

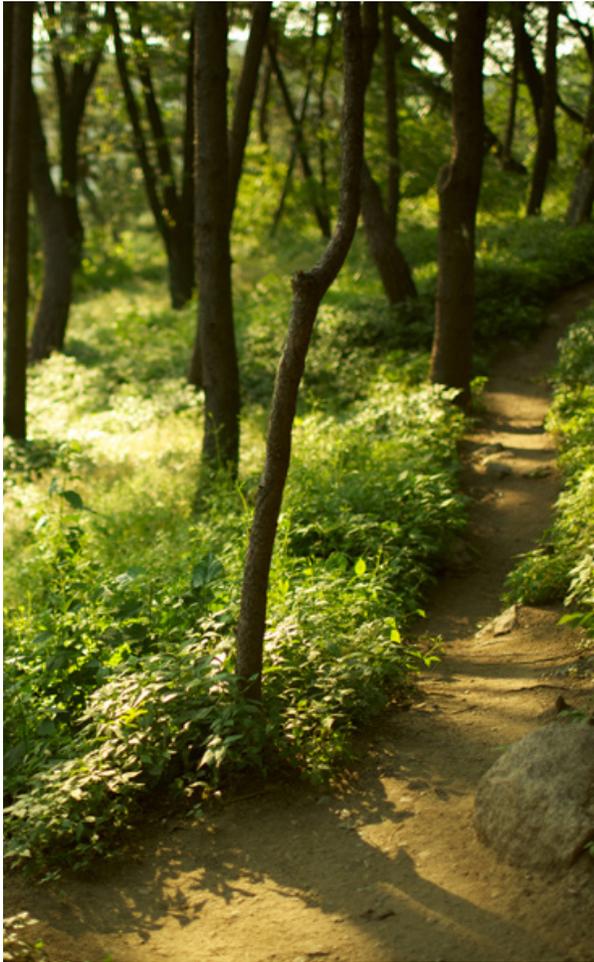
7. ENVIRONMENTAL RESOURCES

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INTRODUCTION

The natural environment sets the scene for all the activities, events, and intentions of a community. While enjoying nature is a cherished activity among Minnesotans, the elements of the environment must be cared for in order to maintain healthy, resilient, valuable resources. These resources support economic development, housing, transportation, utilities, and the overall livability of a community - as long as they are respected and stewarded wisely. To that end, Anoka's natural resources deserve special attention in the City's plan for the next decades.



NATURAL RESOURCE ELEMENTS

NATURAL WATERCOURSES

A natural watercourse is a channel for water movement, such as a creek, stream, or river. Anoka is unique because it's only watercourses are the Mississippi and Rum Rivers. Because of the flat, sandy soil, there are no creeks, streams or intermittent streams in the community. A high percentage of the water in the undeveloped portions of Anoka simply drains to low areas where it percolates into the ground, evaporates or creates a wetland area.

Rum River

The Rum River is part of Minnesota's Wild, Scenic, and Recreational River System. The City of Anoka has been classified as "recreational," however, along with upstream Rum River cities, all of the City of Anoka has been given a special "urban" designation which allows for reduced setbacks in urban areas. In addition to regulating building setbacks, building width, and minimum lot size, the standards also regulate the amount of impervious surface permitted. Regulations relating to development along the Rum River are found in the City Code under Chapter 74, Article VI.

Mississippi River & the MRCCA

The area along the banks of the Mississippi River are included in the Mississippi River Corridor Critical Area and are subject to development regulations. In 1979, at the instigation of the State of Minnesota, the City of Anoka adopted a Critical Area Plan that included goals, policies, and standards for development in the Corridor. With the newly adopted Minnesota Rules 6106, the City of Anoka is updating its approach to this corridor. The MRCCA chapter of this comprehensive plan addresses natural elements, environmental

and developmental issues, and goals and policies pertaining to this corridor specifically.

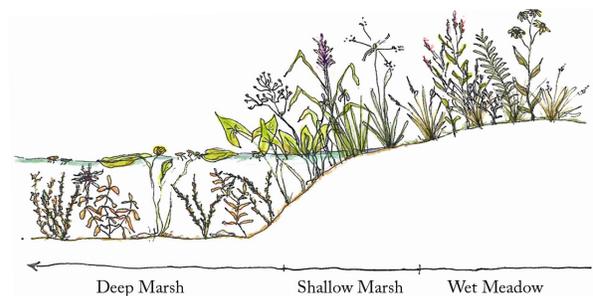
SHORELAND

Most of the shoreland area in the City of Anoka is regulated under the Minnesota Scenic and Recreational Rivers standards or under the Environmental Protection Section of the City Code. As a result, the Minnesota Department of Natural Resources (DNR) ranks the City as a low priority for development of shoreland regulations. Shoreland regulations will be reviewed and implemented, if necessary, during review of the Environmental Protection Section of the City Code. Within the Mississippi River Corridor Critical Area, Minnesota Rules 6106 require extra regulatory processes and policies to shoreland development.

WETLANDS

Wetlands are low-lying areas which are normally covered with shallow or intermittent waters. Swamps, marshes, and other areas are all wetlands and may occur as part of a river, stream, drainage way, or as a free-standing low area. Wetlands provide desirable open space, are recognized as havens for a multitude of wildlife and also provide a natural filtering system and storage basin to absorb and hold storm water runoff. They also reduce the potential for erosion and flooding.

The DNR uses the Corps of Engineers' classification system for wetlands (Table 7-1) and currently



requires a permit for alteration of wetland types 3-5 which are 2.5 acres or larger.

Wetland types 2 and 6, and wetlands as small as one acre, are recognized as having importance as storm water ponding basins. However, the DNR does not presently require permits for alteration of these areas.

The importance of wetlands can be summarized as follows:

1. Wetlands affect the quality of water by acting as a filter and storing organic materials in the leaves of aquatic plants.
2. Wetlands are important as a natural ponding basin. These areas help recharge the water table and reduce peak storm water runoff flows, thereby reducing flood levels.
3. Wetlands provide an essential breeding, nesting, and feeding ground for wildlife.
4. Marshes occurring in upland depressional areas can reduce soil erosion by slowing the velocity of runoff.
5. Wetlands reduce the impact of pollutants.
6. Wetlands provide shoreland protection for adjacent lakes, rivers, or streams.
7. Wetlands provide recreation, aesthetic, and educational experiences.

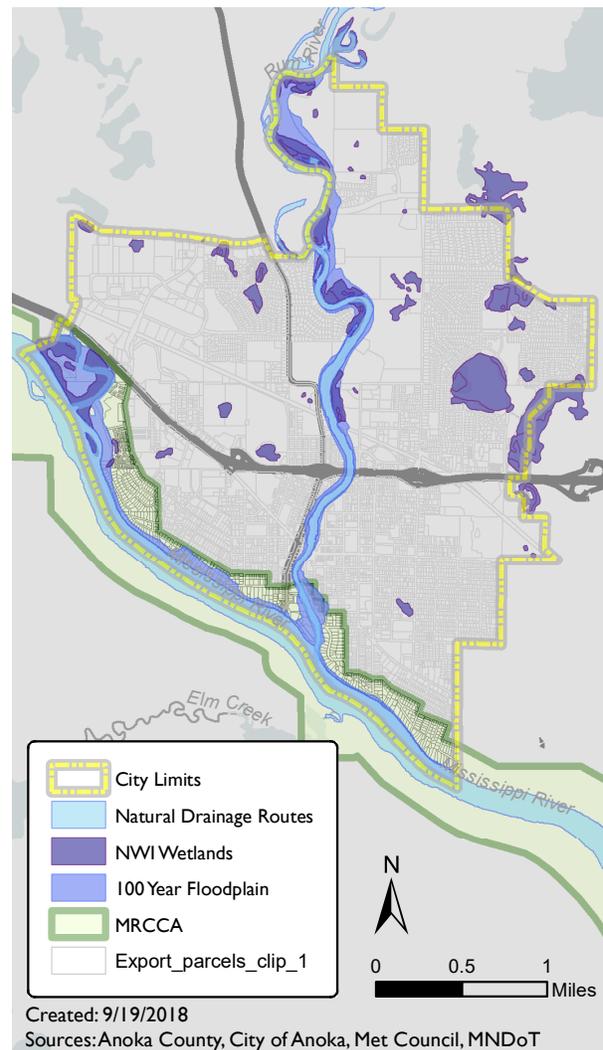
The size and location of wetlands is important in determining their value for maintaining water quality, minimizing flood damage, and preserving wildlife habitat. Most of the wetlands in Anoka are found along the edges of the Mississippi and Rum Rivers. In addition, a small number of wetlands that collect local storm water runoff are found in the north central and eastern portions of the City.

The Minnesota Wetland Conservation Act (WCA),

TABLE 7-1: MINNESOTA DNR WETLAND TYPES

Wetland Type	Wetland Description
Type 1	Floodplain forest and seasonally-flooded basin
Type 2	Wet meadow or prairie
Type 3	Shallow marsh
Type 4	Deep marsh
Type 5	Open water (pond)
Type 6	Scrub shrub swamp
Type 7	Wooded swamp
Type 8	Bog

FIGURE 7-1: WETLANDS & FLOODPLAINS IN THE CITY OF ANOKA



enacted in 1991 and subsequently amended, outlines the standards for wetland conservation. The WCA is administered through the Minnesota Board of Water and Soil Resources (BWSR) with the DNR acting as the enforcement agency. The WCA places implementation at the local level. The Lower Rum River Watershed Management Organization (LRRWMO) monitors wetland activities in the City of Anoka. The DNR’s inventory includes those wetlands that are classified as Type 3, 4 or 5.

FLOOD PLAIN

The State of Minnesota adopted the Flood Plain Management Act in 1969. The Act requires all local units of government to adopt, enforce, and administer a flood plain ordinance.

In the City of Anoka, there are flood plain areas along the Mississippi and Rum Rivers. The flood plain regulations for the City of Anoka were approved by the DNR and are included as a separate chapter in the City’s Zoning Ordinance.

SLOPES

Hillsides are a geological feature whose equilibrium depends on a balance between slopes, soil, vegetation, underlying geology, and the amount of precipitation. Removal of vegetation on steep slopes for development purposes reduces soil stability, which increases erosion and may affect water quality from filtration. Removal of vegetation from slopes also decreases percolation, which reduces groundwater recharge and increases downstream runoff.

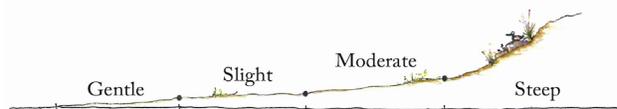
The Anoka County Soil Survey has not identified upland erosion as a serious problem in Anoka. In fact, the only areas with steep slopes are escarpments along portions of the Rum and Mississippi Rivers. It may be possible, however, to find lots or parcels of land in Anoka which have slopes over 18%.

Categories of slopes are shown in Table 7-2:

TABLE 7-2: SLOPE CATEGORIES

Slope Category	Slope %
Gentle	0 - 6%
Slight	6 - 12%
Moderate	12 - 18%
Steep	over 18%

Because of the sandy soil in Anoka, slopes of 18% or more are susceptible to erosion.



SOILS

The Soil Conservation Service in Anoka County conducted soil surveys and developed a functional classification of soils within the County. These soil classifications have been categorized according to suitability for urban development to provide the following information:

1. The suitability of soils for intensive residential, commercial, recreational, or agricultural land uses; and
2. The suitability of soils for septic tank absorption fields and building foundations.

The combination of soils and slopes together determine the general suitability of the land to support various types of urban development. Anoka is generally located on soils of the Hubbard - Nymore association consisting of soils of outwash plains that are on a nearly level elevation with occasional drainageways and depressions. In this area, the soil association is generally located on the northeast side of the Mississippi River ranging in



width from one to three miles. The most prevalent soil is the Hubbard class which is a loamy coarse sand. The water table is commonly eight to twelve feet below the ground surface but ranges from four feet to twenty feet or more. Slopes range from nearly level to steep but commonly are in the range of 1 - 6%.

City of Anoka soils have moderate development limitations, including low water holding capacity, which makes establishment of vegetation difficult without extensive replacement of top soil. The soils are also highly erodible by wind and water until a vegetative cover is established. Excavation for construction may require particular attention to avoid caving in and erosion. The rapid percolation rate also increases the danger of contamination to underground water supplies, lakes, and streams.

However, the characteristics of these soils make them easily adaptable to building sites due to the ease of handling and grading with earthmoving equipment. In addition, quick drainage is a positive factor when considering the relatively short construction season.

The northwest area of the City contains a combination of the previously discussed Hubbard classification with areas of Dickman soils. Dickman soils, generally described as a sandy loam, are very similar to Hubbard soils for building capacities.

Immediately joining the Mississippi and Rum Rivers are small areas of fine sandy loam and mixed alluvial soils. Many of these areas are low and subject to occasional flooding. These areas are protected by the City's Flood Plain Ordinance.

There are several small areas throughout Anoka with severe soil limitations that are generally located around the periphery of wetland areas. Development in these areas is limited due to the high water table.

WOODLANDS

A woodland differs from a forest because of its smaller land area. It includes farm woodlots, shelterbelts, and windbreaks. A general tree cover includes the scattered trees in urban areas.

In Anoka, woodland areas currently exist along the rivers adjacent to some of the wetlands, on some of the City's public property, and on boulevards. In addition, there are other scattered, small concentrations of trees in Anoka.

Woodlands are impacted by urban development as well as by disease, natural disasters, and an aging tree population. The importance of protecting woodlands extends beyond their recreational and aesthetic benefits. Woodlands can act as a moderator of climatic phenomenon, high winds and flooding.



In addition, the ground within a woodland area can act as a filter to recharge groundwater reservoirs, and the trees themselves act as natural air filters, absorbing some air pollutants. Finally, woodlands can act as a temperature moderator by helping reduce the greater daily fluctuation of temperature.

Total preservation of woodlands may not be desired or in the best public interest. Replacement of trees in an urban setting such as Anoka requires a managed effort, including development controls, disease controls, plans concerned with tree loss from natural disasters or aging populations, planting programs for public lands and boulevards, and education and assistance to private property owners who have lost trees.

The City of Anoka adopted a Tree Preservation Ordinance in 2008. This ordinance requires replacement for trees removed as part of a commercial, residential, or industrial development project requiring site plan or plat approval. More restrictive tree preservation techniques in the MNRRA and Rum River Wild, Scenic and Recreational District are regulated by the Environmental Section of the ordinance.



GOALS & POLICIES

The policies stated below act in cooperation with those in the Land Use, Parks, Open Space, & Recreation, MRCCA, and Water Resources chapters.

GOAL ER-1

Conserve Anoka's natural environment, ecology, and heritage through planning, regulation, and cooperation.

- Review and update the Environmental Protection section of the City Code for consistency with Statute requirements and other agency environmental protection policies.
- Protect natural watercourses to minimize public investment in storm sewers and improve the quality of stormwater runoff.
- Protect wetlands of one acre or more in size.
- Periodically review the flood plain regulations to minimize flood risk and comply with the National Flood Insurance Program.
- Development shall not be allowed in areas identified as having severe soil limitations unless corrective measures are taken.
- Private sewer systems shall not be allowed in areas identified as having severe soil limitations.
- Conserve concentrated woodland areas as well as all established trees through clearance limits and replacement mandates.
- Recognize and avoid, where possible, significant natural features in the placement of infrastructure, in areas of development or redevelopment.
- Continue to support efforts for community education and awareness of air quality issues.
- Consider the effect of soil disturbance and grading on air quality and soil erosion in review of development plans.
- Enhance community awareness about the importance of the urban forest and the positive impact trees and shrubs have on the environment. Urban forest includes all trees and shrubbery on public and private property within the City.
- Promote public and private tree planting, replacement, and preservation programs to sustain the urban forest.
- Make conservation and efficient utilization of all energy sources a high priority in the City's operation and development of facilities.