City of Eagan

Tree Preservation and Protection Through Ordinances

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- Area: ~34 mi²
- Drainage system: 200 mi pipe, 25 lift stations
- ~1,200 lakes, wetlands, storm basins: ~10% of city area
Eagan's Award-Winning Comprehensive Stormwater Management Program

1991: Twin Cities Metropolitan Council Policy Implementation Award

1996: U.S. EPA National First Place Award
Eagan Population 1950-2010

- 1950: 1,185
- 1960: 3,382
- 1970: 10,398
- 1980: 20,700
- 1990: 47,409
- 2000: 63,557
- 2010: 64,206
Eagan Estimated Impervious Acres
1990-2010

32% citywide coverage (2010 estimate)

- 25+ % increase -- residential land use
- 30+ % increase -- commercial/industrial land use
- 40+ % decrease -- open/undeveloped
Developing a Tree Preservation Ordinance

- How to create effective
  Tree Preservation Ordinances
Developing a Tree Preservation Ordinance

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- How does Eagan Incorporate our TPO into Policies and Procedures
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- Recognition by decision makers that trees have value
Developing a Tree Preservation Ordinance

- How to create effective Tree Preservation Ordinances

- Tree Inventory - Need to know what you have to manage
Developing a Tree Preservation Ordinance

- How to create effective Tree Preservation Ordinances

- Determine Goals of the Tree Preservation Ordinance
Developing a Tree Preservation Ordinance

- How to create effective Tree Preservation Ordinances

- Educate those who will be affected by the ordinance
Developing a Tree Preservation Ordinance

- How does Eagan Incorporate our TPO into Policies and Procedures
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- How does Eagan Incorporate our TPO into Policies and Procedures

- Need the Support of Decision Makers
Developing a Tree Preservation Ordinance

- How does Eagan Incorporate our TPO into Policies and Procedures

- Need Cooperation Among Other Departments
Developing a Tree Preservation Ordinance

- How does Eagan Incorporate our TPO into Policies and Procedures

- Need Qualified Forester or Natural Resource Manager
Developing a Tree Preservation Ordinance

- How does Eagan Incorporate our TPO into Policies and Procedures

- Need to Promote the Importance of Trees
How Does Eagan Coordinate Tree Preservation and Water Resources

Examples and Take Home Ideas

1. Trees and the Construction Process - Education
2. Stonehaven - Development
3. Patrick Eagan Park - Education
TREES
and the Construction Process

With a basic understanding of tree and root biology, homeowners and builders can minimize tree and root damage during construction. This brochure provides information to assist in planning, preservation and construction preservation. This illustration is a realistic depiction of how far reaching and shallow tree root systems actually grow.

Building Preservation into the Plan
Welcome
The City of Eagan hopes you enjoy your time at Patrick Eagan Park. Visitors can experience the park’s natural character by walking, personal reflection, painting and sketching, and birding.

Feel free to enjoy winter activities such as cross-country skiing, snowshoeing, or photography.

Park Land
The land for Patrick Eagan Park was acquired over time from 1975 to 2004. Funding has come from city, county, and state programs.

Natural “Oasis”
The largest of Eagan’s parks spans nearly 115 acres and is one of the City’s last undeveloped open spaces.

Located in the south-central portion of the City, Patrick Eagan Park is a natural valley landscape with wooded slopes, a lake, and wetlands.

Interpretive Signs
Above map shows locations of this ① Welcome sign and other signs about: ② The Landscape, ③ Aquatic Ecosystems, ④ Forest Ecosystems, ⑤ Stormwater Management, and ⑥ Wildlife.

Scenic Views
There are a variety of scenic views from the observation deck at sign ⑦, from McCarty Lake boardwalk at sign ⑧, and at various places along the 2.3-mile natural trail through the park.

Help Keep It Clean
Please respect Eagan City parks by “packing out what you bring in,” not disturbing wildlife, and not destroying or removing plant material.

Patrick Eagan Park
Aquatic Ecosystems
Shallow lake habitats

Open Water
Muskrats can be underwater for 20 minutes, burrow in the muck, and build dome homes of cattails.

Aquatic plants thrive in Eagan's shallow lakes where sunlight can penetrate deeply into nutrient-rich water and dark muck secures plant roots.

Open Air
Canada geese have unhindered aerial access over lakes. Majestic blue herons soar in and stalk near shore for frogs and fish.

McCarthy Lake
With over 500 natural waterbodies, Eagan has 26 lakes 15 feet deep or less. The City values one of these shallow lakes, 12½-acre McCarthy Lake, for its wildlife habitat, public education, and natural aesthetics.

Normally 4½ feet deep, this lake doesn’t support sport fish, only bullheads and minnows. Up to 8½ feet of floodwater could be stored here temporarily. Stormwater exits the northwest bay to the right of here.

Near Shore
Cattails are nesting sites for red-winged blackbirds and places for mosquito-eating dragonflies to exit the water as crawling nymphs before emerging as flying adults.

Woody Debris
Fallen trees are warming places for turtles in the spring and attachment sites for frog egg clusters.

Seasons and Water

SPRING
Look for muskrats eating plants on edges of melting ice. Frogs emerge from mud to croak.

SUMMER
Notice duckweed covering the lake. Water birds eat this highly nutritious, fast-growing plant.

FALL
Experience the incomparable view of a lake surrounded by a splash of many colors.

WINTER
The lake is covered with ice, but it’s not frozen solid. Bacteria continue decomposing dead plants. Frogs and turtles are buried in the mud.
Forest Ecosystems

Three distinct woodland types

Oak Savanna
This plant community is characterized by scattered, fire-tolerant oak trees. In contrast to a forest, which has a closed canopy (100% coverage), oak savannas have relatively open canopies (10%-30% coverage). Enough sunlight reaches the ground to support a variety of prairie plants such as big bluestems, goldenrods, and asters.

Deciduous Forest
To avoid damaging effects of winter, deciduous trees lose leaves every fall and grow new ones in spring. Typically, these trees have broad leaves that also can be damaged by excessive drought.

In Minnesota, many deciduous forests are threatened by invasive plant species including European buckthorn and honeysuckle. These invasives spread by fast growing roots and/or by birds carrying seeds.

Coniferous Forest
Conifers are cone-bearing trees with needle-shaped leaves that are usually evergreen, but some are deciduous. The acidity of fallen needles inhibits the growth of many understory plants, resulting in a relatively bare forest floor under the tall pines.
Coniferous forests produce soft wood that has many applications, from building materials to paper making.

Seasons and The Forest

SPRING
Watch for very quick changes in the beginning growth in all three forest ecosystems.

SUMMER
Find cool "rooms" to rest under tree canopies that are mostly fully developed over shaded forest floors.

FALL
Examine leaves of deciduous tree that have changed color and dropped. Photosynthesis stops for another year.

WINTER
You may think all three ecosystems are asleep, but tree trunks and roots are still growing.

City of Eagan

Patrick Eagan Park
City Growth
Developing Eagan’s pot-holed landscape from a rural township to an urban center has required most city lakes and wetlands to be connected to the storm sewer system. The City of Eagan officially committed to protect and improve these waterbodies with adoption of a water quality management plan in 1990.

Treatment Pond
Constructed in 1994, the storm pond on the left is one of many the city has built to benefit lakes and wetlands. This pond collects stormwater runoff from neighborhood streets south and east of the park. After rushing 100 feet downhill through large underground pipes, stormwater flows into the pond where suspended material settles and where plants such as algae absorb dissolved phosphorus, a water quality pollutant.

Stormwater Flow
The “treated” stormwater then migrates around or over the vegetated berm in the center, enters the wetland on the right, and flows out through McCarthy Lake northeast of here. Beyond Patrick Eagan Park, the water flows through Fish and Blackhawk lakes and then leaves the City through the Minnesota River bottoms.