

AGENDA
CITY OF MAPLEWOOD
ENVIRONMENTAL AND NATURAL RESOURCES COMMISSION
July 21, 2014
7 p.m.
Council Chambers - Maplewood City Hall
1830 County Road B East

1. Roll Call
2. Approval of Agenda
3. Approval of Minutes: May 19, 2014
4. Unfinished Business
 - a. Tree Ordinance
6. New Business
 - a. Mississippi River Corridor Critical Area Draft Rules
7. Visitor Presentations
8. Commission Presentations
9. Staff Presentations
 - a. Wicklander Pond Dredging Report
 - b. Recycling Update
 - 1) Tour
 - 2) Workshop
 - 3) Bench
 - c. Maplewood National Night Out (Tuesday, August 5 from 5 to 9 p.m.)
 - d. Urban Agriculture Subcommittee Tour (September)
 - e. Maplewood Nature Center Programs
10. Adjourn

**MINUTES
CITY OF MAPLEWOOD
ENVIRONMENTAL AND NATURAL RESOURCES COMMISSION**

7:00 p.m., Monday, May 19, 2014
Council Chambers, City Hall
1830 County Road B East

1. CALL TO ORDER

A meeting of the Environmental and Natural Resources Commission was called to order at 7:01 p.m. by Chair Palzer.

2. ROLL CALL

| | |
|----------------------------------|---------------|
| Randee Edmundson, Commissioner | Present |
| Deborah Fidely, Commissioner | Absent |
| Judith Johannessen, Commissioner | Present |
| Ann Palzer, Chair | Present |
| Cindy Schafer, Commissioner | Present |
| Dale Trippler, Vice Chair | Present |
| Ginny Yingling, Commissioner | Present |

Staff Present

Shann Finwall, Environmental Planner
Steve Love, Assistant City Engineer

City Council Liaison Present

Kathleen Juenemann, City Councilmember

3. APPROVAL OF AGENDA

Commissioner Johannessen added 8. a. - Organic Composting Program with Ramsey County

Commissioner Trippler moved to approve the agenda as amended.

Seconded by Commissioner Schafer. Ayes – All

The motion passed.

4. APPROVAL OF MINUTES

Commissioner Trippler moved to approve the April 21, 2014, Environmental and Natural Resources Commission meeting minutes as submitted.

Seconded by Commissioner Johannessen. Ayes – Chair Palzer,
Commissioners Edmundson,
Johannessen, Trippler &
Yingling

Abstention – Commissioner Schaefer

The motion passed.

5. NEW BUSINESS

a. NPDES Phase II and MS4 Permit and 2013 Annual Report

- i. Environmental Planner Shann Finwall introduced the item.
- ii. Assistant City Engineer Steve Love gave the report and answered questions of the commission about the NPDES Phase II and MS4 Permit and 2013 Annual Report.

Assistant City Engineer Steve Love stated that the City's stormwater permit outlines six minimum control measures that the City must address including public education and outreach, public participation and involvement, illicit discharge/detection/elimination, construction site stormwater runoff, post construction stormwater management, and pollution prevention and good housekeeping. The permit is available on the Public Work's website (www.ci.maplewood.mn.us/stormwater). The permit also requires a public hearing to obtain comments from the public.

Chair Palzer opened the public hearing.

There were no speakers to address the commission.

Chair Palzer closed the public hearing.

The City's final permit will be submitted to the Minnesota Pollution Control Agency on June 30, 2014.

6. UNFINISHED BUSINESS

a. Tree Ordinance

- i. Environmental Planner Shann Finwall went over the Tree Ordinance.

The commission reviewed the tree ordinance and suggested clarifications and changes. One item the Commission would like to continue to review is how specimen trees are calculated for replacement. Staff will review specimen tree replacement requirements with the city's forester and bring back a recommendation to the commission at the next meeting.

7. VISITOR PRESENTATIONS

None present.

8. COMMISSION PRESENTATIONS

- a. **Organic Composting Program at Ramsey County** – Commissioner Johannessen gave an update on the County's new organics program. The County is allowing residents to drop off organics at six of their seven compost sites. They will supply residents with compostable bags. Commissioner Johannessen brings her organics to the White Bear Township site. Residents can also drop off yard waste at the site and pick up mulch and compost for free. More information can be found at Ramsey County's A to Z website (www.RamseyAtoZ.com).

9. STAFF PRESENTATIONS

- a. **Spring Clean Up Summary** – Staff gave an update on the results of the spring clean up which was held on Saturday, April 19, 2014, at Aldrich Arena in Maplewood. Tennis Sanitation was the contractor at the event again this year. A total of 550 vehicles entered the event. The City collected 177 appliances, 24,002 pounds of electronics, 102 mattresses, and 3,410 pounds of carpet. Staff thanked the employees and volunteers that

assisted in making the event a success. Also a big thank you to Papa Murphy's Pizza who donated pizzas for lunch and distributed 50 percent off coupons to all of the attendees.

- b. Waterfest (May 31)** – Staff gave an update on the Waterfest event. Waterfest is sponsored by Ramsey-Washington Metro Watershed District each year as a celebration of our clean water. This year's event will be held at Phalen Park in St. Paul on Saturday, May 31, 2014, from 11:00 a.m. to 4:00 p.m. The Environmental and Natural Resources Commission will have a booth with a focus on pollinators.
- c. Tennis Sanitation Recycling Facility Tour** – Staff stated the Tennis Sanitation Recycling Facility Tour will be held Wednesday, June 25, 2014, at 10 a.m. Staff will send out further information regarding the tour. The City Council showed interest in the tour and will be invited as well.
- d. Maplewood Nature Center Programs**
Environmental Planner Shann Finwall presented the upcoming Nature Center Programs. For more information contact the Maplewood Nature Center at (651) 249-2170.

10. ADJOURNMENT

Chair Palzer adjourned the meeting at 8:35 p.m.

DRAFT

MEMORANDUM

TO: Environmental and Natural Resources Commission
FROM: Shann Finwall, AICP, Environmental Planner
 Virginia Gaynor, Natural Resource Coordinator
SUBJECT: **Tree Ordinance**
DATE: July 16, 2014, for the July 21 ENR Commission Meeting

INTRODUCTION

The City's tree ordinance was adopted by the City Council in 2006. The Environmental and Natural Resources (ENR) Commission has been reviewing the City's tree ordinance to ensure the City's Living Streets policies are met and make other updates to meet the City's tree preservation goals.

DISCUSSION

Ordinance Changes Made in May 2014

In May the ENR Commission proposed additional changes to the ordinance. Those changes are reflected on the attached draft ordinances (Attachment 1 is a clean version of the ordinance and Attachment 2 is a comparison of the May and July versions).

Specimen Trees

The Commission requested additional information on the tree replacement requirements for significant versus specimen trees. A significant tree is defined as a hardwood tree over 6-inches in diameter, a conifer tree over 8-inches in diameter, and a softwood tree over 12-inches in diameter. Specimen trees are defined as any healthy tree that is 28 inches in diameter or greater. A specimen tree is also a significant tree. The current tree replacement calculation requires that significant and specimen trees be replaced at the same ratio. The calculation is as follows:

Tree Removal Calculation

If less than twenty percent (20%) of the total significant tree diameter inches on the property is removed, the applicant shall replace one (1) tree per significant tree removed. Tree replacement shall be a minimum of two (2.0) caliper inches in size.

If twenty percent (20%) or more total significant tree diameter inches is removed, applicant shall mitigate all significant diameter inches using the tree mitigation/replacement schedule in accordance with the following formulas:

A = Total diameter inches of significant trees lost as a result of the land alteration.

B = Total diameter inches of significant trees situated on the property.

C = Tree replacement constant (1.5).

D = Replacement trees (number of caliper inches).

$$[(A/B - .2) \times 1.5] \times A = D$$

Example

A = 379

B = 943

C = 1.5

D = 114.8 caliper inches

$$[(379 / 943 - .2) \times 1.5] \times 379 = 114.8 \text{ caliper inches}$$

From an environmental services perspective (shade for cooling, wildlife habit, filtering air pollutants, absorbing rainwater runoff, etc.) the current formula takes into account the increased biomass and resulting services of specimen trees because the formula uses a tree's diameter. A 30-inch diameter tree will require more replacement inches than a 12-inch diameter tree. If there are other reasons to treat specimen trees differently, such as legacy or aesthetics, it is important to clearly define those reasons and make a value statement in the ordinance. For example, "Specimen trees are an important legacy and the city encourages people to do everything possible to preserve them."

Non-Regulatory Approach to Specimen Trees

Staff favors a non-regulatory approach to specimen trees. Protection can be encouraged through education and through voluntary programs like Maplewood's Big Tree Registry. Our registry includes just the largest trees of each species, but could be broadened to include other important trees.

Regulatory Approach to Specimen Trees

If a regulatory approach was chosen to protect specimen trees beyond the current formula, staff recommends incentivizing protection, rather than penalizing someone for removal. Inver Grove Height's Tree Preservation ordinance incentivizes protection of heritage trees (30-inch diameter tree or larger) by allowing developers to receive credit for each heritage tree saved. Refer to Inver Grove Height's ordinance attached (Attachment 3). The credit is a reduction of two caliper inches for each one inch diameter of heritage tree saved. For example, if a developer is required to replace 140 caliper inches, but saves two 30-inch diameter heritage trees on the site, they would receive a 120-inch credit (2 trees x 30-inches x 2-inches credit) and just have to replace 20 caliper inches. In this example, the formula seems excessive as replacement is reduced from 140 to 20-inches, or from the requirement to replace 70 – 2 caliper inch trees to 10 – 2 caliper inch trees. A more reasonable credit might be a reduction of one caliper inch for each one inch diameter of heritage tree saved.

Maplewood's tree ordinance defines a specimen tree in terms of size. But size alone does not necessarily indicate age or value of a tree. A 28-inch diameter oak tree will be much older than a 28-inch diameter cottonwood. If Commissioners select a regulatory approach to specimen trees, they should also reconsider the definition of a specimen tree. Some communities restrict specimen trees to hardwood trees with a life expectancy greater than ten years. This would mean large cottonwood trees would just be protected as significant, but not specimen trees.

Summary

From a staff perspective, it is not necessary to alter the replacement formula for specimen trees. The current formula takes into account the increased biomass and resulting services of specimen trees. However, if Commissioners like to continue to review that option, staff recommends an incentivized protection approach and modification to the definition of specimen trees to include hardwoods and conifers only.

RECOMMENDATION

Review the draft Tree Ordinance attached and offer comment and feedback.

Attachments:

1. Tree Ordinance (July 2014 Clean Copy)
2. Tree Ordinance (Comparison of May and July Versions)
3. Inver Grove Heights Tree Ordinance

**Tree Ordinance
Draft 7-21-14**

This section moves Chapter 38 (Trees) to Chapter 18 (Environment), Article V (Environment and Natural Resources), Division 3 (Trees) and revises and adds new language as outlined below:

Article V. Environment and Natural Resources

Division 3. Trees

Sec. 1. Findings and Purpose. The city desires to protect the trees and woodlands in the City of Maplewood. Trees and woodlands provide numerous environmental, economic, and scenic benefits. They help filter air pollutants, absorb stormwater runoff, provide wildlife habitat, and moderate temperatures. They reduce cooling costs and increase property values. And they provide scenic beauty, sound and visual buffers, and screening for privacy. It is therefore the city's intent to protect, preserve, and enhance the trees and woodlands of Maplewood and to encourage a resourceful and prudent approach to development in the city; thereby, promoting and protecting public health, safety, and welfare of the citizens of Maplewood. The purpose of this ordinance is to establish tree preservation and protection regulations to assure the continuance of significant trees and woodlands for present and future generations which:

1. Preserve the natural character of neighborhoods (in developed and undeveloped areas).
2. Ensure the health and wellbeing of Maplewood's urban forest.
3. Protect the health and safety of residents.
4. Protect water quality and minimize storm water runoff.
5. Prevent erosion or flooding.
6. Assure orderly development within wooded areas to minimize tree loss and environmental degradation.
7. Establish a minimum standard for tree preservation and mitigation of environmental impacts resulting from tree removal.

Sec. 2. Definitions. The following words, terms and phrases shall have the meanings ascribed to them in this ordinance.

Applicant means developer, builder, contractor, or homeowner who applies for a land use, grading, or building permit.

Caliper inch is a measurement used for nursery stock and refers to replacement trees. It is the unit of measurement for defining the diameter of the tree trunk measured six (6) inches above the

soil surface for tree trunks four (4) diameter inches or less and measured twelve (12) inches above the soil surface for tree trunks greater than four (4) diameter inches.

Certified Arborist is an arborist with up-to-date certification by the International Society of Arborists.

City Forester means a forester who is employed by the city or appropriate agent or independent contractor designated by the city manager.

Conifer Tree means a woody plant that is a member of the division Pinophyta and at maturity is at least twelve (12) feet or more in height. Conifers are cone bearing and most in our climate keep their leaves (also called needles) year-round. Tamarack (also called larch) is the one conifer in our climate that drops its needles in the fall.

Control includes measures to prevent, slow the spread, suppress, eradicate, or destroy a shade tree disease or pests.

Critical Root Zone (CRZ) means an imaginary linear circle surrounding the tree trunk with a radius distance of one (1) foot per one (1) inch of tree diameter (e.g., a sixteen (16) inch diameter tree has a CRZ with a radius of sixteen (16) feet.

Deciduous Tree means a woody plant, which sheds leaves annually, having a defined crown and at maturity is at least fifteen (15) feet or more in height.

Diameter is a measurement used for trees in the landscape. It is the diameter of a tree trunk as measured at a height of four and one half (4.5) feet above ground. To determine diameter, measure the circumference of the tree trunk at four and one half (4.5) feet above ground and divide by 3.14.

Drip Line means the farthest distance around and away from the trunk of a tree that rain or dew will fall directly to the ground from the leaves or branches of that tree.

Environmental Planner means an employee of the city who manages city-wide environmental programs, or appropriate agent designated by the city manager.

Hardwood Deciduous Tree means all deciduous tree species except those listed as softwood deciduous trees below.

Hazard tree means a tree that has structural defects that may cause the tree or tree part to fail, and the city forester determines that such failure could cause property damage or personal injury.

Infestation includes actual, potential, incipient, emergent infestation, or infection by forest pests or shade tree pests.

Invasive Species are species that are not native to Minnesota and cause economic or environmental harm or harm to human health.

Major Home Addition means an addition on a single or double dwelling lot of which the addition or accessory building is more than a sixty (60) percent increase in the footprint of the single or double dwelling structure on said lot.

Minor Home Addition means an addition on a single or double dwelling lot of which the addition or accessory building is less than a sixty (60) percent increase in the footprint of the single or double dwelling structure on said lot.

Native Prairie means a landscape or planting that consists predominantly of grasses, flowers, and sedges that are native to Minnesota prairie ecosystems.

Retaining Wall means a structure utilized to hold a slope in a position in which it would not naturally remain.

Shade Tree means a woody perennial grown primarily for aesthetic or environmental purposes.

Shade Tree Pest means any vertebrate or invertebrate animal, plant pathogen, or plant that is determined by the city council to be harmful, injurious, or destructive to shade trees or community forests.

Specimen Tree is a healthy tree of any species that is twenty-eight (28) inches in diameter or greater, except invasive species. These trees are also considered Significant Trees.

Significant Tree means a healthy tree measuring a minimum of six (6) inches in diameter for hardwood deciduous trees, eight (8) inches in diameter for conifer trees, twelve (12) inches in diameter for softwood deciduous trees, and specimen tree of any species twenty-eight (28) inches in diameter or greater as defined herein. Buckthorn or other noxious woody plants or trees as determined by the environmental planner are not considered a significant tree species at any diameter.

Slope means the inclination of the natural surface of the land from the horizontal; commonly described as a ratio of the length to the height.

Softwood Deciduous Tree means the following tree species: box elder, cottonwood, elm, poplar/aspen, silver maple, and willow.

Structure means anything manufactured, constructed, or erected which is normally attached to or positioned on land, including portable structures.

Tree Preservation Plan is a plan that shows all trees in the area to be developed or within the property. The plan shall include all significant trees to be preserved and measures taken to preserve them. The plan will also include calculations to determine the number of replacement trees as required by the tree mitigation schedule and a proposed re-forestation landscape plan.

The plan shall be developed by a forestry or horticultural professional whose qualifications are approved by the environmental planner.

Utility means electric, telephone, telegraph, cable television, water, sanitary or storm sewer, solid waste, gas or similar service operations.

Wetland as defined in the city's wetland ordinance.

Wilding Tree means a tree that was not grown or maintained by a nursery.

Woodlot means a treed area of at least one-quarter (1/4) acre on a vacant lot, which includes significant tree(s).

Sec. 3. Woodlot Alteration.

1. Woodlot alteration permit. A woodlot alteration permit application shall be submitted to the environmental planner for review prior to removal of any significant living trees on a woodlot that is not reviewed by another land use, grading, or building permit. The applicant shall submit a tree plan and any other information needed to determine compliance with this ordinance. Specific requirements shall be stated on an application form in the office of the environmental planner. An application fee shall be established yearly by the city council by resolution. Failure to submit a woodlot alteration permit application and subsequent approval prior to removal of significant trees will result in the total tree replacement for the property as outlined in the tree mitigation/replacement schedule to assume that all trees removed were significant trees.
2. Woodlot alteration permit appeal process. If the woodlot alteration permit is denied by the environmental planner, the applicant may appeal the environmental planner's decision. The appeal shall be submitted in writing with the reasons for the appeal and received by the city in writing within fifteen (15) days of the environmental planner's written decision to deny the permit. The environmental commission will review the appeal at its next available commission meeting. If the environmental commission denies the appeal, the applicant may appeal the environmental commission's decision. The appeal shall be submitted in writing with the reasons for the appeal and received by the city in writing within fifteen (15) days of the environmental commission's decision. The city council will review the appeal at its next available city council meeting for final decision.

Sec. 4. Tree preservation plan. A tree preservation plan is required for any project which requires a woodlot alteration permit, land use, grading, or building permit; excluding the exemptions and exceptions as outlined in item 1 (Tree preservation plan applicability). A tree preservation plan shall reflect the applicant's best effort to determine the most feasible and practical layout of buildings, parking lots, driveways, streets, storage, and other physical features, so that the fewest significant trees are destroyed or damaged and to minimize the negative environmental impact to the site.

1. Tree preservation plan applicability.
 - a. This ordinance shall apply to any individual, business, or entity that requests a woodlot alteration permit, land use, grading, or building permit. This includes all sites of new development that contain significant trees or woodlots. Platting and adding new roadway and right of way are subject to this ordinance.
 - b. The following are exceptions and are exempt from the requirements of the tree preservation plan of this ordinance:
 - 1) Minor home additions, general home improvements, and construction of accessory buildings (i.e. garage, shed).
 - 2) Tree removal related to public improvement projects to existing roadways, sewers, parks, and utility/infrastructure work or repair.
 - 3) Emergency removal of a tree(s) to protect public health.
 - 4) Restoration of land to native prairie. Prairie restoration shall be approved by the environmental planner.
 - 5) Commercial tree nursery and landscape operations.
 - 6) Removal of dead or dying trees, unless those trees were planted as part of tree replacement in which case they must be replaced based on the approved plan.
 - 7) Removal of nonnative trees that the city deems invasive species.
 - c. Tree preservation plans shall include the following:
 - 1) A tree inventory overlay on the site plans that shows size, species, general health, and location of all significant trees located within the property where significant tree removal is proposed. The tree inventory plan:
 - a) Shall be drawn at the same scale as the other site plan submittals and shall coincide with required engineering documents such as topography maps, wetland information, grading plans, road locations, and building locations;
 - b) Shall include trees growing in clump form. These trees will be considered individual trees and each stem/trunk is measured as individual trees.
 - c) Include the location of groups of standing dead or diseased significant trees.
 - d) Include the outer boundaries of all contiguous wooded areas, with a general description of trees not meeting the significant tree size threshold and any indication of the presence of epidemic tree diseases.
 - e) Include significant trees (species and diameter) identified in both graphic and tabular form.
 - f) Include locations of the proposed buildings, structures, or impervious surfaces.

- g) Include delineation of all limits of land disturbance, clearing, grading, and trenching.
- 2) A list of total diameter inches of all healthy significant trees inventoried.
- 3) The total diameter inches of healthy significant trees removed.
- 4) Location of trees protected and the proposed measures for protection including delineation of tree protection fencing, tree protection signs, location for material storage, parking, debris storage, and wash out area for redi-mix trucks.
- 5) Protection measures for trees in areas with high deer population.
- 6) The name(s), telephone number(s), and address(s) of the person(s) responsible for tree preservation during the course of the development project.
- 7) Size, species, number, and location of all replacement trees and woody shrubs proposed to be planted on the property, planted on city property, or amounts to be paid into the city's tree fund in accordance with the tree mitigation/replacement schedule.
- 8) All tree preservation plans shall be performed by a forestry or horticultural professional whose qualifications are approved by the environmental planner.
- 9) The tree preservation plan shall be reviewed by the environmental planner, with advisement from the city forester, for compliance with this ordinance. Reasons for denial shall be noted on the tree preservation plan, or otherwise stated in writing.

2. Tree Preservation and Safeguarding Tree Measures.

- a. All developments within the city shall be designed to preserve significant trees and woodlots, where such preservation would not adversely affect the public health, safety or welfare of Maplewood citizens. The city may prohibit removal of all or a part of a woodlot or significant trees subject to the limitations as defined in this ordinance. This decision shall be based on but not limited to the following criteria:
 - 1) Size of trees.
 - 2) Size of lot.
 - 3) Species, health, and attractiveness of the trees, including:
 - a) Sensitivity to disease.

- b) Life span.
- c) Nuisance characteristics.
- d) Sensitivity to site grading.
- e) Potential for transplanting.
- f) Need for thinning a woodlot.
- g) Effects on the functioning of a development.
- h) Fragmentation of wooded area and effects on wildlife corridors.
- i) The public health, safety and welfare.
- j) Effect on wetlands and/or watershed.
- k) Native prairie or oak savanna habitat.

b. Safeguarding preserved trees:

- 1) Tree protective areas shall be located at a minimum of the CRZ of trees or drip line, whichever is greater, whenever possible. Saving groups or stands of trees is encouraged over protecting individual trees scattered throughout the site.
- 2) Suitable tree protection fencing in active areas includes use of orange polyethylene laminar safety fencing or woven polyethylene fabric (silt fencing). Fencing shall be self-supportive. All active tree protection areas shall be designated as such with "Tree Save Area" signs that are posted and readable from at least ten (10) feet away.
- 3) Use of passive forms of tree protection requires approval from environmental planner in writing. Passive forms of tree protection fencing include use of continuous rope or flagging (heavy mil plastic four (4) inches or wider) with visible signage stating "Keep Out" or "Tree Save Area".
- 4) Signs requesting subcontractor cooperation and compliance with tree protection standards are required at site entrances.
- 5) No construction work shall begin until tree protection fencing has been installed, inspected, and approved by the environmental planner. Once environmental planner approves tree protection fencing or devices it shall not be altered or removed without environmental planner approval.
- 6) Tree protection fencing shall be maintained and repaired by the applicant for the duration of construction. No grade change, construction activity, storage or staging of materials shall occur within this fenced area.
- 7) Custom grading, retaining walls, or tree wells to maintain existing grade for preserved trees can be used.

- 8) Layout of the project site utility and grading plans shall accommodate the tree preservation areas. Utilities are recommended to be placed along corridors between tree preservation areas and use of common trenches or tunnel installation if possible.
 - 9) Minimize tree wounding by felling or removing trees away from trees remaining on site.
 - 10) Construction site activities such as parking, material storage, concrete washout, placement of holes, etc., shall be arranged so as not to encroach on tree protection areas.
 - 11) Identify and prevent oak wilt infection. Treat all known oak wilt infected areas with current accepted guidelines including root cutting and removal of infected trees. If pruning oaks is required between April 1 and July 1 cover fresh wounds with nontoxic tree wound sealant or latex paint.
 - 12) Failure to safeguard trees as outlined above will result in the city issuing a stop work order for the development or issuing citations per city code.
- c. Post construction tree care mitigation for trees protected shall be identified on the plan as follows:
- a) Tree root aeration, fertilization, and/or irrigation systems.
 - b) Therapeutic pruning.
 - c) Mitigate soil compaction by the following:
 1. Mulch drive lanes with eight (8) to ten (10) inches of woodchips.
 2. Soil fracturing with deep tillage or other similar methods.
 3. Inclusion of organic matter to existing soil.
 - d) Core aeration.
- d. If any significant tree designated as preserved (protected) in the approved tree preservation plan is cut, damaged, or encroached upon by grading equipment or during the construction process without city authorization and if it is determined by the city forester or environmental planner that the damaged tree(s) will not survive, the said damaged tree(s) shall be removed by the applicant at their expense and replacement tree(s) required at a rate of two (2) times the tree mitigation/replacement formula.
3. Tree Removal, Mitigation, and Replacement.

- a. Tree Removal Calculation: If less than twenty percent (20%) of the total significant tree diameter inches on the property is removed, the applicant shall replace one (1) tree per significant tree removed. Tree replacement shall be a minimum of two (2.0) caliper inches in size.

If twenty percent (20%) or more total significant tree diameter inches is removed, applicant shall mitigate all significant diameter inches using the tree mitigation/replacement schedule in accordance with the following formulas:

A = Total diameter inches of significant trees lost as a result of the land alteration

B = Total diameter inches of significant trees situated on the property

C = Tree replacement constant (1.5)

D = Replacement trees (number of caliper inches)

$$[(A/B - .2) \times 1.5] \times A = D$$

Example

A = 379

B = 943

C = 1.5

D = 114.8 caliper inches

$$[(379 / 943 - .2) \times 1.5] \times 379 = 114.8 \text{ caliper inches}$$

The trees required to be replaced pursuant to this ordinance shall be in addition to any other trees required to be planted pursuant to any other provision of city code.

- b. Tree Mitigation: Once the total caliper inches for replacement trees are determined, the applicant shall mitigate loss of significant trees by planting replacement trees in appropriate areas on the property in accordance with the tree replacement schedule and tree preservation plan. After putting as many trees as feasible on the site, if the replacement requirement is still not met, the environmental planner can approve the following replacement steps prior to issuance of a grading or building permit:
- 1) Native or drought tolerant shrubs that are not required as part of foundation, screening, or other city-required plantings will qualify towards tree replacement at a rate of .5 caliper inches per number three (#3) shrub.
 - 2) Planting replacement trees on city property under the direction of the environmental planner.
 - 3) Paying the city a sum per diameter inch in accordance with the tree replacement schedules set forth in the city fee schedule. Payment shall be deposited into an account designated specifically for tree planting on

public property or providing financial assistance for properties that want to voluntarily plant trees or need to remove diseased trees.

c. **Tree Replacement:** For replacement trees, the following standards shall be met:

- 1) The applicant shall be required to maintain trees for one (1) year after planting. If any tree requires replacement during this one (1) year period, the replacement period shall start at the date the replacement tree was planted. Trees required to be planted pursuant to any other provision of the city ordinances are not included in this and shall be replaced according to such ordinance.
- 2) **Species requirements:** Where ten (10) or more replacement trees are required, not more than thirty (30) percent shall be of the same type of tree without the written approval of the environmental planner. Tree species native to the Maplewood area are preferred.
- 3) **Sources of trees:** Replacement trees shall consist of certified nursery stock as defined by Minnesota Statutes, Section 18.46 hardy for this USDA plant hardiness zone (Zone 2, 3, or 4 hardiness rated trees) or other trees including wilding trees, so long as such wilding trees comply with the following standards and are approved by the environmental planner. All replacement trees shall be healthy and free from insect or disease infestation. A wilding tree measured in caliper inches shall not exceed the maximum height as shown on the table below:

| CALIPER INCHES | MAXIMUM HEIGHT (FEET) |
|-----------------------|------------------------------|
| 2-3 | 18 |
| 3-4 | 20 |
| 4-5 | 24 |

The lowest branch of a wilding tree shall not be at a height above the surface of the ground more than one-half (1/2) the total height of the tree (e.g., a fourteen (14) foot tree shall have a branch within seven (7) feet of the surface of the surrounding ground).

- 4) Tree replacement size shall be no less than two (2) caliper inches deciduous or six (6) foot height conifer tree unless pre-approved by the environmental planner. Use the following table to convert conifer trees to caliper inches:

| CONIFER TREE HEIGHT (FEET) | CALIPER INCHES |
|-----------------------------------|-----------------------|
| 6 feet | 2.5 |
| 7 feet | 3 |
| 8 feet | 3.5 |
| 9 feet | 4 |

| | |
|---------|-----|
| 10 feet | 4.5 |
| 11 feet | 5 |
| 12 feet | 5.5 |

Trees required to be planted pursuant to any other provision of city ordinances shall comply with tree size specification of such ordinance.

- d. Tree replacement escrow. The applicant shall post tree replacement escrow with the city, such as a tree replacement cash deposit or letter of credit. Tree replacement escrow will be equal to the amount paid per diameter inch for replacement trees as specified in the tree mitigation section. The escrow will be held by the city until successful completion of final planting inspection and assurance that the trees are covered by at least a one-year warranty for replacement. In areas where trees are planted in an area with heavy deer population or other tree hazards not normally covered under a warranty, the city may hold the escrow for one year to ensure viability of trees. It shall be the applicant’s responsibility to call for such inspection. Tree replacement escrow does not include other escrows required pursuant to any other provision of city ordinances or city directive.

Sec. 5. Diseased and Hazardous Trees.

1. Findings and Declaration of Purpose.

The health of trees in the city is threatened by epidemic shade tree pests. Hazardous trees can cause property damage or personal injury. The loss of trees, ill health of trees, or presence of hazardous trees on public and private property depreciates the value of property within the city and impairs the safety, good order, general welfare and convenience of the public. In addition to and in accordance with Minn. Stat. 89.001, 89.01, and 89.51-.64, the provisions of this section are adopted as an effort to control and prevent the spread of these shade tree pests.

2. Declaration of a Shade Tree Pest.

The city council may by ordinance declare any vertebrate or invertebrate animal, plant pathogen, or plant in the community threatening to cause significant damage to a shade tree or community forest to be a shade tree pest and prescribe control measures to effectively eradicate, control, or manage the shade tree pest.

3. Public Nuisances.

The following are hereby declared nuisances whenever they are found within the city:

- a. Any living or standing elm tree (*Ulmus* spp.) or part thereof infected to any degree with the Dutch elm disease fungus *Ceratocystis ulmi* (Buisman) Moreau or

which harbors the elm bark beetles *Scolytus multistriatus* (Eichh.) or *Hylurgopinus rufipes* (Marsh).

- b. Any dead elm tree or part thereof, including logs, branches, stumps, firewood, or other material from which the bark has not been removed. Proper disposal of removed bark includes chipping or burning.
 - c. Any living, standing, or dead oak tree (*Quercus* spp.) or part thereof infected to any degree with the oak wilt fungus *Certocystis fagacearum* (Bretz) Hunt. Also, any living, standing, or dead oak tree that, due to its proximity to an oak infected with oak wilt, possesses a threat of transmission of the oak wilt fungus to other oak trees through interconnected root systems.
 - d. Any living, standing, or dead ash tree (*Fraxinus* spp.) or part thereof with infestation of emerald ash borer (*Agrilus planipennis*).
 - e. Other shade trees or parts thereof infested with shade tree pests that are epidemic.
 - f. Hazardous trees.
 - g. Any tree obstructing the view of any vehicular traffic on public streets or pathways, or pedestrians on public pathways.
4. Inspection.
- a. The city forester shall inspect all premises and places within the city as often as practical to determine whether any condition described in Sec. 6(3) exists thereon. Inspection shall be of living or dead trees, parts of trees, stump, and firewood. In addition, the city forester shall investigate all reported incidents of hazardous trees or trees infested by Dutch elm fungus, elm bark beetles, oak wilt, emerald ash borer or other epidemic pests of shade trees.
 - b. The city forester may enter upon private premises at any reasonable time for the purpose of carrying out any of the duties assigned under this ordinance.
 - c. Diagnosis of shade tree pests may be by the presence of commonly recognized symptoms; by tests recommended by the commissioner of Agriculture or the commissioner of the Minnesota Department of Natural Resources; or other reliable means. The city forester may remove or cut specimens from the tree in such manner as to avoid permanent injury thereto. No action to remove living trees or wood shall be taken until positive diagnosis of the nuisance has been made.
5. Abatement of Shade Tree Pest Nuisances.

- a. The city forester shall notify in writing the owner of record or occupant of the premise that a public nuisance exists. The notice shall specify the measures to be taken to abate the nuisance and shall specify that the nuisance shall be abated within a reasonable amount of time, not less than ten (10) days from the date of mailing.
- b. The abatement measures required may include removal of an infested tree or wood to control the airborne spread of epidemic shade tree pests. If the city forester finds that Dutch elm disease or oak wilt threatens to cross property boundaries, the city forester may require root graft disruption to prevent the spread of the disease through roots. The city forester may require other control measures that are widely accepted to abate the nuisance as needed to prevent the spread of shade tree pests.
- c. For hazardous trees abatement may include removal of branches or the whole tree or other control measures that are widely accepted to abate the nuisance.
- d. If the owner or occupant shall fail to comply with the removal or control measures specified for the hazard tree, infested tree, or wood on his/her property within the time specified, the city forester may order the work done either by city employees or by contractor. The cost of this work shall be billed to the owner or occupant. If the bill is not paid within thirty (30) days, the city may specially assess the costs against the property.

6. High-Cost Abatement.

If the cost of abating a nuisance from a tree pest will exceed five thousand dollars (\$5,000) in a given year or in two consecutive years, based on a reasonable, good faith estimate from a certified arborist, the owner or occupant may request the matter be referred to the city council for a hearing. This does not apply to hazardous trees. The owner or occupant shall notify the city forester within twenty (20) days of the date on the notification letter, provide an estimate from a Certified Arborist, and provide in writing a request for exemption and the reasons for exemption. The city forester will notify the owner or occupant of the date, time, and location of the hearing, at least three (3) days in advance of the hearing. The owner, occupant, or their agent shall be given the opportunity to present evidence at the hearing. The city council may modify the abatement notice or extend the time by which abatement shall be completed.

7. Emergency Abatement.

Nothing in this section shall prevent the city, without notice or other process, from immediately abating any condition that poses an imminent and serious hazard to human life or safety.

8. No Interference with city forester.

It is unlawful for any person to prevent, delay, or interfere with the city forester while they are engaged in the performance of duties imposed by this ordinance.

Sec. 6. Enforcement.

The city shall be responsible for the enforcement of this ordinance. Any person who fails to comply with or violates any section of this ordinance shall be deemed guilty of a misdemeanor and, upon conviction, shall be subject to punishment in accordance with section 1-15. All land use, building, and grading permits shall be suspended until the applicant has corrected the violation. Each day that a separate violation exists shall constitute a separate offense.

The city reserves the right to inspect the site or property at any time for compliance with tree preservation requirements. If the city finds the site in violation, the city may issue a stop work order until conditions are corrected. A stop work order will be lifted only after approved by environmental planner in writing.

This section revises Chapter 12 (Buildings and Building Regulations), Article VI (Contractors and Subcontractors) to update licensing requirements for tree service companies.

Sec. 12-207. General types of work.

Before any person shall engage in the business of doing or performing the following types of work in the city he or she shall first obtain a license or register to do so as provided in this ordinance:

1. Cement work, cement blockwork, cement blocklaying or brickwork.
2. General construction, including erection, alteration or repair of buildings.
3. The moving or wrecking of buildings.
4. Plastering, outside stucco work or lathing.
5. Plumbing, including installation of outside sewage disposal plants.
6. Heating.
7. Gas installation, including heating, appliances, devices or machinery, etc.
8. Well drilling.
9. Roofing.
10. Sign and billboard erecting.
11. Excavators for basements, foundations, grading of lots, etc.
12. Cesspool and private sewer disposal installers.
13. Sodding and landscaping.
14. Tree service (pruning, removal, treatment, or care).
15. Elevators.

Sec. 12-208. Application for and issuance of license; license fees; registration required.

1. Application for any license required by section 12-207 shall be filed with the city clerk on the appropriate form furnished by the city. Any license required by section 12-207 shall be issued by the city clerk.
2. The license fee for any license required by section 12-207 shall be imposed, set, established and fixed by the city council, by resolution, from time to time.
3. Plumbers, building movers or other crafts, which are licensed by the state and which the city is prohibited from licensing, who undertake to perform work and obtain permits within the city shall first register with the city clerk and shall provide proof of public liability insurance as required by this ordinance. Such state-licensed contractors shall also provide any additional insurance or indemnity bond required by the city council by resolution to protect property of the city when such work is being done in or upon any city street or other public right-of-way or upon any of the city-owned utilities located in such street or right-of-way.

Sec. 12-209. Duration of licenses; consequences of nonrenewal.

1. All licenses issued under section 12-208 shall expire on December 31 following the date of issuance, unless sooner revoked or forfeited.
2. If a license granted under section 12-208 is not renewed prior to its expiration, all rights granted by such license shall cease, and any work performed after the expiration of the license shall be in violation of this Code.

Sec. 12-210. Liability insurance.

Any person applying for any license enumerated in section 12-207 shall file with the city clerk a certificate to the effect that public liability and property damage insurance is in force and shall remain and be in force and effect during the entire term of such license and shall contain a provision that such insurance shall not be cancelled without ten days' written notice to the city. Public liability insurance shall not be less than \$25,000.00 for injuries, including accidental death to any one person, and, subject to the same limit for each person, in an amount of not less than \$50,000.00 on account of any one accident and property damage insurance in the amount of not less than \$5,000.00 on account of damage to any one party and not less than \$25,000.00 on account of any one accident. As to gas installers, such public liability insurance shall be for not less than \$25,000.00 for injuries, including accidental death, to any one person, and, subject to the same limit for each person, in an amount of not less than \$50,000.00 on account of any one accident and property damage in the amount of not less than \$25,000.00. No license shall be issued until such certificate of insurance shall have been filed and approved by the city clerk.

Sec. 12-211. Renewal of license after expiration date.

Any person renewing his license under section 12-208 after the expiration date shall be charged the full annual license fee. No prorated license fee shall be allowed for renewals.

Sec. 12-212. Work covered under license issued to general contractors; requirements of subcontractors.

1. A license granted under section 12-207 to a general contractor shall include the right to perform all of the work included in his general contract. Such license shall include any or all of the persons performing the work which is classified and listed in section 12-207, providing that each person performing such work is in the regular employ of such general contractor and qualified under state law and this Code to perform such work. In these cases, the general contractor shall be responsible for all of the work so performed.
2. Subcontractors on any work classified and listed in section 12-207 shall be required to comply with the sections of this Code pertaining to license, bond, qualifications, etc., for their particular type of work.

Sec. 12-213. Qualifications for licenses.

Except as otherwise provided by law, each applicant for a license under section 12-208 shall satisfy the city council that he is competent by reason of education, special training, experience and that he is equipped to perform the work for which a license is requested in accordance with all state laws, city ordinances and this Code.

Sec. 12-214. Exemptions for homeowners.

A homeowner in the city shall have an exemption, utilized no more often than once every five years, from needing the license for doing or performing any of the various types of work on his own home for which a license is required in section 12-207.

Sec. 12-215. Special licenses for certain work.

The council may, by resolution, provide for any special licenses and set the fees for any work or services pertaining to construction, reconstruction, revocation or repair of buildings or appurtenances thereto, when the council deems in its discretion that the licenses provided for in section 12-207 do not properly pertain to the work or service to be covered by such licenses.

Sec. 12-216. Sewer installer licenses.

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Sec. 12-217. Sign installer licenses.

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Sec. 12-218. Tree service company licenses.

1. No person shall fell, cut or trim any tree for hire in the city, or engage in the business of so doing, without a license. This shall apply only to the felling, cutting or trimming of

trees, limbs and branches which are two (2) inches or more in diameter at the point of cutting or severance.

2. Compliance with recognized industry standards. All licensees performing work under this chapter shall comply with the American National Standards Institute (ANSI) Standard A300. Effective within one (1) year from the date of the adoption of these amendments, any new or renewal license applications shall require that the licensee employ an individual who possesses current certification as an arborist from the International Society of Arboriculture (ISA).

Tree Ordinance
Draft ~~5-197-21~~-14

This section moves Chapter 38 (Trees) to Chapter 18 (Environment), Article V (Environment and Natural Resources), Division 3 (Trees) and revises and adds new language as outlined below:

Article V. Environment and Natural Resources

Division 3. Trees

Sec. 1. Findings and Purpose. The city desires to protect the trees and woodlands in the City of Maplewood. Trees and woodlands provide numerous environmental, economic, and scenic benefits. They help filter air pollutants, absorb stormwater runoff, provide wildlife habitat, and moderate temperatures. They reduce cooling costs and increase property values. And they provide scenic beauty, sound and visual buffers, and screening for privacy. It is therefore the city's intent to protect, preserve, and enhance the trees and woodlands of Maplewood and to encourage a resourceful and prudent approach to development in the city; thereby, promoting and protecting public health, safety, and welfare of the citizens of Maplewood. The purpose of this ordinance is to establish a tree preservation and protection regulations to assure the continuance of significant trees and woodlands for present and future generations which:

1. Preserve the natural character of neighborhoods (in developed and undeveloped areas).
2. Ensure the health and wellbeing of Maplewood's urban forest.
3. Protect the health and safety of residents.
4. Protect water quality and minimize storm water runoff.
5. Prevent erosion or flooding.
6. Assure orderly development within wooded areas to minimize tree loss and environmental degradation.
7. Establish a minimum standard for tree preservation and mitigation of environmental impacts resulting from tree removal.

Sec. 2. Definitions. The following words, terms and phrases shall have the meanings ascribed to them in this ordinance.

Applicant means developer, builder, contractor, or homeowner who applies for a land use, grading, or building permit.

Caliper inch is a measurement used for nursery stock and refers to replacement trees. ~~It is~~ It is the unit of measurement for defining the diameter of the tree trunk measured six (6) inches above

the soil surface for tree trunks four (4) diameter inches or less and measured twelve (12) inches above the soil surface for tree trunks greater than four (4) diameter inches.

Certified Arborist is an arborist with up-to-date certification by the International Society of Arborists.

City Forester means a forester who is employed by the city or appropriate agent or independent contractor designated by the city manager.

Conifer Tree means a woody plant that is a member of the division Pinophyta and at maturity is at least twelve (12) feet or more in height. Conifers are cone bearing and most in our climate keep their leaves (also called needles) year-round. Tamarack (also called larch) is the one conifer in our climate that drops its needles in the fall.

Control includes measures to prevent, slow the spread, suppress, eradicate, or destroy a shade tree disease or pests.

Critical Root Zone (CRZ) means an imaginary linear circle surrounding the tree trunk with a radius distance of one (1) foot per one (1) inch of tree diameter (e.g., a sixteen (16) inch diameter tree has a CRZ with a radius of sixteen (16) feet.

Deciduous Tree means a woody plant, which sheds leaves annually, having a defined crown and at maturity is at least fifteen (15) feet or more in height.

Diameter is a measurement used for trees in the landscape. It is the diameter of a tree trunk as measured at a height of four and one half (4.5) feet above ground. To determine diameter, measure the circumference of the tree trunk at four and one half (4.5) feet above ground and divide by 3.14.

Drip Line means the farthest distance around and away from the trunk of a tree that rain or dew will fall directly to the ground from the leaves or branches of that tree.

Environmental Planner means an employee of the city who manages city-wide environmental programs, or appropriate agent designated by the city manager.

Hardwood Deciduous Tree means all deciduous tree species except those listed as softwood deciduous trees below.

Hazard tree means a tree that has structural defects that may cause the tree or tree part to fail, and the city forester determines that such failure could cause property damage or personal injury.

Infestation includes actual, potential, incipient, or emergent infestation, or infection by forest pests or shade tree pests.

Invasive Species are species that are not native to Minnesota and cause economic or environmental harm or harm to human health.

Major Home Addition means an addition on a single or double dwelling lot of which the addition or accessory building is more than a sixty (60) percent increase in the footprint of the single or double dwelling structure on said lot.

Minor Home Addition means an addition on a single or double dwelling lot of which the addition or accessory building is less than a sixty (60) percent increase in the footprint of the single or double dwelling structure on said lot.

Native Prairie means a landscape or planting that consists predominantly of grasses, flowers, and sedges that are native to Minnesota prairie ecosystems.

Retaining Wall means a structure utilized to hold a slope in a position in which it would not naturally remain.

Shade Tree means a woody perennial grown primarily for aesthetic or environmental purposes.

Shade Tree Pest means any vertebrate or invertebrate animal, plant pathogen, or plant that is determined by the city council to be harmful, injurious, or destructive to shade trees or community forests.

Specimen Tree is a healthy tree of any species that is twenty-eight (28) inches in diameter or greater, except invasive species. These trees are also considered Significant Trees.

Significant Tree means a healthy tree measuring a minimum of six (6) inches in diameter for hardwood deciduous trees, eight (8) inches in diameter for conifer trees, twelve (12) inches in diameter for softwood deciduous trees, and specimen tree of any species twenty-eight (28) inches in diameter or greater as defined herein. Buckthorn or other noxious woody plants or trees as determined by the environmental planner are not considered a significant tree species at any diameter.

Slope means the inclination of the natural surface of the land from the horizontal; commonly described as a ratio of the length to the height.

Softwood Deciduous Tree means the following tree species: box elder, cottonwood, elm, poplar/aspen, silver maple, and willow.

Structure means anything manufactured, constructed, or erected which is normally attached to or positioned on land, including portable structures.

Tree Preservation Plan is a plan that shows all trees in the area to be developed or within the property. The plan ~~should~~shall include all significant trees to be preserved and measures taken to preserve them. The plan will also include calculations to determine the number of replacement trees as required by the tree mitigation schedule and a proposed re-forestation landscape plan.

The plan ~~must~~shall be developed by a forestry or horticultural professional whose qualifications are approved by the environmental planner.

Utility means electric, telephone, telegraph, cable television, water, sanitary or storm sewer, solid waste, gas or similar service operations.

Wetland as defined in the city's wetland ordinance.

Wilding Tree means a tree that was not grown or maintained by a nursery.

Woodlot means a treed area of at least one-quarter (1/4) acre on a vacant lot, which includes significant tree(s).

Sec. 3. Woodlot Alteration.

1. Woodlot alteration permit. A woodlot alteration permit application shall be submitted to the environmental planner for review prior to removal of any significant living trees on a woodlot that is not reviewed by another land use, grading, or building permit. The applicant shall submit a tree plan and any other information needed to determine compliance with this ordinance. Specific requirements shall be stated on an application form in the office of the environmental planner. An application fee shall be established yearly by the city council by resolution. Failure to submit a woodlot alteration permit application and subsequent approval prior to removal of significant trees will result in the total tree replacement for the property as outlined in the tree mitigation/replacement schedule to assume that all trees removed were significant trees.

~~The environmental planner may approve a woodlot~~2. Woodlot alteration permit that complies with this ordinance~~appeal process.~~ If the woodlot alteration permit is denied by the environmental planner, the applicant may appeal the environmental planner's decision. The appeal ~~must~~shall be submitted in writing with the reasons for the appeal and received by the city in writing within fifteen (15) days of the environmental planner's written decision- ~~to deny the permit.~~ The environmental commission will review the appeal at its next available commission meeting. If the environmental commission denies the appeal, the applicant may appeal the environmental commission's decision. The appeal ~~must~~shall be submitted in writing with the reasons for the appeal and received by the city in writing within fifteen (15) days of the environmental commission's decision. The city council will review the appeal at its next available city council meeting for final decision.

Sec. 4. Tree preservation plan. A tree preservation plan is required for any project which requires a woodlot alteration permit, land use, grading, or building permit; excluding the exemptions and exceptions as outlined in item 1 (Tree preservation plan applicability). A tree preservation plan shall reflect the applicant's best effort to determine the most feasible and practical layout of buildings, parking lots, driveways, streets, storage, and other physical features, so that the fewest significant trees are destroyed or damaged and to minimize the negative environmental impact to the site.

1. Tree preservation plan applicability.

- a. This ordinance shall apply to any individual, business, or entity that requests ~~in a~~ woodlot alteration permit, land use, grading, or building permit. This includes all sites of new development that contain significant trees or woodlots. Platting and adding new roadway and right of way are subject to this ordinance.
- b. The following are exceptions and are exempt from the requirements of the tree preservation plan of this ordinance:
 - 1) Minor home additions, general home improvements, and construction of accessory buildings (i.e. garage, shed).
 - 2) Tree removal related to public improvement projects to existing roadways, sewers, parks, and utility/infrastructure work or repair.
 - 3) Emergency removal of a tree(s) to protect public health.
 - 4) Restoration of land to native prairie. Prairie restoration ~~must~~shall be approved by the environmental planner.
 - 5) Commercial tree nursery and landscape operations.
 - 6) Removal of dead or dying trees, unless those trees were planted as part of tree replacement in which case they must be replaced based on the approved plan.
 - 7) Removal of nonnative trees that the city deems invasive species.
- c. Tree preservation plans shall include the following:
 - 1) A tree inventory overlay on the site plans that shows size, species, general health, and location of all significant trees located within the property where significant tree removal is proposed. The tree inventory plan:
 - a) ~~Must~~Shall be drawn at the same scale as the other site plan submittals and ~~must~~shall coincide with required engineering documents such as topography maps, wetland information, grading plans, ~~and~~ road locations, and building locations;
 - b) ~~Should~~Shall include trees growing in clump form. These trees will be considered individual trees and each stem/trunk is measured as individual trees.
 - c) Include the location of groups of standing dead or diseased significant trees.
 - d) Include the outer boundaries of all contiguous wooded areas, with a general description of trees not meeting the significant tree size threshold and any indication of the presence of epidemic tree diseases.
 - e) Include significant trees (species and diameter) identified in both graphic and tabular form.

- f) Include locations of the proposed buildings, structures, or impervious surfaces.
- g) Include delineation of all limits of land disturbance, clearing, grading, and trenching.

- 2) -A list of total diameter inches of all healthy significant trees inventoried.
- 3) The total diameter inches of healthy significant trees removed.
- 4) Location of trees protected and the proposed measures for protection including delineation of tree protection fencing, tree protection signs, location for material storage, parking, debris storage, and wash out area for redi-mix trucks.

~~5) Post construction tree care mitigation for trees protected should be identified on the plan as follows:~~

~~5) Protection measures for trees in areas with high deer population.~~

~~a) Tree root aeration, fertilization, and/or irrigation systems.~~

~~b)a) Therapeutic pruning.~~

~~e)a) Mitigate soil compaction by the following:~~

~~1. Mulch drive lanes with eight (8) to ten (10) inches of woodchips.~~

~~2. Soil fracturing with deep tillage or other similar methods.~~

~~3. Inclusion of organic matter to existing soil.~~

~~d) Core aeration.~~

- 6) The name(s), telephone number(s), and address(s) of the person(s) responsible for tree preservation during the course of the development project.
- 7) Size, species, number, and location of all replacement trees and woody shrubs proposed to be planted on the property, planted on city property, or amounts to be paid into the city's tree fund in accordance with the tree mitigation/replacement schedule.
- 8) All tree preservation plans shall be performed by a forestry or horticultural professional whose qualifications are approved by the environmental planner.
- 9) The tree preservation plan shall be reviewed by the environmental planner, with advisement from the city forester, for compliance with this ordinance.

Reasons for denial shall be noted on the tree preservation plan, or otherwise stated in writing.

2. Tree Preservation and Safeguarding Tree Measures.

a. All developments within the city shall be designed to preserve significant trees and woodlots, where such preservation would not adversely affect the public health, safety or welfare of Maplewood citizens. The city may prohibit removal of all or a part of a woodlot or significant trees subject to the limitations as defined in this ordinance. This decision shall be based on but not limited to the following criteria:

- 1) Size of trees.
- 2) Size of lot.
- 3) Species, health, and attractiveness of the trees, including:
 - a) Sensitivity to disease.
 - b) Life span.
 - c) Nuisance characteristics.
 - d) Sensitivity to site grading.
 - e) Potential for transplanting.
 - f) Need for thinning a woodlot.
 - g) Effects on the functioning of a development.
 - h) Fragmentation of wooded area and effects on wildlife corridors.
 - i) The public health, safety and welfare.
 - j) Effect on wetlands and/or watershed.
 - k) Native prairie or oak savanna habitat.

b. Safeguarding preserved trees:

- 1) Tree protective areas shall be located at a minimum of the CRZ of trees or drip line, whichever is greater, whenever possible. Saving groups or stands of trees is encouraged over protecting individual trees scattered throughout the site.
- 2) Suitable tree protection fencing in active areas includes use of orange polyethylene laminar safety fencing or woven polyethylene fabric (silt fencing). Fencing ~~must~~shall be self-supportive. All active tree protection areas shall be designated as such with "Tree Save Area" signs ~~posted in addition to the required fencing that are posted and readable from at least ten (10) feet away.~~
- 3) Use of passive forms of tree protection requires approval from environmental planner in writing. Passive forms of tree protection fencing include use of continuous rope or flagging (heavy mil plastic four (4)

inches or wider) with visible signage stating “Keep Out” or “Tree Save Area”.

- 4) Signs requesting subcontractor cooperation and compliance with tree protection standards are required at site entrances.
- 5) No construction work shall begin until tree protection fencing has been installed, inspected, and approved by the environmental planner. Once environmental planner approves tree protection fencing or devices it ~~must~~shall not be altered or removed without environmental planner approval.
- 6) Tree protection fencing shall be maintained and repaired by the applicant for the duration of construction. No grade change, construction activity, storage or staging of materials shall occur within this fenced area.
- 7) Custom grading, retaining walls, or tree wells to maintain existing grade for preserved trees can be used.
- 8) Layout of the project site utility and grading plans ~~should~~shall accommodate the tree preservation areas. Utilities are recommended to be placed along corridors between tree preservation areas and use of common trenches or tunnel installation if possible.
- 9) Minimize tree wounding by felling or removing trees away from trees remaining on site.
- 10) Construction site activities such as parking, material storage, concrete washout, placement of holes, etc., shall be arranged so as not to encroach on tree protection areas.
- 11) Identify and prevent oak wilt infection. Treat all known oak wilt infected areas with current accepted guidelines including root cutting and removal of infected trees. If pruning oaks is required between April 1 and July 1 cover fresh wounds with nontoxic tree wound sealant or latex paint.
- 12) Failure to safeguard trees as outlined above will result in the city issuing a stop work order for the development or issuing citations per city code.

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c. Post construction tree care mitigation for trees protected shall be identified on the plan as follows:

a) Tree root aeration, fertilization, and/or irrigation systems.

b) Therapeutic pruning.

c) Mitigate soil compaction by the following:

1. Mulch drive lanes with eight (8) to ten (10) inches of woodchips.

2. Soil fracturing with deep tillage or other similar methods.

3. Inclusion of organic matter to existing soil.

d) Core aeration.

d. If any significant tree designated as preserved (protected) in the approved tree preservation plan is cut, damaged, or encroached upon by grading equipment or during the construction process without city authorization and if it is determined by the city forester or environmental planner that the damaged tree(s) will not survive, the said damaged tree(s) shall be removed by the applicant at their expense and replacement tree(s) required at a rate of two (2) times the tree mitigation/replacement formula.

3. Tree Removal, Mitigation, and Replacement.

a. Tree Removal Calculation: If less than twenty percent (20%) of the total significant tree diameter inches on the property is removed, the applicant shall replace one (1) tree per significant tree removed. Tree replacement shall be a minimum of two (2.0) caliper inches in size.

If twenty percent (20%) or more total significant tree diameter inches is removed, applicant shall mitigate all significant diameter inches using the tree mitigation/replacement schedule in accordance with the following formulas:

A = Total diameter inches of significant trees lost as a result of the land alteration

B = Total diameter inches of significant trees situated on the property

C = Tree replacement constant (1.5)

D = Replacement trees (number of caliper inches)

$$[(A/B - .2) \times 1.5] \times A = D$$

Example

A = 379

B = 943

C = 1.5

D = 114.8 caliper inches

$$[(379 / 943 - .2) \times 1.5] \times 379 = 114.78 \text{ caliper inches}$$

The trees required to be replaced pursuant to this ordinance shall be in addition to any other trees required to be planted pursuant to any other provision of city code.

b. Tree Mitigation: Once the total caliper inches for replacement trees are determined, the applicant shall mitigate loss of significant trees by planting replacement trees in appropriate areas on the property in accordance with the tree replacement schedule and tree preservation plan. After putting as many trees as feasible on the site, if the replacement requirement is still not met, the environmental planner can approve the following replacement steps prior to issuance of a grading or building permit:

- 1) ~~Mulched beds of native~~Native or drought tolerant shrubs that are not required as part of foundation, screening, or other city-required plantings will qualify towards tree replacement at a rate of .5 caliper inches per ~~#2~~ or #number three (#3) shrub.
- 2) Planting replacement trees on city property under the direction of the environmental planner.
- 3) Paying the city a sum per diameter inch in accordance with the tree replacement schedules set forth in the city fee schedule. Payment shall be deposited into an account designated specifically for tree planting on public property within the city or providing financial assistance for properties that want to voluntarily plant trees or need to remove diseased trees.

c. Tree Replacement: For replacement trees, the following standards shall be met:

- 1) The applicant shall be required to maintain trees for one (1) year after planting. ~~Should~~If any tree ~~require~~requires replacement during this one (1) year period, the replacement period shall start at the date the replacement tree was planted. Trees required to be planted pursuant to any other provision of the city ordinances are not included in this and ~~must~~shall be replaced according to such ordinance.
- 2) Species requirements: Where ten (10) or more replacement trees are required, not more than thirty (30) percent shall be of the same type of tree without the written approval of the environmental planner. Tree species native to the Maplewood area are preferred.
- 3) Sources of trees: Replacement trees shall consist of certified nursery stock as defined by Minnesota Statutes, Section 18.46 hardy for this USDA plant hardiness zone (Zone 2, 3, or 4 hardiness rated trees) or other trees including wilding trees, so long as such wilding trees comply with the following standards and are approved by the environmental planner. All replacement trees shall be healthy and free from insect or disease infestation. A wilding tree measured in caliper inches shall not exceed the maximum height as shown on the table below:

| CALIPER INCHES | MAXIMUM HEIGHT (FEET) |
|----------------|-----------------------|
| 2-3 | 18 |
| 3-4 | 20 |
| 4-5 | 24 |

The lowest branch of a wilding tree shall not be at a height above the surface of the ground more than one-half (1/2) the total height of the tree (e.g., a fourteen (14) foot tree mustshall have a branch within seven (7) feet of the surface of the surrounding ground).

- 4) Tree replacement size mustshall be no less than two (2) caliper inches deciduous or six (6) foot height conifer tree unless pre-approved by the environmental planner. Use the following table to convert conifer trees to caliper inches:

| CONIFER TREE HEIGHT (FEET) | CALIPER INCHES |
|----------------------------|----------------|
| 6 feet | 2.5 |
| 7 feet | 3 |
| 8 feet | 3.5 |
| 9 feet | 4 |
| 10 feet | 4.5 |
| 11 feet | 5 |
| 12 feet | 5.5 |

Trees required to be planted pursuant to any other provision of city ordinances mustshall comply with tree size specification of such ordinance.

- d. Tree replacement escrow. The applicant shall post tree replacement escrow with the city, such as a tree replacement cash deposit or letter of credit. Tree replacement escrow will be equal to the amount paid per diameter inch for replacement trees as specified in the tree mitigation section. ~~Funds~~The escrow will be held by the city until successful completion of final planting inspection and assurance that the trees are covered by at least a one-year warranty for replacement. In areas where trees are planted in an area with heavy deer population or other tree hazards not normally covered under a warranty, the city may hold the escrow for one year to ensure viability of trees. It shall be the applicant's responsibility to call for such inspection. Tree replacement escrow does not include other escrows required pursuant to any other provision of city ordinances or city directive.

~~Sec. 5. **Enforcement.**—The city reserves the right to inspect the site or property at any time for compliance with this ordinance. Should the city find the site in violation of the approved tree preservation plan, the city may issue a stop work order until conditions are~~

~~corrected. A stop work order will be lifted only after approved by environmental planner in writing~~Diseased and Hazardous Trees.

~~The city shall be responsible for the enforcement of this ordinance. Any person who fails to comply with or violates any section of this ordinance shall be deemed guilty of a misdemeanor and, upon conviction, shall be subject to punishment in accordance with section 1-15. All land use, building, and grading permits shall be suspended until the applicant has corrected the violation. Each day that a separate violation exists shall constitute a separate offense.~~

~~Sec. 6. Tree Disease~~

1. Findings and Declaration of Purpose.

The health of trees in the city is threatened by epidemic shade tree pests. Hazardous trees can cause property damage or personal injury. The loss ~~of trees,~~ ill health of trees growing, or presence of hazardous trees on public and private property depreciates the value of property within the city and impairs the safety, good order, general welfare and convenience of the public. In addition to and in accordance with Minn. Stat. 89.001, 89.01, and 89.51-.64, the provisions of this section are adopted as an effort to control and prevent the spread of these shade tree pests.

2. Declaration of a Shade Tree Pest.

The city council may by ordinance declare any vertebrate or invertebrate animal, plant pathogen, or plant in the community threatening to cause significant damage to a shade tree or community forest to be a shade tree pest and prescribe control measures to effectively eradicate, control, or manage the shade tree pest.

3. Public Nuisances.

The following are hereby declared nuisances whenever they are found within the city:

- a. Any living or standing elm tree (*Ulmus* spp.) or part thereof infected to any degree with the Dutch elm disease fungus *Ceratocystis ulmi* (Buisman) Moreau or which harbors the elm bark beetles *Scolytus multistriatus* (Eichh.) or *Hylurgopinus rufipes* (Marsh).
- b. Any dead elm tree or part thereof, including logs, branches, stumps, firewood, or other material from which the bark has not been removed. Proper disposal of removed bark includes chipping or burning.
- c. Any living, standing, or dead oak tree (*Quercus* spp.) or part thereof infected to any degree with the oak wilt fungus *Ceratocystis fagacearum* (Bretz) Hunt. Also, any living, standing, or dead oak tree that, due to its proximity to an oak infected with oak wilt, possesses a threat of transmission of the oak wilt fungus to other oak trees through interconnected root systems.

ed. Any living, standing, or dead ash tree (*Fraxinus* spp.) or part thereof with infestation of emerald ash borer (*Agrilus planipennis*).

de. Other shade trees or parts thereof infested with ~~epidemic~~ shade tree pests that are epidemic.

f. Hazardous trees.

g. Any tree obstructing the view of any vehicular traffic on public streets or pathways, or pedestrians on public pathways.

4. Inspection.

a. The city forester shall inspect all premises and places within the city as often as practical to determine whether any condition described in Sec. ~~9-6(3)~~ exists thereon. Inspection shall be of living or dead trees, parts of trees, ~~stumps~~ stump, and firewood. In addition, the city forester shall investigate all reported incidents of ~~infestation~~ hazardous trees or trees infested by Dutch elm fungus, elm bark beetles, oak wilt, emerald ash borer or other epidemic pests of shade trees.

b. The city forester may enter upon private premises at any reasonable time for the purpose of carrying out any of the duties assigned under this ordinance.

c. Diagnosis of shade tree pests may be by the presence of commonly recognized symptoms; by tests ~~may be~~ recommended by the commissioner of Agriculture or the commissioner of the Minnesota Department of Natural Resources; or other reliable means. The city forester may remove or cut specimens from the tree in such manner as to avoid permanent injury thereto. No action to remove living trees or wood shall be taken until positive diagnosis of the nuisance has been made.

5. Abatement of Shade Tree Pest Nuisances.

a. The city forester shall notify in writing the owner of record or occupant of the premise that a public nuisance exists. The notice shall specify the measures to be taken to abate the nuisance and shall specify that the nuisance ~~must~~ shall be abated within a reasonable amount of time, not less than ten (10) days from the date of mailing.

b. The abatement measures required may include removal of an infested tree or wood to control the airborne spread of epidemic shade tree pests. If the city forester finds that Dutch elm disease or oak wilt threatens to cross property boundaries, the city forester may require root graft disruption to prevent the spread of the disease through roots. The city forester may require other control

measures that are widely accepted to abate the nuisance as needed to prevent the spread of shade tree pests.

ec. For hazardous trees abatement may include removal of branches or the whole tree or other control measures that are widely accepted to abate the nuisance.

d. If the owner or occupant shall fail to comply with the removal or control measures specified for the hazard tree, infested tree, or wood on his/her property within the time specified, the city forester may order the work done either by city employees or by contractor. The cost of this work shall be billed to the owner or occupant. If the bill is not paid within thirty (30) days, the city may specially assess the costs against the property.

6. High-Cost Abatement.

If the cost of abating a nuisance from a tree pest will exceed \$5000 five thousand dollars (\$5,000) in a given year or in two consecutive years, based on a reasonable, good faith estimate from a certified arborist, the owner or occupant may request the matter be referred to the city council for a hearing. This does not apply to hazardous trees. The owner or occupant ~~must~~shall notify the city forester within twenty (20) days of the date on the notification letter, provide an estimate from a Certified Arborist, and provide in writing a request for exemption and the reasons for exemption. The city forester will notify the owner or occupant of the date, time, and location of the hearing, at least three (3) days in advance of the hearing. The owner, occupant, or their agent shall be given the opportunity to present evidence at the hearing. The city council may modify the abatement notice or extend the time by which abatement ~~must~~shall be completed.

~~7. —Transporting Diseased or Infested Wood. It is unlawful for any person to transport within the city any elm wood, oak wood, or ash wood known to be diseased or infested, without having obtained a written permit from the city.~~

~~8. —Emergency Abatement.~~

7. Emergency Abatement.

Nothing in this section shall prevent the city, without notice or other process, from immediately abating any condition that poses an imminent and serious hazard to human life or safety.

98. No Interference with city forester.

It is unlawful for any person to prevent, delay, or interfere with the city forester while they are engaged in the performance of duties imposed by this ordinance.

Sec. 6. Enforcement.

The city shall be responsible for the enforcement of this ordinance. Any person who fails to comply with or violates any section of this ordinance shall be deemed guilty of a misdemeanor and, upon conviction, shall be subject to punishment in accordance with section 1-15. All land use, building, and grading permits shall be suspended until the applicant has corrected the violation. Each day that a separate violation exists shall constitute a separate offense.

The city reserves the right to inspect the site or property at any time for compliance with tree preservation requirements. If the city finds the site in violation, the city may issue a stop work order until conditions are corrected. A stop work order will be lifted only after approved by environmental planner in writing.

This section revises Chapter 12 (Buildings and Building Regulations), Article VI (Contractors and Subcontractors) to update licensing requirements for tree service companies.

Sec. 12-207. General types of work.

Before any person shall engage in the business of doing or performing the following types of work in the city he or she shall first obtain a license or register to do so as provided in this ordinance:

1. Cement work, cement blockwork, cement blocklaying or brickwork.
2. General construction, including erection, alteration or repair of buildings.
3. The moving or wrecking of buildings.
4. Plastering, outside stucco work or lathing.
5. Plumbing, including installation of outside sewage disposal plants.
6. Heating.
7. Gas installation, including heating, appliances, devices or machinery, etc.
8. Well drilling.
9. Roofing.
10. Sign and billboard erecting.
11. Excavators for basements, foundations, grading of lots, etc.
12. Cesspool and private sewer disposal installers.
13. Sodding and landscaping.
14. Tree service (pruning, removal, treatment, or care).
15. Elevators.

Sec. 12-208. Application for and issuance of license; license fees; registration required.

1. Application for any license required by section 12-207 shall be filed with the city clerk on the appropriate form furnished by the city. Any license required by section 12-207 shall be issued by the city clerk.
2. The license fee for any license required by section 12-207 shall be imposed, set, established and fixed by the city council, by resolution, from time to time.

3. Plumbers, building movers or other crafts, which are licensed by the state and which the city is prohibited from licensing, who undertake to perform work and obtain permits within the city shall first register with the city clerk and shall provide proof of public liability insurance as required by this ordinance. Such state-licensed contractors shall also provide any additional insurance or indemnity bond required by the city council by resolution to protect property of the city when such work is being done in or upon any city street or other public right-of-way or upon any of the city-owned utilities located in such street or right-of-way.

Sec. 12-209. Duration of licenses; consequences of nonrenewal.

1. All licenses issued under section 12-208 shall expire on December 31 following the date of issuance, unless sooner revoked or forfeited.
2. If a license granted under section 12-208 is not renewed prior to its expiration, all rights granted by such license shall cease, and any work performed after the expiration of the license shall be in violation of this Code.

Sec. 12-210. Liability insurance.

Any person applying for any license enumerated in section 12-207 shall file with the city clerk a certificate to the effect that public liability and property damage insurance is in force and shall remain and be in force and effect during the entire term of such license and shall contain a provision that such insurance shall not be cancelled without ten days' written notice to the city. Public liability insurance shall not be less than \$25,000.00 for injuries, including accidental death to any one person, and, subject to the same limit for each person, in an amount of not less than \$50,000.00 on account of any one accident and property damage insurance in the amount of not less than \$5,000.00 on account of damage to any one party and not less than \$25,000.00 on account of any one accident. As to gas installers, such public liability insurance shall be for not less than \$25,000.00 for injuries, including accidental death, to any one person, and, subject to the same limit for each person, in an amount of not less than \$50,000.00 on account of any one accident and property damage in the amount of not less than \$25,000.00. No license shall be issued until such certificate of insurance shall have been filed and approved by the city clerk.

Sec. 12-211. Renewal of license after expiration date.

Any person renewing his license under section 12-208 after the expiration date shall be charged the full annual license fee. No prorated license fee shall be allowed for renewals.

Sec. 12-212. Work covered under license issued to general contractors; requirements of subcontractors.

1. A license granted under section 12-207 to a general contractor shall include the right to perform all of the work included in his general contract. Such license shall include any or all of the persons performing the work which is classified and listed in section 12-207, providing that each person performing such work is in the regular employ of such general

contractor and qualified under state law and this Code to perform such work. In these cases, the general contractor shall be responsible for all of the work so performed.

2. Subcontractors on any work classified and listed in section 12-207 shall be required to comply with the sections of this Code pertaining to license, bond, qualifications, etc., for their particular type of work.

Sec. 12-213. Qualifications for licenses.

Except as otherwise provided by law, each applicant for a license under section 12-208 shall satisfy the city council that he is competent by reason of education, special training, experience and that he is equipped to perform the work for which a license is requested in accordance with all state laws, city ordinances and this Code.

Sec. 12-214. Exemptions for homeowners.

A homeowner in the city shall have an exemption, utilized no more often than once every five years, from needing the license for doing or performing any of the various types of work on his own home for which a license is required in section 12-207.

Sec. 12-215. Special licenses for certain work.

The council may, by resolution, provide for any special licenses and set the fees for any work or services pertaining to construction, reconstruction, revocation or repair of buildings or appurtenances thereto, when the council deems in its discretion that the licenses provided for in section 12-207 do not properly pertain to the work or service to be covered by such licenses.

Sec. 12-216. Sewer installer licenses.

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Sec. 12-217. Sign installer licenses.

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Sec. 12-218. Tree service company licenses.

1. No person shall fell, cut or trim any tree for hire in the city, or engage in the business of so doing, without a license. This shall apply only to the felling, cutting or trimming of trees, limbs and branches which are two (2) inches or more in diameter at the point of cutting or severance.
2. Compliance with recognized industry standards. All licensees performing work under this chapter ~~must~~shall comply with the American National Standards Institute (ANSI) Standard A300. Effective

within one (1) year from the date of the adoption of these amendments, any new or renewal license applications shall require that the licensee employ an individual who possesses current certification as an arborist from the International Society of Arboriculture (ISA).

INVER GROVE HEIGHTS – TREE PRESERVATION

*** definitions

HERITAGE TREE: Healthy, large, hardwood trees which equal or exceed twenty seven inches (27") dbh and large coniferous trees which equal or exceed twenty four inches (24") dbh which have been determined to be of high value because of their type, size (diameter at breast height [dbh]), age or other professional criteria. A tree in fair or better condition must meet the following criteria:

- A. A life expectancy of greater than ten (10) years.
- B. A relatively sound and solid trunk with no extensive decay or hollow.
- C. No major insect or pathological problem.
- D. A lesser size tree can be considered a **heritage tree** if a certified forester determines it is a rare or unusual species or of exceptional quality.

SIGNIFICANT TREE: A healthy deciduous tree measuring eight inches (8") or greater in diameter, at a point four and one-half feet (4¹/₂') above grade (diameter at breast height (dbh)), or a healthy coniferous tree measuring ten feet (10') in height or greater. A significant tree does not include box elder or cottonwood.

10-15D-1: PURPOSE AND INTENT:

The purpose of this article is to provide for minimal tree loss and mitigation of tree removal in wooded areas of the city. Tree cover is beneficial in terms of aesthetics, screening, cooling, wildlife habitat, watershed control, air quality enhancements, erosion control and preservation and enhancements of property values. Land alteration that causes large scale destruction of trees diminishes and impairs the public health, safety and general welfare. The intention of this article is to provide regulations relating to the cutting or removal of trees in areas where the natural vegetation or topography are to be significantly altered. (Ord. 1147, 5-14-2007)

http://sterlingcodifiers.com/codebook/index.php?book_id=542§ion_id=287225

10-15D-2: WOODLAND PROTECTION STANDARDS:

No land alteration within a woodland shall occur until the city finds that the land alteration complies with the following:

- A. Maximum Possible Preservation: The land alteration shall be conducted so that the maximum amount of woodland is preserved by the clustering of structures wherever possible, or by the use of other innovative design techniques where appropriate. Measures shall be taken to protect and preserve the preservation area as described in the city's "Guidelines For Preventing Construction Damage".

B. Protection Of Root Zones: Grading, contouring, paving, and any excavation or trenching, as well as parking of vehicles, material storage, dirt stockpiling and other similar activities, shall not occur within or detrimentally affect the aeration or permeability of the root zone in the preservation area. The "root zone" shall be understood to mean the area within a radius surrounding the tree trunk of one foot (1') per one inch (1") of tree diameter.

C. Data Submission: The applicant shall submit data at the time of preliminary plat submission to the city that outlines conformance to this article. The data shall include:

1. Inventory of all significant and heritage trees by species, diameter and condition.
2. Proposed building pad location for each lot including custom graded lots.
3. Identification of significant and heritage trees to be preserved.
4. Identification of significant and heritage trees to be removed, including those to be removed in the future for a proposed building pad by a developer or builder.
5. Identification of all significant and heritage trees within the thirty foot (30') grading limit.

D. Removal Thresholds:

1. Although the applicant must retain the maximum amount of woodland possible, the city recognizes that a certain amount of significant trees and tree cover removal is an inevitable consequence of the urban development process.
2. Therefore, in the following zoning districts listed in column I, a percentage of the woodland may be removed without any obligation for reforestation, but only up to and including the threshold percentage of woodland listed in column II. If the land alteration results in woodland removal that is less than the percentage thresholds of column II, then the applicant shall be given, for each percent under the thresholds, a credit of one percent (1%), up to a maximum of ten percent (10%), toward the total park dedication or park contribution requirement of sections 11-4-5 and 11-4-6 of this code. If the land alteration results in woodland removal that exceeds the percentage listed in column II, then the applicant shall be responsible for reforestation in accordance with the standards of this article.

| Column I Zoning District | Column II Threshold |
|-----------------------------|------------------------|
| A | 25 percent |
| E-1 and E-2 | 25 percent |
| R-1A, R-1B, R-1C and R-2 | 30 percent |
| R-3A, R-3B, R-3C and R-3D | 40 percent |
| B-1, B-2 and P | 50 percent |
| B-3, B-4, I-1 and I-2 | 60 percent |

E. Reforestation:

1. If the land alteration results in woodland removal beyond the woodland removal threshold, the applicant shall be required to submit a reforestation plan. The reforestation plan must be submitted prior to final plat approval. The reforestation plan shall include:

a. Location of proposed reforestation.

b. Species and size of proposed plantings.

c. Quantity of proposed plantings.

2. The reforestation plan shall comply with the following criteria:

a. Tree replacement will be predicated on total number of diameter inches of significant and heritage trees removed beyond the threshold limits outlined in subsection D of this section.

b. Actual replacement quantities shall be adjusted based on the type of woodland removed in accordance with the following guidelines:

(1) Class A, fast growing deciduous species, predominantly aspen, Siberian elm, American elm, silver maple, red maple, willow: fifty percent (50%).

(2) Class B, conifer/mixed hardwoods, predominantly pine, spruce, cedar and mixed hardwoods consisting of the following species: oak, birch, sugar maple, black cherry, basswood, ironwood, walnut, ash, hackberry, locust: one hundred percent (100%).

(3) Class C, heritage tree: one hundred percent (100%). For each heritage tree saved, the developer may receive credit towards the required replacement trees. This credit will be at a rate of two (2) caliper inches for each one dbh inch saved. To receive this credit, the applicant must demonstrate that extraordinary measures have been taken to preserve the heritage trees that otherwise would not be saved.

c. Species replacement must meet site landscaping requirements (subsection 10-15-11A of this chapter). Consideration should be given to a replacement tree species' potential to disease, and emphasis on planting diversity should be encouraged.

d. Where heritage trees have been removed, replacement trees shall consist of the same species as the removed heritage tree, or a tree that has the same potential value as the removed heritage tree. This value shall be certified by a certified forester or arborist. For the purposes of this subsection E2d, "value" is defined as a species which has the same growth and life potential as the removed tree.

e. Required replacement trees shall be planted on the site being developed in areas such as yard setbacks and outlots. These trees shall be planted based on the frequency and density as determined by the city. Unless found otherwise, at least seventy five percent (75%), but in no case less than forty five percent (45%), of the required tree placement shall occur on the site being developed. Should the development not have sufficient room on the site to allow for all required reforestation, the balance may, at the city council's discretion, either be: 1) planted upon public property in locations approved by the city; or 2) a cash payment to the city in an amount equivalent to the cost of the plantings, said payment to be used by the city for future plantings on public property.

f. The reforestation plan shall be reviewed by the city planner and shall be considered by the city council as part of final plat approval.

g. The actual replacement quantities for woodlands located on commercial and industrial developments in tax increment financing districts may be reduced according to such factors as: the stated purposes for creation of the subject tax increment district, need for tax base generation in the tax increment district, and mandatory landscaping requirements as specified in the city's landscaping policy. The city administrator shall review each such proposal prior to final plat approval and make a recommendation to the city council on the actual percentage of replacement that will be required. At the time of final plat approval, the city council shall make a final decision regarding actual replacement quantities based upon the factors listed above. In no instance will the replacement rate be less than ten percent (10%) for class A species and twenty five percent (25%) for class B and C species, as defined in subsection E2b of this section.

F. Construction Damage To Significant Trees In Or Near Preservation Area: Significant and heritage trees which are within thirty feet (30') of the proposed grading limits shall be surveyed by the applicant. Any significant or heritage tree that the applicant commits to preserve that is subsequently damaged, during or as a result of construction, shall be replaced by the applicant on a one for one diameter inch basis.

G. Pruning Trees: Owners or developers pruning oak trees between April 15 and August 1 must apply an appropriate nontoxic wound sealant to any cut areas.

H. Landscape Security:

1. The applicant shall post with the city a landscape performance bond or cash deposit or letter of credit in an amount equal to one hundred twenty five percent (125%) of the cost of the plantings, plus installation, when the land alteration exceeds the woodland removal threshold limit. The bond shall ensure adherence to the requirements of this article.

2. The performance security shall remain in effect for at least one year after the date that the last replacement tree has been planted. The city may release the performance security at that time unless the city planner, upon inspection, finds that any of the replacement trees have died or are unhealthy, or if there was any encroachment upon the protective fencing surrounding any tree to be saved. The city may retain that portion of the performance security equal to the cost of removing dead or unhealthy trees and replanting replacement trees. If the applicant supplies proof of a nursery guarantee which is approved by the city planner, then the performance security posted by the applicant shall be released upon planting of the last guaranteed tree. The nursery guarantee shall remove liability from the applicant, and responsibility will be placed upon the nursery or current landowner. (Ord. 1147, 5-14-2007)

http://sterlingcodifiers.com/codebook/index.php?book_id=542§ion_id=287226

10-15D-3: REPLACEMENT TREES:  

Replacement trees shall be planted no more than twelve (12) months after the date that land alteration has commenced. If the applicant is prevented from performing within this time limit because of unforeseeable reasons beyond the applicant's control, the city planner may extend the time for performance. The applicant shall inform the city planner when all replacement trees have been planted, at which time, the city planner shall inspect the site. (Ord. 1147, 5-14-2007)

http://sterlingcodifiers.com/codebook/index.php?book_id=542§ion_id=287227

10-15D-4: EDUCATION:  

The city parks and recreation director shall develop an education program which shall be distributed to applicants and all general contractors prior to receiving a contractor's license from the city. The information shall include, but not be limited to, prevention of construction damage to trees, tree replacement, pruning, general tree protection techniques and tree disease information. (Ord. 1147, 5-14-2007)

http://sterlingcodifiers.com/codebook/index.php?book_id=542§ion_id=287228

10-15D-5: EXEMPTIONS:  

A. All public improvement projects shall be exempt from the requirements of this article.

B. The requirements of this article shall not apply to the removal of trees seriously damaged by storm, other acts of nature, or disease. (Ord. 1147, 5-14-2007)

Footnote 1: To convert height of coniferous trees to caliper inch measurements, the first 6 feet of growth equals 2.5 inches dbh; each additional 2 feet of growth equals 1 inch dbh.

http://sterlingcodifiers.com/codebook/index.php?book_id=542§ion_id=287229

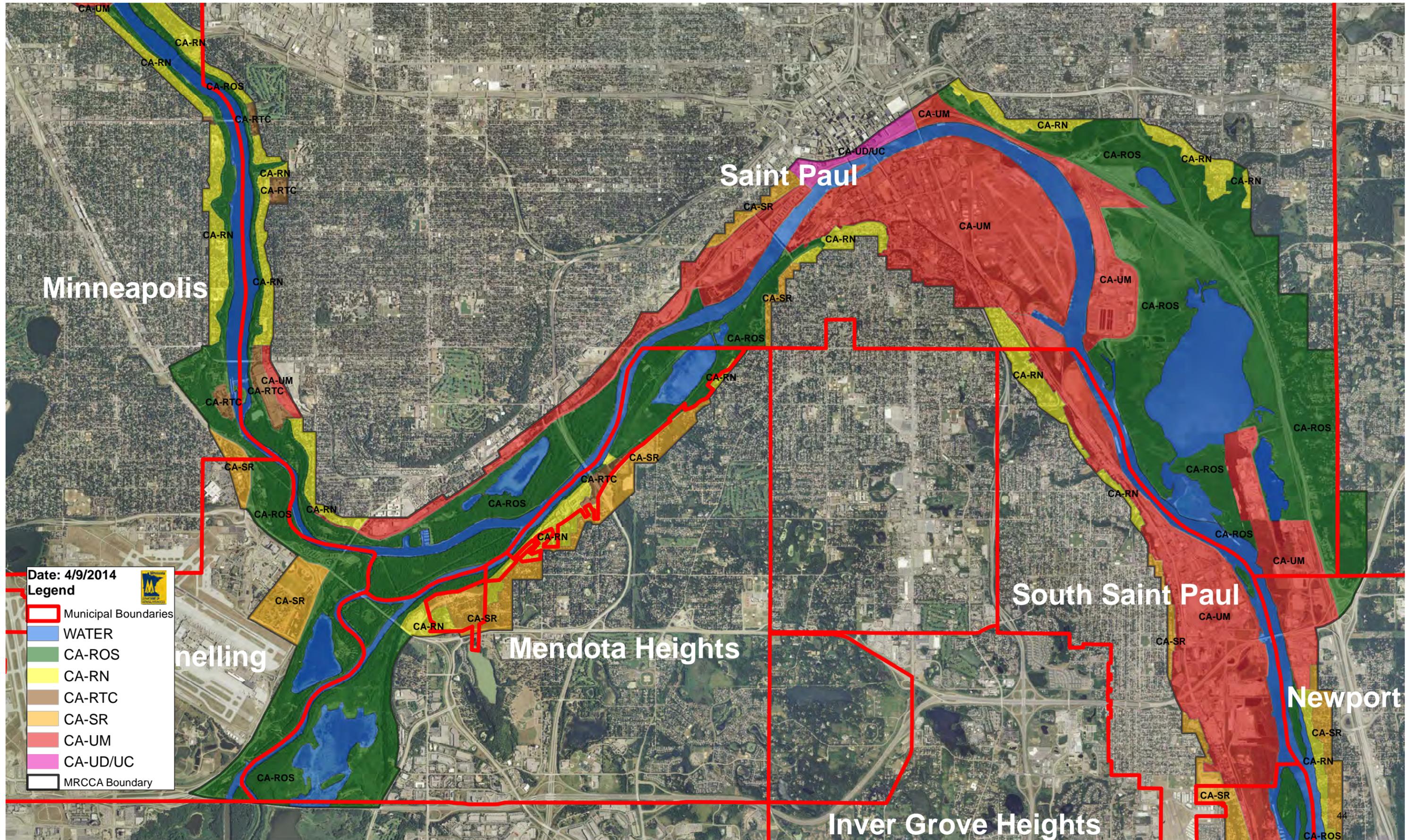
MEMORANDUM

TO: Environmental and Natural Resources Commission
FROM: Shann Finwall, AICP, Environmental Planner
SUBJECT: **Mississippi River Corridor Critical Area Draft Rules**
DATE: July 17, 2014 for the July 21 ENR Commission Meeting

The Department of Natural Resources (DNR) has completed a draft of the new Mississippi River Corridor Critical Area Rules (MRCCA). A small portion of Maplewood's southern leg is located within the MRCCA. The DNR will present information on the draft rules during three open houses, with the next two meetings scheduled for July 22 and July 24 in St. Paul and Hastings. The public comment period on the draft rules ends August 15, 2014. During the July ENR Commission meeting staff will present changes to the rules and how they will affect Maplewood's MRCCA. Several MRCCA public hearing and Rulemaking attachments are included with this report. For complete information on the project visit the DNR website at www.dnr.state.mn.us/input/rules/mrcca/index.html.

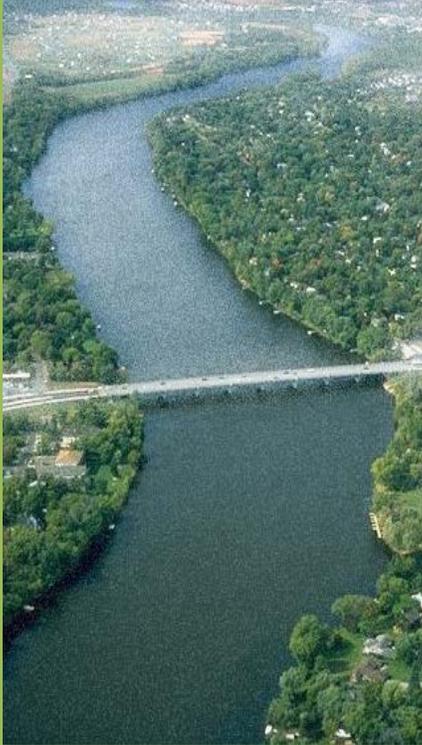
Attachments

MRCCA Rulemaking DNR Working Draft-Districts





Mississippi River Corridor Critical Area Rulemaking Project



Public Information Meetings

The Minnesota Department of Natural Resources (DNR) is holding **three public information meetings** on the rulemaking currently underway for the Mississippi River Corridor Critical Area (MRCCA):

Wednesday, July 16th - 6:30 PM – 9:00 PM

Greenhaven Golf Course (courtesy of City of Anoka)
2800 Greenhaven Road, Anoka, MN 55303

Tuesday, July 22nd - 6:30 PM – 9:00 PM

Nova Classical Academy
1455 Victoria Way W., St. Paul, MN 55102

Thursday, July 24th - 6:30 PM – 9:00 PM

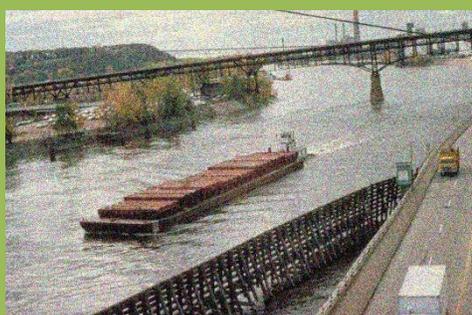
Schaar's Bluff Gathering Center (Spring Lake Park Reserve)
8395 127th Street E, Hastings, MN 55033

The DNR will present the same information at each meeting. The meetings will be in an open house format, with a presentation and discussion scheduled from 7:00 to 8:00 pm. Stop in at any time to learn more about the MRCCA rulemaking, and provide feedback on the draft rules, focusing on key topics such as vegetation, land alteration, setbacks, nonconformities, and shoreline facilities. DNR staff will be available to explain how the draft rules might affect individual properties. Comments received at these meetings are not part of the formal rulemaking record but will be considered as draft rules are revised.

The MRCCA is a land corridor along the Mississippi River within the seven-county metro area. There are 30 local governments within the 72 mile long, 54,000 acre corridor. Land development in the corridor is guided by existing state regulations, which are implemented through local government plans and zoning ordinances. The proposed rules, if adopted, would replace the existing regulations.

For further information:

<http://www.dnr.state.mn.us/input/rules/mrcca/index.html>, or call 651-259-5714.



Overview of Mississippi River Corridor Critical Area Program and Rulemaking Effort

History of the Mississippi River Corridor Critical Area

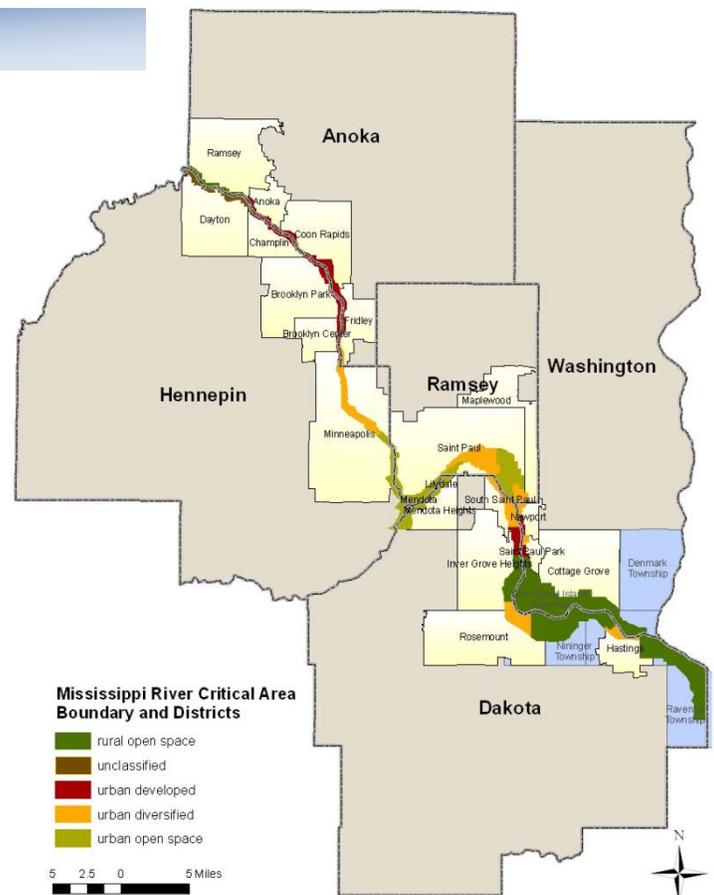
- 1973** Minnesota passes Critical Areas Act of 1973 (MN Statutes, Chapter 116G)
EQB adopts rules to implement Act (MN Rules, parts 4410.8100 – 4410.9910)
- 1976** Mississippi River and adjacent corridor designated a state critical area by Governor Wendell Anderson (Executive Order No. 130)
- 1979** Designation continued by Governor Albert Quie (Executive Order 79-19)
Metropolitan Council acts to make designation permanent (Resolution 79-48)
- 1988** Mississippi National River and Recreational Area (MNRRA) established by Congress as unit of NPS (MNRRA shares same boundary as Mississippi River Corridor Critical Area)
- 1991** MNRRA designated a state critical area per Critical Areas Act (MN Statutes, section 116G.15)
- 1995** Responsibility shifts from EQB to DNR by Governor Arne Carlson (Reorganization Order 170)
- 2007** Legislature directs DNR to prepare report on the Mississippi River Corridor Critical Area (Completed January 2008)
- 2009** Legislature amends MN Statutes, section 116G.15 and directs DNR to conduct rulemaking for the Mississippi River Corridor Critical Area (MN Laws 2009, Chapter 172, Article 2, Section 5.e.)
- 2011** DNR develops draft rule after participatory stakeholder process, but rulemaking authority lapses
- 2013** Legislature directs DNR to resume rulemaking process in consultation with local governments

Current Status

- 30 communities along corridor (21 cities, 5 counties, 4 townships) + several quasi-governmental entities. Most have adopted critical area plans and ordinances.
- EO 79-19 establishes four land use districts:
 - Rural Open Space
 - Urban Open Space
 - Urban Developed
 - Urban Diversified
- EO 79-19 establishes performance standards and guidelines for each land use district.
- Local government units (LGUs) administer and enforce a variety of plans and regulations to meet the performance standards.
- The critical area is cooperatively managed:

DNR Role: Adopts rules, reviews/approves plans and ordinances, and may review and comment on actions requiring a public hearing.

NPS Role: Has provided funding assistance to local, regional, and state agencies; encourages LGUs to incorporate voluntary MNRRA policies into plans; and provides stewardship, education, and historical and cultural resource protection.



Met Council Role: Reviews plans for consistency with regional policies, EO 79-19, and MNRRRA policies and submits recommendation to DNR; and provides assistance to LGUs adopting or amending plans.

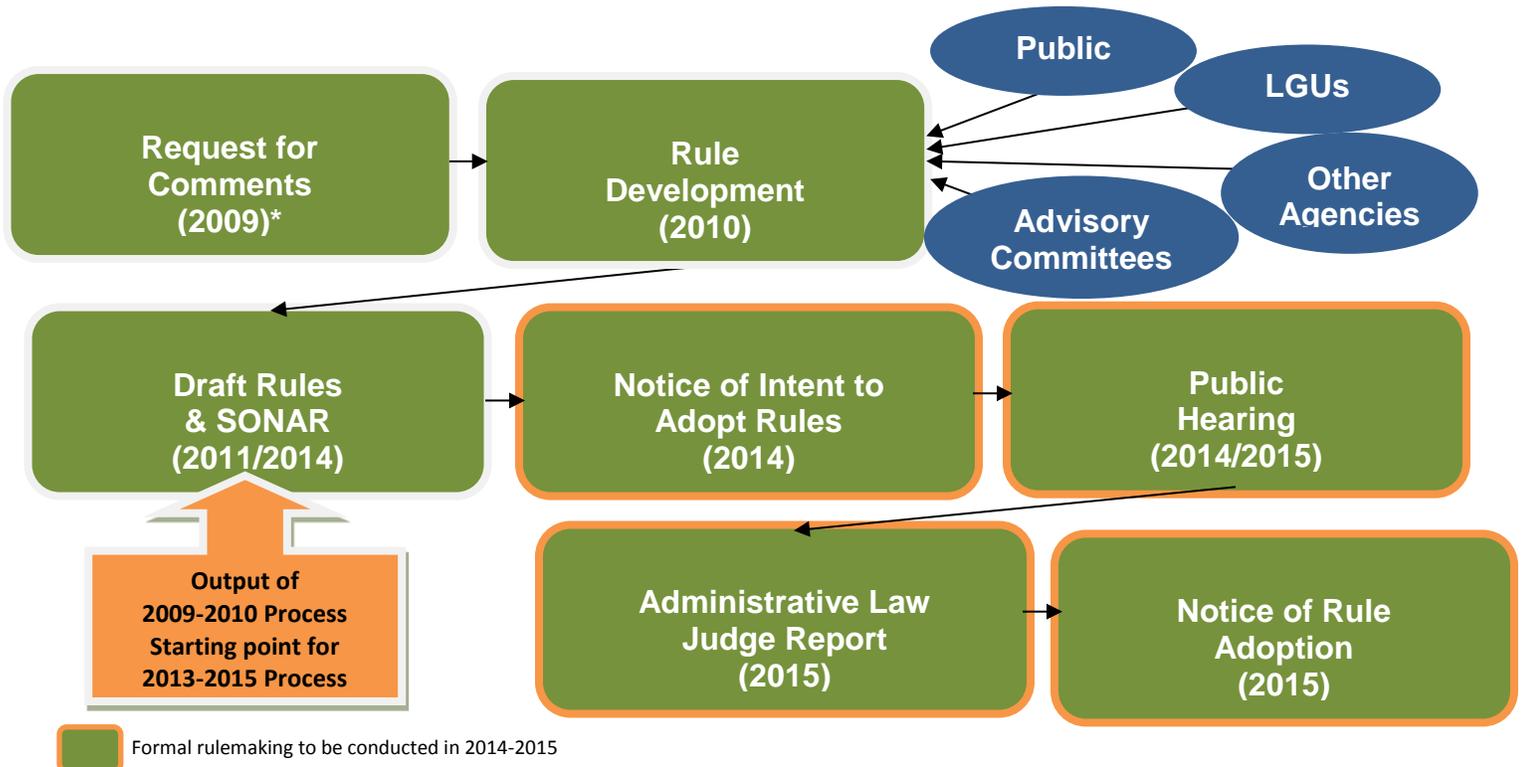
LGU Roles: Adopt DNR-approved plans and ordinances, and administer and enforce them.

Key Points of 2009 and 2013 Legislation

The legislation authorizes the DNR to adopt rules and requires the DNR to:

- establish, by rule, districts within the Mississippi River Corridor Critical Area. The DNR must:
 - determine appropriate number of districts within each municipality,
 - take into account municipal plans and policies, and existing ordinances and conditions, and
 - consider protection of key identified resources and features.
- establish, by rule, minimum guidelines and standards for the districts to protect key resources and features and use them when approving plans and regulations and reviewing development permit applications.
- consult with local governments prior to rule adoption (new in 2013).
- protect existing commercial, industrial and residential uses (new in 2013).
- 2009 legislation required preparation of a preliminary bluff map; this requirement was eliminated in 2013, but protection of bluffs and related features remains a priority.

General Overview of State Rulemaking Process (MN Statutes, Chapter 14)



*The DNR re-published a Request for Comments on June 2, 2014 and will continue to involve local governments, interest groups, other agencies, and the public in improving and refining the draft rules. The DNR also intends to hold a public hearing as part of the formal rulemaking process.

For more information, including a detailed 2013-2015 rulemaking schedule, visit the project website: http://mndnr.gov/waters/watermgmt_section/critical_area/rulemaking.html



Homeowner's Guide to the MRCCA Working Draft Rules

Purpose

The purpose of this guide is to familiarize homeowners in the Mississippi River Corridor Critical Area (MRCCA) with the working draft rules dated June 2, 2014. This guide focuses on those rule provisions most likely to affect homeowners. It is intended to be used with the "[MRCCA Overview](#)" document, which explains the MRCCA and its history. This guide describes how the working draft rules differ from the existing MRCCA regulations. The rule part or subpart number referencing the actual rule language is shown in the title of each summarized rule provision.

Background on Local Control

Property owners have been subject to MRCCA regulations since the MRCCA was established by Executive Order in the 1970s. Since that time, MRCCA regulations have been implemented through local government zoning ordinances. The proposed rules will update the MRCCA regulations, which will then be implemented through updates to these local zoning ordinances. The DNR and Metropolitan Council both review local ordinances for consistency with MRCCA standards, with the DNR having final approval authority. The working draft rules will not change these inter-governmental relationships.

Districts (part 6106.0100)

What are districts? Resources are currently protected through the use of four districts established in the Executive Order. The working draft rules propose six districts that better reflect the existing character and development along the river and recognize planned future development.

In which district is my property located? Most residential neighborhoods are located in the proposed CA-ROS, CA-RN and CA-SR Districts. To find where your property is located, please see maps showing the [existing districts](#) and the [proposed districts](#).

Dimensional Standards (part 6106.0120)

What standards apply to my property? Standards for building height and setbacks from the river and the top of 18% slopes are regulated by district. The setback provisions are intended to keep buildings and other development activity away from sensitive shoreline areas and areas prone to soil erosion. Sediment is a pollutant and it also carries nutrients and other pollutants into the river, which reduces water clarity and water quality.

Will the standards change for my property? Building height and setbacks are currently regulated by local zoning ordinances and will not change for most homeowners. The tables on the following page outline the standards currently contained in most local ordinances, as well as those proposed in the working draft rules.



Existing Regulations - Executive Order 79-19*

| | Rural Open Space | Urban Developed | Urban Diversified | Urban Open Space |
|--------------------------|------------------|-----------------|-------------------|------------------|
| Height | 35' | 35' | Underlying zoning | 35' |
| River Setback | 200' | 100' | Underlying zoning | 100' |
| 18% Slope Setback | 100' | 40' | 40' | 40' |

* These regulations are implemented through local zoning ordinances. Standards may differ from one community to another. Check your community’s ordinance to verify which standards currently apply to your property.

Proposed Working Draft Rules

| | CA-ROS | CA-RN | CA-RTC | CA-SR | CA-UM | CA-UC |
|--------------------------|--------|-------|---------------------------|-------------------|------------------|-------------------|
| Height | 35' | 35' | 48 - 56' TBD CUP > 56' | Underlying zoning | 65' CUP > 65' | Underlying zoning |
| River Setback | 200' | 100' | 75' | NA | 50' | Underlying zoning |
| 18% Slope Setback | 100' | 40' | 40' | 40' | 40' | 40' |

Expansion of Nonconforming Structures (part 6106.0080, Subp. 3)

Legal nonconforming structures are structures that were lawfully permitted when they were built. However, when zoning standards change, these lawfully established structures that do not conform to the new standards become legally nonconforming or “grandfathered”. The ability to expand these structures is unclear in the existing MRCCA regulations and has raised concern among some homeowners. To address this, the working draft rules clarify that local governments may allow the expansion of nonconforming structures, as long as they do not expand further into required setbacks from 18% slopes and from the river. For additional information on nonconformities, refer to [“Nonconformities Guide”](#).

Vegetation & Land Alteration Standards (part 6106.0150)

Why do we need rules on vegetation and land alteration?

Vegetation is the primary means for stabilizing soil and for slowing, absorbing, and filtering stormwater before it runs into the river. Land alteration in areas near water and on steep slopes increases the risk of soil erosion and the movement of sediment into water. Retaining and/or restoring deep-rooted vegetation along the river’s edge and on steep slopes, and preventing erosion during development are important strategies for protecting water quality and animal habitat.

What is wrong with the existing regulations?

Existing MRCCA regulations for managing vegetation removal and land alteration activities are vague and are not clear on what homeowners can and can’t do. Changes are proposed to better protect vegetation and manage land alteration. The biggest change would require homeowners to obtain a permit from the local government for land alteration and vegetation removal activities in sensitive areas (primarily along the river’s edge and on 18 % slopes on developed lots) that exceed certain thresholds

that pose risks. The purpose of requiring a permit is to connect property owners with a qualified person who can guide these activities to minimize negative impacts to water quality and habitat.

When and in which areas would a permit be required for land alteration?

A permit would be required for any activity that disturbs more than **5-10** cubic yards or **250 – 3,000** square feet of soil in the following areas:

- In the shore impact zone - 50% of the structure setback from the river
- Within 50 feet of a public water, wetland, or natural drainage way
- In a slope preservation zone – areas with slopes greater than 18%, including land within 20 feet of these areas.
- In a bluff impact zone – areas with slopes greater than 30% including land within 20 feet of these areas.

Comments are requested on the specific amount of disturbance activity that should trigger the permit - please suggest a specific number within the highlighted range of numbers, or some other number you feel is more appropriate.

Disturbance activity exceeding these levels in these areas must use temporary and permanent erosion and sediment control measures sufficient to retain sediment onsite. Except for a limited number of exceptions, land alteration is not allowed in slope and bluff preservation zones. Local governments would have the authority to attach conditions to the permit that would minimize environmental impacts.

What if I need riprap or retaining walls?

The construction or replacement of riprap, retaining walls, and bioengineering systems are considered a form of land alteration that would also require a permit in the following areas:

- In the shore impact zone - 50% of the structure setback from the river
- In a slope preservation zone – areas with slopes greater than 18%, including land within 20 feet of these areas.
- In a bluff impact zone – areas with slopes greater than 30%, including land within 20 feet of these areas.

Riprap, retaining walls or other “hard armoring” can only be used to correct an erosion problem that cannot be controlled through vegetation or a bioengineered system (as determined by the local government). Patios and retaining walls would be allowed in slope preservation zones that don’t abut the river, a bluff, or natural drainageway, as long as slope stability is maintained, and the project is not readily visible from the river.

When and in which areas would a permit be required for vegetation management?

A permit is also proposed for removal of tree canopy or other natural vegetative cover that reduces cover more than **5-15** percent or more than **1,000 – 5,000** square feet, whichever is less, in the following areas:

- In the shore impact zone - 50% of the structure setback from the river.

Comments are requested on the specific amount of vegetation removal that should trigger the permit – please suggest a specific number within the highlighted range of numbers, or some other number you feel is more appropriate.

- In a slope preservation zone – areas with slopes greater than 18%, including land within 20 feet of these areas.
- In a bluff impact zone – areas with slopes greater than 30%, including land within 20 feet of these areas.
- Areas of native plant communities anywhere in the MRCCA.
- Other areas of significant vegetation identified in local government plans.

Vegetation removal activity that exceeds these levels in these specific areas must comply with local government permit conditions that minimize environmental impact. For example, the removal of native plant communities would need to be replaced with vegetation similar to the habitat value, slope stabilization, and stormwater retention value of the removed native plant communities. Another example would require the planting of deep-rooted vegetation on any highly erodible soils that are disturbed. Within the above listed areas, intensive vegetation clearing or clear-cutting is prohibited. The proposed rules also state that the local government must require a restoration plan for violations of the standards.

The proposed standards also list the following activities for which NO permit is required:

- Pruning of trees and shrubs to maintain plant health and improve aesthetics
- Maintenance of existing lawns, landscaping, and gardens
- Removal of vegetative cover less than the amounts described above

Shoreline Facilities & River Access on Riparian Lots (part 6106.0140)

The existing MRCCA regulations do not address shoreline facilities and river access such as access paths, stairways, recreation areas and water-oriented structures. The working draft rules propose the following:

- Driveways or parking areas must meet structure setbacks and cannot be placed in the slope preservation or bluff impact zones.
- No impervious surfaces within the shore impact zone (50% of structure setback) except for:
 - Access paths no greater than eight feet wide
 - Stairways and lifts no greater than four feet wide - landings may be up to 32 square feet in area.
- One shoreline recreation area per lot no larger than 5,000 square feet and no wider than 25 feet or 12% of the lot width, whichever is greater, and not extending more than 25 feet landward from the water.
- One water-oriented accessory structure for every 300 feet of river frontage. Lots less than 300 feet may have one structure. The water-oriented accessory structure is limited to a 12 foot height, 120 square feet, and must be at least 10 feet from the water's edge. Structures are not allowed in the bluff impact and slope preservation zones.

MEMORANDUM

TO: Environmental and Natural Resources Commission
FROM: Shann Finwall, AICP, Environmental Planner
DATE: July 16, 2014, for the July 21 ENR Commission Meeting
SUBJECT: Wicklander Pond Dredging Report

Wakefield Lake is defined as an impaired water body and is under a Watershed Restoration and Protection (WRAP) Plan. The Ramsey-Washington Metro Watershed District (RWMWD) is the lead on the WRAP and has partnered with the City in identifying Wicklander Pond as an upstream water body in need of maintenance to help improve the water quality of Wakefield Lake. Wicklander Pond is located within the City Hall Campus, west of City Hall and east of the Community Center.

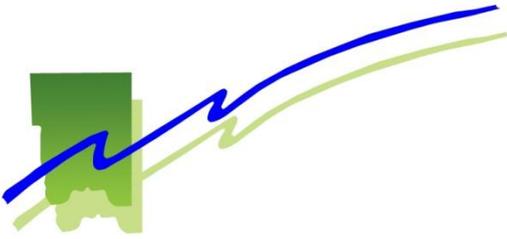
In January 2014 the City Council authorized dredging of the pond to improve water quality treatment and water storage volume. RWMWD paid to design and inspect the project and cover other indirect costs, with the City covering construction costs only.

In May the Ramsey Conservation District submitted the attached Wicklander Pond Dredging Report which outlines the bottom composition and percent biovolume comparisons before and after dredging. The results show the impact that dredging had on the pond's holding capacity to help restore approximately 6.11 acres per foot of volume holding capacity.

The draft Wakefield Total Maximum Daily Load (TMDL) Study is currently under review by the Minnesota Pollution Control Agency. Once approved by the MPCA the watershed district and stakeholders will finalize other implementation strategies for improving water quality of Wakefield Lake. The watershed district will hold additional public meetings during this process.

Attachment: Wicklander Pond Dredging Report

Ramsey Conservation District



1425 Paul Kirkwold Drive

Highway 96 & Hamline Avenue

Arden Hills, MN 55112

Telephone 651-266-7270

Wicklender Pond

Bottom Composition & Biovolume Analysis Survey

05/15/2014

The following report outlines the bottom composition and percent biovolume within Wicklender Pond located at the City of Maplewood facility in Maplewood, MN. Comparisons were made from the initial survey completed in October 2013, with the most recent survey completed in May 2014. Between the initial and most recent surveys, dredging was completed on the bottom of the pond to remove accumulated sediment and to restore the pond's volume back to its original capacity. The results below, specifically the bottom composition, show the impact that dredging had on the pond's holding capacity. Results indicate that dredging the pond helped restore approximately 6.11 ac-ft of volume holding capacity.

Data Collected and prepared by **Ramsey Conservation District** for:

City of Maplewood

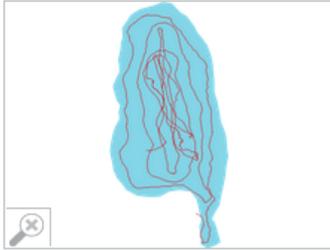
1902 County B, Maplewood, MN 55109

Phone: 651-249-2400 www.ci.maplewood.mn.us

Walden Pond, Ramsey County Minnesota

Generated: 5/27/2014 6:42:31 PM (UTC)

Waterbody Size: 1.91 ha (4.70 acres)

[report link](#)

Data Collector
 Ann WhiteEagle

Data Collection Date
 5/15/2014 4:21:12 PM (UTC)

Average Water Temperature
 12.79° C (55.02° F)

Location
 Start: 45.00323486, -93.02261353
 End: 45.00390244, -93.02315521

Survey Size
 Area: 1.91 ha
 (4.71 acres)
 Percent: 100% of waterbody
 Volume: 18,728.00 cu. m
 (15.18 acre ft)

Est. Waterbody Volume ?
 18,728.00 cu. m
 (15.18 acre ft)

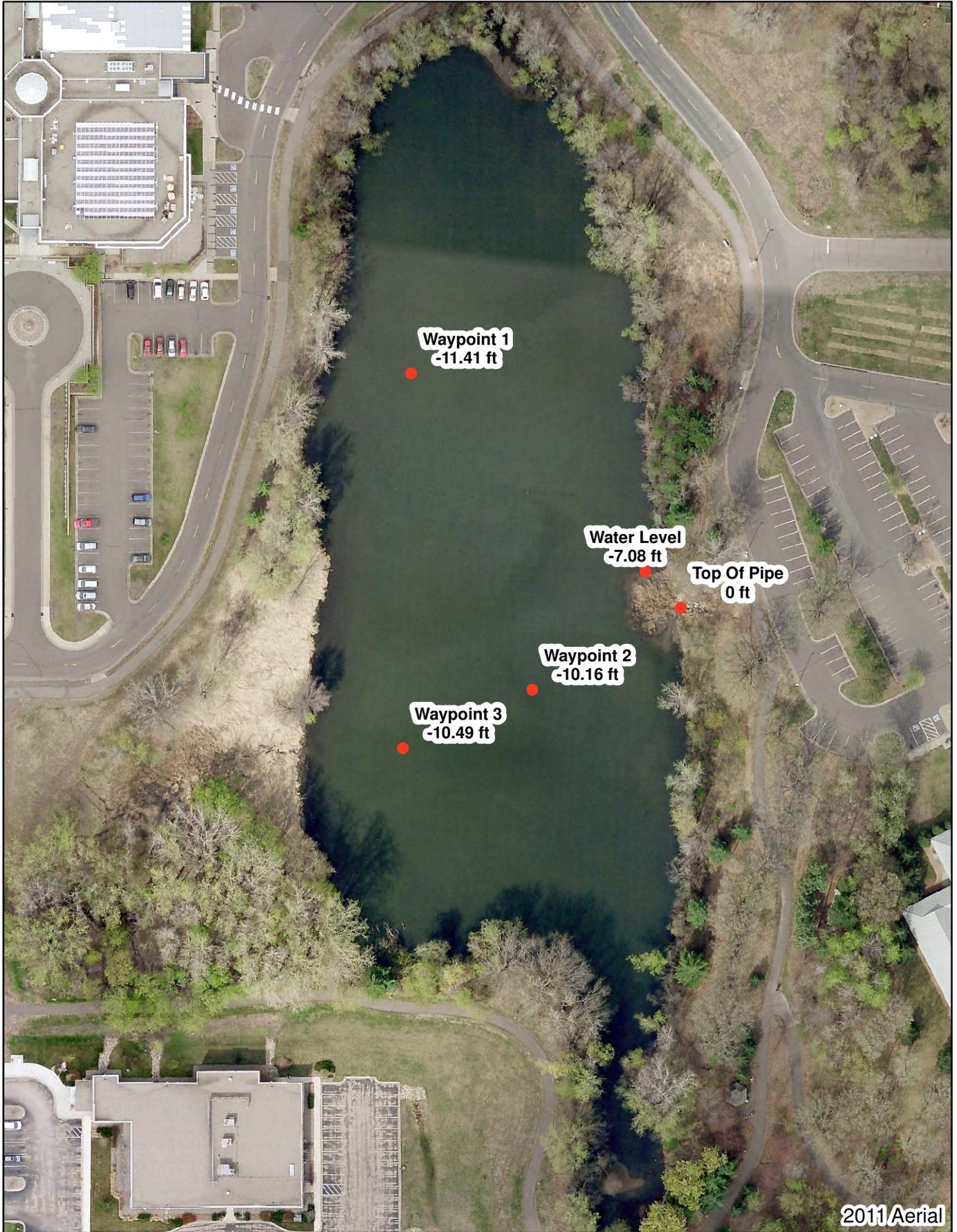
Settings
 Track Buffer: 25 m
 Grid Cell Size: 5 m
 Min. BV Detect: 5%
 Min. Veg Depth Detect: 0.73152 m

Quality Control
 Reviewer: Valley, Ray
 Status: Pass
 Looks great. Expand buffer in the Trip
 Reprocessing Tab to get complete fill in

Data recorded on 5/15/2014

| | | |
|-------------|--------|----|
| Top of Pipe | 0.00 | ft |
| Water Level | -7.08 | ft |
| Waypoint 1 | -11.41 | ft |
| Waypoint 2 | -10.16 | ft |
| Waypoint 3 | -10.49 | ft |

| Date | October 10, 2013 (pre-dredging) | May 15, 2014 (post-dredging) |
|----------------------------------|---------------------------------|------------------------------|
| Approximate Water Volume (ac-ft) | 9.07 ac-ft | 15.18 ac-ft |
| Water Temp (°F) | 60.03 °F | 55.02 °F |
| Water Level (ft) | -7.22 ft | -7.08 ft |



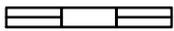
2011 Aerial

Approximate Waypoint Locations with sampling depths

Ramsey Conservation District



Feet

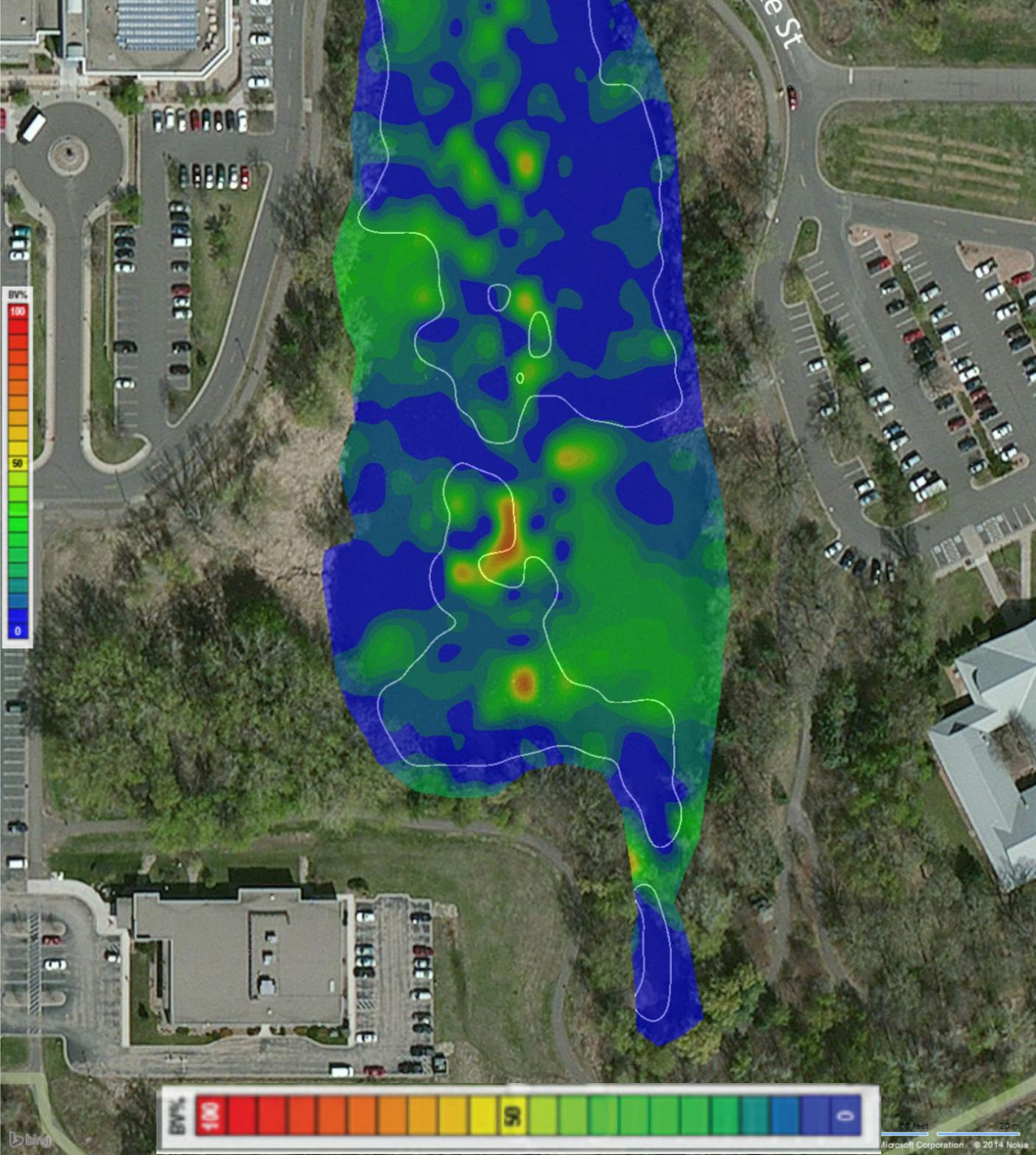


30 15 0 30 60

Wicklender Pond - City of Maplewood - Maplewood, MN

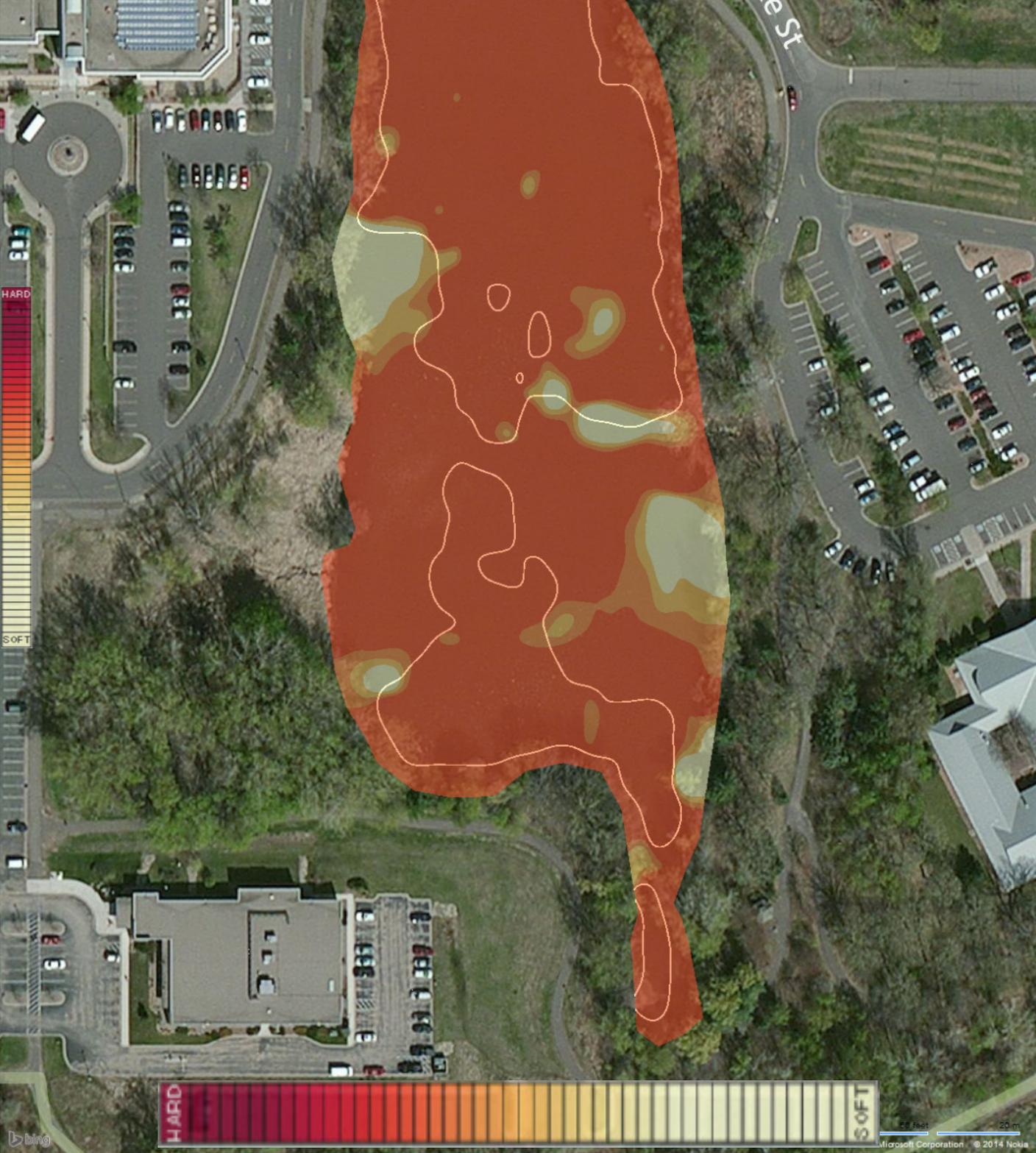


BIOWISE
Wicklander Pond
5/15/2014
Latitude: 45.0041465
Longitude: -93.0228885
Gathered By: Ann WhiteEagle
Map Type: Contour Vegetation
www.cibibase.com



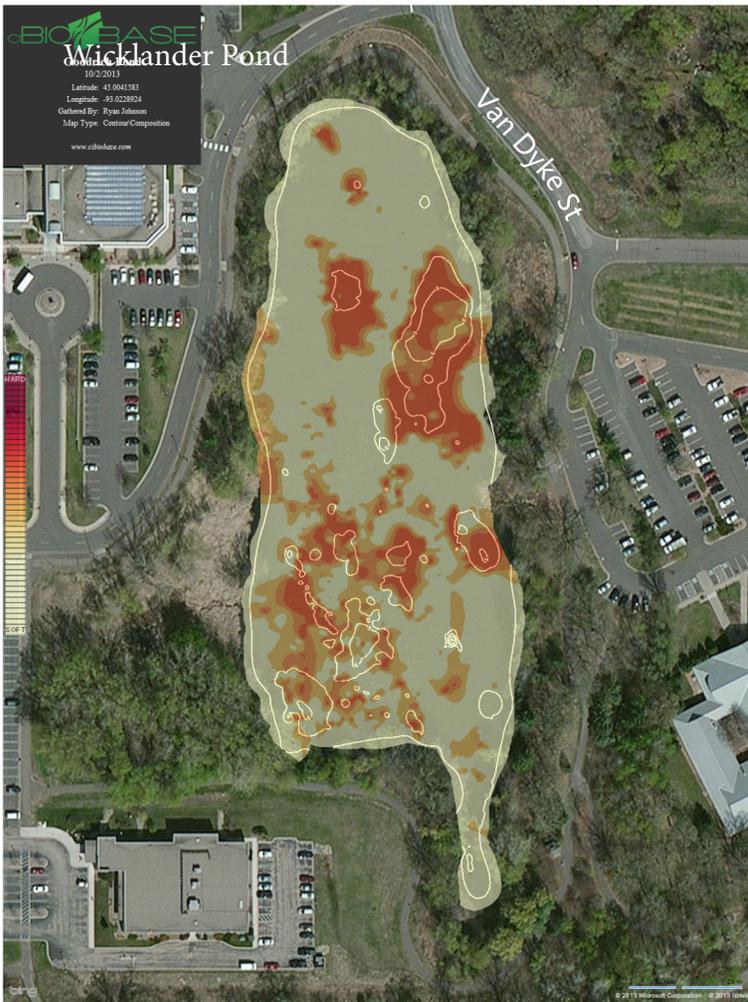
Red Indicates - 100% Vegetation; Blue Indicates - 0% Vegetation

ci BIOBASE
Wickliffe Pond
5/15/2014
Latitude: 45.0041465
Longitude: -93.0228885
Gathered By: Ann WhiteEagle
Map Type: Contour Composition
www.cibibase.com

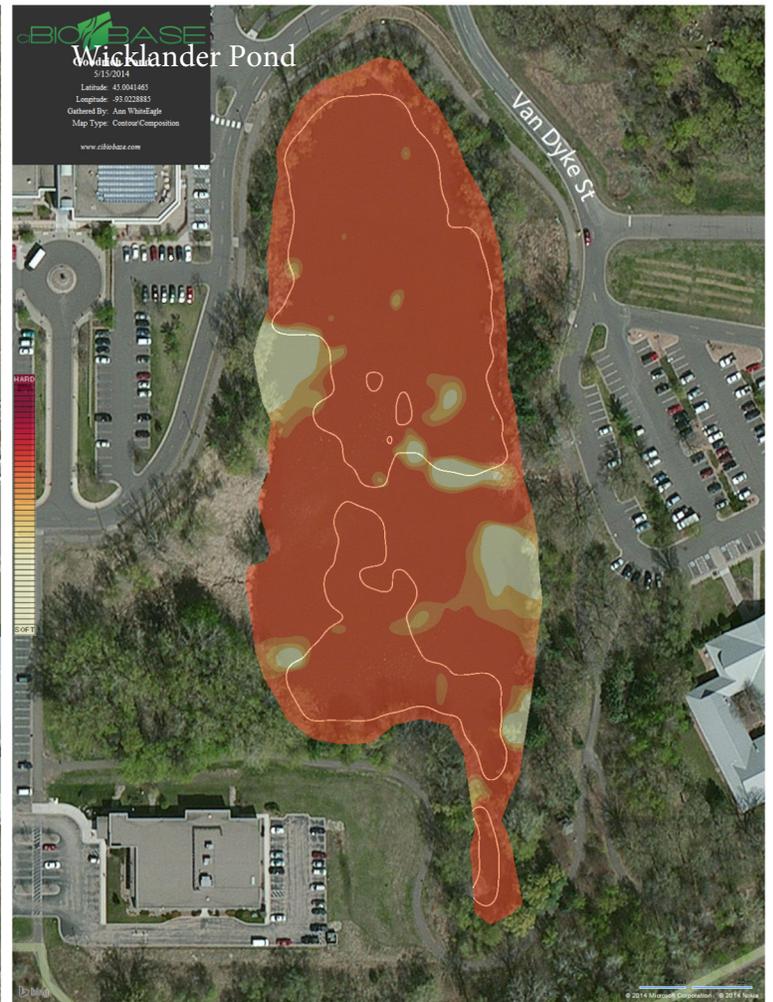


Red Indicates - Harder bottom composition; Tan Indicates - Softer bottom composition

Bottom Composition Comparison: October 2013 Data vs. May 2014 Data



October 10, 2013 - Before Dredging

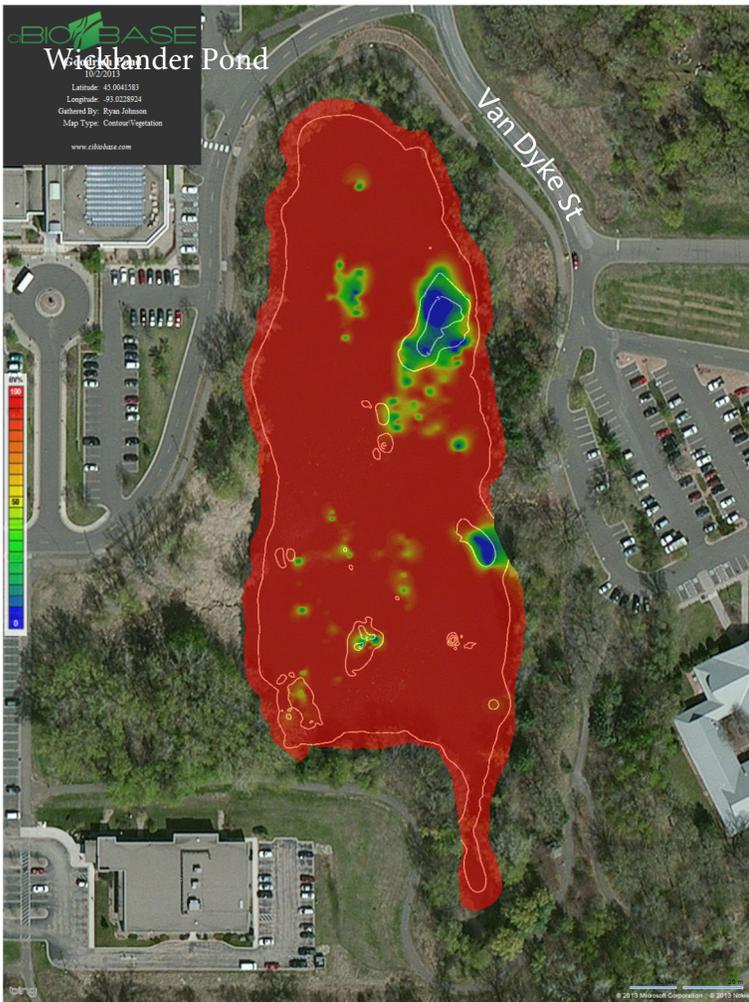


May 15, 2014 - After Dredging

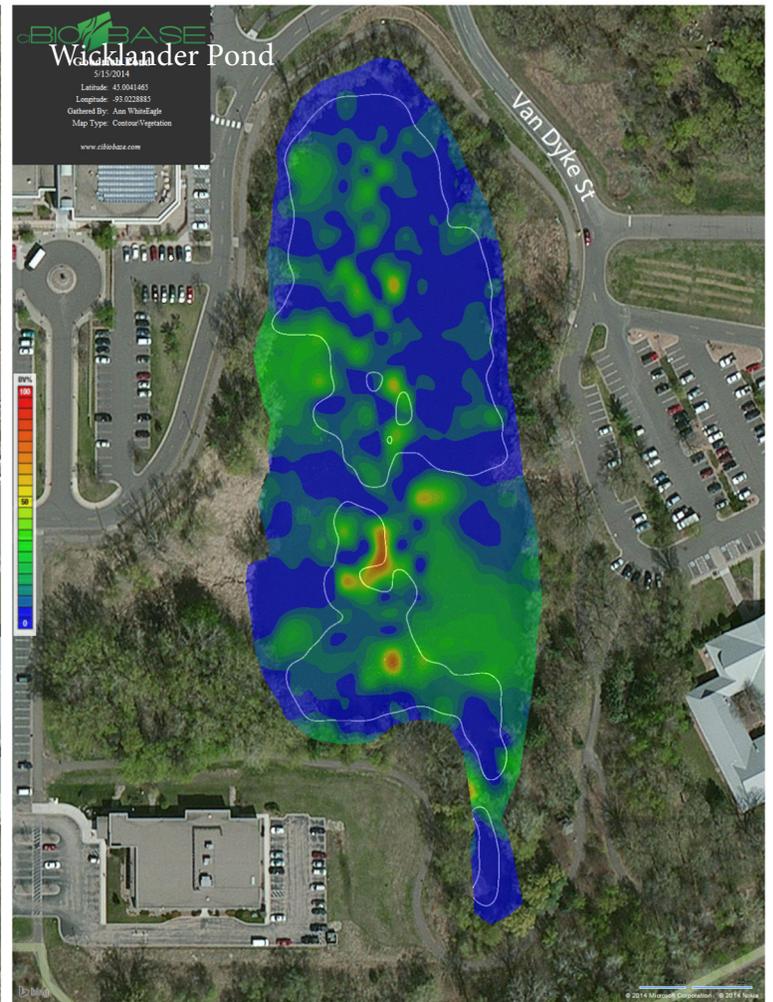


Red Indicates - Harder bottom composition; Tan Indicates - Softer bottom composition

Biovolume Percentage Comparison: October 2013 Data vs. May 2014 Data



October 10, 2013 - Fall Biovolume Map



May 15, 2014 - Spring Biovolume Map



Red Indicates - 100% Vegetation; Blue Indicates - 0% Vegetation