

Chapter 6: Natural Resources



Natural Resources Goals

- Goal 1: Continuously pursue a balance between Oakdale’s built environment and its natural resource system.
 - a. Through the implementation of the Parks and Open Space Plan and other tools, the City shall pursue the conservation of key natural areas and features and seek to create, restore and maintain multi-purpose greenway corridors that support nature protection and recreational uses.
 - b. Utilize zoning and other regulations to ensure the functionality and compatibility of all adjacent land uses.

- Goal 2: Establish and maintain a strong and ecologically healthy open space system and promote these features as significant community assets.
 - a. Pursue opportunities for open space preservation through Washington County Land and Water Legacy Program
 - b. Continue to enhance the environmental aspects of Oakdale Nature Preserve and Discovery Center, Tanners Lake, The Passages of Oakdale, and other areas as appropriate.
 - c. Utilize interpretive signage along trails, as appropriate, to increase public awareness of the unique natural resources in Oakdale.

- Goal 3: Conserve and restore Oakdale’s significant natural features.
 - a. Utilize the Minnesota Land Cover Classification System (MLCCS) mapping, available through the Metropolitan Council, along with field inventories to identify and map significant natural features.
 - b. Add a shoreland ordinance to ensure quality waters at the appropriate time.
 - c. Continue to implement a reforestation plan for the community.
 - d. Through community education, collaboration, dedication, acquisition, conservation easements and similar strategies pursue the establishment and maintenance of additional multi-purpose greenway corridors. Also, establish and promote the environmental and recreational benefits associated with interconnected open space systems.

The City of Oakdale has made a strong commitment to preserving its unique natural resources. These features contribute to the City’s identity, and they add to the quality of life for residents. Preservation of these areas has been an important initiative of the City through acquisition, stewardship, and regulation of its

natural resources. The city retains a number of natural features that are valued by residents and which provide important wildlife habitat and opportunities for recreation. Many of these features are already preserved through their inclusion in existing parks or as part of dedicated greenways. Other areas lack protection.

To help guide the protection and preservation of open space and natural resources, the city has articulated goals and strategies on the previous page.

Some specific policies for achieving these goals include:

1. Require all new development to be designed so as to preserve and be compatible with the important natural features of the site.
2. Promote the use of a diversity of plant species in landscape plans to minimize impacts from plant diseases and pests, and to minimize the spread of plant diseases and pests
3. Promote the use of species native to central Minnesota in landscape plans, especially in sites near or adjacent to identified parks, open space, and corridors.



4. Preserve as undeveloped open space, environmentally sensitive areas (to the extent consistent with the reasonable utilization of land, and in accordance and cooperation with applicable federal, state, and local regulations). Where preservation is not feasible, minimize impacts. Environmentally Sensitive areas include:



- a. Unique and/or fragile areas, including wetlands as defined in Section 404 of the Clean Water Act, as amended, and as delineated on National Wetland Inventory maps prepared by the U. S. Fish and Wildlife Service and as identified via on-site inspection in the field.
- b. Groundwater and aquifer recharge areas.
- c. Lands in the floodplain.
- d. State and federal threatened and endangered animals and plants, as well as their habitats, as identified on federal and/or state lists.
- e. Quality natural areas as identified by the Minnesota Department of Natural Resources County Biological Survey, local Natural Resource Inventories, or similar efforts.
- f. Sites identified on the city's Open Space Map or Greenways Corridor map.
- g. Significant trees or stands of trees, defined as the largest known individual trees of each species in the state, large trees approaching the diameter of the known largest tree, or species or clumps of trees that are rare to the



area or of particular horticultural or landscape value.

- h. Historically significant sites, including significant archaeological sites, as listed on federal, state, and/or local lists.

5. Wetland Protection

- a. Regulate and enforce wetland alteration and mitigation according to the provisions of the most recent Wetland Conservation Act (WCA).
- b. If avoidance is not possible, then consider all possible alternatives to disturbing a wetland by following the “minimize and replace” sequence described in the WCA and encourage mitigation within city limits.
- c. City adopts the policies and protection and performance standards as established by the South Washington Watershed District, Ramsey-Washington Metro Watershed District, and Valley Branch Watershed District, as appropriate for different regions of the city.
- d. Acknowledge the important role wetlands and lakes play in the City’s environmental quality.

**Review of Existing Natural Resources
Natural Areas**

According to the original land survey notes (compiled in Minnesota between 1853 and 1856), at the time of European settlement, the vegetation of what is now west-central Washington County was comprised primarily of oak openings and barrens. Oak openings and barrens includes habitats we describe today as oak savanna and oak woodland. The area also included Big Woods habitat—a mesic, mixed hardwood forest—as well as conifer bogs and swamps, open water, and small inclusions of wet prairie. A map showing the approximate historic extent of these plant communities is shown in Figure 6.1

Today, examples of this historic vegetation (as identified by the DNR’s Minnesota County Biological Survey (MCBS) completed in the late 1980’s, and by the Natural Resources Inventory (NRI) completed between 2002 to 2007) are preserved in a few scattered locations within the city (See Figure 6.2).

Specific sites identified by the Minnesota DNR survey are as follows:

- Section 7: A complex of Big Woods Forest (Maple-Basswood forest), shrub swamp, and cattail marsh. This area is protected as part of Oakdale Park.



- Section 20: There is a small area of Big Woods (Maple Basswood Forest) on the east side of Hwy 694.
- Sections 20 and 29: The DNR mapped an area of Big Woods (Oak Forest) on the east side of these sections. The NRI data indicates that much of the site is gone, but portions of it are still present near the ponds.

Other natural areas, identified during the Natural Resources Inventory, can be found in unnamed parks associated with the school in section 29, and with the Greens of Silver Lake development in section 6.

Open Space and Semi-natural Areas

“Open Space and Semi-Natural Areas” are areas of land not subject to active use, and which are not dominated by vegetation native to Minnesota. Examples include fallow pasture or crop land which has been retired, degraded wetlands dominated by reed canary grass or other invasive species, and secondary growth or disturbed woodlands, typically dominated by boxelder, green ash, and/or basswood.

These areas still can offer significant benefit for wildlife and for water quality protection, and often form important buffers around and connections between remnants of native habitat. As seen on the “Open Space and Natural Resources” map, these semi-natural areas form a significant percentage of the undeveloped lands within the city. Open space and semi-natural sites within the city’s greenway corridors should be considered high priority for restoration.

Surface Water

The city has a number of surface water resources. Named lakes include Mud Lake,

Tanner Lake, and Armstrong Lake, as well as several smaller unnamed lakes and ponds.

Public Waters

The “Public waters” designation includes lakes, rivers, trout streams and other bodies of water that meet the standards described in Minnesota Statutes, Section 103G.005, as well as wetlands classified as public water wetlands. Public waters wetlands include all type 3, type 4, and type 5 wetlands that are 10 acres or more in size in unincorporated areas or 2 ½



acres or more in size in incorporated areas. These sites provide public value for recreation, water quality or water supply, wildlife habitat, or are publicly owned. The DNR has regulatory authority over these areas, and specific rules are in place regarding the need for a permit or license to cross or otherwise impact these areas

Wetlands

Wetlands provide a number of valuable services to the community, including natural flood control, filtering, cleaning, and supplying water for both downstream water bodies and groundwater sources, and creating valuable habitat for fish, amphibians, waterfowl, birds, and other wildlife. Economically, they are an economic amenity in many developments and

can provide visual and spatial buffers between homes. The State of Minnesota and the Federal Government recognize the values that wetlands provide, and have created a series of rules that protect wetlands. In the State of Minnesota, nearly all wetlands are protected by the Wetland Conservation Act.

With nearly 400 wetlands mapped by the National Wetlands Inventory (NWI) within the city, understanding the location of and providing adequate protection for these resources is an important consideration. There are several sources of information that can help in a preliminary determination of whether wetlands are present on a site, as described below. In all cases, however, review by an experienced wetland professional is recommended and in some cases required, to make a final determination regarding the presence or absence of a wetland and determine the legal boundaries of any wetlands. Appropriate permits are required prior to any activities which fill, drain, or otherwise impact a wetland.

National Wetlands Inventory

The National Wetlands Inventory (NWI) is a national assessment of wetland resources, conducted by the United States Fish and Wildlife Service between 1988 and 1992 within the state of Minnesota. The NWI survey was based strictly on aerial photography reconnaissance and interpretation and may be less accurate than some of the other sources. However, the NWI coverage is useful in giving an estimate of the extent (i.e. approximate geographic location) and type (i.e. system, hydrologic regime, and predominant vegetation types) of wetlands within the city.

Wetland Inventories Conducted by Watershed Organizations

The City of Oakdale falls within the jurisdic-

tion of three separate watershed districts: Ramsey Washington Metro Watershed District, (RWMWD), South Washington Watershed District (SWWD), and Valley Branch Watershed District (VBWD). Each watershed district has completed a wetland inventory that includes a wetland Functions and Values assessment, as well as mapping wetlands within their jurisdictional boundaries; the inventory for VBWD is in draft form as of March 2008.

Minnesota Land Cover Classification System (MLCCS) Mapping and Natural Resource Inventory

The MLCCS mapping and Natural Resource Inventory is another source of field-verified wetland information on a city-wide scale. This data was compiled from 2002 to 2007 from different sources. Limitations of the data include that wetlands below approximately 1 acre in size are not captured in this system, nor are many temporary wetlands in agricultural fields, pastures, or forests.



Existing Plans and Ordinances

The city has taken several important steps towards implementing natural resources preservation within its boundaries, as discussed below.

Parks and Open Space Stewardship Plan

In 2005, the City adopted the Parks and Open Space Stewardship Action Plan (POSSP). This Plan was based upon the 2004 Parks, Recreation, Open Space, and Trail System

Study, and fosters the ongoing preservation of natural areas through the formation and implementation of policies and programs that promote and sustain the quality of existing open space.

In the POSSP all properties with natural features are considered to have open space potential, regardless of ownership. However, some properties exhibit greater open space value and preservation opportunities than others, due to size, location, and availability. Based on these criteria, the POSSP prioritizes 15 properties for potential open space acquisition. The city has successfully secured grant funds and acquired the top priority site, the Priority Natural Area.

The Washington County Groundwater Plan

The City references and supports the Washington County Groundwater Plan provides a county-wide framework for the protection and conservation of groundwater resources. The Groundwater Plan “ownership” and implementation falls to every community, watershed organization and state agency with a vested interest in protecting Washington County’s groundwater resources.

Local Surface Water Management Plan

This plan is used to protect and enhance surface water, ground water, and related land resources. This document can be reviewed in Appendix B.

Wildlife & Greenway Corridors

Greenway corridors provide important ecological connections between other, larger open space areas and create opportunities for animal movement as well as plant migration. These functions are especially important in community that is almost fully developed,

such as Oakdale. A multi-use corridor can also provide important connections for walking trails, allowing pedestrians and/or bicyclists to move easily between sites, as well as generate opportunities for scenic overlooks, wildlife viewing, and other outdoor recreation. In recognition of the value of corridors and in keeping with the city’s goals of providing wildlife habitat and connecting park lands, the city has developed both a Regional Corridor and a Community Corridor. These connect parks and natural/open space areas within Oakdale.

Regional Corridor:

The Regional Corridor promotes the regional flow of wildlife and promotes the future existence of migratory corridors through protective buffers and the mandatory compliance of the ordinance. A majority of the corridor lies within publicly owned property and easements, with minimal linkages on privately owned properties.

Community Corridor:

The Community Corridor promotes the mobility of wildlife within the community. Compliance with the requirements listed in the ordinance is voluntary. While every effort was made to develop linkages via publicly owned properties, some connections through private properties were unavoidable. The city aspires to develop the corridor connections through education and/or the donation of a conservation easement by property owners, in order to achieve the goal of an ecologically functional Community Corridor.

The City of Oakdale will continue to support and promote the development of the corridors by increasing public awareness and encouraging landowners to voluntarily set aside corridor areas for wildlife.

Natural Areas Protection Resources and Techniques

As the city continues to grow and redevelopment occurs, protection of these resources is critical. There are a variety of tools and strategies available to the City to manage and protect its natural resources, which are discussed below.

Open Space Preservation

Protection and preservation of open space within the city is key for both developing, maintaining, and/or enhancing ecological function within the city. Open space and natural areas are the cornerstone of a parks and trails plan, and are integral to maintaining the aesthetics of the city as well as important wildlife habitat. The Washington County Land and Water Legacy program contains more information about the value of open space, and has resources available to help communities implement open space plans. The following recommendations are designed to assist the city in maintaining and developing its open space, and balancing growth with conservation.

Low Impact Development

LID is a sustainable stormwater management strategy that focuses on managing stormwater locally, using features such as swales, green roofs, constructed wetlands, pervious pavement, and rainwater gardens to infiltrate runoff, rather than relying solely on a system of pipes and stormponds. It has significant water quality benefits and can effectively manage small to moderate rainfall events, depending on the LID design. Adding a LID ordinance to the city code could provide a significant benefit for water resources.

Conservation Design Subdivisions

Conservation design subdivisions is the practice of designing subdivisions to minimize

their impact to the environment by using LID strategies, and thoughtful siting of homes and infrastructure to maintain the ecological integrity and function of the landscape. Once a parcel evaluation has been completed to identify areas suitable for low-impact development, subdivisions are designed to allow for more compact development or clustering of homes in smaller areas and retain larger areas of common, open space.

If thoughtfully implemented, Conservation Design can foster a sense of neighborhood and community that is sometimes lost in large lot developments, and it is an effective choice for maintaining natural resource quality while allowing development. For example, in Conservation Design quality forest areas would be left largely intact, and construction activities would occur in semi-natural areas or former agricultural lands. This strategy is appropriate in areas with remnant natural areas, and is especially important for developing and maintaining connections in the Greenway Corridors.

Conservation Easements

Conservation easements are the voluntary and in most cases, permanent, transfer of specific land and development rights from a landowner to a qualified organization, often the DNR or a Land Trust. The mutually agreed upon restrictions placed on the land will vary with the features that an easement is intended to protect, and can vary in different parts of the property. They can be structured to allow development in a portion of a site, while protecting natural areas in another part of the site. Conservation easements can be purchased from or donated by a willing landowner. They provide another tool for protecting areas from certain types of uses, and can help in the establishment of parks and corridors or in the preservation of other open space areas.

For more information, please see the DNR handbook *Land Protection Options: A handbook for Minnesota Landowners*.

Park Dedication Ordinance

A Park Dedication ordinance can be an effective strategy for developing and maintaining a parks and open space system within the city. The ordinance acknowledges the value that parks and open space provide for area residents, and requires that any new development include a specified area of parks and/or open space within it. In lieu of land, a specified fee may be required instead, either based on the total area of land or on the number of proposed units. Fees would then be assigned to a dedicated parks fund, and used for the permanent acquisition and development of parks.

This can be a very effective tool for developing resources for parks, and allows the city flexibility in determining how and where parks are created. For example, if a proposed development is not impacting any significant natural areas and is not within an identified greenway corridor or open space, the park dedication fee may allow the city to acquire areas that help achieve the goal of developing an open-space system. Similarly, for developments proposed within the open space system, natural areas or restorable areas within the system could be required as set-aside for parks and open space.

While the city has a Park Dedication Ordinance in place, a review of the ordinance is recommended to determine whether updating it to meet current conditions is appropriate.

Greenway Corridor

A greenway is defined as “privately or publicly owned corridors of open space which often follow natural land or water features and which are primarily managed to protect and enhance

natural resources”. However, greenways can, and often do incorporate active or passive recreational trails, active recreational spaces (such as athletic fields or golf courses), and other public open spaces that may provide rudimentary ecological functions and values.

A Greenways Corridor system can form the backbone for natural resources conservation within the city, and has implications for natural resources conservation across the region. Developing strategies to maintain and develop connectivity between natural and semi-natural areas within this system is fundamental to preserving natural resources within the city, and to providing an ecological system that is resilient to change over the long term--in the face of changing demands, development, and climate change.

The City recognizes the many benefits offered by a functional greenway system, and has identified both a community and a Regional Greenway within its boundaries. As gaps and missing connections within the greenway are filled, the greenway corridor will provide a critical foundation to help the ecological systems of the City and the Region adapt to changing land uses.

As much as possible, development and redevelopment within the greenway systems should use conservation design strategies, park dedication, and the strategic siting of open space and natural areas parks to develop and improve habitat quality and connectivity. Strategies to avoid parcelization and fragmentation of existing natural areas into smaller sections are especially important for maintaining ecological function of the natural areas.

Parcel Evaluation

Parcel evaluation is a useful strategy for

identifying areas where methods such as cluster development or Conservation Design subdivision may be appropriate, as a way of protecting priority natural resources. One potential approach is to identify parcels with development or redevelopment potential above a specified size threshold (for example, 10 acres) and determine which of these parcels intersect with priority natural resource features. An additional level of planning would be to consider these factors and overlay them with the DNR identified greenway corridors. This may facilitate planning by allowing the city to focus conservation strategies within a defined area (the greenway corridors).

Shoreland Ordinance

The City has not yet identified a Shoreland Zoning Ordinance to protect the quality of its lakes but is considering adapting this regulation tool. This ordinance would regulate the use of shoreland areas, the size, shape, and arrangement of lots; the size, type, and location of structures on lots; the installation and maintenance of water supply and waste treatment systems; the grading and filling of any shoreland area; and the cutting of shoreland vegetation to protect valuable water resources in the city.

Tree/Woodland Preservation Ordinance

Many communities use tree preservation ordinances to protect large trees, or to require the



replacement of trees removed in the course of development or other specific activities. These ordinances can result in the planting of young boulevard trees as replacement when a mature forest or woodland is removed during development.

To preserve the ecological function of the landscape, a woodland preservation ordinance may be a more effective approach, either as a substitute for or in addition to a tree ordinance. A woodland ordinance would emphasize the protection of quality wooded areas rather than of individual trees, and acknowledges that trees are part of more complex, inter-related system. Disturbance to or removal of a woodland could be compensated for via creating and implementing a management plan for other natural areas, for example, or by concerted efforts to recreate the lost ecological system via restoration efforts rather planting individual trees.

Wetland Protection

Each of the three watershed organizations that have jurisdiction within the city has developed a watershed management plan that includes management and protection standards for the wetlands within its boundaries. Standards vary depending on the watershed, but generally include water quality and quantity standards for stormwater runoff treatment prior to impacting wetlands, and buffer standards. The city is required to comply with the standards of the governing watershed.

Education and Outreach

The City of Oakdale should pursue education and outreach opportunities for its residents to increase awareness of the City’s natural resources and the importance of resource protection. The new Discovery Center provides an excellent opportunity and example for this

type of education and outreach.

Intergovernmental Coordination

Intergovernmental coordination is critical for optimal ecological function, as natural resource areas typically cross jurisdictional boundaries and because the actions of one community often impact a much larger ecosystem encompassing many surrounding communities. Coordination with other jurisdictions, including neighboring communities and appropriate watershed districts, provides opportunity for shared financial resources, as collaborative, cross-jurisdictional efforts often have better grant eligibility for conservation and planning projects

Natural Areas Management

The city is fortunate in that a number of the remnant natural areas within the community are already protected by their inclusion in existing parks and/or dedicated open space. An additional step to help protect and enhance the ecological value of the sites would be to complete an on-the-ground site assessment for the natural resources within the park and develop a site-specific natural resources management plan. Optimally, this assessment and plan should be completed by a plant ecologist with a broad knowledge of Minnesota plants and habitats, and a solid understanding of effective management techniques for native plant communities.

Other Tools for Protection and Management of Natural Areas

Ordinances are mainly a regulatory (“stick”) approach for protecting and managing natural resources. Cities can also provide incentives (“carrots”) to natural resources protection. Many communities use a combination of carrots and sticks in protecting and managing

natural resources. The regulatory approach assures that some priority resources will be protected, but is limited by laws that prohibit the “taking” of private property without adequate compensation. The “carrot” approach may be more politically acceptable in some cases than the “stick” approach, and may be more viable when potential “taking” is an issue.

In addition to changes in existing ordinances or adoption of new ordinances, the City can consider a variety of “carrot” approaches to encourage city residents to protect the natural resources on their properties, including the following:

- Provide information and education to homeowners about the special features on their properties. Many landowners will take great pride in knowing that they have something special on their land, and will be eager to learn about how best to manage it.
- Inform property owners about options to donate their land as parks and open space, or protect it with a conservation easement. For some property owners, donation of land or easements provide financial and tax benefits.
- Identify grants or other public programs that provide financial or educational benefits to owners of natural areas
- Work with developers or property owners to encourage design strategies that protect and improve the quality of resources.
- The DNR Website (<http://files.dnr.state.mn.us/assistance/landprot.pdf>) contains the resource Land Protection Options, a Handbook for Minnesota Landowners. This is an outstanding tool to help individual landowners better understand their options, and also for city staff as a re-

source to help positively engage interested property owners.

- Another important resource for private landowners is the publication “Beyond the Suburbs: A Landowner’s Guide to Conservation Management.” This resource can also be found on the MN DNR website at: http://files.dnr.state.mn.us/forestry/beyond_suburbs.pdf
- The City can also continue to set a good example for other landowners by protecting or restoring natural areas on city-owned properties, and by developing interpretive and educational opportunities.
- The City was awarded funding through the Land and Water Legacy Program that can be utilized for acquiring land sites that contain significant natural resources.
- Continue to pursue the acquisition of land mainly for natural resource benefits as opportunities arise.
- In addition, there are a variety of funding options available to assist with implementation of these and/or other activities. These include the existing park dedication fee, bond referendums, and grant opportunities. For a summary of grant opportunities, please visit the DNR website: www.dnr.state.mn.us/grants .

Figure 6.1 Land Cover at Settlement

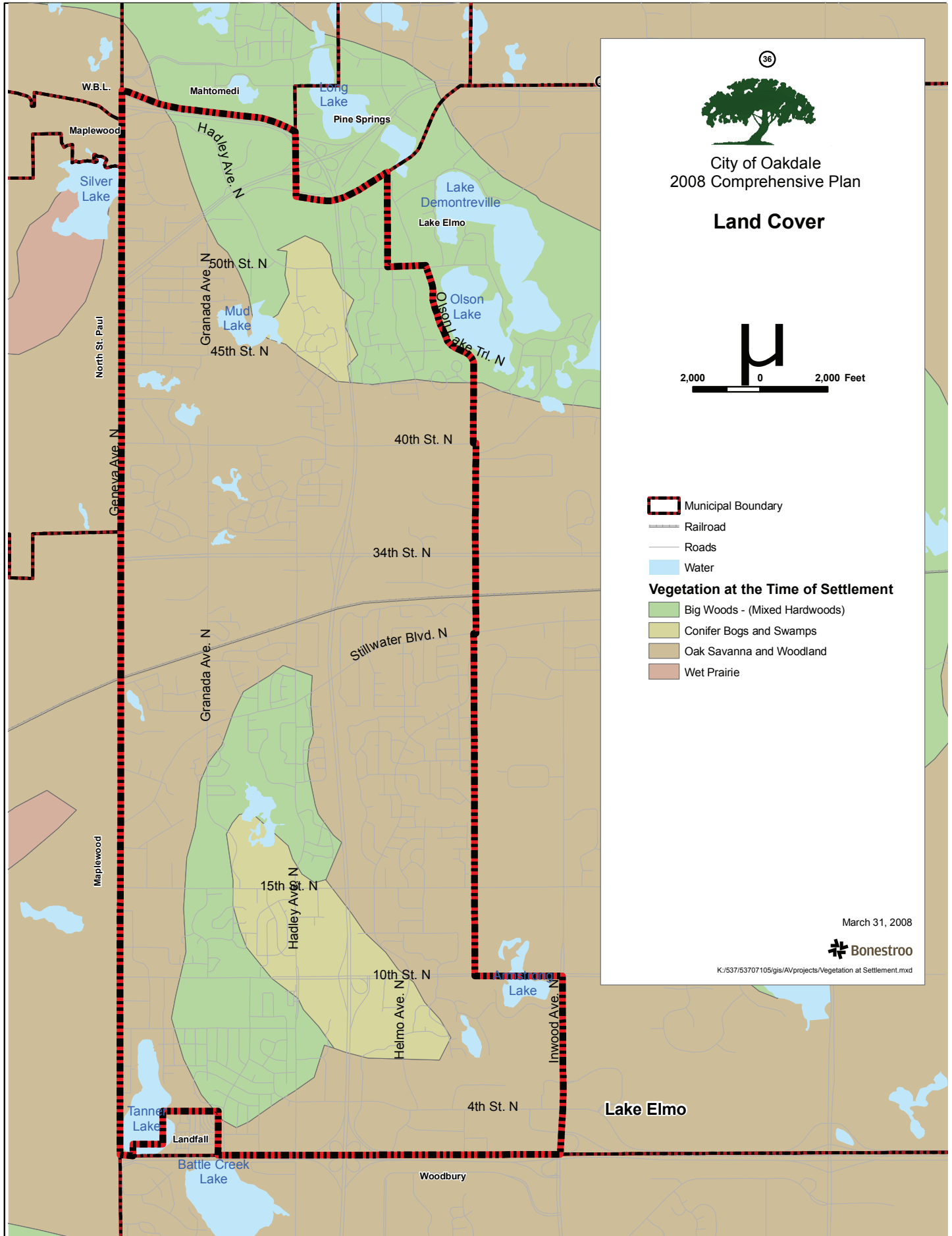


Figure 6.2 Natural and Semi-Natural Areas

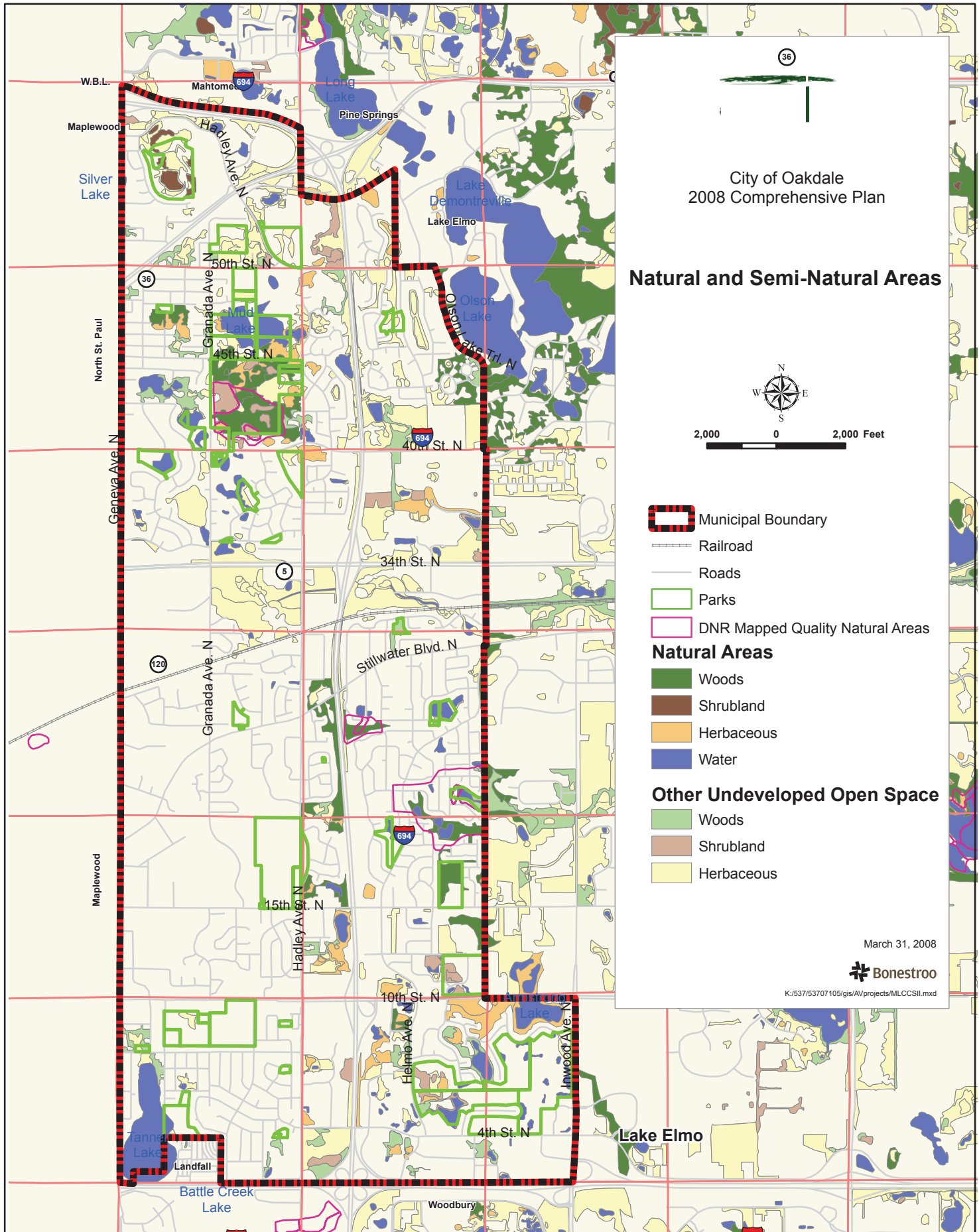


Figure 6.3 Open Space Preservation Map

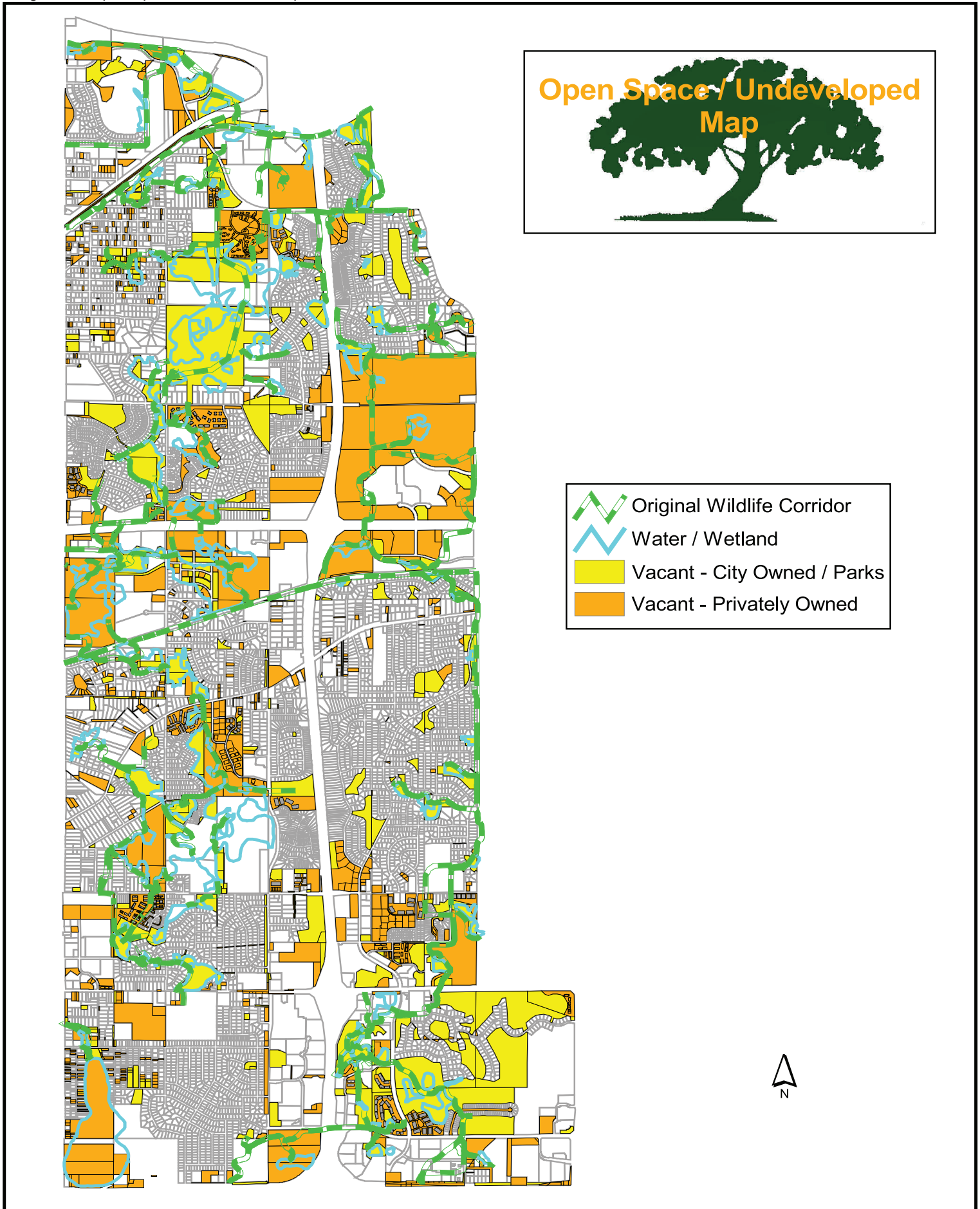


Figure 6.4 Wetland Map

