

## Natural Features

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### A. Introduction

#### Natural Resources Protection Benefits

The MCJPC area has many natural features that contribute to the rural sense of place, and more specifically, that contribute to the sense of being a part of the Manchester community.

Southwest Washtenaw County is, in a word, beautiful. This beauty not only contributes to a sense of place, but it represents resources that are worth protecting for current and future generations. The presence of natural features is important to the life of a community. Natural features are visually soothing and even inspiring. MCJPC area residents talk about the feeling of “coming home” that they enjoy upon returning from destinations outside the region. The MCJPC area’s historic German roots that tie families and generations together are coupled with rivers, streams and lakes, rolling topography with many a new vista revealing itself at the next turn in the road, working farms and open spaces, woodlands, wetlands and wildlife. Generally, such natural features are considered sensitive, in that their “naturalness” can be seriously impaired by disturbance. Replacing them is rarely as successful or desirable as the original, and can take decades or even generations to return to their former glory.

#### Water Quality

Of critical importance is protecting and maintaining a clean, safe, and adequate supply of water. Outside the Village of Manchester, which has a municipal water and sewage system, MCJPC area residents rely on wells for their drinking and other domestic and commercial needs. Clean water is therefore essential to the continued success and the health of the community. This includes both safe drinking water and water suitable for agricultural and household uses.

The Manchester joint planning area is situated in two watersheds. The Village of Manchester, Manchester Township, and Bridgewater Township are located entirely within the River Raisin Watershed. From east to west, Bridgewater Township is in the Saline River Sub Basin and the Upper River Raisin Sub Basin. The approximately northern two-thirds of Manchester Township is also located in the Upper River Raisin Sub Basin, with the southern one-third is in the Iron Creek Sub Basin. In Freedom Township, the southern third, more or less, is in the Upper River Raisin Sub Basin of the River Raisin Watershed, with the northern two-thirds in the Huron River Watershed, specifically the Mill Creek Subwatershed. Protection of these two main watersheds is a high priority for this Plan.

Storm Water Management best practices can positively affect the rate and amount of storm water runoff flowing into MCJPC waterways. One strategy is to minimize impervious surfaces on newly developed or redeveloped land. Slowing the flow of stormwater runoff can improve infiltration of water into the soil, thus removing pollution and contaminants.

INSERT WATERSHEDS MAP

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### Agri-Business

“Agri-business,” in the context of this Plan, refers to businesses related to and in support of agriculture. Examples include farming itself, farm machinery and equipment, feed and seed supply, etc. Agri-business is an important component of the MCJPC economy. For these businesses to remain economically viable, environmental quality must be protected. Without environmental quality, agriculture is put at-risk. Agri-business, in this context, does not refer to large-scale corporate agriculture, such as Concentrated Animal Feeding Operations (CAFO’s), which contribute to environmental degradation, particularly water and air quality.

### Ecological Corridors

Preserving natural features is an important strategy for protecting and maintaining a rural sense of place. Ecological or natural corridors are a way that open spaces can remain linked. This allows for continuity within the natural system, rather than having open spaces be broken up into discrete units. An ecological corridor is a strip of vegetation of varying widths, sometimes following waterways that allow wildlife to travel between two areas. Movement of other biotic factors, such as seeds and spores, is also possible within an ecological corridor. Advantages of having ecological corridors include routes for wildlife migration, buffered protection from pollution and invasive species for natural vegetation and possible recreational amenities such as connected trails and fishing routes, as well as aesthetic enhancements, such as scenic roads.

### Quality of Life

Having a healthy, vibrant, and diverse system of natural resources and natural features is a key component to the quality of life Manchester area residents continue to value and seek to protect. The “Manchester Experience” is not merely the act of being in the Village of Manchester or surrounding townships, it is getting there as well. Lakes, streams, wetlands, woodlands, orchards, steep slopes, and working farms are all part of the Manchester Experience, in addition to the quaint and historic homes and businesses throughout the area.

### Conservation/Sustainability

Conservation is a term with multiple meanings, but is essentially the concept that natural resources, woodlands, water bodies, etc., must be managed to assure adequate supplies of natural resources for present and future generations. Conservation protects resources for future use by asserting reasonable regulation to prevent unchecked exploitation. Extraction Ordinances used by the MCJPC communities are a good example. Owners of extraction operations have the right to use mineral resources on their land, but subject to land use ordinances that assure such things as water quality, soil erosion and site restoration once the extraction operation has concluded are addressed.

Of more recent popular usage, sustainability refers to the concept that to be sustainable, nature’s resources must be used only at a rate at which they can be replenished naturally. As applied to the

human community, sustainability generally means meeting the needs of the present without compromising the ability of future generations to meet their own needs. Both conservation and sustainability are key concepts in this Plan, as it seeks to protect the natural environment of the Manchester area for generations today and generations to come.

## B. Current Conditions

### Important Natural Features

#### Surface Water

Surface water is all above ground water that is naturally open to the atmosphere. Surface water is comprised of lakes and ponds, rivers and streams and their tributaries, reservoirs, impoundments, or other collectors directly influenced by surface water. Seas and estuaries are also forms of surface water.

- The River Raisin: The River Raisin is the most significant natural feature of the MCJPC area. From the west in Jackson County, running easterly, then to the south through Sharon Township, the River Raisin enters Manchester Township in its northeast corner, runs through the Village of Manchester where it is a major natural feature, then bends southeasterly into Bridgewater Township before taking a more southerly route through Bridgewater Township. In Bridgewater Township, the River Raisin roughly parallels Clinton Road until it enters Lenawee County and the Village of Clinton, continuing south for a while, then, near Blissfield, east again on its way to Lake Erie.
- Pleasant Lake in the central portion of Freedom Township has 210 acre of water surface. The eastern portion of Pleasant Lake is marshy lowland that derives its character through drainage from the surrounding area to Pleasant Lake.
- Iron Creek runs easterly from Mud Lake in Jackson County through Iron Mill Pond in southern Manchester. Iron Creek joins the River Raisin south of Allen Road in Bridgewater Township.
- Other primary waterways in the MCJPC area include Iron Creek in Manchester and Bridgewater Townships, Iron Mill Pond, Lower Lake, Twin Lakes and Round Lake in Manchester Township. In addition are Joslin Lake and Columbus Lake in Bridgewater Township.
- Streams, lakes, ponds, and wetlands are part of the MCJPC area's storm drainage system. These features should be protected from disturbance by construction and from pollution and sediments that might be carried by runoff from developing or developed areas.

There are numerous smaller water bodies throughout the area. In total, there are approximately 1,400 acres of lakes and 111 miles of river and streams, and approximately 8,200 acres of wetlands in the MCJPC area. The breakdown by local unit of government is included on Table 9.

- Iron Creek: Iron Creek runs easterly from Mud Lake in Jackson County through Iron Mill Pond in southern Manchester. Iron Creek joins the River Raisin south of Allen Road in Bridgewater Township.

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Pleasant Lake: Pleasant Lake is located in the virtual center of Freedom Township. With 210 acres of water surface, Pleasant Lake is surrounded by homes and it is the historic and current central focus for the Township.

Woodlands: Areas defined as woodland refer to lands that are at least ten (10%) percent stocked by trees capable of producing timber or other wood products.

Woodlands are a valuable natural resource from environmental and aesthetic points of view. They play an important role by stabilizing soil and slowing runoff and erosion resulting from flooding and high winds. Careful management of woodlands must be of prime concern. Needless destruction of trees and the conversion of woodlands to other uses should be discouraged. Land uses and development patterns that permit the land to remain forested should be encouraged. Woodlands are important for a number of reasons:

- Woodlands create a varied and rich habitat for plant and animal life.
- When connected with other woodlands or fencerows, they provide migration paths for animals and birds.
- Woodlands are a source of timber.
- Woodlands are a source of aesthetic enjoyment and provide areas for recreation.
- Woodlands moderate climatic extremes by providing shade and transpiring water.
- Woodlands protect watersheds from erosion by reducing the impact of rain on soil and by holding soil in place.
- Woodlands help recharge groundwater by holding precipitation, giving it time to percolate into the ground. The woodland floor also helps to filter the percolating water.
- Woodlands filter the air by absorbing pollutants.
- Woodlands absorb sound and act as buffers between land uses.

There are approximately 17,000 acres of woodlands in the MCJPC area. Woodlands are dispersed throughout the MCJPC area and are depicted on [Map 2](#).

Wetlands: Wetlands are transitional zones between dry land and aquatic systems. The water table is usually near or covering the surface. Very low topographic change, poor drainage, specific types of vegetation, and standing water characterize wetlands. Marshes, swamps, and bogs are well known terms, which have historically referred to wetlands. Since wetlands are among the most environmentally sensitive lands, it is important to have reliable information that defines and classifies these sensitive areas. Wetlands perform the following basic functions:

- Wetland habitats are essential to the breeding, feeding, and survival of many species of fish and wildlife. In their natural condition, wetlands are among the most productive of land areas when the total quantity of animal and plant matter produced is considered. They also provide valuable predator escape cover, and a wide range of vegetative communities.

- Wetlands influence the quantity of water stored in a watershed and act to retain water during floods, and to reduce fluctuations in the water table level. Wetlands retain water during wet periods and release it slowly during dry periods. During dry periods, wetlands help keep the water table relatively stable. Wetlands also recharge the ground water supply by allowing surface water to percolate into the aquifers.
- Wetlands protect water quality by trapping and storing nutrients from upland runoff, and by serving as settling basins for silt from upland erosion. This function can only be performed if the nutrients and silt are not excessive in amounts. Excess runoff and nutrients due to development and agricultural activities can overload wetlands and result in the eventual destruction of their filtering function.

The principal threats to the long-term health and stability of wetlands includes:

- Dredging and filling of wetlands for development, agricultural, or mining purposes.
- High volumes and rates of surface water runoff, usually caused by upstream development.
- Surface runoff from fertilizers and other pollutants.
- Siltation caused by upstream erosion.

Wetlands were mapped using U.S. Geological Survey Quadrangles and Washtenaw County data.

There are approximately 8,000 acres of wetlands in the MCJPC area. Wetlands are shown on [Map](#) and are most extensive along the River Raisin system

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Table 9 Natural Features Inventory Summary

<u>Local Unit of Government</u>	<u>Approximate Acres</u>			<u>Approximate Miles</u>
	<u>Lakes</u>	<u>Wetlands</u>	<u>Woodlands</u>	<u>Streams</u>
<u>Bridgewater Township</u>	<u>299</u>	<u>2,219</u>	<u>4,412</u>	<u>49</u>
<u>Freedom Township</u>	<u>371</u>	<u>2,389</u>	<u>4,708</u>	<u>32</u>
<u>Manchester Township</u>	<u>682</u>	<u>3,321</u>	<u>7,607</u>	<u>27</u>
<u>Village of Manchester</u>	<u>63</u>	<u>257</u>	<u>341</u>	<u>3</u>
<b><u>TOTAL</u></b>	<b><u>1,415</u></b>	<b><u>8,186</u></b>	<b><u>17,068</u></b>	<b><u>111</u></b>

Source: SEMCOG

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Rolling Terrain, topography and scenic views: The MCJPC area is characterized by a rolling topography, with hills and valleys throughout the region. The term topography is used to refer to slope. The natural stability of a slope is dependent on the interaction of vegetation, climate, soil, and underlying geology. In general, the greater the slope - the greater the sensitivity to disturbance. Natural slopes that have not been disturbed by human activity are generally stable, at least in the short run. Improper development practices on sensitive slopes can incur great economic and environmental consequences. Soil type, particle size, permeability, vegetative cover, organic matter, and moisture content will vary the

rate of erosion on a particular slope. Slope of land is an integral part of the natural drainage system. Slope adds visual contrast to the landscape.

## Inventory of Natural Features

### Wetlands

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### Surface Water

Surface water is all above ground water that is naturally open to the atmosphere. Surface water is comprised of lakes and ponds, rivers and streams and their tributaries, reservoirs, impoundments, or other collectors directly influenced by surface water. Seas and estuaries are also forms of surface water.

The primary surface water in the MCJPC area is the River Raisin and Pleasant Lake. The River Raisin runs from Sharon Township to the northeast portion of Manchester Township, through the Village of Manchester and southeastward through Bridgewater Township, on its way through Lenawee and Monroe Counties to Lake Erie.

- Pleasant Lake in the central portion of Freedom Township has 210 acre of water surface. The eastern portion of Pleasant Lake is marshy lowland that derives its character through drainage from the surrounding area to Pleasant Lake.
- Other primary waterways in the MCJPC area include Iron Creek in Manchester and Bridgewater Townships, Iron Mill Pond, Lower Lake, Twin Lakes and Round Lake in Manchester Township. In addition are Joslin Lake and Columbus Lake in Bridgewater Township.
- Streams, lakes, ponds, and wetlands are part of the MCJPC area's storm drainage system. These features should be protected from disturbance by construction and from pollution and sediments that might be carried by runoff from developing or developed areas.

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Village of Manchester	63	257	341	3
<b>TOTAL</b>	<b>1,415</b>	<b>8,186</b>	<b>17,068</b>	<b>111</b>

Source: SEMCOG

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INSERT NATURAL FEATURES MAP (wetlands, woodlands)

Insert Maps 7, 8, and 9

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### Groundwater Recharge Areas

Water that is stored in and slowly filtered through geologic formations is referred to as ground water. An aquifer is a geological formation that contains sufficient ground water to supply wells, lakes, springs, streams, and/or wetlands. Precipitation reaches an aquifer by downward percolation from the surface. A land surface that readily permits water to move downward into an aquifer is referred to as a ground water recharge area. Groundwater recharge areas are highly generalized and it must be emphasized that the boundaries are not precise.

Underground aquifers serve three (3) major functions:

1. They are natural reservoirs of groundwater for human consumption and for irrigation.
2. They are natural filters for groundwater, but they can be easily polluted by unsound land use practices in the recharge area.
3. They interconnect with surface water systems and help stabilize surface water levels. They help reduce high water levels during wet periods and add water to surface water bodies during dry periods.

Map \_\_\_ indicates groundwater recharge areas in the MCJPC area.

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INSERT GROUNDWATER RECHARGE AREAS MAP

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### Floodplains

A floodplain is an area adjoining a lake, stream, river, or pond that receives excess water from flooding. Floods are a natural occurrence in the hydrologic cycle. A well-defined floodplain is produced when flooding recurs on the same area, which then becomes important in flood situations where excess water requires a natural reservoir. Water exceeding the normal average level is stored as a temporary lake across a floodplain. As long as the overflow remains on the floodplain, this volume is not added to the floodwater moving downstream. When floodplain storage is prevented by restricting the water flow to a channel, the volume and size of the flood may be increased downstream, causing higher water levels and more damage.

Floodplain areas are measured or “*delineated*” to indicate the chance of a flood occurring at a given location. This measuring or delineating is done regarding the probability of flooding, usually once in fifty (50), one hundred (100), or five hundred (500) years. Floodplain delineation is required for home and business construction loans and the Federal Flood Insurance program. The National Flood Insurance Program accepts the one hundred (100) year floodplain as the minimum standard for protection. A one hundred (100) year flood is a flood, which has a probability of reaching a given elevation once in one hundred (100) years, or a one (1%) percent chance of occurring in any given year.

The River Raisin drainage system, starting in northeastern Manchester Township, through the Village of Manchester and continuing through Bridgewater Township is the only watercourse to have a designated one hundred (100) year floodplain in the MCJPC area. This area is currently limited to northwest of the Village of Manchester and the southeast quadrant of Bridgewater Township.

Map    indicates floodplains in the MCJPC area.

[INSERT WATERWAYS MAP]

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### Wildlife Habitat

Habitat for wildlife requires shelter, access to food and water, and safe places that are reasonably free from predators and encounters with the human population to allow wildlife to nest and bear young and sufficient space to accommodate territorial behavior. The concept of wildlife corridors means that natural linkages exist through which wildlife can travel, irrespective of human ownership or uses of the land. Environmental features such as wetlands, waterways, woodlands, hedgerows, prairies and meadows support wildlife. Natural links between properties should be maintained whenever possible to facilitate movement of wildlife between areas.

### Soil Conditions

One aspect of soil analysis regarding natural resources is to identify soils that should not be disturbed from an environmental standpoint. Soils of this nature are usually organic-wet by nature, ~~classified as muck~~, and contain high water tables or are frequently flooded. These soils are often found in wetlands and floodplains. Due to the sensitive nature of these soils and the environmental function they perform, they should not be subject to development or alteration. It is recognized that the unsuitability of a soil could relate to a slope factor as opposed to an organic or high water table condition. Wetlands and flood plains most often characterize these soils.

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INSERT SOIL CLASSIFICATIONS MAP

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| [Steep Slopes/Topography](#)

Slopes are any inclined, exposed surface of fill, excavation, or natural terrain. Slopes of 12% or greater provide special opportunities and limitations. While it is important to protect all soils throughout the area from erosion, areas with steep slopes require special attention to control amount and velocity of runoff and to maintain existing positive aesthetic qualities.

Development should be limited to low densities in areas of steep slopes and other sloping areas where soil conditions create serious erosion potential. The natural contours, vegetation, and drainage patterns should be maintained or enhanced when development occurs in areas of steep slopes. Development on slopes of eighteen (18%) percent or greater should be discouraged.

Map    illustrates steep slopes in the MCJPC area.

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INSERT STEEP SLOPES MAP

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## Protected Open Space

These are designated publically owned open space, preserved as natural areas without active recreation, and private lands with conservation easements which restrict development but not passive uses. There are three active organizations in the region that have secured open space preservation agreements.

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### a. Washtenaw County Parks & Recreation Preserves (NAPP)

The Natural Areas Preservation Program (NAPP) was established by a County-wide voter approved millage to acquire sensitive lands for preservation purposes. The NAPP is overseen by the Washtenaw County Parks & Recreation Commission which has, to date, purchased a total of 567 acres to acquire four Preserves in the MCJPC area. These include, in Manchester Township the Leonard Preserve, the largest preserve in the NAPP program (237 acres), two areas in Bridgewater Township; the Ervin-Stucki Preserve (126 acres) and the Greiwahn Preserve (17 acres) and the Brauer Preserve in Freedom Township (187 acres). All four preserves are intended to preserve open space, to protect the River Raisin from development and erosion, and to provide space for passive recreation.

### b. Washtenaw Land Trust

The Washtenaw Land Trust (WLT), formed by the merger of the Washtenaw Land Conservancy and the Potawatomi Land Trust in 1999, protects land primarily through conservation easements and donations of title to land. The Washtenaw Land Trust holds several conservation easements in the MCJPC area. WLT has four conservation easements in Freedom township; one 167 acre property, one 41.21 acres, 18 acres and 76.41 acres. WLT holds two conservation easements in Bridgewater Township, with 68.58 and 40 acres. WLT also holds a conservation easement for 106.8 acres in Manchester Township.

### c. Raisin Valley Land Trust

The Raisin Valley Land Trust holds two conservation easements in Manchester Township, with a third conservation easement in process. Total acreage protected is approximately 230 acres, to date.

INSERT PROTECTED OPEN SPACE MAP

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### Environmentally Sensitive Areas

While all the natural features identified in the MCJPC region are individually important, the combination of several features in an area indicate a special fragility or visual appeal. These are opportunities for distinction and regulation somewhat beyond conventional preservation measures. Some of these natural features are clearly defined geographically because of existing programs and ordinances, while others are awaiting inventory and mapping as the need arises. For the purpose of the MCJPC, the following natural features shall be considered Environmentally Sensitive Areas where they occur together:

- 100 year floodplains
- Wetlands
- Surface waters including vegetative buffer\*
- Woodlands
- Ground Water recharge areas
- Steep slopes
- Unique wildlife habitats/plant communities

~~\*a suitable vegetative buffer in developed areas is 50', which allows for appropriate green pathways; in undeveloped areas, a vegetative buffer of 25', which filters runoff and controls access may be appropriate. Refer to the Glossary for an explanation of vegetative buffers.~~

The Environmentally Sensitive Areas are shown on the Future Land use map.

INSERT ENVIRONMENTALLY SENSITIVE AREAS MAP

[This map is in the parking lot]

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## C. Goals, Objectives, and Policies

**Goal 1: The Manchester Community Joint Planning area shall protect natural features and open spaces to maintain a high quality of life for area residents.**

### Objective 1: Protect Water Resources

1. Use streams, water bodies, and wetlands as part of the storm drainage systems of the MCJPC area. These features should be protected from disturbance by construction and from pollutants and sediments that might be carried by runoff from developing or developed areas. It is the intent of the Joint Master Plan to protect surface water, stream corridors, and wetlands in their natural condition.
2. Protect the MCJPC area's potable water supplies from the dangers of drought, overdraft, contamination, or mismanagement.
3. Prohibit development within the one hundred (100) year flood plain of existing watercourses or wetlands.
4. Preserve stream corridors and wetlands in their natural condition.
5. Minimize the disruption of the hydrology, alignment, topography, or vegetation.
6. Discourage mitigation of wetlands.
7. Manage storm water run-off to retain the quantity and quality of water in surface water features.
8. Private community sanitary sewage treatment systems shall be regulated.
9. Establish land use patterns that limit potential adverse impact on water features, including: a) topographical disturbance, b) including grading and/or filling; c) bio-chemical pollution; d) thermal pollution; e) stream channel alteration; and f) loss of vegetative buffers.
10. Protect the hydrological qualities of ground water recharge areas by; a) requiring a description of ground water recharge areas including a rough delineation of their borders as part of the site plan review process, b) limiting site coverage of impervious surfaces over groundwater recharge areas, c) requiring storm water retention facilities that will maintain the water supply to ground water recharge areas in quantity and quality that match existing conditions, and d) protecting surface vegetation where needed to purify storm water runoff.
11. Encourage land uses that limit the potential for ground water contamination or harmful impact on the underground water system. Certain land uses may be permitted on groundwater recharge areas, taking into consideration; a) potential for contamination from on-site septic systems, b) the percent of site coverage by impervious surfaces, c) the potential for water contamination from surface use of fertilizers and pesticides, d) potential for water contamination from spills of hazardous substances, and e) the potential for contamination from road de-icing materials.
12. Utilize Zoning Ordinances to ensure that development will minimize disruption to valuable wetlands, watercourses and other natural feature areas.

**Objective 2: Develop and use ordinances to protect natural features in during the development process.**

1. Require the following information for all proposed developments that require site plan review:
  - a. one hundred (100) year flood plain
  - b. lakes, ponds, stream courses, and wetlands
  - c. on-site watershed for on-site water features
  - d. slopes, especially slopes over eighteen (18%) percent
  - e. organic soils
  - f. vegetation in buffer zone adjacent to on-site and off-site surface water features, wetlands, and woodlands
  - g. woodlands
  - h. free-standing landmark trees
  - i. ground water recharge areas
  - j. stormwater management.
2. Adopt ordinances to protect surface water features, wetlands, and woodlands. Place special emphasis on those features that provide viable wildlife habitat. Ordinances should include provisions, such as:
  - a. wetlands protection, including discouraging of mitigation;
  - b. designated controls within environmentally sensitive areas
  - c. designation of vegetative buffers at the edge of water features or wetlands
  - d. protection of vegetation within the buffer zone;
  - e. clustering provision to compensate for the loss of developable land for wetlands less than five (5) acres in size; and connections between protected natural features on the same property and those on adjacent properties.
  - f. zoning standards to control density in woodland areas.
3. Encourage the use of planned unit development and cluster development to establish permanent easements for open space or agricultural use on common lands and to protect designated natural features within environmentally sensitive areas.
4. Use natural features to create boundaries of use or to separate development areas from agricultural areas.
5. Encourage the establishment of binding and permanent conservation easements and deed restrictions to protect designated natural features.
6. Minimize the impact of development on natural features by means of the following methods:
  - a) Low density residential development may be permitted in designated woodlands.
  - b) Clustering of developments may be allowed to minimize the impact of development on woodlands.
  - c) Permanent protection and expansion of woodlands and areas of upland brush through the establishment of deed restrictions and easements shall be encouraged.

7. Control erosion during construction and after construction by: a) limiting stripping of vegetation and soil removal; b) minimizing the duration of exposure of disturbed areas; c) requiring the use of temporary vegetation, mulching or other techniques to prevent erosion; and d) installation of temporary erosion control barriers.
8. Utilize progressive stormwater management and erosion control techniques to ensure that development will not adversely impact natural resources and surrounding property.
9. Protect the diversity and quality of wildlife habitats and their associated flora and fauna by: a) protecting landmark and historic trees, b) limiting the deforestation of significant areas and concentrations of trees, c) protecting areas of miscellaneous native and mature trees and shrubs located at the edge of woodlands and in environmentally sensitive areas.
10. Prohibit development within the one hundred (100) year flood plain of existing watercourses or wetlands.
11. Limit development to low densities in areas of steep slopes and other sloping areas where soil conditions create serious erosion potential.
12. Protect slopes from erosion to: a) maintain slope stability, b) control amount and velocity of run-off; and c) maintain existing positive aesthetic qualities.
13. Discourage development on slopes of eighteen (18%) percent or greater.
14. Maintain or enhance the natural contours, vegetation, and drainage patterns when development occurs in areas of steep slopes.
15. Require the identification of fragile natural features in the site plan review process for any development, especially within environmentally sensitive areas.
16. Maintain attractive natural streetscapes along all MCJPC area roads and streets to continue to promote the rural visual character of the MCJPC community.
17. Adopt standards for setbacks and landscaping along MCJPC roads in appropriate ordinances.

**Objective 3: Open Spaces Protection**

1. Encourage use of public, non-profit land trusts with the power to buy property, establish deed restrictions, and sell property.
2. Establish development design parameters that keep open space visible from roadways.
3. Encourage donation of land to a local unit of government or to public or private land trusts for open space, recreational, or agricultural use.
4. Encourage donations or sale of deed restrictions, view easements, and development easements to a public or private entity empowered to hold them (e.g., P.A. 116, Local Open Space, and Development Rights Easements).
5. Work with the State legislature or appropriate agencies to establish enabling legislation for tools to restrict development potential within designated agricultural and environmentally sensitive lands.

Encourage or require the provision of private open space in new developments, by using permanent easements and similar legal structures, with such open space to be a significant feature, especially in planned unit developments and residential cluster subdivisions.

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**Goal 2: Develop an open space vision that connects open space and ecological systems throughout the planning area and region.**

**Objective 1: Natural Resource Conservation**

1. Conduct an inventory and map sensitive wildlife habitat and native plants in the MCJPC area.
2. Encourage the establishment and protection of an interconnected system of natural environmental corridors, including wetlands, woodlands, and open fields (in either prairie or agricultural use), which provide a diverse, viable habitat for wildlife and rare native plants.
3. Identify properties to be dedicated for open space or recreational use. Properties may include: 1) significant natural features within urban, suburban, and rural residential areas; 2) environmentally sensitive sites that are potentially endangered; and 3) sites to buffer land uses. Delineate the sites on an Official Public Facilities Map.
4. Develop ordinances to protect and conserve natural features and fragile lands, such as wetlands, woodlands, steep slopes, floodplains, groundwater recharge areas, native plants and wildlife habitat (Consider the Washtenaw County Open Space Ordinance as a guide)
5. Utilize proximity as well as contiguity of natural features e.g., a stream corridor, to achieve a true “system” of natural features, whenever feasible. Such an open space system can be any combination of natural features, e.g. wetlands, woodlands, open spaces, steep slopes, etc.
6. Protect wildlife habitat by protecting environmental features, including wetlands, woodlands, hedgerows, prairies and meadows that support wildlife habitat within designated important environmental areas.
7. Protect natural links between protected areas in important environmental areas that facilitate the movement of wildlife across areas.
8. Coordinate development of public and private open space and recreational uses with important environmental areas where the requirements for the recreational use are compatible with the requirements for environmentally sensitive areas.
9. Provide attractive natural streetscapes along MCJPC area roads and streets by, a) protecting landmark trees and hedgerows located adjacent to area roads, b) requiring landscaping along MCJPC area roads for a new development, c) protecting or enhancing special corridors e.g. Natural Beauty Roads and Scenic Roads, and d) coordinating the location of overhead or underground utilities to minimize their impact on existing vegetation and wetlands.

**It is the Policy of the Manchester Community Joint Planning Commission that:**

1. The MCJPC communities will work together to coordinate their zoning ordinances to be consistent with the natural resources goals and objectives of this joint master plan.
2. The MCJPC communities will coordinate with the Washtenaw County Department of Parks and Recreation, Land Trusts, the Natural Areas Preservation Program, Purchase of Development

Rights program and other entities, as appropriate, to facilitate acquisition of open spaces and preservation of agricultural land through such means as conservation easements and purchase of development rights.

3. MCJPC communities will make use of new data and community input to prioritize natural resources and designate areas of special concern, which are subject to more stringent development regulations.

DRAFT 2