 90%, 80%, and 70% respectively (UWSP, 2011).

Trunk Formula Method

Field Observations

- 1. **Species** Northern red oak (*Quercus rubra*)
- 2. **Condition** 80 %
- 3. **Trunk Circumference** _____ in./cm **Diameter** 28 in./cm
- 4. **Location %** = [Site 90 % + Contribution 80 % + Placement 70 %] / 3 = 80 %

Regional Plant Appraisal Committee and/or Appraiser-Developed or -Modified Information

- 5. **Species rating** 80 %
- 6. **Replacement Tree Size** (diameter) 3.5 in./cm
(Trunk Area) 10 in²/cm² TA_R
- 7. **Replacement Tree Cost** \$ 275
(see Regional Information to use **Cost** selected)
- 8. **Installation Cost** \$ 550
- 9. **Installed Tree Cost** (#7 + #8) \$ 825
- 10. **Unit Tree Cost** (#7 / #6) \$ 28 per in²/cm²
(see Regional Information to use **Cost** selected)

Calculations by Appraiser using Field and Regional Information

- 11. **Appraised Trunk Area:**
(TA_A or ATA_A; Figure 5 - 1)
or c2 (#3) _____ × 0.08 = 615 in²/cm²
or d2 (#3) _____ × 0.785
- 12. **Appraised Tree Trunk Increase** (TA_{INCR}) =
TA_A or ATA 615 in²/cm² (#11) - TA_R 10 in²/cm² (#6) = 605 in²/cm²
- 13. **Basic Tree Cost** = TA_{INCR} (#12) 605 in²/cm² × **Unit Tree Cost** (#10)
\$ 28 per in²/cm² + **Installed Tree Cost** (#9) \$ 825 = \$ 17,765
- 14. **Appraised Value** = **Basic Tree Cost** (#13) \$ 17,765 × **Species rating**

$$(\#5) \underline{90} \% \times \mathbf{Condition} (\#2) \underline{80} \% \times \mathbf{Location} (\#4) \underline{80} \% = \$ \underline{10,232.64}$$

15. If the **Appraised Value** is \$5,000 or more, round it to the nearest \$100; if it is less than \$5,000, round to the nearest \$10.

16. **Appraised Value** = (#14) \$ 10,200

The overall goal of implementing the CTLA Trunk Formula Method is to provide a more accurate value of City of Mequon Specimen Trees. There is still plenty of research to be done to determine values and percentages, but we believe that it is rudiments of a fair appraisal process of specimen trees. Further steps in determining a concrete method of specimen tree appraisal includes:

- Determining mean replacement costs by species for B&B planting stock obtained from multiple nurseries.
- Determining species ratings for each specimen tree.
- Establishing concrete methods for analyzing condition and location ratings.

Concluding different rates for approved and negligent removals.