

**VI. Natural Features Review, Mark Spencer**

# MEMORANDUM



TO: MASTER PLAN & ZONING COMMITTEE  
FROM: MARK SPENCER, AICP, PLANNER *Mark Spencer*  
SUBJECT: 2007 MASTER PLAN REVIEW - NATURAL FEATURES  
DATE: NOVEMBER 27, 2007

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## Introduction

Natural features such as streams, ponds, wetlands and woodlands are part of the "green infrastructure" of the City of Novi. Green infrastructure supports native species, sustains natural ecological processes, maintains air and water resources, and contributes to our health and quality of life. Conserving green infrastructure can produce economic dividends for communities, businesses, and residents, as well as, providing a framework for sustainable development. Studies have shown that natural areas and green space are amenities that add value to nearby properties.

The City of Novi has a long history of protecting natural features in the City. From the inclusion of the Residential Unit Development (RUD) option that permitted clustering of development to preserve natural features in the Zoning Ordinance in 1966 to the adoption of low impact development (LID) practices in an update to the storm water management ordinance in 2007, the City has developed ordinances to protect natural features throughout its history as a village and later a city. The Wetland and Watercourse Protection and the Woodland Protection Ordinances adopted in the 1980s have facilitated the preservation of many acres of wetlands and woodlands in the City. The City continues to participate with Oakland County to identify natural feature areas that could be opportunities for preservation.

The 2007 Master Plan Review is focused on three study areas. Each of these study areas contain some natural features. This review includes a description of woodland areas as depicted on the City's Regulated Woodland Map, wetlands and streams as depicted on the City's Regulated Wetland and Watercourse Map and wildlife habitat areas as depicted in the 2004 Oakland County Potential Conservation/Natural Area report. A review of each of the study areas follows with maps of each study area attached.

## I-96/Novi Road Study Area

Located in Section 15, in the Rouge River watershed, the study area is crossed by the Walled Lake Branch of the Middle Rouge River that flows southeast from the northwest corner of the study area. Except for a small amount of woodlands adjacent the CSX Railroad, all of the natural areas in this Study Area are located adjacent to the Walled Lake Branch. Most of these are located in the flood zone of this stream. The 147 acre I-96/Novi Road Study Area contains 19.5 acres (13.3%) of City regulated woodlands and 4.3 acres (2.9%) of potential wetlands. Although a very urbanized area, most of the Walled Lake Branch stream corridor is in a natural state. The largest exception is the almost 500 foot long culvert that takes the stream under the Comau Pico building. Natural areas along the stream help reduce erosion, stabilize stream banks, cool the water, filter pollutants and provide habitat for aquatic and non-aquatic organisms. The Study Area does not contain any priority habitat areas (see attached Study Area Map).

According to research compiled for the Middle One Rouge River Management Plan (2001), the upper reaches of the Rouge River, including the Walled Lake Branch, are subject to nutrient loading and flow variability that reduces fish and macro invertebrate communities. High peak flows also increase stream bank erosion and increase sediment load in the stream. Most of the Study Area was developed before the City's newer Storm Water Management Ordinances were in place, thus throughout the Study Area storm sewers empty directly into the Walled Lake Branch without the benefit of a flow moderating device such as a detention pond.

The stated goals of the Middle One Rouge River Management Plan include reducing stream flow variability, studying and implementing stream protection best management practices, reducing nutrient loading, reducing soil erosion, protecting and mitigating the loss of natural features, increasing water quality, and increasing the recreational use of the streams in the watershed. In the early 1990s the City developed a River Walk Plan to link the former Expo Center with Main Street via the Walled Lake Branch stream corridor. Although this project was never built, this type of facility would provide the area with an amenity that could help people appreciate the stream corridor.

#### **Twelve Mile, Napier and Wixom Roads Study Area**

This 130 acre Study Area is located in Section 18 and totally within the Huron River Watershed. Most of the Study Area is former cleared agricultural fields. About 13 acres (10%) of field verified wetlands are located in the central portion of the Study Area. The wetlands ultimately drain north and west into tributaries of the Huron River. The Study Area also contains about 28 acres (21.8%) of City regulated woodlands that are located around the wetlands and along the borders of the Study Area. The Study Area includes 16 acres (12.7%) of priority habitat areas (see attached Study Area map).

Currently, the City is reviewing a development for 116 acres of the Study Area. This development proposes to fill about 5 acres of wetland and to provide 6 acres of wetland mitigation. An undetermined amount of wetland buffer is also proposed to be impacted by this development. The plan also proposes substantial woodland impacts that would require the planting of over 500 replacement trees. Some of the proposed wetland impacts are located on an adjacent parcel that is not in the Study Area.

#### **Southwest Quadrant Study Area**

At 2,703 acres, the Southwest Quadrant Study Area is the largest study area under review. This Study Area includes all of Sections 29, 30, 31 and 32 and a small portion of Sections 19, 20, 21 and 28. The Study Area predominantly drains into the Huron River with parcels and developments fronting on Beck Road, along Eight Mile Road between Garfield and Beck Road draining into the Rouge River and a small area at the northeast corner of Eight Mile and Napier Roads. With around 508 acres (18.8%) of wetlands and 1,009 acres (37.3%) of City regulated woodlands in the Study Area, this quadrant of the City contains the most undisturbed natural features in the City. Overlapping these areas is 766 acres (28.3%) of priority habitat area identified by Oakland County (see attached Study Area map). In addition, an additional 250 acres (1,121 acres 41.5% total) has been identified in Oakland County's Draft Greenways Plan as existing or potential preservation, conservation or open space areas. These areas include existing subdivision open space, utility corridors, the developed City owned Community Sports Park and potential connections (links) between the natural feature areas (see attached Study Area map).

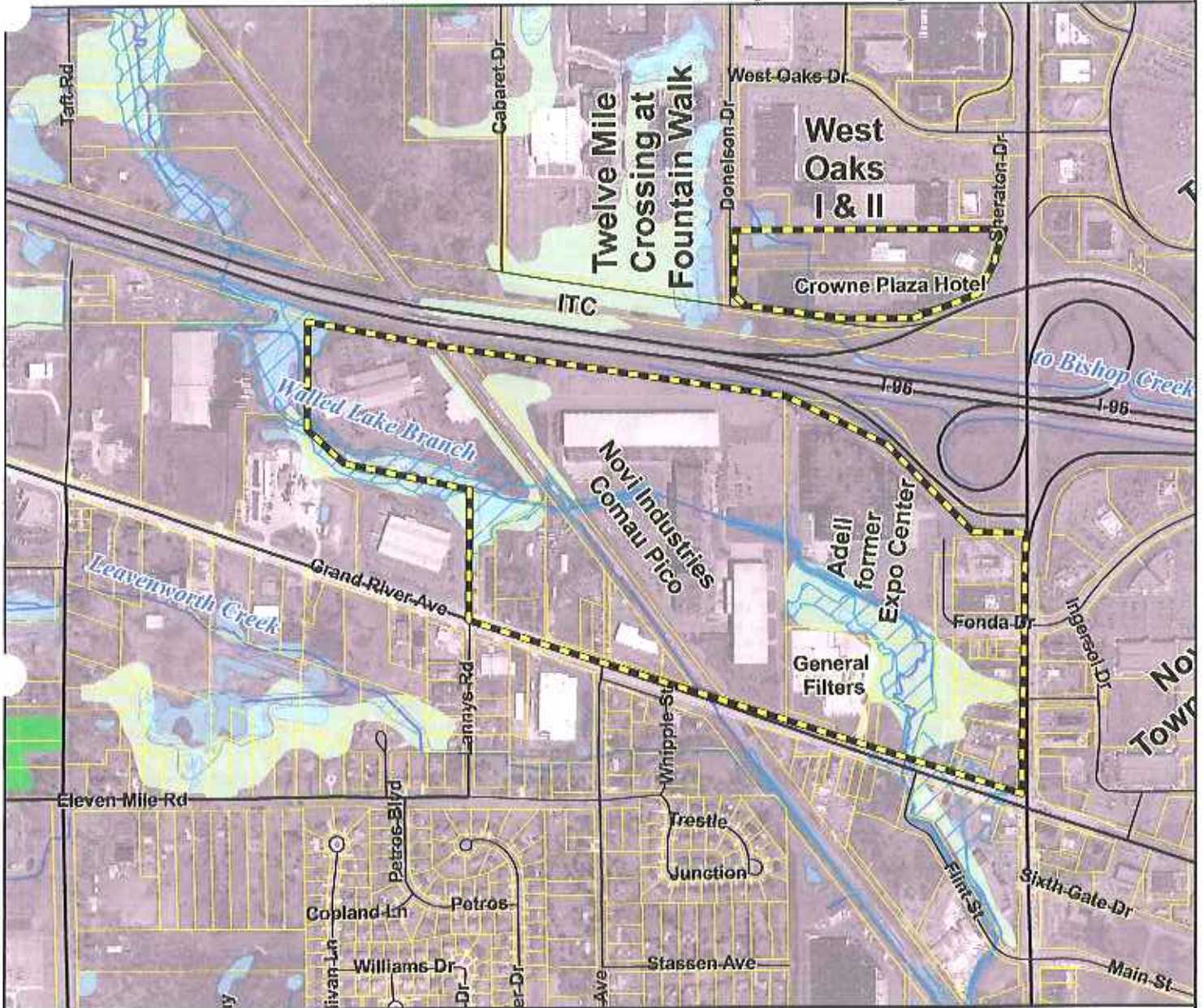
In the central portion of the Study Area are several large wetlands that are interconnected to tributary streams of the Huron River. This several hundred acre headwater area drains north into Island Lake and leaves the City via the Novi Lyon Drain. South and east of Nine Mile and Garfield Roads is a 106 acre site owned by the City that contains one of these wetlands, a mitigated wetland created when M-5 was built. An additional portion of this central wetland complex lies in two parcels containing 164 acres. A total of 270 acres (10.0%) of undeveloped and wetland mitigation land is owned by the City in the Study Area.

### **Conclusion**

Natural features are an important component in all master plans. Natural features provide aesthetic, economic, social and ecological benefits to a community. The interrelationship of natural features and the built environment should be considered when making long term planning decisions. As part of a master plan review, proposed changes to natural feature related master plan goals and objectives (if any) may be discussed and incorporated into the final review.

# I-96 & Novi Road Study Area

## Flood Zones, Wetlands, Woodlands and Natural Features Habbitat Priority Areas Map



### Legend

<p> Tax Parcels</p> <p> Waterways</p> <p> Waterbodies</p> <p> Wetlands</p>	<p> I-96/Novi Rd. Study Area</p> <p><b>Flood Zones</b></p> <p> Zone A</p> <p> Zone AE</p>	<p><b>Regulated Woodlands</b></p> <p>TYPE</p> <p> Light</p> <p> Medium</p> <p> Dense</p>	<p><b>Natural Features</b></p> <p>Priority Rank</p> <p> High</p> <p> Medium</p> <p> Low</p>
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**CITY OF NOVI PLAN REVIEW CENTER**

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/96novi nat features.mxd

**MAP INTERPRETATION NOTICE**  
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# Twelve Mile, Napier & Wixom Roads Study Area

## Flood Zones, Wetlands, Woodlands and Natural Features Habbitat Priority Areas Map



### Legend

Tax Parcels	Twelve, Napier & Wixom Roads Study Area	<b>Regulated Woodlands</b>	<b>Natural Features</b>
Waterways	<b>Flood Zones</b>	<b>TYPE</b>	<b>Priority Rank</b>
Waterbodies	Zone A	Light	High
Wetlands	Zone AE	Medium	Medium
		Dense	Low



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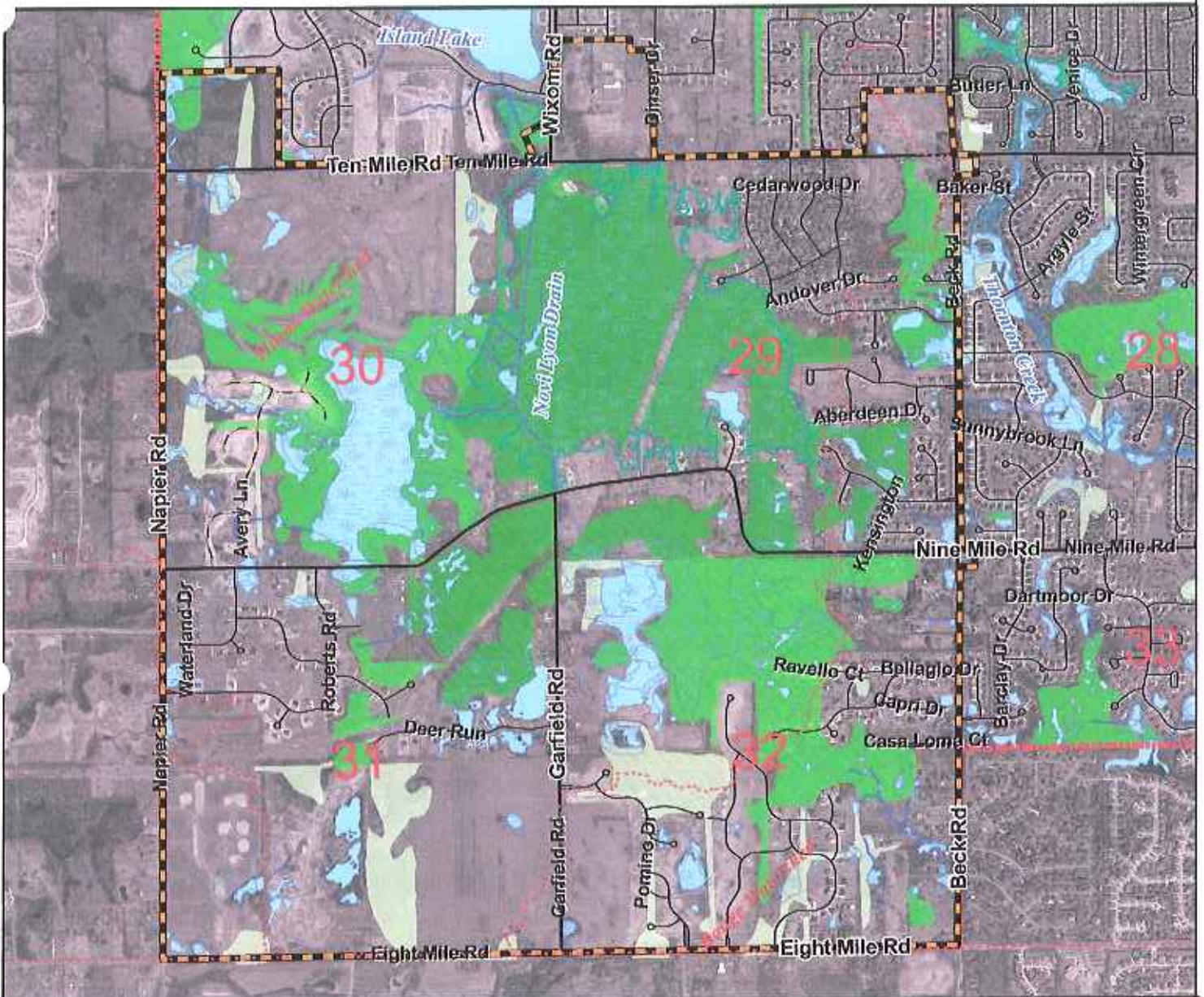


Twelve Napier nat features.mxd

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# Southwest Quadrant Study Area

## Flood Zones, Wetlands, Regulated Woodlands and Natural Feature Habbitat Area Map



### Legend

 Watershed Boundary	<b>Flood Zones</b>	<b>Regulated Woodlands</b>	<b>Natural Features</b>
 Southwest Quad Study Area	<b>100 yr. Zones</b>	<b>TYPE</b>	<b>Priority Rank</b>
 Wetlands	 Zone A	 Light	 High
 Waterbodies	 Zone AE	 Medium	 Medium
 Waterways		 Dense	 Low



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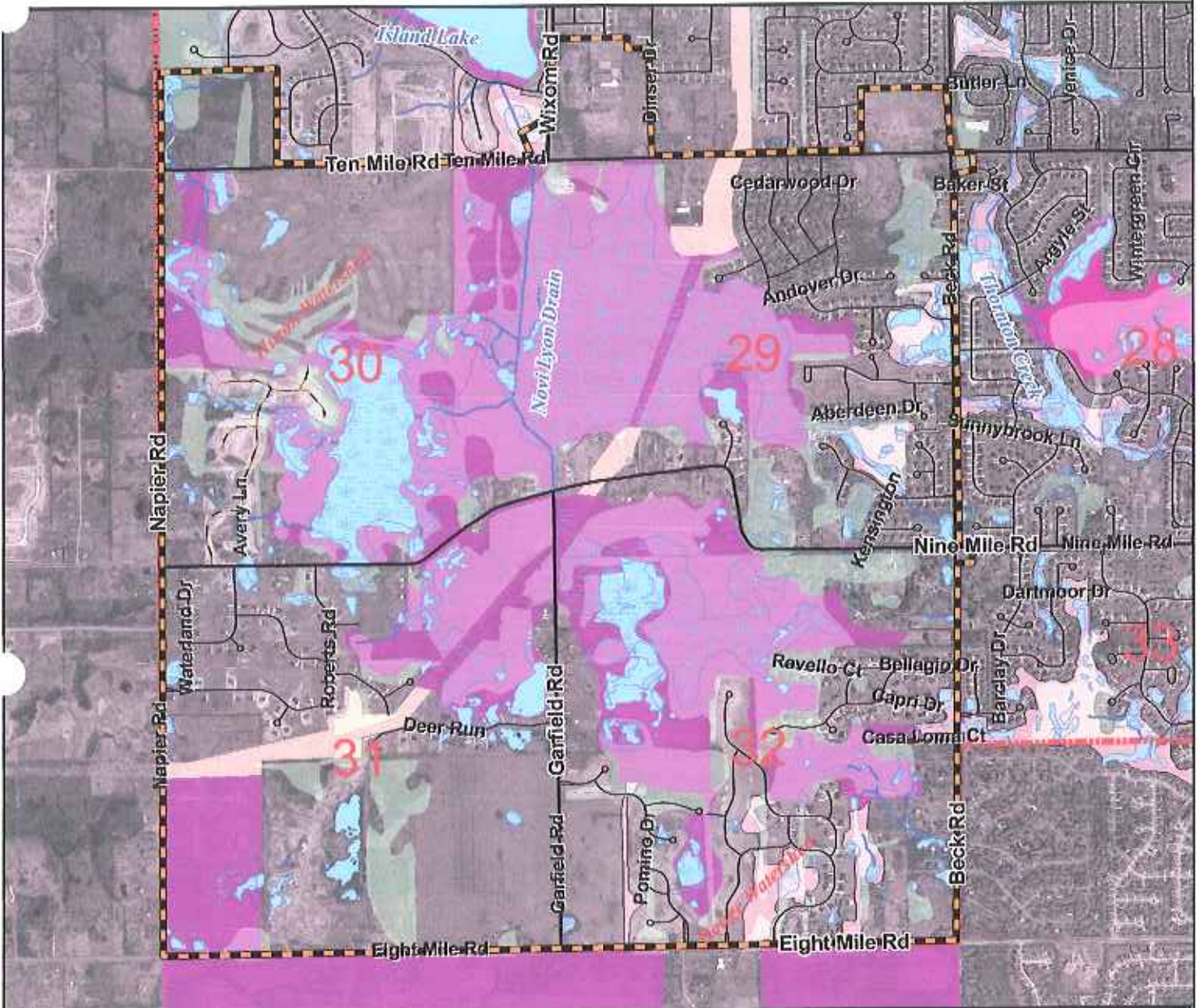


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# Southwest Quadrant Study Area

Flood Zones, Wetlands, Regulated Woodlands and Draft Oakland County Green Infrastructure Map



## Legend

- |  |   |   |   |
|--|---|---|---|
|  Southwest Quad Study Area |  Wetlands    |  Regulated Woodlands | <b>Green Infrastructure</b>   |
|  |  Waterbodies |   |  Hub   |
|  |  Waterways   |   |  Site  |
|  |   |   |  Link  |
|  |   |   |  Other |



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/swquadgreen.mxd

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