

Chapter Two



BACKGROUND:

I. History of Ann Arbor

Ann Arbor's original 640 acres were first laid out in 1824 by two land promoters, John Allen from Virginia and Elisha Rumsey from Connecticut. They founded, named and registered the town tract of Ann Arbor in 1824. This early settlement included all the land between Allen Creek on the west to Division Street on the east, and from Jefferson Street on the south to an extension of Felch Street on the north. This area became known as the Upper Village. That same year, the town was designated the County Seat by Governor Cass at Allen and Rumsey's urging. In 1834, the Ann Arbor Land Company offered 40 acres of free land to the trustees of the newly-formed University of Michigan, then located in Detroit, if the University would relocate. By 1837, the University had approved Ann Arbor as the site of the University, and by 1841, the University was actually opened in the City. In 1839, the first railroad was completed along the Huron River. The completion of the railroad and the location of the University encouraged Ann Arbor's steady growth.

Most of the early settlers came from New England or immigrated from Germany and Ireland. The first German family arrived in 1829. German settlers concentrated on the town's west side, and by 1880, nearly half of Ann Arbor's population was of German descent.

The first additions to the City were to the north and west. Industry concentrated along the railroad and the river. The first businesses in Ann Arbor were established in the middle to late 1820's soon after the townsite was established. The central business district began to develop along Main Street and around the county courthouse square at Main and Huron. A pre-Civil War building boom propelled a transformation of the downtown from a collection of insubstantial wood frame structures to two and three-story masonry buildings with richly ornamented facades.

By the 1870's, land was being platted and annexed in every direction. By 1878, when a railroad link with Toledo finally was established, Ann Arbor had become one of the most thriving business centers west of Detroit, boasting several grist mills, two furniture factories, three printing establishments, two sash factories, an organ factory and an iron foundry, in addition to the usual dairies, breweries, groceries and dry goods stores.

The University's influence on the neighborhoods was also evident. By 1865, enrollment had grown to 1,145, the largest University enrollment in the United States. The first students had boarded in dormitories, but these were soon inadequate and the majority of students began to board with townspeople. Dr. Henry Tappan, president of the University from 1852-63, encouraged students to

live off campus, feeling student life with private families was more “normal and orderly” than when students gathered in group quarters.

When women were first admitted to the University in the 1870’s, the resulting increase in housing demand encouraged the growth of rooming and boarding houses. Most students continued to live off campus until the 1920’s when Dean Bursley and Professor Angell became advocates of University housing for all students. The University grew steadily during the late 1800’s and in the decades prior to World War I, and by 1910, the student body totaled 3,441. City population in the same year had grown to 17,000.

The importance of the University to the businesses of Ann Arbor was recognized by an acceleration of business development during the second decade of this century. The building boom of 1910-20 turned the State Street area from residential to commercial as faculty members moved to newly-developing neighborhoods, such as Burns Park, and commercial buildings took the place of houses. Simultaneously, South University Street began a changeover from residential to primarily commercial.

This University growth in part led to the need for planning. Ann Arbor’s first planning study started prior to World War I when the City and University contracted with the New York firm of Frederick L. Olmsted, Jr. and Brothers to recommend patterns for future City growth. This report, completed in 1922, created a park plan and strongly suggested the adoption of a City-wide zoning ordinance. It also described the City’s west side as a location for future industry and residential areas for workingmen, while land east of Washtenaw Avenue was suggested as a place for “suburban and country homes.” Ann Arbor’s first apartment building was built in the same year to house University staff and married students. When a second apartment building was proposed at Washtenaw and Hill, public protest called for a limitation to such construction.

Following the Olmstead Brothers’ suggestion, City Council adopted Ann Arbor’s first zoning ordinance in 1923. Despite the concern over apartments, most of the central area neighborhoods were still zoned to permit multiple-family as well as one and two-family residences. Industrial districts were designated along the railroad and river, while commercial zones were limited to existing business areas.

In the decades following World War I, the University and the City both continued to grow. The University Stadium was finished in 1927. In the 1920’s, the City completed five new schools (Jones, Bach, Angell, Burns Park and Mack), and by 1939, a new junior high and elementary school had also been added. The University began a program of dormitory construction, completing the Law Quad, Martha Cook and West Quad by 1939. In 1918, the Ann Arbor park system totaled 122 acres, and by 1937 it had expanded to 189 acres, not including the golf course.

With the ending of World War II, Ann Arbor’s population began to grow more rapidly. The growth continued into the 1950’s with a population increase of almost 40 percent in that decade. The City almost doubled in area through further annexations. The University of Michigan began its expansion program on the North Campus, and a number of research industries located their plants in Ann Arbor.

In the 1960’s, growth continued to accelerate, reaching the highest rate since the 1890’s. This was due primarily to continued expansion of the University and to the growth of firms engaged in research and the development of new technology. The physical expansion of the City continued as well, and 4,238 acres of surrounding territory were annexed, including land for a new regional mall.

The University of Michigan capped its enrollment in the early 1970’s and growth in Ann Arbor slowed. After increasing 50 percent between 1940 and 1960 and another 50 percent in the 1960’s, the City’s population increased by only 12 percent between 1970 and 1990.

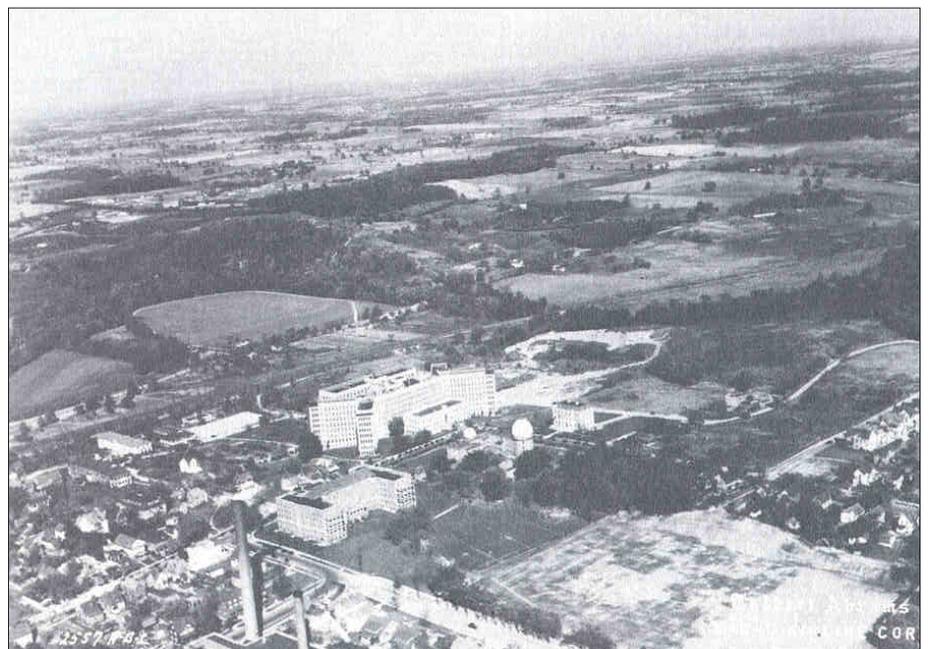
After the recession of the early 1980's, expansion resumed mid-decade. A nationwide building boom occurred and Ann Arbor was carried away in the flurry of new construction: offices, apartments, hotels and strip shopping centers.

As development neared the freeway "ring" that will generally mark the City's foreseeable physical boundary, growth in the 1990's increasingly consisted of redevelopment of existing sites and new construction beyond the City limits in the adjacent townships of Pittsfield, Scio and Ann Arbor.

Two railroad lines currently exist in Ann Arbor. The Norfolk Southern Railroad line, originally constructed in the late 1830's, travels east/west from Detroit to Chicago and runs primarily along the south side of the Huron River. Six Amtrak trains run daily, including three westbound and three eastbound. The westbound trains travel to Chicago and points west. The eastbound trains travel through Detroit to Pontiac, Michigan. The Ann Arbor Railroad line (north/south) was completed in 1878 and is currently used exclusively for freight. Three trains run daily between Flint and Toledo.



Railroad at Dhu Varren



Historic aerial photograph of the University of Michigan Hospital

II. Related Planning Efforts

Over the past twenty years, various City planning efforts have guided land use decisions in the city of Ann Arbor. The following is a summary of some of the significant planning efforts .



The Huron River

Downtown Plan (2009) - Updated as part of the Ann Arbor Discovering Downtown (A²D²) effort; a subarea of the master plan.

Ann Arbor Transportation Plan (2009) – Analyzed the opportunities and constraints for improving major transportation corridors such as Plymouth Road and Washtenaw Avenue in Ann Arbor and provided design guidelines for aesthetic and transportation improvements.

Non-Motorized Transportation Plan (2007) – Provides recommendations for improving non-motorized modes of travel in Ann Arbor.

Northeast Area Plan (2006) – Adopted area plan for the Northeast Area.

2006-2011 Parks & Recreation Open Space Plan (2005) – Analyzed park and recreational needs and provided information and recommendations on parks, recreation and open space issues in Ann Arbor.

Natural Features Master Plan (2004) – Provides a framework to guide the City and its citizens in their policy making and stewardship of natural features protection activities.

2010 to 2015 - Capital Improvement Program (2009) – Compiled and prioritized a list of possible capital improvement projects in the City of Ann Arbor through fiscal year 2010.

West Area Plan (1995) – Adopted area plan for West Area.

Central Area Plan (1992) – Adopted area plan for the Central Area.

South Area Plan (1990) – Adopted area plan for the South Area.

III. Population Profile

Two sets of data have been used to determine the population profile of Ann Arbor. The United States Census Bureau provides actual population counts and other demographic information, including age, race and gender. The Southeast Michigan Council of Governments (SEMCOG) provides population forecasts and information on housing and employment.

According to the Population chart below, the highest number and percentage of City residents were between the ages of 18 and 29 in 2000. This is attributed, in part, to the student and family housing populations that reside in Ann Arbor. The Central Area in particular had large populations of 18-29 year olds due to the proximity of the University of Michigan’s central campus.

The 2000 census showed that the average residential density in the City was 7.24 persons per acre.

City of Ann Arbor 2000 Census and Land Use Data

Population

Race		Percent
White	85,151	74.4
Black	10,070	8.8
American Indian, eskimo or Aleut	332	0.3
Asian or Pacific Islander	13,566	11.9
Native Hawaiian and Other Pacific Island	41	0.0
Hispanic	3,814	3.3
Other	1,384	1.2
Multiple Race	3,480	3.1
Total	114,024	100.0

Age		Percent
Under 5	5,829	5.0
5-17	13,619	11.8
18-21	21,011	18.2
22-29	21,289	18.4
30-39	17,169	14.8
40-49	14,244	12.3
50-64	13,199	11.4
65 and up	9,312	8.1
Total	114,024	100.0

Median Household Income by Age	
Household under 25	\$17,039
Household 25-34	\$41,866
Household 35-44	\$58,700
Household 45-54	\$72,560
Household 55-64	\$74,635
Household 65-74	\$51,140
Household 75 and older	\$35,825
Median Household Income	\$46,299

Chapter Three



LAND USE INVENTORY

I. Introduction

According to the City's land use data, the City occupies approximately 16,000 acres of land, which includes parcels, right-of-way and the Huron River. The City's Planning and Development Service staff updated the land use inventory in 2000. This inventory assigned a land use code to each parcel within the City, excluding roads and the river. Almost half of land in Ann Arbor is occupied by residential uses (48.4%). The second most prevalent use in Ann Arbor is recreational (17.7%), followed by public/quasi-public uses (10.9%).

City of Ann Arbor 2000 Census and Land Use Data

Land Use

Type of Use	in Acres	Percent
Residential	7,736	48.4
Office	584	3.1
Commercial	509	3.2
Research and Industrial	389	2.3
Transportation/Communications/Utilities	598	3.7
Public/Quasi-Public/Institution/Organization	1,621	10.9
Recreation	2,813	17.7
Vacant	1,218	8.9
Mixed Use	275	1.7
Total	15,743	100.0

II. EXISTING LAND USE TYPES

Residential Land Uses

Residential land uses comprise 48.4% of all land in Ann Arbor. This land consists primarily of single-family homes and multiple family units. Residential uses are clustered in multiple areas around the City. Some areas include a mixture of housing types including single-family homes, duplexes, townhouses and apartment buildings. Some neighborhoods are represented by neighborhood associations that can help address issues that affect neighborhoods.



Leslie Science and Nature Center

Commercial Land Uses

Multiple commercial areas exist within Ann Arbor and make up 3.2% of its total land area. Plymouth Road has four commercial areas along its corridor, including the Lower Town commercial area, the Plymouth/Murfin Area, the Plymouth/Nixon Area, and the Plymouth/Green Shopping Center. The Washtenaw Avenue commercial corridor is located between US-23 and Platt Road and includes Arborland Mall and strip commercial development. Stadium Boulevard between Pauline and Maple is a substantial retail corridor with many small, individually owned businesses. Small scale retail establishments also are located at and near the intersection of Packard and Platt Road. Downtown Ann Arbor is home to many retail establishments, providing easy access for pedestrians. The Briarwood area is the largest commercial area in the City. Briarwood Mall has approximately 1,000,000 square feet of retail space. Other retail establishments exist in the immediate vicinity. Maple Road between Liberty and Dexter Ann Arbor provides retail opportunities at a variety of establishments. Substantial retail centers also exist near the corner of Ann Arbor-Saline Road and Eisenhower Parkway, Ann Arbor-Saline Road and South Main Street, Miller and Maple Roads. Additional smaller retail centers are scattered throughout Ann Arbor.

Office Land Uses

Office land uses occupy 3.1% of total land in Ann Arbor. Office uses are concentrated in the areas of Plymouth and Green Roads, Plymouth Road and Huron Parkway, South Main Street and Eisenhower Parkway, State Street and Eisenhower Parkway, Packard Road and Eisenhower Parkway, and Pauline Boulevard. Other smaller office centers are scattered throughout the City. A large amount of office space is concentrated downtown.

Research/Industrial Land Uses

Research and industrial land uses comprise 2.3% of all land in Ann Arbor. The majority of this land is concentrated near the intersection of Plymouth and Green Roads, and along Research Park Drive in the northeast quadrant of South State Street and Ellsworth Road.

Public, Quasi-Public, Institutional, Organization Land Uses

These uses total 10.9% of all land in Ann Arbor. This category includes land uses such as religious institutions, hospitals, universities, cemeteries, libraries, fire departments, fraternal organizations, and land used for educational purposes. Two major institutions of higher learning exist, including the University of Michigan and Concordia University. In addition, various public and private schools exist throughout the City of Ann Arbor.



Concordia University

Transportation/Communication/Utility Land Uses

Nearly 3.7% of land in Ann Arbor contains uses identified as transportation, communication and utilities. Such uses include electrical substations, cellular towers and water towers but do not include roads, bridges and sidewalks.

Recreational Land Uses

Recreational uses consist of 17.7% of land in Ann Arbor. Recreation includes public parks and nature areas, University of Michigan recreational property, golf courses, private swim clubs, and other recreational facilities. More than 160 parks on over 2,000 acres exist in Ann Arbor. Recreational opportunities include playgrounds, golf courses, ball fields, sledding hills, cross-country ski trails, picnic areas, nature areas, gardens, tennis courts, basketball courts, swimming pools, volleyball courts, canoe liveries, fishing piers and jogging paths. A wide variety of natural features exist in City parks including dense woodlands, wetlands, creeks, river frontage, prairie, ponds and open fields. Other public recreational and open space properties in Ann Arbor include the Nichols Arboretum and Dow Field (University of Michigan; 119 acres), Mitchell Field (University of Michigan; 38 acres), Hubbard Woods (University of Michigan; approx. 25 acres), Thurston Nature Area (Ann Arbor Public Schools, 17 acres) Braun Nature Area (Ann Arbor Township; 11 acres) and County Farm (132 acres).

Vacant

Approximately 8.9% of land in the Ann Arbor is vacant. This category also includes many small vacant parcels in residential neighborhoods which are used as side or backyards of adjacent single family homes.

Mixed Use

Mixed land uses occupy 1.7% of land in Ann Arbor. This includes properties with more than one land use category. The highest concentration of mixed use properties exist in downtown Ann Arbor.



Leslie Park Golf Course

Chapter Four



NATURAL SYSTEMS & THE ENVIRONMENT

I. Introduction

A primary characteristic of Ann Arbor is the extent, diversity and quality of its natural systems. The southern area of the city is predominantly a glacial till plain. The northern area has considerable topographic relief as a result of glacial activity. The last glaciers deposited significant amounts of soil, creating hills and kames (short hills or mounds) that are separated by waterways and valleys. Because of these steep slopes and wetlands, some land was never farmed. As a result, a diversity of natural communities, species and pre-settlement landscape remains today. A significant number of these high quality natural systems remain intact in pockets throughout the City.

Foremost of these natural systems is the Huron River, its tributaries and surrounding valleys. These features, more than any other, provide Ann Arbor with its best natural scenery. Another important natural system includes native forest fragments. The City was logged extensively in the 19th century for lumber and to clear land for farming. Where farming did not occur, natural systems have recovered and regenerated into high quality native forest fragments and wetlands. Native forest fragments and other woodlands offer important habitat for plants and animals, help to cool the community and provide valuable recreational opportunities. Landmark trees and steep slopes also help define the natural character of a community and provide a window to the past. Water features are important in Ann Arbor. Wetlands help to clean and stabilize storm water runoff and provide critical habitat to a wide variety of plants and animals. Wetlands along the Huron River include high quality and rare natural elements. South Pond, Barton Nature Area and the Arboretum provide important bird habitat. Nine creek corridors exist in Ann Arbor supplying wildlife habitat and are a critical component to water quality in the Huron River watershed. Flood plains also exist in areas along creeks and the Huron River.

Natural areas are lands where high quality native forest fragments, wetlands, waterways, and steep slopes exist. Places where several of these high quality natural systems overlap are particularly valuable. In addition to supporting plant and animal life, natural areas provide sanctuaries for people and scenic views that define what is special about Ann Arbor. They offer sounds, smells and sights that can help people relax after a hectic day. By providing opportunities for walking, jogging and bicycling, natural areas can help link neighborhoods and broaden a sense of community. Such linkages can present opportunities for residents to meet neighbors and friends and have a better connection to the community at large. Natural areas can also present educational opportunities for students of all ages. The Huron River, City parks, and public and private open spaces are the primary

components of the City's natural systems. These areas provide habitat and linkages for plant and animal life and provide residents recreational opportunities within an urban area. The City of Ann Arbor Parks & Recreation Open Space Plan (PROS) provides an inventory of the City park system, identifies guiding principles, goals and objectives and makes recommendations for acquisition of parkland. Development in Ann Arbor should preserve and protect high quality natural systems. The City should continue to ensure that these areas are protected when sites are developed and that careful stewardship of natural areas continues, in perpetuity, on public lands and private lands. The City should also continue to work toward connecting the Huron River greenway system to protect natural systems and improve public access. The City's National Features Master Plan (2004) provides additional information.



Near Nixon and Dhu Varren Roads

II. Issues

A. Natural Systems Protection

Helping to protect natural features is one of the primary goals of this plan. The following are existing tools that the City uses to protect and enhance natural systems:

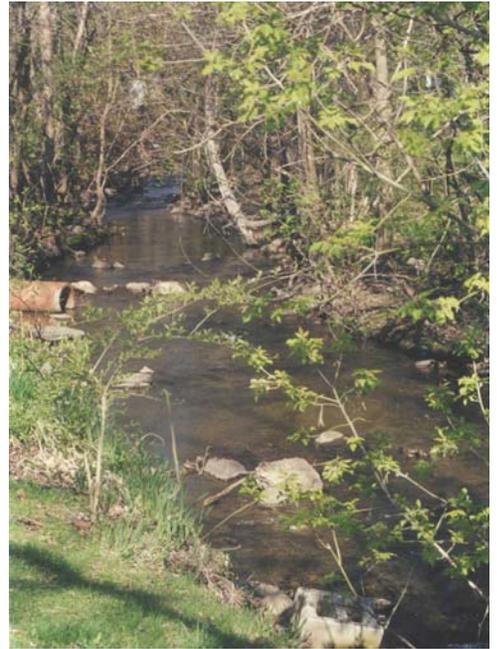
City Code Regulations - The City requires substantive protection of the following natural features: endangered species habitat; 100-Year floodplain; landmark trees, steep slopes, watercourses, wetlands and woodlands. Protection is provided by requiring site plan review of proposed development projects. This review considers the location, nature and quality of the natural features on the development site. If disturbance or removal is proposed, then alternatives must be considered. If impact is deemed acceptable, then mitigation, usually in the form of replacement, is required. The intent of these regulations is to ensure that sensitive natural features are preserved while identifying those portions of the site that are developable.

Natural Features Master Plan – Although the City has performed generalized inventories of floodplains, wetlands and woodlands, landforms change over time and such inventories are used only as general guidelines for natural features on a site. The last comprehensive natural systems inventory was conducted for Ann Arbor in the 1980's. The Parks and Recreation Department, however, has conducted an inventory on the "floristic quality" of natural areas in City parks. A summary of this assessment is provided in the Parks & Recreation Open Space Plan. The goal of developing this inventory is to establish various categories of natural areas based on the overall ecological quality of each site. This type of analysis is helpful when determining the ecological value of natural areas and whether they should be protected or acquired by the City.

Natural Area Preservation – The Natural Area Preservation (NAP) Division of the Parks and Recreation Services Unit is responsible for managing, preserving and restoring the condition of natural areas in parks throughout Ann Arbor. A primary activity of NAP is the removal of non-native, invasive species of plants from public natural areas. NAP also determines the floristic quality of natural areas and has developed a chart that ranks natural areas in Ann Arbor by the quality of the natural environment. The chart and additional information about NAP can be found in the Parks & Recreation Open Space Plan. Some site plans and development agreements include language on the removal of invasive plants.

B. Water Quality & Huron River

One of the largest pollution sources for surface water quality is storm water runoff. Storm water collected within Ann Arbor falls into one of nine watershed areas (Traver Creek, Fleming Creek, Millers Creek, Malletts Creek, Swift Run, Allen, Honey, Paint Creek or the Huron River) and is funneled into storm drains and creeks and eventually makes its way to the Huron River. Much of this water flows over impervious surfaces and lawns collecting fertilizers, pesticides, metals, animal waste, and petroleum-based products. Storm water flowing over impervious surfaces also increases in temperature and raises the speed and volume of water flowing into creeks. The impact on creeks and the River is reflected in erosion, sedimentation, temperature rise, and nutrient overloading, which significantly decrease natural, recreational, and wildlife values.



Traver Creek

In 1972, Congress adopted the National Pollution Discharge Elimination System (NPDES) Act to regulate water pollution in the United States.

The act gave states the authority to regulate

local water pollution discharge. In 1972, the State of Michigan adopted the Soil Erosion and Sedimentation Control Act. The act, which was amended in 1994, allows municipalities to adopt their own soil erosion and sedimentation control regulations in accordance with the act. The City adopted Chapter 63 (Storm Water Management and Soil Erosion and Sedimentation Control) to regulate soil erosion and sedimentation control. Chapter 63 regulates the issuance of grading permits and defines the requirements for storm water management systems. The Planning and Development Services Unit regularly updates Chapter 63. In 2000, the City adopted the “Rules of the Washtenaw County Drain Commission” as a step toward improving the quality of water that enters the Huron River within its jurisdiction. In addition to enforcing Chapter 63, the City has continued its street cleaning program and increased storm drain clearing and educational programming related to improving water quality. It is anticipated that additional efforts to protect water quality will continue in the future.

In 2000, the Ann Arbor City Council adopted the Malletts Creek Restoration Plan in an attempt to develop a long-range and cost-effective plan to control flow, improve the water quality and enhance the natural resource of Malletts Creek. The Restoration Plan identified ways to modify ordinances and standards to achieve the recommendations of the restoration plan. In 2000 the Ann Arbor City Planning Commission adopted a resolution regarding development in the Malletts Creek Watershed. The resolution describes Malletts Creek as being “a severely impacted urban watershed” and the watershed as a degraded urban stream. The resolution strongly encourages petitioners of any development proposal within the watershed to make special efforts to limit the impact of development on Malletts Creek by incorporating “best management practices” into any proposal. Those practices might include a) minimizing impervious surfaces by efficient parking and drive design, shared parking, parking deferral, and the use of multiple-story building design wherever possible, b) providing or retrofitting detention facilities to meet and, if possible, exceed the Rules of the Washtenaw County Drain Commissioner, and c) participating in creek-safe maintenance of the lawn and landscaping on proposed development projects including the use of low phosphorus, fertilizers and native plant alternatives to lawn.

In early 2004, the Millers Creek Study, a restoration planning effort for Millers Creek, was completed. The public/private partnership evaluated and inventoried the conditions of the creekshed and included recommendations for restoration and enhancement of the Millers Creek watershed.

C. Air Quality

The City of Ann Arbor is a part of Region 5 of the federal Environmental Protection Agency (EPA). Region 5 is based in Chicago and includes the states of Michigan, Minnesota, Wisconsin, Illinois, Indiana, and Ohio. Each state is responsible for producing an air quality management plan. (The EPA office in Ann Arbor is the national emissions testing laboratory.)

The Michigan Department of Environmental Quality (MDEQ) is authorized to develop and enforce an air quality plan for the State of Michigan. The Southeast Michigan Council of Governments (SEMCOG) works with MDEQ to develop strategies for reducing air pollution in southeast Michigan.

In 1997, the United States Environmental Protection Agency (EPA) adopted a new, more stringent ozone standard, known as the 8-hour ozone standard. Various areas in the U.S. including Southeast Michigan, are out of compliance with this new standard. In 2004, the EPA gave its support to a petition from the Michigan Department of Environmental Quality (MDEQ) and SEMCOG to reclassify Southeast Michigan as a moderate non-attainment area. MDEQ and SEMCOG will work with the EPA to develop a strategy to reduce air pollution in the region to achieve attainment. Ann Arbor is also in a region that is considered non-attainment for small particulate matter.

Ann Arbor's State of the Environment report (2004) indicated that, "Air quality in Ann Arbor continues on a slow decline." The report also describes what can be expected from being "out of attainment: "Motorists will see some significant changes due to the County designation as 'moderate' non-attainment. This federal designation will require emissions testing of all automobiles in the SEMCOG area. We may be required to use cleaner fuels for our area..."

In 2002, the American Lung Association released a report that measured ground level ozone in 678 counties in the U.S., which monitor for ozone levels. The report indicated that Washtenaw County received an "F" (a failing grade) for its smog levels for the second year in a row.

Primary air quality contaminants in the 1990's were also ozone and particulate matter. Ozone is a gas that is produced through a combination of emissions from internal combustion engines (volatile organic gases and nitrogen oxide [NOX]) and certain weather conditions (hot, sunny weather). Ozone causes severe lung irritation and can damage vegetation. Particulate matter is a microscopic byproduct of the burning of fossil fuels and can cause respiratory problems.

The EPA has developed a list of land use and transportation recommendations to help reduce the amount of regional air pollution in southeast Michigan. The recommendations are in an EPA report called Improving Air Quality through Land Use Activities (January 2001). Recommendations from the report include:

- *Concentrated activity centers:* Encourage pedestrian and transit travel by creating nodes of high density, mixed-use development that can be more easily linked by a transit network.
- *Mixed-use development:* Encourage pedestrian and transit travel by locating a variety of compatible land uses within walking distance from each other.
- *Infill and densification:* Encourage pedestrian and transit travel by locating new development in already developed areas.
- *Increased density near transit corridors:* Encourage transit travel by increasing development density within walking distance of a high capacity transit corridor.
- *Pedestrian and bicycle facilities:* Encourage pedestrian and bicycle travel by increasing sidewalks, paths, crosswalks, and shading.
- *Interconnected street network:* Encourage pedestrian and bicycle travel by providing more direct routes between locations. Also, alleviate traffic congestion by providing multiple routes between origins and destinations.
- *Strategic parking facilities:* Encourage non-automobile modes of transit by limiting the parking supply, and encourage carpooling by reserving parking close to buildings for carpools and vanpools.

D. Brownfields

The Michigan Department of Environmental Quality (MDEQ) defines Brownfields as “abandoned, idle, or underused industrial and commercial properties where redevelopment is complicated by real or perceived contamination”. Recent changes to the State’s Brownfield legislation have expanded the definition of sites in the City of Ann Arbor eligible for consideration as a Brownfield site to include “obsolete” or “blighted” properties. A number of brownfield and suspected brownfield sites exist in the City of Ann Arbor.

III. Natural Systems Goals, Objectives and Action Statements

The Natural Systems Goals, Objectives and Action Statements provide a framework to preserve, protect or restore natural features, water quality, air quality and brownfields in the City of Ann Arbor.

Natural Systems Overall Goal: To manage, maintain, protect, restore and enhance natural systems to assure biodiversity and provide a sustainable ecological balance between urban and natural systems in the City of Ann Arbor.

Goal A: To protect and restore woodlands, landmark trees, steep slopes, endangered species habitats, prairies and savannahs, the Huron River, creeks and native flora and fauna from the impacts of development.

Objective 1: Evaluate and improve the City’s current environmental protection practices.

Action Statements:

- a) Periodically evaluate City ordinances (i.e., natural features, wetland, and soil erosion control ordinances) to determine code sections that could be improved to better protect natural systems.
- b) Continue coordination with the Huron River Watershed Council, the Washtenaw County Drain Commissioner, the parks departments of the City of Ann Arbor, Ann Arbor Township, Pittsfield Township, Scio Township and Washtenaw County, and other organizations to better coordinate and prioritize goals, and enforce regulations to protect and preserve natural systems and greenways especially along the Huron River.
- c) Continue coordination with City departments, commissions and other organizations to restore and maintain natural areas.
- d) Develop methods to encourage the identification and removal of invasive species.
- e) Consider adopting City ordinance language that requires developers to identify and remove invasive species and otherwise restore natural areas on sites proposed for new development.
- f) Consider reducing setback requirements to increase design flexibility to minimize impacts to natural systems.
- g) Implement the recommendations of the Natural Features Master Plan.

Objective 2: Encourage developers to consider alternative land use designs that provide the best protection for existing natural features.

Action Statements:

- a) Encourage multiple-story buildings where appropriate, structured parking or cluster design development to reduce impacts to existing natural features and reduce surfaces that are impervious to water.
- b) Ensure that the placement of buildings, parking lots, driveways, sidewalks, and storm water management systems minimizes the impacts to natural features and encourages storm water infiltration.

Objective 3: Create educational materials that will provide information to decision-makers,

developers and the public regarding the protection of natural features.

Action Statements:

- a) Develop design guidelines to encourage development patterns that enhance and preserve natural features.
- b) Provide educational material to developers and property owners regarding existing natural systems protection measures, alternative storm water protection techniques, and development techniques that provide long-term protection of natural features.
- c) Identify, map and characterize existing woodlands and wetlands consistent with the definitions of the natural features regulations.
- d) Increase public awareness of invasive plant species and encourage removal on private properties.
- e) Increase public awareness of natural and naturalized landscapes as an alternative to lawns.
- f) Consider the recommendation of the Washtenaw Metro Alliance coordinated Parkland and Open Space Plan regarding nature systems protections.

Objective 4: Maintain and preserve natural open space corridors that are important to wildlife and plant life habitats.

Action Statements:

- a) Identify and map existing open space corridors and seek opportunities to establish linkages.
- b) Identify public open spaces that could be improved by the introduction of native plantings.
- c) Develop techniques to create greater public awareness and appreciation of natural open spaces and corridors.
- d) Support the Parks & Recreation Open Space Plan with regard to establishing open space linkages.
- e) Coordinate with the University of Michigan, Concordia College, the Ann Arbor Public School District, Ann Arbor Township, Washtenaw County and private property owners in developing open space corridors in the City of Ann Arbor.

Goal B: To achieve and maintain high quality of the area's watersheds to protect the health and welfare of the community and maintain the balance of natural systems.

Objective 1: Improve the quality of surface water, which enters the Huron River in the City of Ann Arbor.

Action Statements:

- a) Continue working with the Huron River Watershed Council, the Washtenaw County Drain Commission and other organizations to study and model the water quality of City watersheds and to research ways to improve the quality of storm water drainage.
- b) Continue to research and implement methods to help predict the effects and mitigate the impacts of new development in floodways; reduce impervious surface areas, such as providing development incentives for private parking structures; establishing a maximum number of parking spaces for each use; encouraging alternative parking designs, shared parking, and pervious materials, where appropriate; and reducing street right-of-way, street widths, front setback requirements and driveway lengths where appropriate.
- c) Modify City ordinances to prohibit or carefully regulate any new buildings within a floodway to substantially reduce or eliminate impacts to flooding.
- d) Encourage developers and property owners to use innovative designs (i.e., "green construction") and best management practices for storm water detention.
- e) Work with adjoining townships to discuss approaches to protecting watershed systems with cross-jurisdictional boundaries.
- f) Encourage stewardship of water resources by providing educational material to decision-makers, developers and the general public regarding watershed and urban storm water management issues to raise awareness of the value of watersheds and the impacts of everyday activities on water quality. Continue to educate the public on the footing drain disconnect program.
- g) Encourage partnerships of public agencies and private property owners that work together to protect watersheds on their lands.
- h) Identify contributing non-point sources of water pollution; research and implement ways to

reduce such sources.

- i) Map city creek sheds to help the Federal Emergency Management Agency determine flood boundaries.
- j) Implement the recommendations of the Malletts Creek Study.
- k) The following hierarchy should be used to guide the selection of stormwater management approaches: 1) preservation of the natural environment; 2) minimization of impervious surfaces; 3) use of vegetative swales and natural storage; 4) infiltration of runoff onsite; 5) stormwater detention structures; 6) stormwater retention structures; and 7) stormwater conveyance.

Goal C: To improve air quality to protect the health and welfare of the public.

Objective 1: Encourage the use of mass transit and non-motorized modes of transportation through land use design and incentive programs to help reduce the total number of trips made by gasoline, diesel and other air polluting vehicles.

Action Statements:

- a) Develop incentives that encourage the location of public facilities (i.e., library, post office, and police district offices) in commercial centers or in close proximity to neighborhoods.
- b) Develop incentives in City Code to encourage development projects that provide multiple uses in close proximity to one another (i.e., mixed-use).
- c) Develop transit/pedestrian oriented development guidelines to encourage “walkable” communities.
- d) Encourage residential densities that can sustain bus transit.
- e) Develop a parking management program, such as incentives for employers who provide subsidies for alternative trip modes equal to or greater than the subsidies employers provide for drivers (i.e., free parking space).
- f) Develop incentives for employers who encourage alternatives to single passenger automobiles, such as, mass transit, high occupancy vehicles, and other techniques that reduce vehicular trips.
- g) Continue to seek state and federal grants for non-motorized public improvements.
- h) Consider requesting that developers provide on-site and off-site bicycle and pedestrian amenities to mitigate traffic impacts.
- i) Modify City ordinances to allow electric and alternative fuel and recharge centers to be installed at appropriate locations.
- j) Encourage the City, University of Michigan, Ann Arbor Public Schools, and the Ann Arbor Transportation Authority to purchase and maintain low emission fleets.
- k) Encourage the establishment of a Transportation Management Organization (TMO) for major road Corridor employers.
- l) Continue to support ozone actions alert programs.
- m) Encourage the development of bicycle lanes and non-motorized paths.
- n) Implement the recommendations of this plan.

Objective 2: Increase community understanding of air quality and air pollution sources.

Action Statements:

- a) Provide educational material to the public on point and non-point air pollution sources and on how individuals can reduce their impact on air quality.
- b) Encourage Ann Arbor retailers to sell alternatives to gasoline-powered equipment.

Goal D: To reduce and prevent soil contamination to protect the health and welfare of the community and maintain the balance of natural systems.

Objective 1: Facilitate the clean-up of known contaminated sites.

Action Statements:

- a) Identify and categorize contaminated sites on public and private lands.
- b) Prioritize clean-up for sites with underground plumes or uncontained material.
- c) Increase community understanding of underground contamination and soil quality.

Objective 2: Increase community understanding of underground contamination and soil quality.

Action Statements:

- a) Provide information to the public on contaminated sites and their impact on the environment.
- b) Provide information to the public regarding frequently used hazardous material (i.e., batteries, used automotive oil, paint, etc.) and their proper disposal.