



WATERFORD OAKS BASELINE PARK ANALYSIS

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Park Location

Waterford Oaks County Park is a 199-acre park located in the center of Oakland County in Waterford Township¹.

Park Contact Information

1702 Scott Lake Road (Main Park Entrance)
2800 Watkins Lake Road (Activity Center and Administrative Complex)
2350 Pontiac Lake Road (Farmers Market)
248-858-0918 (Waterpark)
248-858-0916 (Activity Center)
248-858-5495 (Farmers Market)
www.oakgov.com/parks/

Township and Range

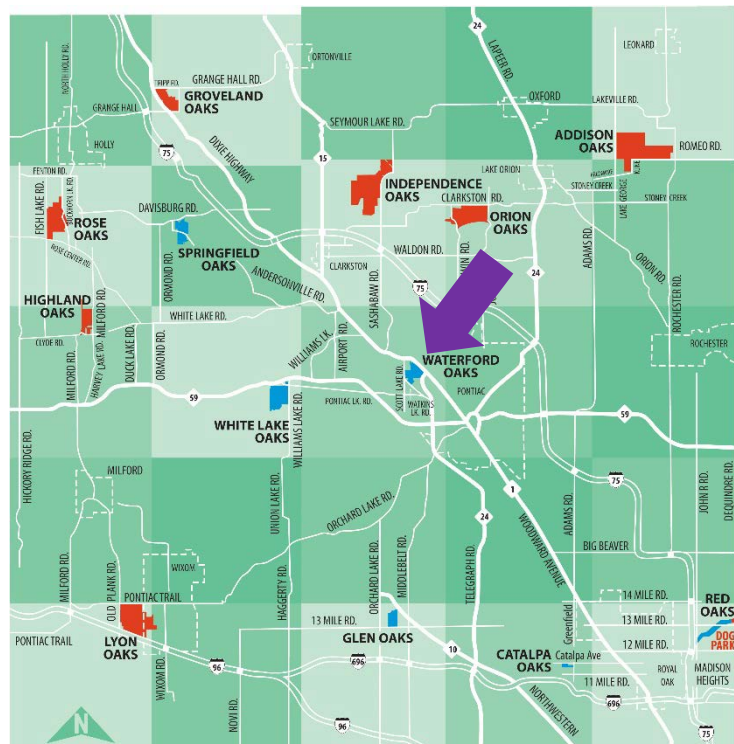
T3N R9E, Sections 13 (west ½ and southeast ¼) and 24 (northwest ¼)



Community Context

The characteristics of Waterford Oaks are unique and reflect the character of the local communities. It is important to understand the park within the context of its communities – Michigan, Oakland County, and Waterford Township – for multiple reasons:

- To convey a 'sense of place' that is harmonious and complementary to the local environment
- To ensure that Oakland County Parks is not duplicating services provided by local recreational authorities or by the private, non-profit, or larger regional/state providers
- To collaborate with units of governments and organizations related to the Oakland County Parks mission to manage open space and natural areas and provide recreational facilities and programs on an inter-community, county and/or multi-county basis



¹ See *Planning Map Set*, page 3 – Location Map

- To develop facilities and programs that contribute to the implementation of local and county plans
- To ensure compliance with local and county regulations

Oakland County

Oakland County is located in southeast Michigan, approximately 20 miles northwest of Detroit, and covers **907** square miles (SEMCOG, 2015). The estimated population in 2016 was **1,234,680** and the median household income was **\$69,354** (US Census Bureau, 12/2/2016). In 2010-2014, an estimated **10%** of households had income below the poverty level (ACS, 12/2/2016).

According to Advantage Oakland, Oakland County employs nearly 690,000 workers with more than 260,000 commuting from outside the county. The top three employment sectors are Professional and Business Services (26%), Trade, Transportation and Utilities (18%), and Private Education and Health Services (16%). The county is home to nearly 1,000 firms from 39 foreign countries (EDCA).

Within the county, there are 30 cities, 21 townships, and 11 incorporated villages, in urban, suburban, and rural landscapes. The county is home to the headwaters of five major rivers, the Clinton, Flint, Huron, Rouge, and Shiawassee Rivers, all of which are important to the long-term health of the Great Lakes Ecosystem. Many diverse ecosystems are located in the county due to the area's complex topography and geological history and are an important element in the character of the county (OCPRC, 2013).

Oakland County Parks and Recreation

Oakland County Parks and Recreation (OCPR) provides parks and recreation services within the geographic boundaries of Oakland County, but are also open to visitors to the county. Since 1966, OCPR has expanded and diversified the park system from four parks to thirteen, now totaling over 6,700 acres. Key attractions include managed natural areas, nature centers, waterparks, golf courses, conference centers, campgrounds, fairgrounds and over 65 miles of park trails. OCPR also offers a variety of entertaining and educational recreation programs and services for various ages and abilities (OCPRC, 2013).

Waterford Township

Waterford Oaks County Park is located in Waterford Township in the center of Oakland County. The township covers **35.3 square miles** (SEMCOG, 2015). The estimated population in 2016 was **72,232** and the median household income was **\$55,984** (US Census Bureau, 12/2/2016). In 2010-2014, an estimated **11.6%** of households had income below the poverty level (ACS, 12/2/2016).

Description from Township Website¹: Waterford Township is a great place to live, work and visit. Established in 1834, Waterford is centrally located in Oakland County. It's the fifth largest Township by population in Michigan. It is a "Lakeland Paradise" with 34 lakes and has much to offer residents, businesses and visitors alike.

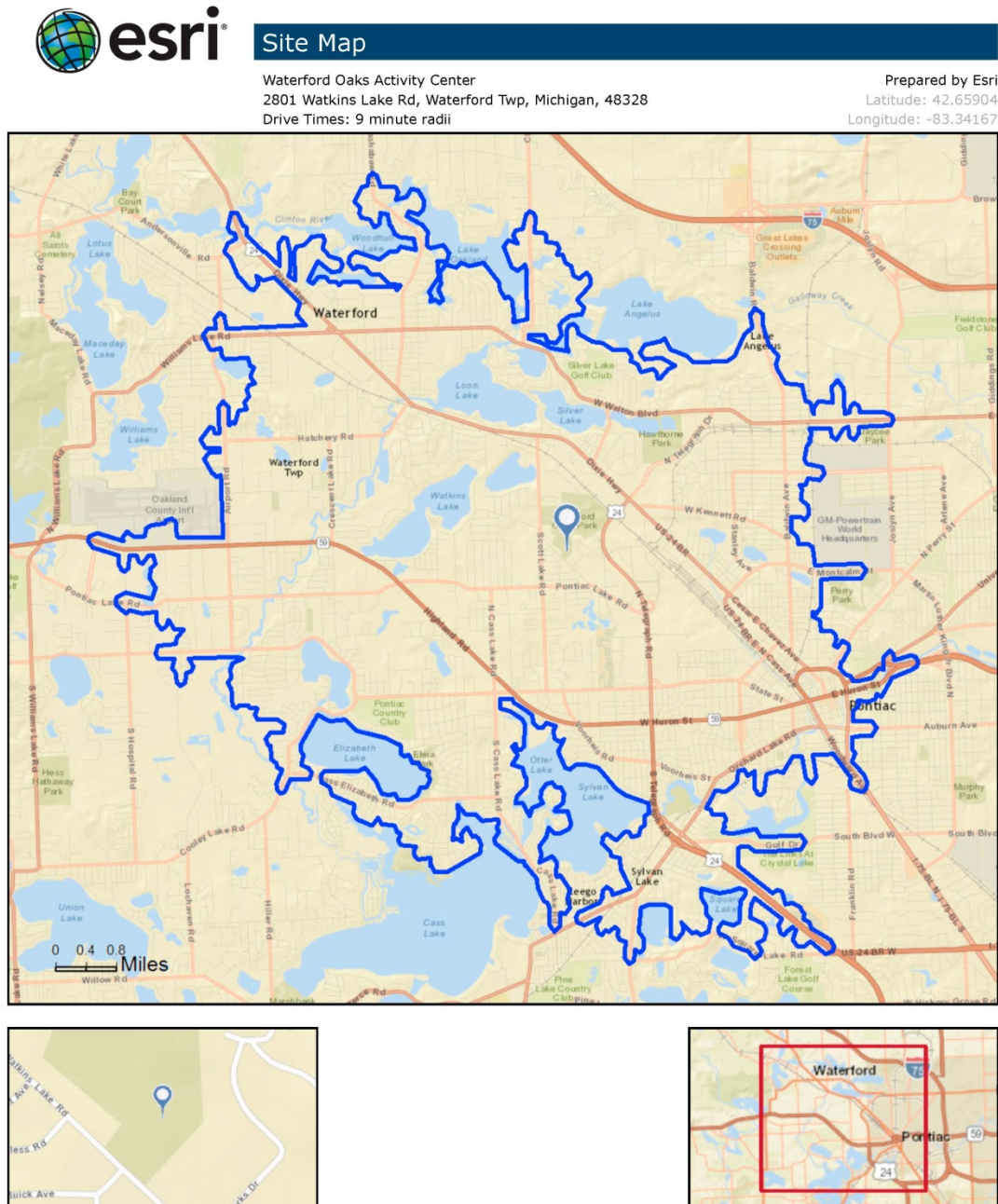
Drive-Time Service Area – Day Use

This purpose of this section is to outline the geographic area that draws the majority of visitors to a specific park or facility (drive-time service area) and describe the demographic and socio-economic characteristics of the people who live there.

¹ <http://waterfordmi.gov/462/Discover-Waterford>

The drive-time analysis is conducted using park visitor home zip codes that are collected at point-of-sale (OCPRC, 2015). The median drive-time – indicating that half of all visitors drive for a specific length of time or less – is used to approximate the service area for each park and facility. At this time, zip code data is not available for users of Waterford Oaks. For the purpose of this analysis, a 9-minute median drive-time was selected to align it with the drive-times of two other parks in urbanized areas – Red Oaks and Glen Oaks.

Figure A: Waterford Oaks Drive-Time Map



December 02, 2016

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Population and Income Trendsⁱ

Table 1: Population Trends - 9-minute drive-time of Waterford Oaks

Summary	Census 2010	2016	2020
Population	79,138	80,035	81,817
Households	31,695	32,232	33,079
Families	19,119	19,128	19,465
Average Household Size	2.42	2.40	2.40
Owner Occupied Housing Units	20,274	20,197	20,631
Renter Occupied Housing Units	11,421	12,035	12,447
Median Age	37.4	38.5	39.0
Trends: 2015 - 2020 Annual Rate	Area	State	National
Population	0.44%	0.23%	0.84%
Households	0.52%	0.28%	0.79%
Families	0.35%	0.16%	0.72%
Owner Households	0.43%	0.27%	0.73%
Median Household Income	2.63%	2.26%	1.89%

Figure B: Population by Age – 9-minute drive-time of Waterford Oaks

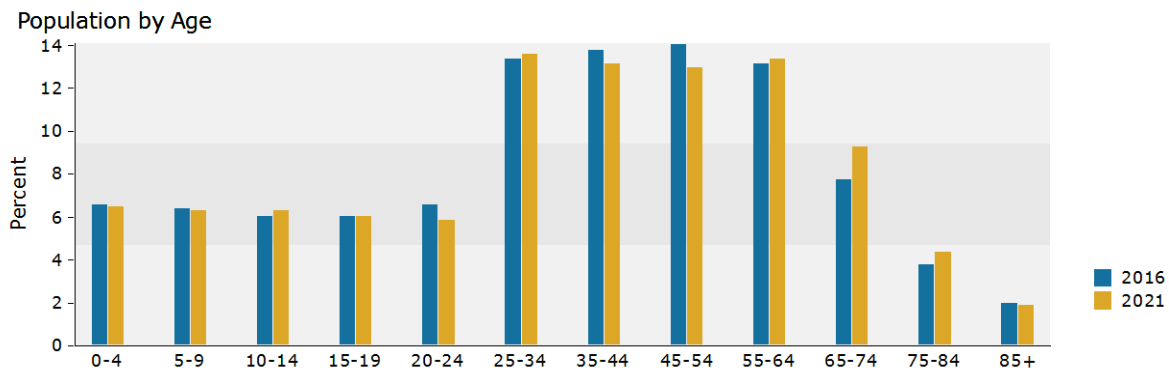


Table 2: Race and Ethnicity – 9-minute drive-time of Waterford Oaks

Race and Ethnicity	Census 2010		2015		2020	
	Number	Percent	Number	Percent	Number	Percent
White Alone	57,840	73.1%	56,301	70.3%	55,575	67.9%
Black Alone	13,684	17.3%	15,019	18.8%	16,539	20.2%
American Indian Alone	432	0.5%	443	0.6%	450	0.6%
Asian Alone	1,659	2.1%	2,041	2.6%	2,410	2.9%
Pacific Islander Alone	20	0.0%	30	0.0%	35	0.0%
Some Other Race Alone	2,887	3.6%	3,198	4.0%	3,475	4.2%
Two or More Races	2,615	3.3%	3,003	3.8%	3,333	4.1%
Hispanic Origin (Any Race)	8,932	11.3%	9,992	12.5%	11,080	13.5%

ⁱ Population and income profiles are generated for the drive-time service area using Esri ArcGIS Business Analyst Online. Demographic data is compiled by Esri from US Census Bureau data. Esri builds ArcGIS, which “connects people with maps, data, and apps through geographic information systems (GIS). It is a location platform that’s accessible to anyone, anywhere, anytime”. <http://www.esri.com/about-esri#what-we-do>

Market Potential Index – Recreation and Pet-Related Expenditures

ESRI's Market Potential Index (MPI) measures the relative likelihood of the adults or households in the specified trade area to exhibit certain consumer behavior or purchasing patterns compared to the U.S. An MPI of 100 represents the U.S. average.

Table 3: Market Potential – 9-minute drive-time of Waterford Oaks

Product / Consumer Behavior	Percent of Population	MPI
Walking for Exercise in past 12 months	25.1%	94
Households owning 1 dog	24.8%	101
Households owning 2 or more dogs	15.7%	96
Fishing (Fresh Water) in past 12 months	12.7%	103
Overnight Camping Trip in past 12 months	11.4%	96
Jogging/Running in past 12 months	10.9%	82
Bicycling (Road) in past 12 months	8.7%	87
Golf in past 12 months	8.6%	95
Hiking in past 12 months	7.9%	80
Canoeing Kayaking in past 12 months	5.5%	98
Horseback Riding in past 12 months	2.0%	82

Tapestry Segmentationⁱ

Tapestry Segmentation classifies neighborhoods into 67 unique segments based not only on demographics but also socioeconomic characteristics. It describes US neighborhoods in easy-to-visualize terms to help understand residents' lifestyle choices, what they buy, and how they spend their free time and help identify best customers, optimal sites, and underserved markets.

The Esri Dominant Tapestry Map shows the tapestry segments within and surrounding the drive-time radius and provides a list of the Tapestry segments with hyperlinks to detailed descriptions. See *Planning Map Set*, pages 21-22 – Esri Dominant Tapestry Map.

The top five Tapestry segments within the drive-time radius are shown below. Each segment name is hyper-linked to the detailed Esri profile. After the name, we show the percentage of households that are included in each segment – within the drive-time radius and nationally. The Tapestry segment summary from the Esri profile is included with each entry.

[Rustbelt Traditions \(5D\)](#)

Describes 21.8% of households within the drive-time radius; 2.2% of households in the U.S.

The backbone of older industrial cities in states surrounding the Great Lakes, Rustbelt Traditions residents are a mix of married-couple families and singles living in older developments of single-family homes. While varied, the work force is primarily white collar, with a higher concentration of skilled workers in manufacturing, retail trade, and health care. Rustbelt Traditions represents a large market of stable, hard-working consumers with modest incomes but above average net worth (Index 111). Family oriented, they value time spent at home. Most have lived, worked, and played in the same area for years.

[Hardscrabble Road \(8G\)](#)

ⁱ <http://www.esri.com/data/tapestry>; See Planning Map Set, page 23 – Dominant Tapestry Map (Waterford Activity Center)

Describes 11.1% of households within the drive-time radius; 1.2% of households in the U.S.

Hardscrabble Road neighborhoods are in urbanized areas within central cities, with older housing, located chiefly in the Midwest and South. This slightly smaller market is primarily a family market, married couples (with and without children) and single parents. Younger, highly diverse (with higher proportions of black, multiracial, and Hispanic populations), and less educated, they work mainly in service, manufacturing, and retail trade industries. Unemployment is high (almost twice the US rate), and median household income is half the US median. Almost 1 in 3 households have income below the poverty level. Approximately 60% of householders are renters, living primarily in single-family homes, with a higher proportion of dwellings in 2–4 unit buildings. This market is struggling to get by.

[Comfortable Empty Nesters \(5A\)](#)

Describes 10.6% of households within the drive-time radius; 2.5% of households in the U.S.

Residents in this large, growing segment are older, with more than half of all householders aged 55 or older; many still live in the suburbs where they grew up. Most are professionals working in government, health care, or manufacturing. These Baby Boomers are earning a comfortable living and benefitting from years of prudent investing and saving. Their net worth is well above average (Index 363). Many are enjoying the transition from child rearing to retirement. They value their health and financial well-being.

[Traditional Living \(12B\)](#)

Describes 8.8% of households within the drive-time radius; 2.0% of households in the U.S.

Residents in this segment live primarily in low-density, settled neighborhoods in the Midwest. The households are a mix of married-couple families and singles. Many families encompass two generations who have lived and worked in the community; their children are likely to follow suit. The manufacturing, retail trade, and health care sectors are the primary sources of employment for these residents. This is a younger market—beginning householders who are juggling the responsibilities of living on their own or a new marriage, while retaining their youthful interests in style and fun.

[Set to Impress \(11D\)](#)

Describes 7.0% of households within the drive-time radius; 1.4% of households in the U.S.

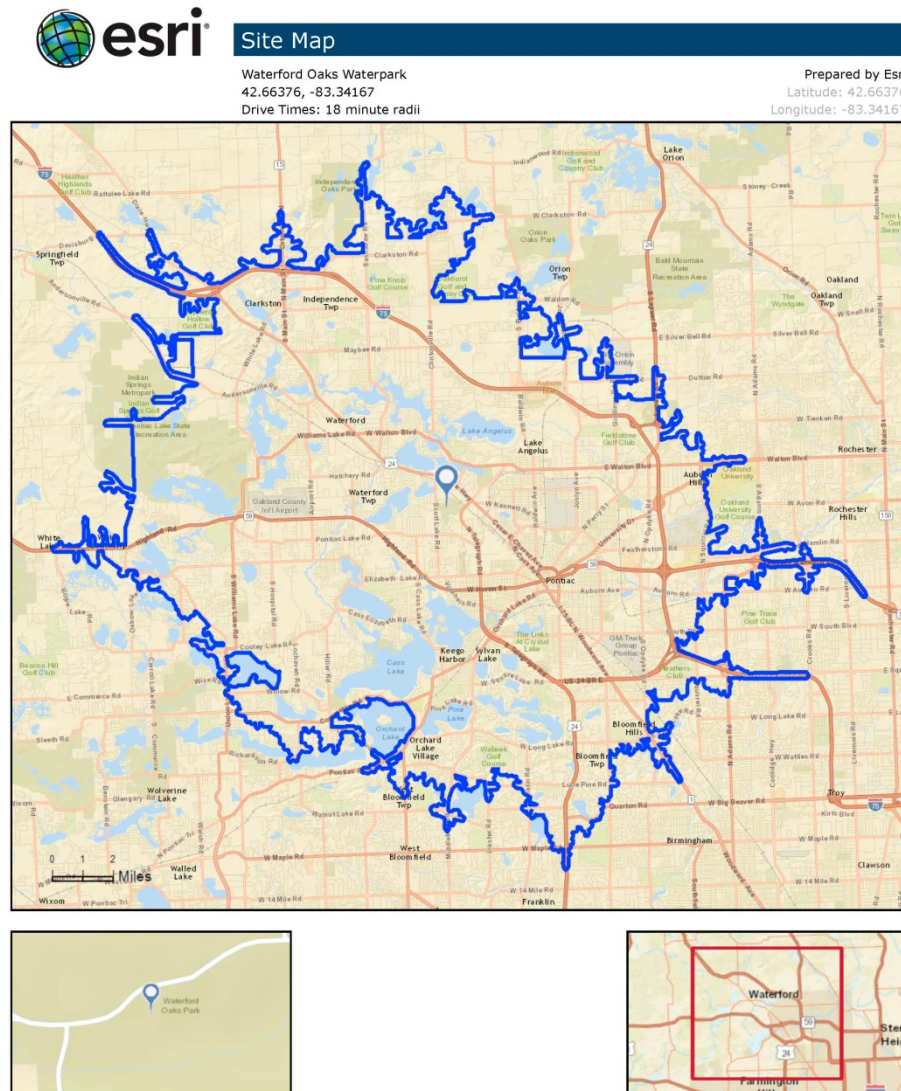
Set to Impress is depicted by medium to large multiunit apartments with lower than average rents. These apartments are often nestled into neighborhoods with other businesses or single-family housing. Nearly one in three residents is 20 to 34 years old, and over half of the homes are nonfamily households. Although many residents live alone, they preserve close connections with their family. Income levels are low; many work in food service while they are attending college. This group is always looking for a deal. They are very conscious of their image and seek to bolster their status with the latest fashion. Set to Impress residents are tapped into popular music and the local music scene.

Drive-Time Service Area – Waterpark

This purpose of this section is to outline the geographic area that draws the majority of visitors to a specific park or facility (drive-time service area) and describe the demographic and socio-economic characteristics of the people who live there.

The drive-time analysis is conducted using park visitor home zip codes that are collected at point-of-sale (OCPRC, 2015). The median drive-time – indicating that half of all visitors drive for a specific length of time or less – is used to approximate the service area for each park and facility. The median drive time for visitors to the Waterford Oaks Waterpark was 18 minutes.

Figure C: Waterpark Drive-Time Map



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Population and Income Trendsⁱ

Table 4: Population Trends - 18-minute drive-time of Waterford Oaks

Summary	Census 2010	2016	2020
Population	241,970	245,580	251,701
Households	95,599	97,470	100,176
Families	62,595	63,055	64,412
Average Household Size	2.49	2.48	2.47
Owner Occupied Housing Units	66,596	67,016	68,739
Renter Occupied Housing Units	29,003	30,453	31,437
Median Age	38.7	39.9	40.7
Trends: 2015 - 2020 Annual Rate	Area	State	National
Population	0.49%	0.23%	0.84%
Households	0.55%	0.28%	0.79%
Families	0.43%	0.16%	0.72%
Owner HHs	0.51%	0.27%	0.73%
Median Household Income	2.56%	2.26%	1.89%

Figure D: Population by Age – 18-minute drive-time of Waterford Oaks

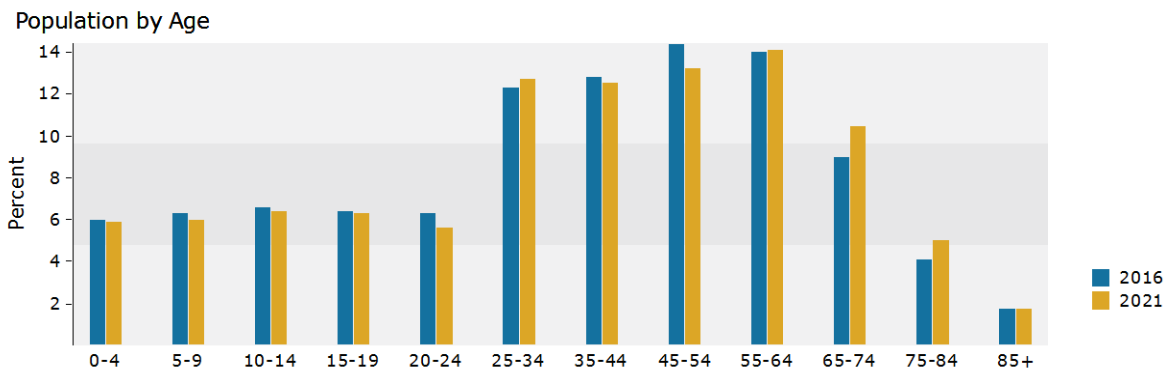


Table 5: Race and Ethnicity – 18-minute drive-time of Waterford Oaks

Race and Ethnicity	Census 2010		2015		2020	
	Number	Percent	Number	Percent	Number	Percent
White Alone	177,466	73.3%	174,022	70.9%	172,601	68.6%
Black Alone	42,061	17.4%	45,255	18.4%	49,160	19.5%
American Indian Alone	945	0.4%	972	0.4%	993	0.4%
Asian Alone	8,324	3.4%	10,368	4.2%	12,415	4.9%
Pacific Islander Alone	50	0.0%	68	0.0%	78	0.0%
Some Other Race Alone	6,268	2.6%	6,993	2.8%	7,632	3.0%
Two or More Races	6,857	2.8%	7,904	3.2%	8,822	3.5%
Hispanic Origin (Any Race)	19,127	7.9%	21,527	8.8%	24,021	9.5%

ⁱ Population and income profiles are generated for the drive-time service area using Esri ArcGIS Business Analyst Online. Demographic data is compiled by Esri from US Census Bureau data. Esri builds ArcGIS, which “connects people with maps, data, and apps through geographic information systems (GIS). It is a location platform that’s accessible to anyone, anywhere, anytime”. <http://www.esri.com/about-esri#what-we-do>

Market Potential Index – Recreation and Pet-Related Expenditures

ESRI's Market Potential Index (MPI) measures the relative likelihood of the adults or households in the specified trade area to exhibit certain consumer behavior or purchasing patterns compared to the U.S. An MPI of 100 represents the U.S. average.

Table 6: Market Potential – 18-minute drive-time of Waterford Oaks

Product / Consumer Behavior	Percent of Population	MPI
Walking for Exercise in past 12 months	27.8%	104
Households owning 1 dog	25.2%	103
Households owning 2 or more dogs	15.6%	96
Jogging/Running in past 12 months	12.8%	97
Fishing (Fresh Water) in past 12 months	12.3%	100
Overnight Camping Trip in past 12 months	11.9%	100
Bicycling (Road) in past 12 months	10.1%	102
Golf in past 12 months	9.9%	108
Hiking in past 12 months	9.8%	99
Canoeing Kayaking in past 12 months	6.0%	108
Horseback Riding in past 12 months	2.3%	92

Tapestry Segmentationⁱ

Tapestry Segmentation classifies neighborhoods into 67 unique segments based not only on demographics but also socioeconomic characteristics. It describes US neighborhoods in easy-to-visualize terms to help understand residents' lifestyle choices, what they buy, and how they spend their free time and help identify best customers, optimal sites, and underserved markets.

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The top five Tapestry segments within the drive-time radius are shown below. Each segment name is hyper-linked to the detailed Esri profile. After the name, we show the percentage of households that are included in each segment – within the drive-time radius and nationally. The Tapestry segment summary from the Esri profile is included with each entry.

Rustbelt Traditions (5D)

Describes 12.7% of households within the drive-time radius; 2.2% of households in the U.S.

The backbone of older industrial cities in states surrounding the Great Lakes, Rustbelt Traditions residents are a mix of married-couple families and singles living in older developments of single-family homes. While varied, the work force is primarily white collar, with a higher concentration of skilled workers in manufacturing, retail trade, and health care. Rustbelt Traditions represents a large market of stable, hard-working consumers with modest incomes but above average net worth (Index 111). Family oriented, they value time spent at home. Most have lived, worked, and played in the same area for years.

ⁱ <http://www.esri.com/data/tapestry>; See Planning Map Set, page 23 – Dominant Tapestry Map (Waterford Waterpark)

[Comfortable Empty Nesters \(5A\)](#)

Describes 7.6% of households within the drive-time radius; 2.5% of households in the U.S.

Residents in this large, growing segment are older, with more than half of all householders aged 55 or older; many still live in the suburbs where they grew up. Most are professionals working in government, health care, or manufacturing. These Baby Boomers are earning a comfortable living and benefitting from years of prudent investing and saving. Their net worth is well above average (Index 363). Many are enjoying the transition from child rearing to retirement. They value their health and financial well-being.

[Green Acres \(6A\)](#)

Describes 5.8% of households within the drive-time radius; 3.2% of households in the U.S.

The Green Acres lifestyle features country living and self-reliance. They are avid do-it-yourselfers, maintaining and remodeling their homes, with all the necessary power tools to accomplish the jobs. Gardening, especially growing vegetables, is also a priority, again with the right tools, tillers, tractors, and riding mowers. Outdoor living also features a variety of sports: hunting and fishing, motorcycling, hiking and camping, and even golf. Self-described conservatives, residents of Green Acres remain pessimistic about the near future yet are heavily invested in it.

[Hardscrabble Road \(8G\)](#)

Describes 5.4% of households within the drive-time radius; 1.2% of households in the U.S.

Hardscrabble Road neighborhoods are in urbanized areas within central cities, with older housing, located chiefly in the Midwest and South. This slightly smaller market is primarily a family market, married couples (with and without children) and single parents. Younger, highly diverse (with higher proportions of black, multiracial, and Hispanic populations), and less educated, they work mainly in service, manufacturing, and retail trade industries. Unemployment is high (almost twice the US rate), and median household income is half the US median. Almost 1 in 3 households have income below the poverty level. Approximately 60% of householders are renters, living primarily in single-family homes, with a higher proportion of dwellings in 2–4 unit buildings. This market is struggling to get by.

[Exurbanites \(1E\)](#)

Describes 4.9% of households within the drive-time radius; 1.9% of households in the U.S.

Ten years later, Exurbanites residents are now approaching retirement but showing few signs of slowing down. They are active in their communities, generous in their donations, and seasoned travelers. They take advantage of their proximity to large metropolitan centers to support the arts, but prefer a more expansive home style in less crowded neighborhoods. They have cultivated a lifestyle that is both affluent and urbane.

Site Analysis

Parcel Analysis

Waterford Oaks County Park consists of two parcels. The Oakland County Farmers Market is considered part of Waterford Oaks and is located on a separate parcel owned by Oakland County – the portion managed by OCPD equals 14 acres.

Table 7: Parcels comprising Waterford Oaks

Parcel ID	Acres	Deed/ Lease/ Easement / Agreement	Liber and Page
13-13-300-201	182.98	See Table 8 for deleted parcels	
2012- Consolidated from 17 previous parcels (see Table 8)		1967- Quit Claim Deed- Consumers Power Co. to OC-- 10' Easement	4995/532
13-24-426-001 (Oakland County Farmers Market)	(36 total- 14 acres managed by OCPD)	2003- Warranty Deed (OC Board of Comm. to OC Building Authority)	2791/071
		2003- Quit Claim Deed (Oakland Schools to OC)	29764/670
		2012- Covenant Deed (OC to OC Building Authority)	44759/567
		Lease agreement	

Table 8: Deleted parcels within consolidated parcel #13-13-300-201

Parcel ID	Acres	Deed/ Lease/ Easement / Agreement	Liber and Page
13-13-152-008	22.25	2008- Pontiac Elks Temple Assoc. Deed	40771/188
(from -004, -006, - 002)	6.14	2008-Toliver Quit Claim Deed	40764/450
	16.11	2008-Tolliver Warranty Deed	40771/186
13-13-300-006	5.82	1972-Wright Deed	06009/049
13-13-300-007			See table 9 below
13-13-300-010	87.06	OSA-80 6 parcels-- 87.06 acres <ul style="list-style-type: none"> 1968- Fields, Guzzo, Lavire OSA-80 (46) 1973-Fields, Guzzo, Lavire OSA-80 (46) 1968-Wright Deed OSA-80 (6.54/6.23) 1968-Leonard (Kelly) Deed OSA-80 (10/9.8) 1968-Leonard (Kelly) Deed OSA-80 (1.58) 	<ul style="list-style-type: none"> 5144/22 6063/259 hard copy 5162/279 05262/026
13-13-300-195	5.20	2009-Ernst Deed	41367/813
13-13-300-196	8.9	1975-Ernst Deed	06518/722
(from -009)		1988-Detroit Edison Co R-O-W (underground)	10403/589
13-13-451-001	29	No deed found in records search	
		1988-Pontiac Creek Extension Drain R-O-W	10354/453
		1988-Consumers Power Co 3' Easement	10999/175
13-24-126-003		OSA-80—19.5 acres	See table 9 below

Parcel ID	Acres	Deed/ Lease/ Easement / Agreement	Liber and Page
		1988-Detroit Edison Co R-O-W (underground)	10403/589
13-24-126-004	0.65	1990-Meredith Deed	11606/868
13-24-126-006	3.95	1969-Shuler (Schweigart)- 2 parcels	05304/564
	0.5	1971-Schweigart (assuming PIN)	See table 9 below
		1988-Detroit Edison Co R-O-W (underground)	10403/589
13-24-126-009	36.3	No deed found in records search	
		1992-Waterford Township Easement-water main	12499/158
13-24-126-012	0.82	2008-Kidwell Deed	40380/736
13-24-126-013 (from -005)	2.14	1975-Warren Deed	06511/820
		1988-Detroit Edison Co R-O-W (underground)	10403/589
13-24-126-014 (also from -005, see -013 above)	0.86	1990-Warren Deed	11324/261
13-24-126-015 (from -007) 2.14 total	0.48	1984-Swanson Warranty Deed	08758/836
		1984-Swanson Quit Claim Deed	08758/839
13-24-126-016 (also from -007, see -015 above)	0.69	1984- Fry Deed	08671/877
13-24-126-018 (from -001 and - 011)	2.32	2009- E. Michigan District of Wesleyan Church	40941/141
13-24-126-019 (from-008,-009)	36.3	1973-18.3 acres OC to Children's Village (assuming PIN)	See table 9 below

Table 9: Unconfirmed parcel ids and deeds potentially related to deleted parcels within consolidated parcel #13-13-300-201

Parcel ID	Acres	Deed/ Lease/ Easement / Agreement	Liber and Page
13-13-300-007	3.23	1974-Leonard (Kelley) Deed 13-18-308-007	6266/683
13-13-300-010	21.66	1968- Magid Deed OSA-80	05141/403
	24.08	1968- James QC Deed (corrects 5167/338) OSA-80	05188/465
13-13-451-001	29	No deed found in records search	
13-24-126-003	19.5	1968-Evangelical Missionary Church Deed	05206/170
13-24-126-006	0.5	1971-Schweigart	05304/564
13-24-126-012	1.182	1975-Kidwell Deed	
13-24-126-019 (from-008,-009)	36.3	1973-18.3 acres OC to Children's Village	

Physical Characteristics

Geologyⁱ

The property lies within the Washtenaw Subsection Ecoregion¹ and the Jackson Interlobate Sub-subsection². This area is found between three glacial lobes and is characterized by ice-contact topography³ and glacial deposits⁴ (Albert D. , 1995). The park consists of rolling glacial topography with ground moraines and outwash plains.

Soilsⁱⁱ

Fourteen soil types are found on the property, ranging from very poorly-drained mucky soils in the wetlands and ponds, to well-drained loamy soils in the uplands.

Topographyⁱⁱⁱ

Elevation varies by 45 feet from approximately 945 feet to 990 feet above sea level. The ground surface within much of the park slopes toward the Pontiac Creek Drain. The eastern portion of the park, which contains part of the trail system and Lookout Lodge, contains a few areas of dramatic topography, with a few valleys and scenic overlooks. The northern portion of the park, accessible by Alliance Drive, is mostly flat. A steep berm for the adjoining railroad is present along the park's northeastern boundary.

The rolling topography of portions of the park offers opportunities to promote many of the 'adrenaline' sports, such as mountain biking, cross-country skiing, sledding, trail running and zip-lines. Unfortunately, the topography can create a barrier to accessibility and dealing with the challenges of slope can increase construction costs. Also, the orientation of slope can have a significant effect on the design and engineering needed to construct park improvements.

Hydrography^{iv}

Waterford Oaks lies within the Clinton River Watershed and the Clinton Main Subwatershed. The main branch of the Clinton River is located approximately 1.5 miles to the west at Waterford Township's Drayton Plains Nature Center. The Pontiac Creek originates at the park, where it has been converted into a County Drain, known as the Pontiac Creek Extension or Mainland Drain. The drain runs easterly through the middle of the park. It is channelized underneath Telegraph Road, and terminates at the County Service Center pond located north of the railroad and east of Telegraph Road. Wetlands surround Pontiac Creek due to a high water table most of the year.

There are four ponds in the park-- one pond north of the Activity Center, one south of the greenhouses, one in the BMX track, and one north of the volleyball courts. Additional newly created ponds and swales around the Administrative complex have been constructed for storm water treatment and collection.

Presettlement Plan Communities^v

The pre-settlement habitat (circa 1816-1856) was Black Oak Barren in the north half, Mixed Conifer Swamp through the middle and Mixed Oak Savanna in the south half (Comer & Albert, 1997).

ⁱ See *Planning Map Set*, page 4 – Surface Geology

ⁱⁱ See *Planning Map Set*, page 5 – Soils

ⁱⁱⁱ See *Planning Map Set*, page 6 – Ten Foot Contours

^{iv} See *Planning Map Set*, page 7 – Hydrography

^v See *Planning Map Set*, page 8 – Presettlement Vegetation

Regional Context

Potential Natural Areasⁱ

A portion of the wetland complex has been designated by the Michigan Natural Features Inventory (MNFI)⁵ as a Priority 3 (lowest status) Natural Area.

Watershedⁱⁱ

Waterford Oaks lies within the Clinton River Watershed and the Clinton Main Subwatershed.

Green Infrastructureⁱⁱⁱ

A majority of the park is included within the Oakland County Green Infrastructure Vision (OCPEDS, 2009) .

Land Use^{iv}

Zoning

The park is zoned as Public Lands, PL. Note that nursery establishments on zoning lots five contiguous acres or larger are permitted with special approval.

Current Land Use

Current land use is focused on recreation. See Parcel Analysis section for information about easements and rights-of-way to which the property may be subject.

Surrounding Land Use

An active rail line, operated by Canadian National Railroad, forms the northeast boundary of the park with vacant and industrial land and Dixie Highway beyond. Telegraph Road and the Oakland County Juvenile Corrections Center (Children's Village)⁶ form the eastern boundary. The Oakland County Public Works Building is located to the south of the park. The western boundary of the park is formed by various roadways and properties: Watkins Lake Road (with single-family residences on the opposite side); Waterford Oaks Community Church; Scott Lake Road (with single-family residences on the opposite side); Colonial Village residential apartment complex; single-family homes; a car wash; a self-storage business; Elk's Lodge; and Alliance Drive. Industrial businesses are located north of the park, along Alliance Drive.

Zoning districts within Waterford Township that adjoin Waterford Oaks include Neighborhood Business (C-1), High Tech Office (HT-1), High Tech Industrial and Office (HT -2), Light Industrial (M-1), General Industrial (M-2), General Office (O-2), Public Lands (PL), Single-Family Residential (R1-A, B, and C), and Multi-Family Residential (R-M2).

Past Land Use^v

Prior to phased development of Waterford Oaks, much of the land was in agricultural use or consisted of woods, wetlands and vacant land. A number of single family homes were located along the west boundary of the park, on Scott Lake and Watkins Lake Roads. Three of those homes are still standing and owned by OCPR, which includes the former Ernst family residence at 1580 Scott Lake Road (by the greenhouses). This home was originally constructed in 1870, and its affiliated barn was constructed in 1880. There are currently two other single-family residences owned and leased by OCPR, located along Watkins Lake Road.

ⁱ See *Planning Map Set*, page 9 – MNFI Potential Natural Area

ⁱⁱ See *Planning Map Set*, page 10 – Oakland County Subwatersheds

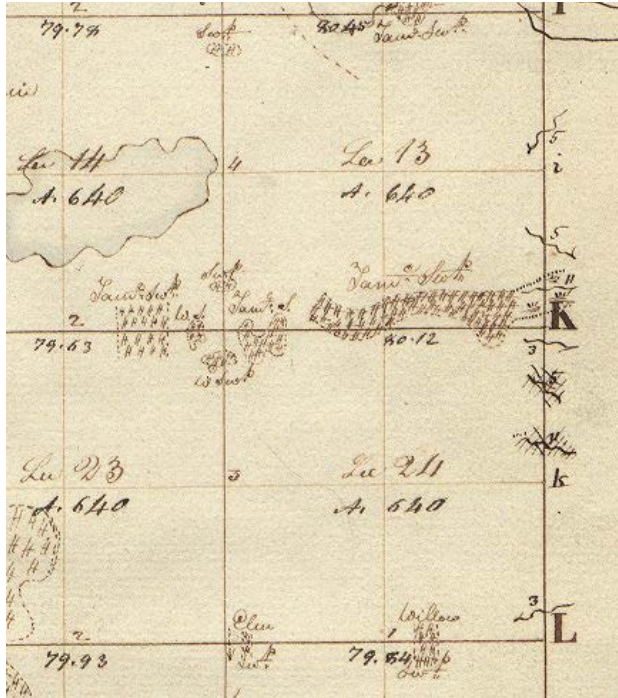
ⁱⁱⁱ See *Planning Map Set*, page 11 – Green Infrastructure

^{iv} See *Planning Map Set*, page 12 – 2015 Land Use

^v See *Planning Map Set*, pages 13-20 for views of the park from 1940 through 2015

Park History

Early History



The central portion of Waterford Oaks occupies much of the southwest quarter of Section 13 with smaller areas occupying the northwest and southeast quarters. Another portion lies in the northwest quarter of Section 24.

The General Land Office (GLO)⁷ survey for Sections 13 and 24 of Township 3 North, Range 9 East in Michigan Territory was filed at the Surveyors General Office in Ohio on February 20, 1819. The land on the section line between Sections 13 and 24 is described in the surveyor's notes as "barren timber oak" and "part tamarack swamp".

Figure E: 1823 Survey of Waterford Township, Sections 13 and 24 (BLM)

According to the *Native Americans of Oakland County Heritage Poster* (OCPEDS, 2009) from Oakland County Planning and Economic Development Services (OCPEDS), many well-traveled historic Native American

trails have literally "paved the way" for today's major roadways. The famous "Saginaw Trail" within Oakland County is now Woodward Avenue and portions of Dixie Highway. Also, the map indicates that portions of the Saginaw Trail were located along Watkins Lake Road and Scott Lake Road, which adjoin Waterford Oaks to the west. A portion of the original trail still exists in Waterford Township as a residential street, referred to as Saginaw Trail (located just northwest of the park, beyond Scott Lake).

Land Patents and Plat Mapsⁱ - Southwest Quarter of Section 13

Joseph Stevenson entered a land patent for the entire southwest quarter of Section 13 on December 1, 1831, where the central area of Waterford Oaks is now located.

A survey of plat maps shows southwest quarter of Section 13 split into two parcels. In 1872 and 1896, 130 acres are owned by D.T. Kellogg and 30 acres by R. Vaughn, then Fred Vaughn. In 1908, the 130 acres is identified as Lake View Dairy Farm owned by James Nye. In 1925, the Nye parcel is reduced to 61 acres, with 66 acres owned by A.E. McClintock. A 3-acre narrow parcel fronting on Scott Lake Road appears to have been split off also. F. Vaughn owned the 30-acre parcel on both the 1908 and 1925 plat maps. In 1947 much of the land is divided into smaller parcels – John Ernst owned a 34.4-acre parcel (part of the former McClintock parcel); Stephen Ernst a 15-acre parcel (part of the former Vaughn parcel); and it appears that the Nye family retained a 6-acre parcel.

ⁱ See Figure F – Historic Plat Maps

The 15 acres owned by the Ernst family were primarily used as a family farm in the 1940s and 50s. Several greenhouses were constructed as part of their horticulture business between the mid-1960s and 2000.

Photos from left: Ernst Greenhouses (date unknown); Ernst Greenhouse in production (2003)



Land Patents and Plat Maps – Northwest Quarter of Section 13

Ephraim S. Williams filed a land patent for both the northeast and northwest quarters of Section 13 (320 acres) on October 1, 1829 – a portion of Waterford Oaks now occupies the northwest quarter.

The 1872 plat map shows this small portion of the future Waterford Oaks owned by A. W. Leroy. In 1896 and thereafter, this triangle of land with the railroad as the northern boundary is under the same ownership as the land directly south (see previous section).

Land Patents and Plat Maps – Southeast Quarter of Section 13

Three parties – William E. Bent, Joseph Kilburn, and Judah Church – filed a land patent for the southeast quarter on July 3, 1832.

A small portion of the current park was part of a 40-acre parcel owned by J. Ashman in 1872, 1896, and 1908. Ashman also is identified as the owner of the 63-acre parcel to the south. In the 1925 and 1947 plats both parcels are identified as having been added to the Pontiac State Hospital propertyⁱ.

ⁱ The majority of the Pontiac State Hospital was located southeast of the park property between the Grand Trunk railroad and Elizabeth Lake Road. According to the Asylum Project website, the facility was established as the Eastern Michigan Asylum in 1878 to relieve overcrowding at the Michigan Asylum in Kalamazoo. It was renamed Pontiac State Hospital in 1911; in 1973 it was renamed the Clinton Valley Center. The facility closed in 1997 and was demolished in 2000.

http://www.asylumprojects.org/index.php?title=Pontiac_State_Hospital#History

Land Patents and Plat Maps – Northeast Quarter of Section 24

In Section 24, Chesley Blake filed a land patent for the northwest quarter on April 2, 1823.

Transected diagonally by Pontiac Lake Road, this quarter section is identified in the 1872, 1896 and 1908 plats as owned by M.D. Osmun (155 acres). In 1925 the owners are identified as M.A. & M.E. Haines. In 1947, the area north of Pontiac Lake Road is identified as owned by Samuel Patterson Exc (northern half 79.20 acres).

At the time of the acquisition in 1968, the property in Section 24 included the Evangelical Missionary Church and Tabernacle Complex (19.5 acres) run by Reverend A. J. Baughey. The complex included the tabernacle building, dining hall, 20-unit motel, caretaker's house, guest house, concession shed, and the home of Reverend Baughey. Three of the Tabernacle buildings are still in use within the Administrative Complex.

Photos clockwise from upper left: Entrance to Tabernacle Complex (current Administrative Complex); Reverend Baughey's home (currently Oakland County Sheriff's Office); Tabernacle building (current Activity Center); Dining Hall (current Facilities Building)



Park History

Between the years 1967 and 1975, Oakland County Parks and Recreation acquired 157.768 acres of land for Waterford Oaks County Park, with the exception of selling 8.3 acres of parkland to Oakland County in 1973 for the construction of Children's Village. Additional small parcels were acquired in 1984, 1990, 2008, and 2009, bringing the total park acreage to 184.46 acres. The addition of the Oakland County Farmers Market in 2012 added 14 acres of area managed by OCPR and a total park acreage of 199 acres.

Development of Facilities:

- 1976: Waterpark with wave-action pool opened; the second or third of its kind in the U.S.
- 1978: Court Games Complex (current Paradise Peninsula area) and BMX Track opened
- 1982: The Slidewinder, a giant double water slide added to Waterpark
- 1988: Current Waterford Oaks Administration Building finished and occupied
- 1994: Opening of "The Fridge" refrigerated toboggan run – the first of its kind in the State – 1,000 foot dual flumes drop riders from a 55 foot tower and continue over dips and straight-aways; Includes a 4,000 square foot warming shelter (Lookout Lodge) with observation decks, concessions area and fireplace
- 1994: BMX track hosted the World Championship BMX races;

- 1996: capacity doubled at Waterpark with opening of Group Raft Ride, Big Bucket, and children's water playground
- 1998: Two lighted natural ice skating rinks (no longer in use) and a kiddie sledding hill added near Rabbit Run Lane
- 2002-2005: Waterpark renovations
- 2009: The Fridge closes, due to extensive repairs needed. Storm water improvement project begins at Administrative Complex
- 2010: Greenhouses open with community gardens and horticultural programs; Paradise Peninsula Playground opens; Improved sledding hill opened
- 2011: First prescribed burn to manage natural areas and enhance ecological diversity; establishment of community gardening programs at greenhouses
- 2012: Removal of Slidewinder from Waterpark due to need for extensive repairs
- 2013: Programming at greenhouses discontinued due to low participation

Photos clockwise from left: "Slidewinder" under construction (1982); "Fridge" under construction (1993); "Ragin' Rapids" under construction (1996)



History references include: (OCPRC, 7/22/2012), (Barbara Stafford, 2004)

Park Master Plans

Prior to this park plan, four planning documents have been adopted for Waterford Oaks. These include: *Waterford Oaks Park Development Plan* (Swanson Associates, Inc., 7/28/1972); *Waterford Oaks Master Development Plan, with a Natural Resources Inventory* (Swanson Associates, Inc., December 1972); *Master Plan Renovation* (Scott, James C. and Associates, Inc., February 1997); and the *Waterford Oaks Park Vision and Facility Concepts* (OCPRC, 7/11/2012). The *Waterford Oaks Master Plan* (Russell Design, 2015) was created as part of a competition for a design master plan to implement the vision and concepts in the 2012 plan.

1972: Waterford Oaks Park Development Plan

Two documents were produced for OCPRC by Swanson Associates in 1972 to guide the development of Waterford Oaks and the 120 acres that comprised the park at that time. The purpose of the *Park Development Plan* (Swanson Associates, July 1972) was to assist OCPRC to “determine the community recreational and leisure time activities programs” to be provided in the relatively new park. This Plan was followed by the more comprehensive *Master Development Plan* (Swanson Associates, Inc., 7/28/1972) which provided a detailed site analysis and plans for land use and capital improvements.

The *Park Development Plan* recommended several development policies for the park:

- Provide programs that fill unmet need in the urban community and provide programs to the entire county
- Balance programs to meet the needs of individual citizens and organized special activities interest groups
- Facilities and programs shall consider the needs and make provisions for –“the mentally and physically handicapped, the economically and socially deprived, and the senior citizen.”
- Integrate the physical design into the adopted master plan of the County Service Center and consider the need for additional land acquisition
- Group park activities into “functional areas” separated by natural and landscaped buffers
- Separate park activities from surrounding neighborhoods with landscaped buffers
- Preserve approximately 40% of the park as natural area – including picnic areas and natural buffers
- Implement construction in phases while maintaining continuity of park activities and uses
- Design parking lots as an accessory use to activities areas and distribute among the areas according to need – with multiple use whenever possible
- Offset operating and maintenance expense of the park with a balance of revenue and nonrevenue producing programs

Facility concepts with approximate acreages were provided in the *Master Development Plan* (Swanson Associates, December 1972). Several of the proposed projects were developed and are the precursors of our current facilities. Other recommendations, such as a pool building indicated in the design sketch in Figure B were not implemented.

Table 9: Implementation status of 1972 Master Plan concepts

IMPLEMENTED	NOT IMPLEMENTED
Trails: Connection of all areas with walks and trails; minimized contact with roadways	Trails: Part of trail system set aside for bicycles
Natural Areas: Natural areas at the end of trail system with access restricted to walkways and trails	Natural Areas: Special areas for environmental education
Picnic Areas: Preservation of natural resources; easy access to activities areas	Leisure Lawn and Garden: “Areas of quiet relaxation should be provided with consideration of senior citizens.”
Play Center: Play lots for preschool children and playgrounds for elementary school children in selected functional areas; “innovative and imaginative designs which break with tradition should be developed”	Sports Field: Lighted facilities for softball and junior baseball (4.0 acres), baseball (1.0 acre), volleyball, touch football and miscellaneous turf areas for gymnastics, badminton, horse shoes, and outdoor education
Administration Building: Central office facilities for OCPR	Indoor Ice-Skating Facilities: Seating for 2,000 spectators
Indoor Activities Center: Multipurpose facility (Activity Center)	Hard Surface Areas: Lighted facilities for tennis, shuffleboard, paddle tennis, basketball and handball
	Day Camp Center: Outdoor center for nature-related experiences
	Indoor Swimming Pool: 50 meter pool

1997: Waterford Oaks Master Plan Renovation

The size of Waterford Oaks had grown to 152 acres by 1992. Many of the planned uses from the 1972 documents had not been developed and other uses had arisen that were not anticipated in the earlier master plan. The *Waterford Oaks Master Plan Renovation* (James C. Scott & Associates, February 1997) compiled the “changing needs, opportunities and constraints facing the park” at that time. Conceptual preliminary design plans were prepared that identified modifications from the 1972 master plan and proposed new recommendations.

The 1997 master plan labeled two parcels as potential acquisitions. These include a north parcel of approximately 14.5 acres that had potential for expansion of winter activities areas. The other “south parcel” of 12.6 acres included a church, a residence and various farmstead structures.

Figure F: 1997 Master Plan Renovation Concept by James C. Scott & Associates

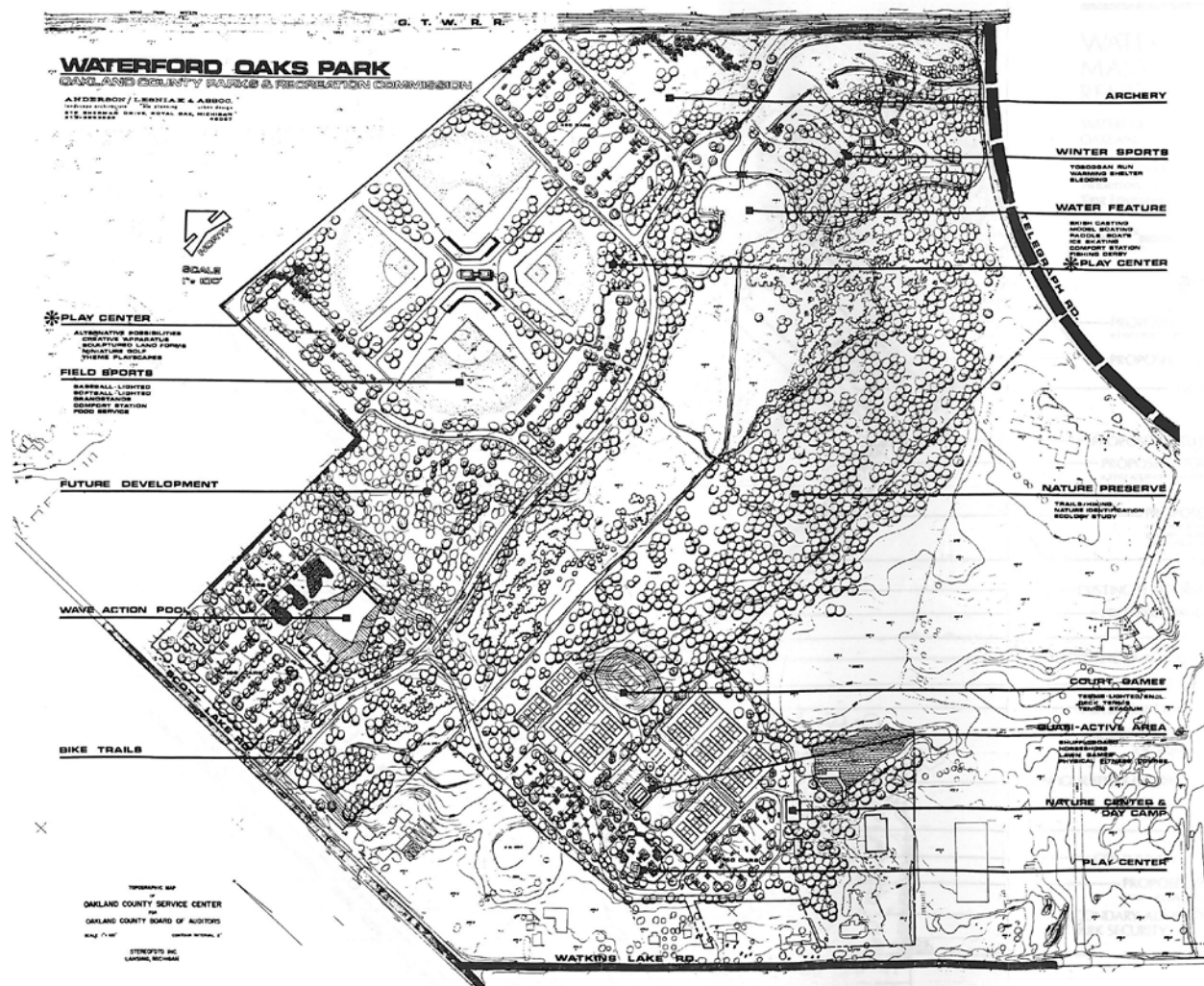


Table 10: Implementation status of 1997 Master Plan concepts

IMPLEMENTED	NOT IMPLEMENTED
<p>Trails: Two (trail) loop systems with the first loop covering ½ mile and associated with wetland fringes, using elevated foot bridges as needed; second (trail) loop system continuing northeast and link to pathways north of the toboggan run; pedestrian linkage with control gate to allow access from administration areas to park.</p> <p>Paved Paths: Paved pedestrian walkways linking aquatic activities center with court sport complex (now Paradise Peninsula) and toboggan run area</p> <p>Sand Volleyball Courts: Allocation of additional sand volleyball courts in aquatic activities area</p> <p>BMX: Periodic analysis of the participation level and cost-effectiveness of facility</p> <p>Sledding Hill: More extensive sledding hill with a southwest to northeast orientation</p> <p>Shuffleboard Courts: Removal of all but two shuffleboard courts, due to low usage. All shuffle board courts have been removed.</p>	<p>Pond A: Proposed location southeast of toboggan run and concession building; creation by opening up selected wetlands; purpose to create a focal point for observation from toboggan concession deck and improved vegetative diversity and wildlife habitat.</p> <p>Pond B: Proposed location adjacent to existing east west paved road (Waterford Oaks Boulevard) and across from the waterslide (The Slidewinder); purpose to create a scenic vista from the road and create ecological benefits.</p> <p>BMX: Utilization for expansion or renovations of aquatic activity complex if becomes obsolete.</p> <p>Sledding Hill: Provide for adult recreation and a safe “kiddie hill”; warming shelter with restrooms would service both Sledding Hill and Ice Skating areas; Toboggan run concession would service these areas.</p> <p>Ice Skating / Picnic Area: Two seasonal ice rinks west of the existing toboggan complex parking lot to be used during warm seasons for picnicking and open field games; separation of rinks would serve to separate open recreational skating from ice hockey. Ice rinks were completed in 1998 but discontinued a few years later.</p> <p>“Fridge”: Expansion of storage building at base of run by adding two modules; replace chain link fence with trellis to screen chiller units.</p> <p>Existing Park Building: Expansion and upgrade of existing restroom facilities and a future additional module</p> <p>Service Facility and Yard: Reconfiguration of service building and yard; additional vegetative screening between service building and yard and the park.</p>

2012 Park Vision and Facility Concepts

The 2012 Park Vision and Facility Concepts was developed in-house at OCPD and adopted by the Parks Commission on July 11, 2012. The 2012 park vision built on the unique character of Waterford Oaks to develop a four-season destination that comprises distinct and complementary facilities and encourages active and healthy lifestyles.

“Enhanced connectivity between the various facilities will encourage visitors to experience a variety of recreation within one visit. At Waterford Oaks, quality recreational experiences are waiting for everyone whether you spend an hour or spend the day.”

Table 11: Implementation Status of 2012 Park Vision and Facility Concepts

CONCEPT	STATUS
<p>Roadways and Parking: Creation of a central parking lot to support multiple facilities operating in alternate seasons. Installation of a contact station and a requirement for daily or annual motor vehicle permits for vehicle entry were envisioned to occur with the opening of a new dog park.</p>	<p>Roadways and Parking: The central parking lot is still considered a key concept and was emphasized in the Design Competition described in the next section. Design and implementation of this concept is dependent on key decisions being made regarding other facilities – specifically the Waterpark and BMX. Funding continues to be a major limitation in moving this concept forward.</p>
<p>Park Trails and Non-Motorized Access: An enhanced trail network to increase connectivity between facilities would promote the ‘whole park’ experience and make the park more accessible to pedestrians, public transportation users, and non-motorized vehicle users, with enjoyment of the natural areas also enhanced.</p>	<p>Park Trails and Non-Motorized Access: The trail system has not been expanded. However, a damaged boardwalk has been replaced and re-routing of a trail section to improve accessibility is underway.</p>
<p>Natural Areas: Natural beauty has always been an important part of the character of Waterford Oaks. Park staff and volunteers would continue to manage the natural resources using science-based techniques. Increased nature interpretation and partnership with schools was envisioned. The best practices for management of stormwater that are already in place would be showcased to demonstrate how public agencies can contribute to water quality and the preservation of natural resources.</p>	<p>Natural Areas: Natural resource management has continued, with an expansion of the area managed.</p>
<p>Waterpark: The Waterpark concept envisioned the replacement of aging infrastructure and incorporating these changes into a new and exciting theme that welcomes visitors to enjoy a full-day, whole-park experience. The visitor experience would be enhanced by greater availability of convenience items and improvements in food service, restroom facilities, and picnic facilities.</p>	<p>Waterpark: The Sidewinder was removed in 2012 for safety reasons. Replacement with a new water feature has been delayed due to funding limitations. Admission fees to the Waterpark were reduced after the Sidewinder was removed.</p>
<p>Bicycle Motocross (BMX) Complex: The BMX concept was built on the local pride of the facility and called for better integration with other facilities. The concept acknowledged that the layout or continued operation of the BMX Complex facility would be impacted by the design of the proposed central parking lot.</p>	<p>Bicycle Motocross (BMX) Complex: No changes</p>

CONCEPT	STATUS
Parkview and Rabbit Run: Improvements to these picnic and sports areas were proposed to better support four-season use of the park and provide a base for visitors to enjoy multiple other park facilities.	Parkview and Rabbit Run: No changes
Lookout Lodge Complex: “The Fridge” refrigerated toboggan run has been closed due to maintenance issues since 2009. The concept considered a variety of enhancements, including repair of the toboggan run, improvements to the sledding hill, nighttime recreation, rental of sports equipment, and improved food service – all intended to create a signature winter-time destination.	Lookout Lodge Complex: No changes
Alliance Drive Acquisition: Part of this recent land acquisition was envisioned to become a new dog park with dogs-only water features and both off-leash and on-leash elements. The recreational experience would be enhanced by the availability of dog run rentals for events, food concessions, and sale of merchandise and convenience items. Part of the area could potentially also be used to locate structures or uses displaced by creation of the proposed central parking lot.	Alliance Drive Acquisition: No changes
Paradise Peninsula: The facility vision for Paradise Peninsula built on the aesthetics and accessibility of the existing Paradise Peninsula Playscape by expanding both barrier-free and conventional elements of the playscape. The vision included the creation of a proposed “Celebration Grounds” and its promotion for weddings, corporate picnics, and family and school gatherings. The Paradise Peninsula facility concept would support the sustainability of the entire park by drawing visitors to the barrier-free playscape and social gathering spaces.	Paradise Peninsula: No changes
Greenhouse Complex: The Greenhouse Complex facility concept expanded the availability of community gardens and builds support for community initiatives that promote healthy eating and local food.	Greenhouse Complex: Community gardens and greenhouse programs were discontinued because there was not enough participation to make it viable. Parks has been looking for a private grower to lease the facility.
Administrative Complex: The facility concept for the Administrative Complex envisioned an environment where staff is creative and productive and a positive environment for developing partnerships, funding opportunities and community relations.	Administrative Complex: No changes
Oakland County Market: This plan was developed contemporaneously with the transfer of the Market’s management to OCPR. The facility concept envisioned integration of the County Market into Waterford Oaks and the creation of a destination where families and friends can gather to support local producers and access healthy food.	Oakland County Market: Continued expansion of programs and services at the Market. Access to underserved communities expanded.

2015 Design Competition

The Oakland County Parks and Recreation Commission hosted a compensated design competition in 2014-15. The purpose of the Waterford Oaks Design Competition was to gather the expertise of multiple designers into the development of a master plan and business plan for Waterford Oaks County Park that built on the Park Vision and Facility Concepts approved by the Parks Commission in 2012. The advantage of a compensated design competition was that it drew input from a greater number and more diverse array of talent than one would get from a single design contract – for a similar or smaller financial investment. The competition followed Oakland County Purchasing Department procedures and was facilitated by an Evaluation Committee that consisted of staff members from Parks and Purchasing and a representative from the Parks Commission.

From an initial pool of six responses to the request for qualifications, the Evaluation Committee selected the three top design teams – LAP (Lansing), OHM (Livonia), and Russell Design (Northville) to participate in the competition. The three teams developed preliminary master plans and business plans using information supplied by staff and following guidelines established in the request for qualifications and criteria established by the Evaluation Committee.

Following Purchasing Department scoring procedures, the Evaluation Committee selected Russell Design as the winning team, followed by LAP and OHM. The Evaluation Committee acknowledged that all of the presentations and materials had areas that were especially appealing to team members and other areas where they met the minimum evaluation criteria. Russell Design thoroughly addressed many important issues – i.e. circulation, parking, universal design, diversity, stormwater BMPs, and public engagement – and had the best overall plan into which the strengths of the other two teams could be incorporated.

Per the request for qualifications, the winning firm was expected to develop a final plan that adapts to the OCPRC budget allocation for Waterford Oaks capital improvements and will incorporate selected design and business planning elements from all three preliminary master plans. Citing budgetary issues, however, the Parks Commission opted not to enter into a contract with Russell Design for the final plan in 2016. The winning plan by Russell Design and elements of the plans developed by LAP and OHM are rich sources of inspiration and information as staff develops the 10-year park plan for Waterford Oaks.

2016: Waterford Oaks Preliminary Master Plan – Russell Design

The following design concepts are adapted from the design concepts in the 2015 preliminary master plan developed by Russell Design. The original design concepts were “derived from the goals and objectives of Oakland County Parks, the previous Waterford Oaks master plans and the Park Vision and Facility Concepts study. Our design is not driven by trends, but by sound design principles that are rooted in history, timeless by its virtue, fiscally responsible and are sensitive to the existing natural systems” (Russell Design, 2015).

Accessibility

- Strengthen and enhance universal accessibility throughout the park promoting inclusivity for all people
- Provide opportunities for individuals and groups of all abilities to immerse themselves in the park amenities
- Improve trail network connecting all areas and features of the park
- Provide uninterrupted non-motorized connectivity between the park and adjacent residential communities, Oakland County Farmers Market, and Oakland County government facilities
- Include multi-sensory options as part of wayfinding and signage
- Explore the potential to provide mobility devices

Environmental Management and Sustainability

- Preserve and protect existing natural systems with sensitive design solutions
- Incorporate low impact design and best management practices into all aspects of the plan
- Explore use of alternative energy sources and green architecture
- Establish vegetative buffers for wildlife habitat and to reduce maintenance
- Restore and protect wildlife habitat

Recreation and Program Diversity

- Offer the park as an outdoor classroom for schools and other groups to provide classes, workshops, and for citizen scientists
- Understand and share the cultural and physical history of the property and its role in the settlement of Waterford
- Offer program diversity focused on natural systems, horticulture, and food systems
- Design to promote multiple recreational opportunities through diverse programming and increased utilization of existing and proposed facilities and features
- Design elements into the park that promote four seasons of recreation and programmatic opportunities
- Design elements into the park that encourage visitors stay longer

Financial Sustainability

- Design features into the park that provide opportunities for additional revenue
- Incorporate a contact station to collect day use and annual vehicle fees
- Utilize marketing opportunities to promote day use and special events within the park
- Develop strategies to meet cost recovery targets for services provided in the park

Figure G: Russell Design preliminary master plan for Waterford Oaks



Key and Notes to Russell Design Plan

1. New Boulevard Entry and Exit to Park

- Traffic signal modification will require RCOC approval
- Add acceleration and deceleration lanes on Scott Lake Road per RCOC requirements
- Parkway bioswale
- New contact station for day use fee collection
- Pull off at park map provides wayfinding and upcoming event programming
- Safety path adjacent to Scott Lake and Watkins Lake Road encourage non-motorized transportation routes to the park and connection to the adjacent residential communities and the County Market
- Accessible pedestrian and bicycle entry points with park map to provide wayfinding information

2. Ernst House and Barn

- Existing residence and barn to remain
- Ernst Home is remodeled into an on-site information office and offers historic and interpretive display
- New 27 car parking lot and an additional 17 new parking spaces east of the pond
- Existing barn restored to offer meeting space, classrooms and workshops. Interpretive display offers protective view of construction methods
- Outdoor classroom
- Nine greenhouses remain for educational classes or outside vendor opportunity
- Consider partnership with agriculture extension to run production greenhouses or botanical garden
- Expanded and dredged pond provides aquaponics education, fishing, fish feeding and fly fishing
- Possible radio control boating opportunity on pond

3. Large and Small Dog Park

- Accessible controlled entry to keep dogs separated
- Covered shelter
- Pet turf walk off area with yard hydrant
- Accessible perimeter walk and 26 car parking log

5. New Round-A-Bout with Water Feature and Directional Signage

6. Existing Park Entry

- Redesigned to provide park entry for staff, delivery and emergency access only
- Modifications may require RCOC approval
- Park visitor exit
- Directional signage to direct visitors

7. Water Park

- Modify existing parking lot to provide 60 car staff parking lot
- Two new mechanical and storage buildings to serve water park expansion
- New accessible themed lazy River with perimeter and interior picnic area
- New accessible Zero Entry Family Activity Pool with spray toys
- Add family restrooms to existing bathhouse
- Existing concessions remain
- Existing bridge to new accessible observation deck is improved with decorative screen to hide mechanical area

8. New Water Park Entry

- New 583 car parking lot with permeable parking bays
- Captured water directed to bioswales and filtering system
- Controlled exit at north to facilitate festival traffic
- New vehicular drop off celebrated with lush plantings and playful water features
- New bathhouse with restrooms, lockers and concessions
- Enhanced pedestrian linkage to amphitheater from water park

9. Amphitheater

- Multi-use area accommodates organized events and informal gatherings
- Dedicated drop off area could support food trucks and vendors during events
- Tensile structure with storage and restrooms
- Accessible perimeter walk and viewing nodes
- Large open lawn area to accommodate spectator seating and informal uses
- Outdoor classroom and workshops
- Performances (plays, concerts, etc.)
- Possible graduation and wedding ceremonies

10. Day Camp and Corporate Retreat Area

- Access from Alliance Drive
- New ledge, restrooms and storage, and interpretive display, office and flexible meeting space
- Programmed outdoor educational activities and workshops
- Camping and council rings
- Large open lawn area
- Natives plantings or arboretum

11. Sand Volleyball Courts with Accessible Perimeter Walkway and Viewing Nodes

- New 13 car parking lot

12. Climbing Center

- Designed with accessible components
- Bouldering and Climbing Wall
- High and Low Ropes course

13. Lookout Lodge

- Entry road has been re-routed to the north and to existing 120 car parking lot
- Current programming opportunities remain and are enhanced
- Skate rental (winter and summer)
- Accessible surface designed to accommodate summer uses
- Portable tent structure could provide opportunities for public and private events
- Sledding hill with portable terrain park and “magic carpet” to provide accessibility to top

14. Sky Trail

- Accessible aerial connection of the north and south sides of the park
- Multi-sensory interpretive and wayfinding components
- Two loading areas (north and south of wetlands)
- Access to observation area at former toboggan entry deck
- Consider partnership with ski facilities for operation and equipment

15. Existing Unpaved Trails

- Accessibility improved with provided mobility devices
- Connect to park trail network throughout park
- Multi-sensory interpretive and wayfinding signage
- Signage indicating trail type and difficulty
- Trail provides connection to existing and proposed park features

16. Inter-Connected Paved Path System

- Improves connectivity throughout park and to park features
- Design to accommodate maintenance and emergency access
- Accessible fitness course
- Distance markings
- Multi-sensory interpretive and wayfinding signage
- Signage indicating trail type and difficulty

17. Park Security and first Aid Station

- Former residence becomes park office
- 8 car parking lot
- Access from Watkins lake Road

19. Existing Residence to Remain

- Possible acquisition for future programmed uses

20. Alliance Drive Entry

- Controlled bus and vehicular traffic to day camp area
- Exit only during events

21. Administration Campus

- Administration building
- Sheriff house
- Activity center
- Park operation/technical support

22. Existing Wetlands

- Improved accessibility provided by expanded paved path system
- New boardwalk leads to screened observation deck
- Multi-sensory interpretive and wayfinding signage

23. Alternative Site Entry

- Rental home removed to accommodate new entry
- Add acceleration and deceleration lanes on Watkins Lake Road per RCOC requirements
- New contact station for day use fee collection

24. County Market

- Relocated greenhouses for education classes or vendor opportunity
- Opportunity to establish an educational component on adjacent woodlot
- Possible partnership with agricultural extension or university horticultural department to run production greenhouses
- New 186 car parking lot (268 spaces are existing)
- Paved accessible path to county executive building
- Possible expansion of canopy for increased vendor capacity
- Provide non-motorized connection to Waterford Oaks. Will require approval from RCOC
- Multi-sensory interpretive and wayfinding signage

Natural Resources





The Michigan Natural Features Inventory has described and abstracted 76 distinct natural community types within the State of Michigan (Kost, 2010). According to MNFI, 40 natural communities occur within Oakland County at varying degrees.

Waterford Oaks is characterized by steep, glacial moraine topography. Plant communities include open meadows; woodlands-- including dry-mesic and mesic southern forest; and wetlands-- including emergent marsh, southern wet meadow, hardwood-conifer swamp, and southern hardwood swamp. To date, 10 natural community types have been identified at Waterford Oaks.







Butler's garter snake, Western chorus frog and blue-spotted salamander, all state species of greatest conservation need (SGCN), have been documented at the park (ECT/HRM 2015).



Table 12: Natural Features at Waterford Oaksⁱ

Natural Community	Description
 <p>Pontiac Creek 1 – Pontiac Creek</p>	<p>Channelized into the Pontiac Creek Extension county drain. An approximately ¾-mile section flows easterly through the middle of the central valley. Open and shrubby wetlands surround the creek. Smaller unnamed creeks with culverts are scattered throughout the park.</p>
 <p>Submergent marsh 2 – Wetland Complex</p>	<p>Found within the creek and ponds. Submerged rooted and non-rooted species include duckweed, pondweed, and pond lily.</p>
 <p>Emergent marsh 2 – Wetland Complex (note Phragmites)</p>	<p>Part of wetland complex scattered throughout non-developed areas of the park, especially at the eastern end of the central wetland. Dominant species include cat-tail, sedge, grass and invasive Phragmites, purple loosestrife, and reed canary grass.</p>
 <p>Southern wet meadow 2 – Wetland Complex</p>	<p>Part of wetland complex scattered throughout non-developed areas of the park. The ground-water influenced wetland includes sedge, wool-grass, swamp milkweed, common boneset, and Joe-Pye-weed.</p>

ⁱ See Figure D: Waterford Oaks Natural Features Map

Natural Community	Description
 <p>Southern shrub-carr 2 – Wetland Complex</p>	<p>Part of wetland complex scattered throughout non-developed areas of the park, especially in the middle of the central wetland. The shrub-dominated wetland includes willow, dogwood, viburnum, elderberry, black chokeberry and Michigan holly. Invasive species include glossy and common buckthorn and purple loosestrife.</p>
 <p>Southern hardwood swamp/hardwood-conifer swamp 2 – Wetland Complex</p>	<p>Part of wetland complex scattered throughout non-developed areas of the park. The poorly-drained forested wetland surrounds the Pontiac Drain. Species include red maple, yellow and paper birch, swamp white oak, American sycamore, Eastern cottonwood, and green ash. The intermixed hardwood-conifer swamp includes northern white-cedar and Eastern white pine.</p>
 <p>Vernal Pool Scattered</p>	<p>Seasonal forested pools scattered throughout woodlands. Two prominent vernal pools have been monitored by staff. Species include red maple, yellow birch, American elm, and ferns.</p>
 <p>Dry-mesic southern forest 3 – Woodland Complex</p>	<p>Upland woodland on ridges and upper slopes, especially in the southeastern portion of the park. Species include white and red oak, sugar maple, pignut hickory, white ash, wild black cherry, and witch-hazel.</p>
 <p>Mesic southern forest 3 – Woodland Complex</p>	<p>Occurs on lower slopes and edges of wetlands. Species include sugar maple, white ash, oak, elm, basswood, dogwood, bottlebrush grass, Solomon's seal, bloodroot and common trillium. Invasive species include common buckthorn and large areas of garlic mustard.</p>
 <p>Old field 4 – Field</p>	<p>Open fields and no-mow buffers scattered throughout park, especially in the northern half. Species include hawthorn, crab apple, red cedar, Indian grass, common milkweed, black-eyed Susan, goldenrod, Queen-Anne's-lace, and butterfly weed. Invasive species include autumn olive, multi-flora rose, Canada thistle, crown-vetch, and sweet clover.</p>


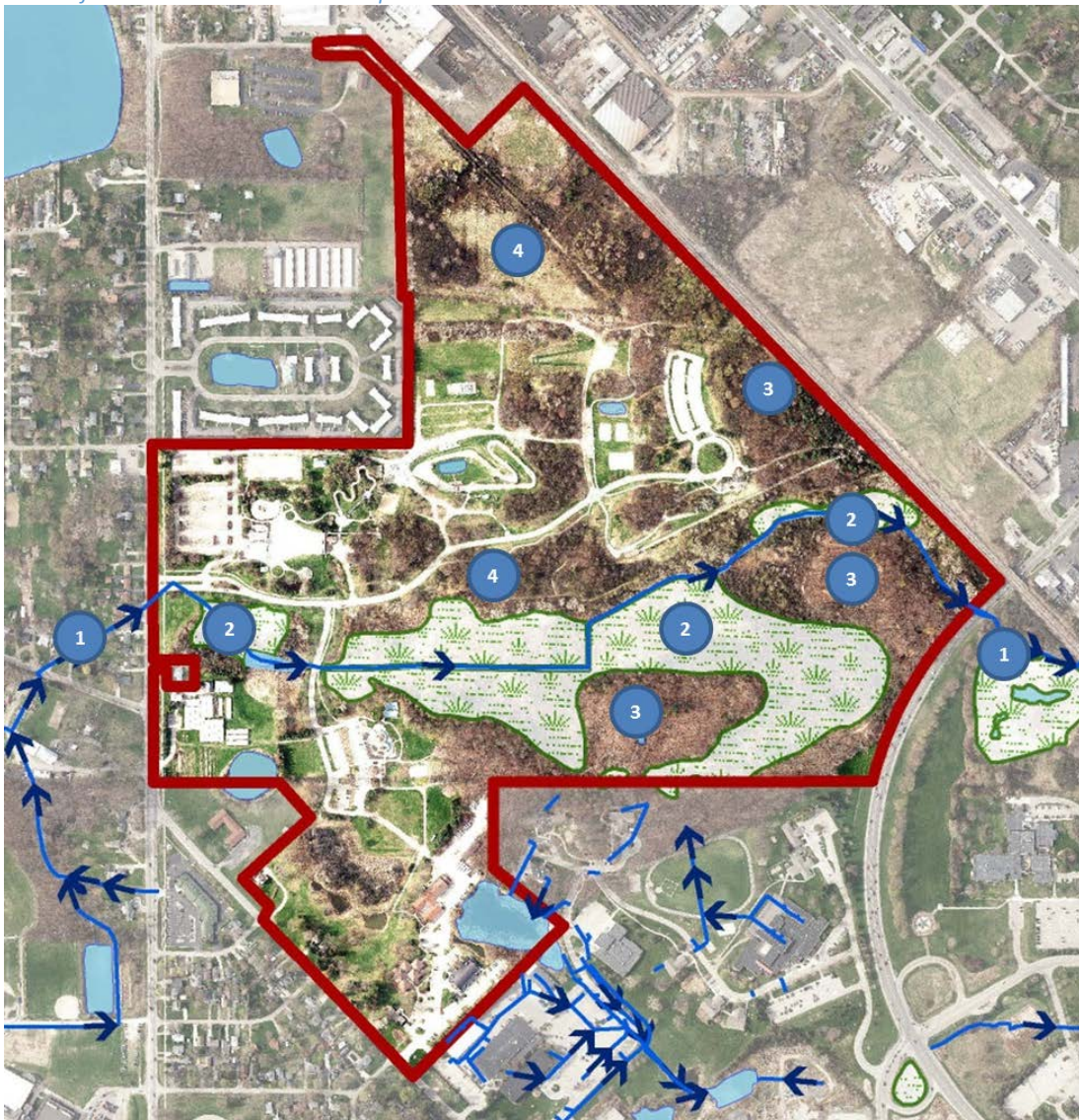
Natural Community	Description
<p>Native plantings</p>	<p>Includes seeding of wool-grass, swamp milkweed, black-eyed Susan and bottlebrush grass. Native plant mix seeding at Lookout Lodge.</p>
 <p>Detention Ponds/ Rain gardens</p> <p>2 – Wetland Complex</p>	<p>Storm water improvements, including creating detention swales, rain gardens, and bioswales, were completed in 2010. Planted native species include swamp milkweed, aster, blue joint grass, sedge, Joe-Pye-weed, marsh blazing star, black-eyed Susan, blue vervain and evening primrose.</p>

Figure H: Waterford Oaks Natural Features Map



Park Infrastructure and Assets

Park Entrances, Roadways and Parking

The main vehicular access points to the park include the administrative entrance at 2800 Watkins Lake Road, and the day-use park entrance to Waterford Oaks Boulevard, at 1702 Scott Lake Road. Additional entry points include Alliance Drive at the northern end of the park, and the southern corner of the Administrative complex, which can be accessed from the adjoining County Department of Public Works parking lot. Additionally, the Greenhouse Area can be accessed at 1580 Scott Lake Road.

Non-motorized access to Waterford Oaks is also available, primarily from a sidepath along Scott Lake Road and through the Scott Lake Road Entrance along Waterford Oaks Boulevard into the park. The sidewalks around the Administration buildings also provide non-motorized access to the park's trail system. Other non-motorized access points include a gate by Children's Village, which is locked when not in use, and an opening in the fence between the Public Works Building and the Activities Center.

Electrical

Electric utilities are present along both Watkins Lake and Scott Lake Roads. A secondary electrical feed runs along the park roadway at Waterford Oaks Boulevard.

Gas and Propane

The Administrative Complex, Waterpark and Lookout Lodge are serviced with natural gas. A gas line runs from Watkins Lake Road to the Administrative Complex. Natural gas is used to heat the water in the Waterpark as well as the restrooms and concessions. Natural gas and passive solar heat the greenhouses in the Greenhouse Complex; a backup generator also works on natural gas. Gas meters are located in the maintenance area. The Platform Tennis Courts north of the Paradise Peninsula playscape are heated with propane from a nearby above-ground propane tank. The heat melts snow off the metal court decking and keeps the surface slightly warm. The former Fridge toboggan run was heated with propane.

Water and Sewer

The property is served by the municipal sewer system. A 15" sanitary sewer is located along the north border of the main wetland. Most of property is supplied by municipal water. Irrigation heads are located in the grounds surrounding the Administration Building, Waterpark, and along the west half of Waterford Oaks Boulevard. An irrigation meter is located in the maintenance area. There is also a water well that serves Lookout Lodge. A water well record indicates the 160-foot deep well was installed on December 21, 1993. It has a 50 gallon-per-minute pumping capacity and is a "Type IIb" public water well.

Security

Security and regular patrolling is provided by Oakland County Sheriff's Office Parks Unit⁸ and the Waterford Township Police. The Oakland County Sheriff's Office Parks Unit Office is located in the Administrative Complex at 2800 Watkins Lake Road. Perimeter fencing surrounds much of the property, with the exception of portions of the west and southwest boundaries along Watkins Lake and Scott Lake roads.

Technology

Waterford Oaks has Wi-Fi capabilities available to the public at the Recreation Center, Administration building, and Facilities Management. There are fiber data connection lines in all buildings and the waterpark.

Trails

See [Trail Map](#) on page 40

Non-Recreational Features

Waterford Oaks has three houses and a barn that are not used for recreation. The two houses on Watkins Lake Road are leased to private parties.

- House and Shed – 2930 Watkins Lake Road (Asset ID 64)
- House and Garage – 2866 Watkins Lake Road (Asset ID 762)
- Ernst House – 1580 Scott Lake Road (Asset ID 750)
- Ernst Barn – 1580 Scott Lake Road (Asset ID 750)

Below left: House at 2930 Watkins Lake Road; Below right: shed at same address – garage belongs to adjacent church property



Below left: House at 2866 Watkins Lake Road; Below right: Garage at 2866 Watkins Lake Road



Below left: Ernst House at 1580 Scott Lake Road – east side Road; Below right: Ernst Barn at 1580 Scott Lake Road



Planning Units: Waterpark and Waterpark Concession

See [Planning Unit Map](#) – page 41

- Wavepool (No ID)
- Big Bucket Children's Area (No ID)
- Ragin' Rapids Group Water Slide (No ID)
- Sidewinder (No ID) – removed in 2012
- Bridge
- Waterpark Mechanical Building (Asset ID 763)
- Waterpark Storage Barn (Asset ID 764)
- Bathhouse (Asset ID 765)
- Waterpark Pool Shelter (Asset ID 770)
- Waterpark Pump House (Asset ID 771)
- Overflow Ticket Booth (Asset ID 1369)
- Main Ticket Booth (Asset ID 1370)
- Concession (Asset ID 220840)

Below left: Wavepool; Below right: Big Bucket Children's Area



Below left: Ragin' Rapids Group Raft Ride; Below right: Slidewinder (removed in 2012)



Planning Unit: Central Park Area

See [Planning Unit Map](#) – page 41

- Sledding Hill (No ID)
- Sand Volleyball Courts (No ID)
- BMX Track

- BMX Pavilion (Asset ID 752)
- BMX Concession (Asset ID 766)
- BMX Starter Hut (No ID)
- BMX Announcers Stand (No ID)

Planning Unit: North Park Area

See [Planning Unit Map](#) – page 41

There are no assets in this area

Planning Unit: Lookout Lodge Area

See [Planning Unit Map](#) – page 41

- Fridge Toboggan Run (No ID) – out of service since 2009
- Fridge Tower (No ID)
- Chiller Building (Asset ID 767)
- Slide Bottom (Asset ID 768)
- Lookout Lodge (Asset ID 769)

Planning Unit: Paradise Peninsula

See [Planning Unit Map](#) – page 41

- Paradise Peninsula Play Area and Structures (No ID)
- Platform Tennis Courts – 2 (No ID)
- Paradise Peninsula Pavilion (Asset ID 772)
- Landing Building (Asset ID 773)

Below left: Landing building; Below right: Paradise Peninsula Pavilion



Below left: entry to Paradise Peninsula play area; Below right: Platform tennis courts



Planning Unit: Greenhouse Area

See [Planning Unit Map](#) – page 41

- Greenhouses (Asset ID 741-748)
- Greenhouse Garage (No ID)
- The Ernst House and Barn are also in this area

Planning Unit: Administrative Complex

See [Planning Unit Map](#) – page 41

- FM Storage Shelter #1 (Asset ID 753)
- FM Storage Shelter #2 (Asset ID 754)
- Activity Center (Asset ID 758)
- Administration Building (Asset ID 759)
- Sherriff's Office (Asset ID 760)
- Facilities Maintenance Building (Asset ID 775)

Planning Unit: Farmers Market

See [Farmers Market Map](#) – page 42

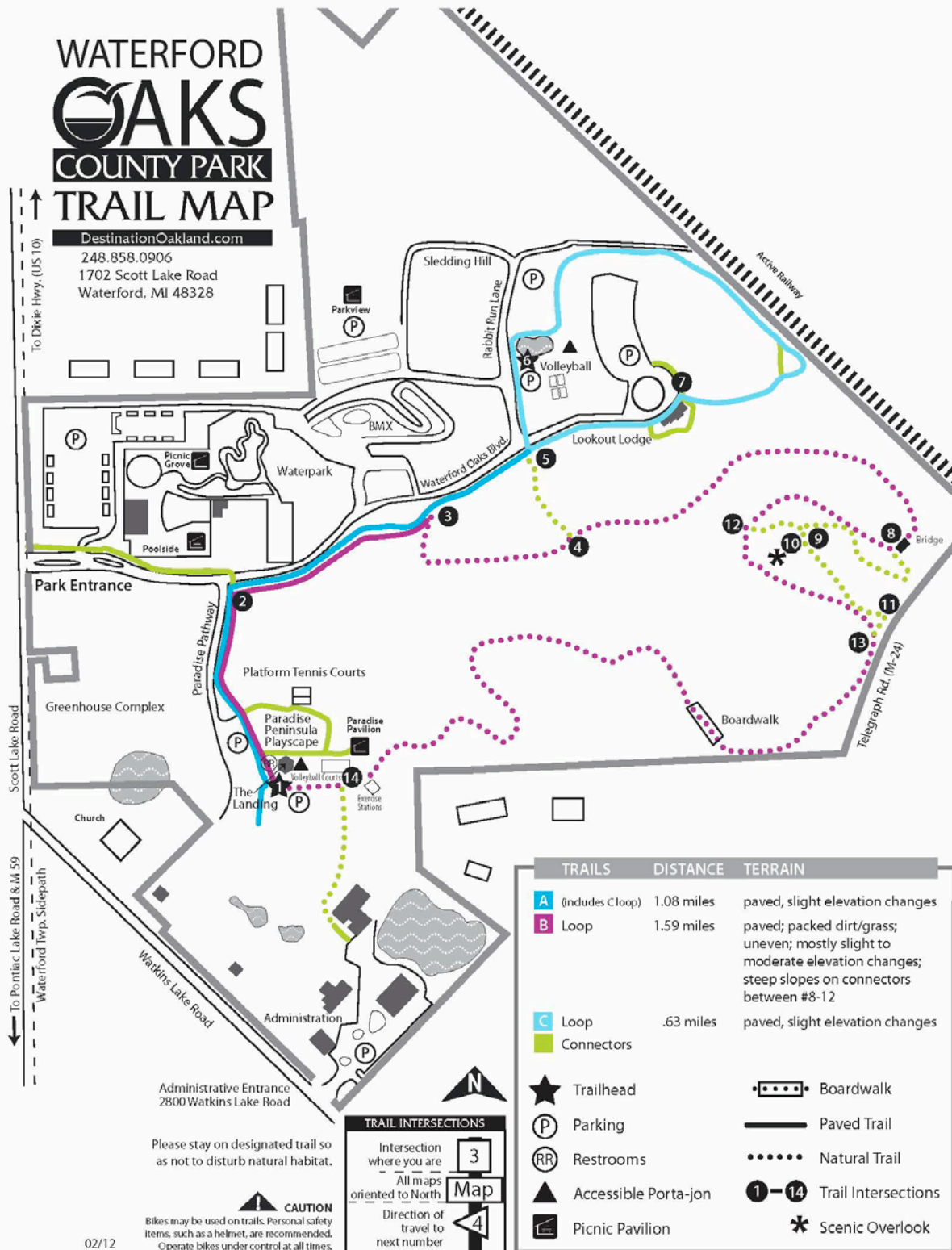
- Market Building (Asset ID 1690)
- Market Canopy (No ID)

Park Maps

A standard set of planning maps are provided in a separate document - the *Planning Map Set*. This section provides other park maps, such as trails, campsites, and golf course features, which are specific to this park.

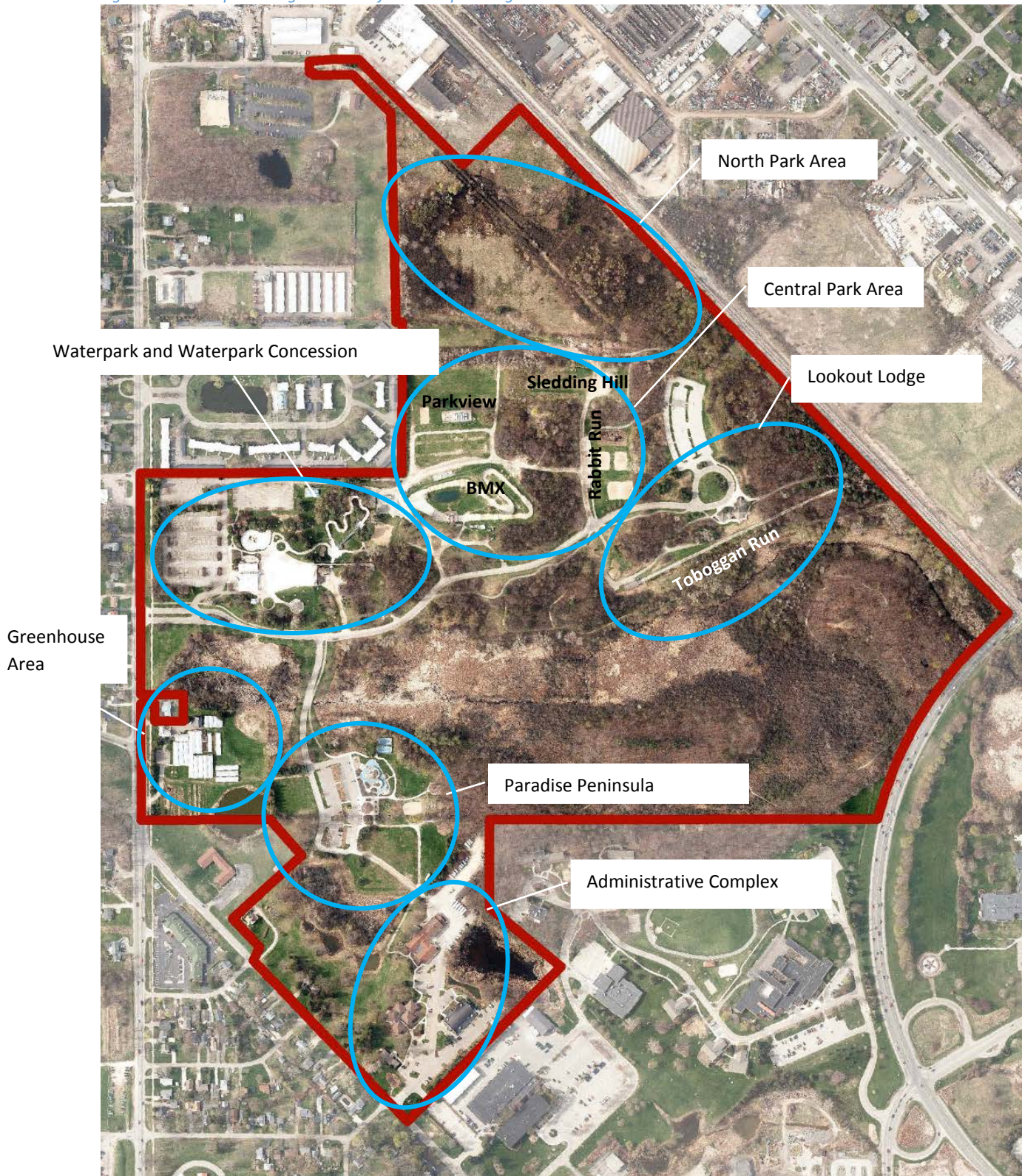
Trail Map

Figure I: Waterford Oaks Trail and Facility Map



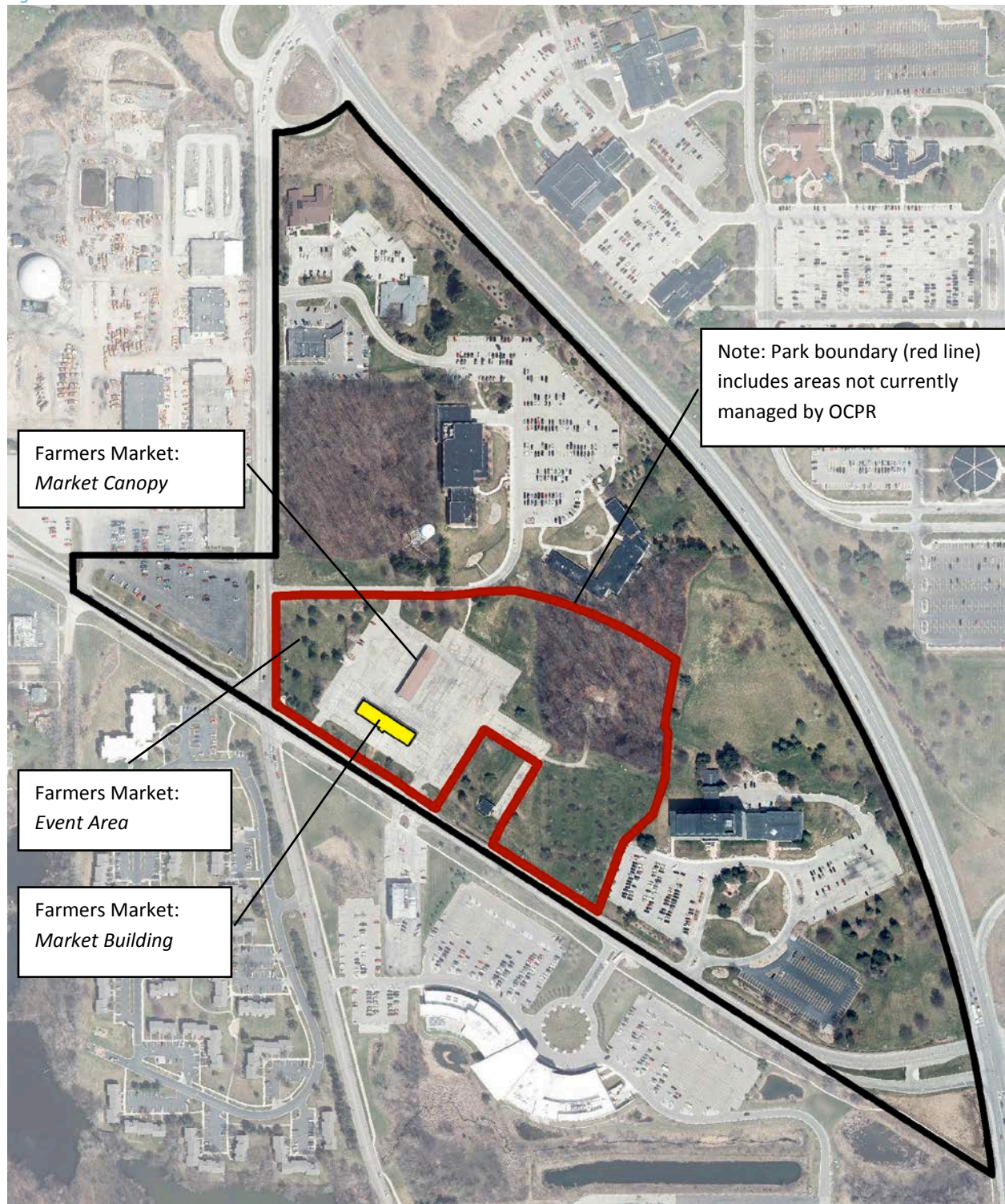
Planning Unit Map

Figure J: Park map showing locations of selected planning units



Planning Unit Map – Farmers Market

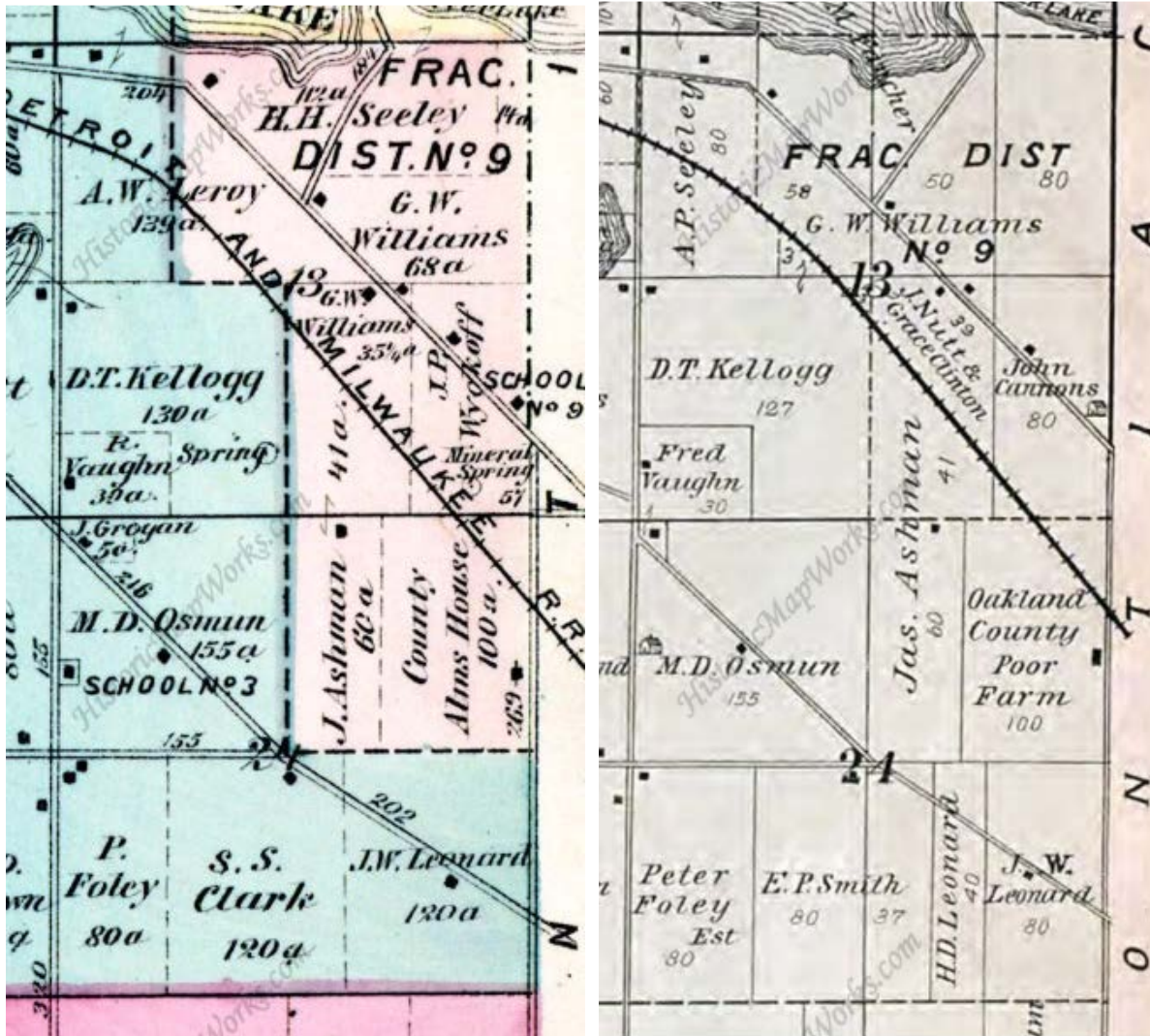
Figure K: Farmers Market



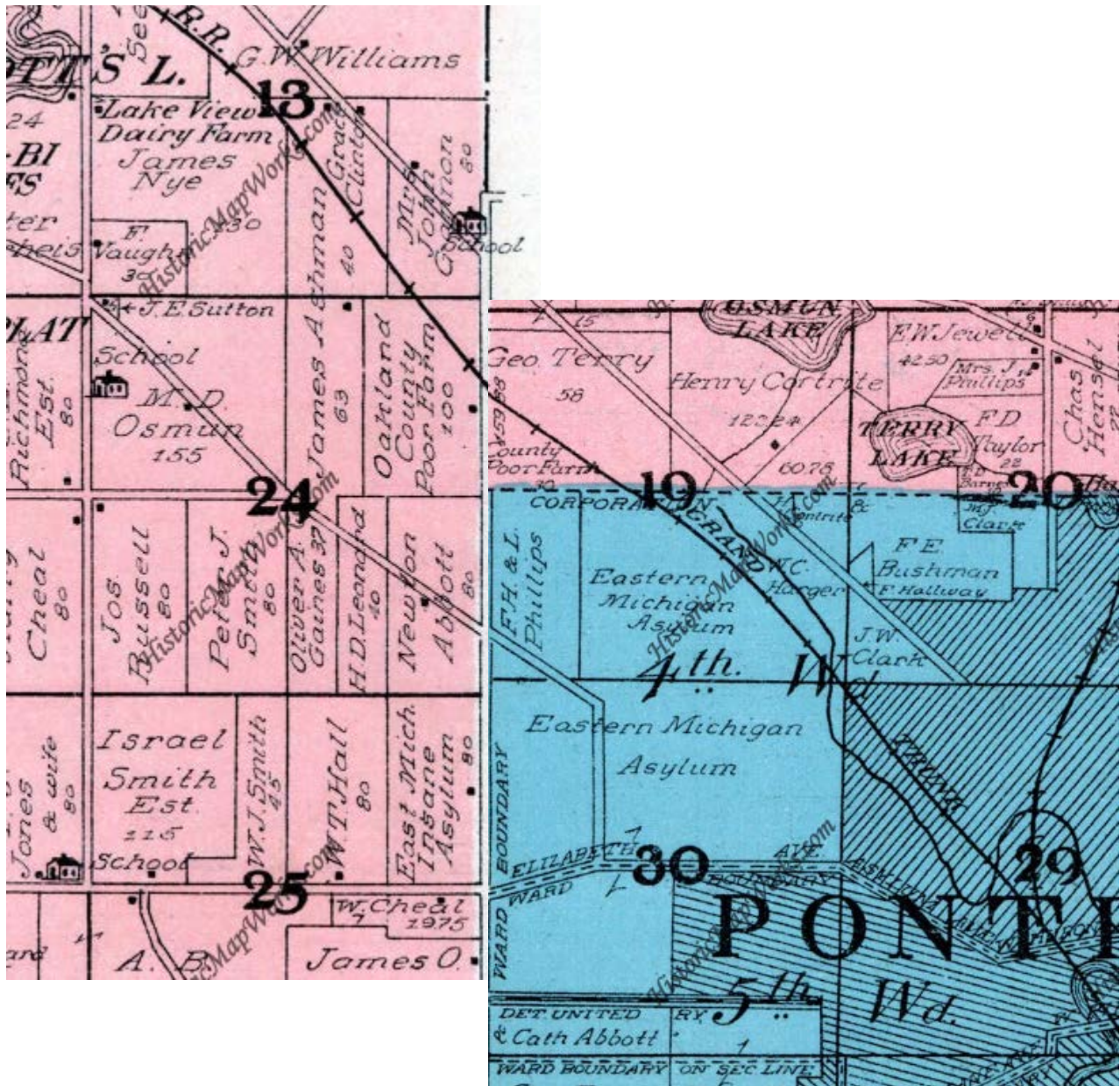
Historic Plat Maps

Figure L: Waterford Sections 13 and 24 Historic Plat Maps

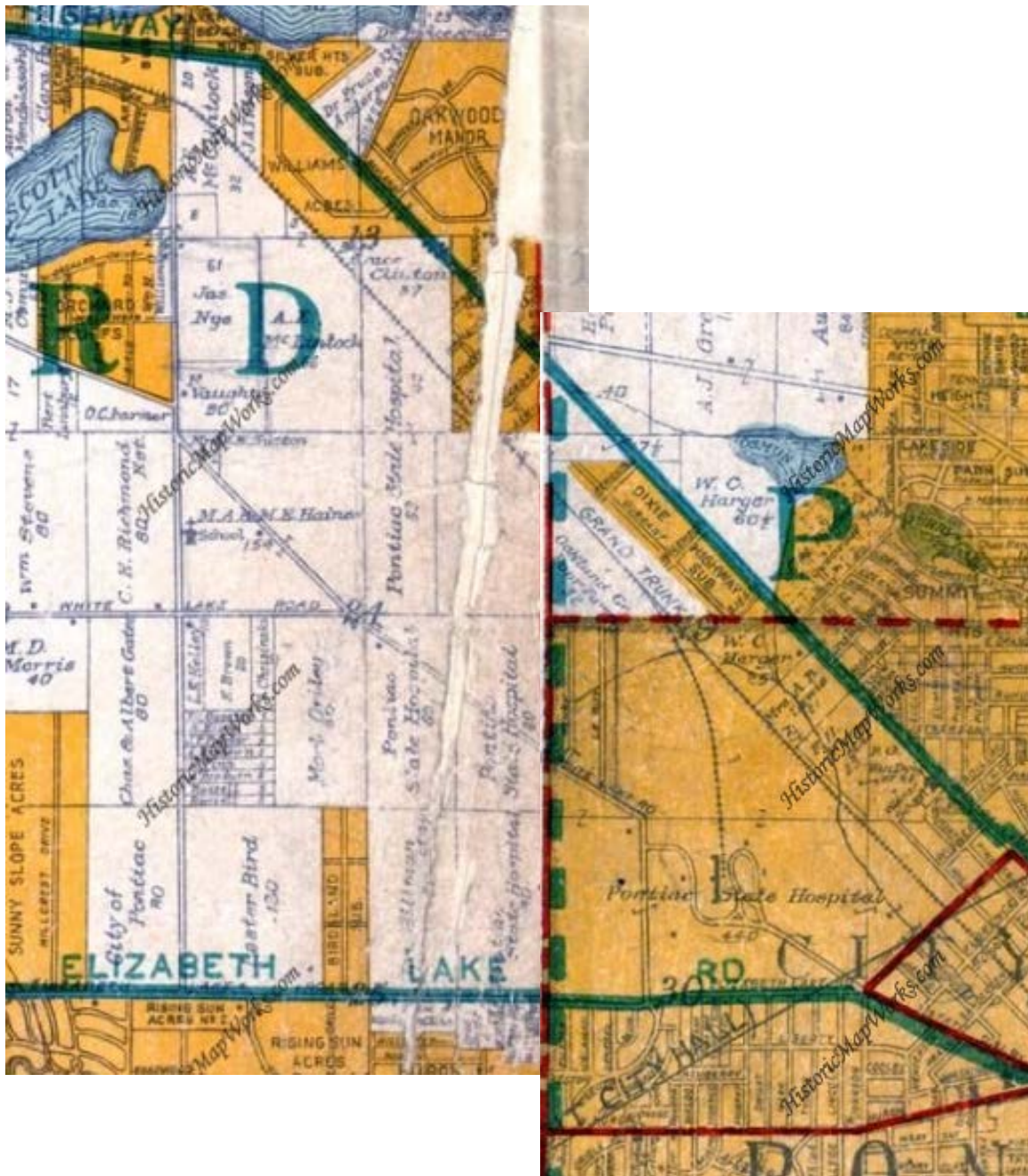
1872 Plat Map (F.W. Beers and Co, 1872); 1896 Plat Map (Kace Publishing Company, 1896)



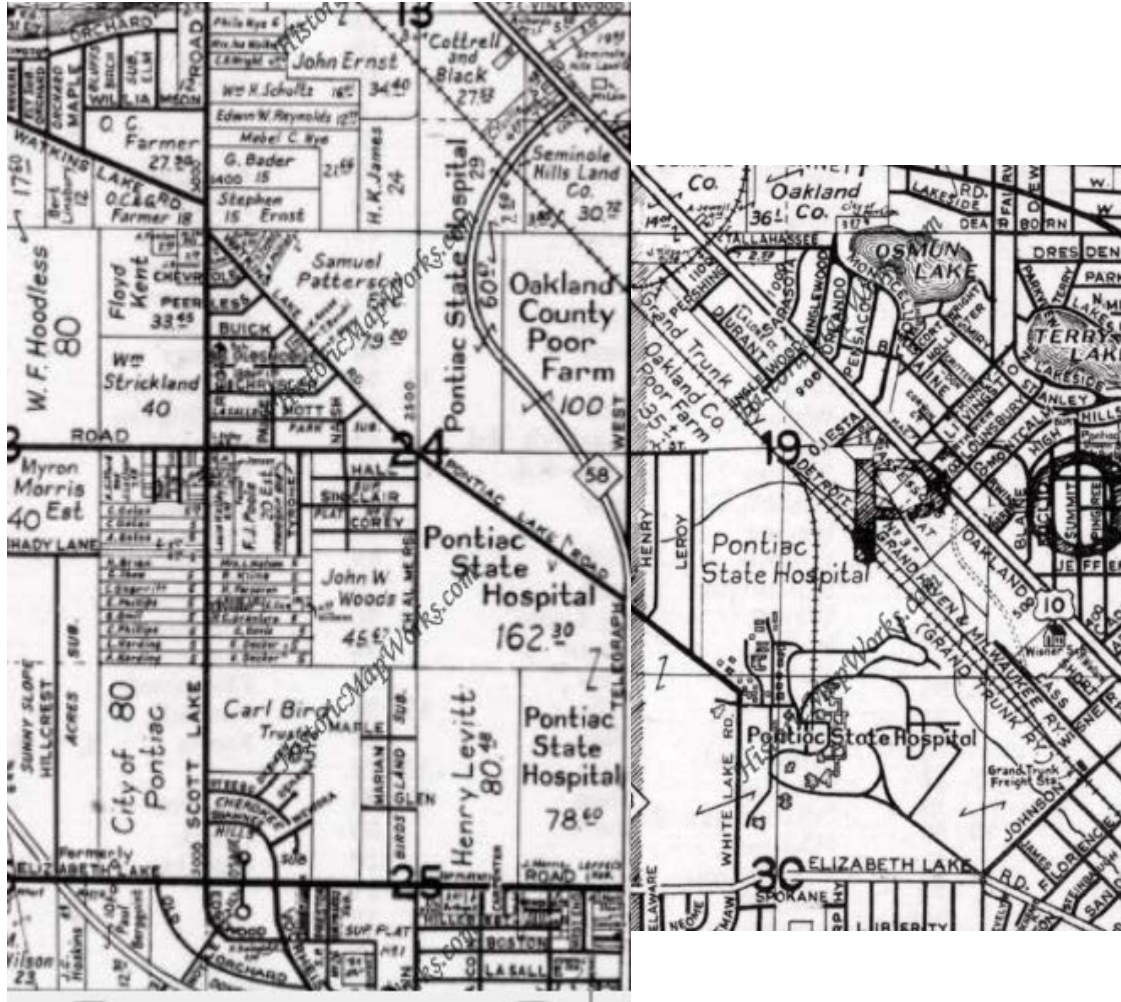
1908 Plat Map (Geo A. Ogle and Co., 1908)



1925 Plat Map (W.S. McAlpine Map Company, 1925)



1947 Plat Map (W.S. McAlpine Map Company, 1947)



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Notes

¹ Ecoregion: An ecoregion (ecological region), sometimes called a bioregion, is an ecologically and geographically defined area that is smaller than an ecozone and larger than an ecosystem. Ecoregions cover relatively large areas of land or water, and contain characteristic, geographically distinct assemblages of natural communities and species.

² Sub-subsection: Based on differences in climate, bedrock geology, glacial landform, and soils, the section, subsection, and sub-subsection levels of an ecoregion represent areas with distinctive natural conditions affecting species composition and productivity (Albert, 1995).

³ Ice-Contact Topography: This is a general term that refers to glacier-modified landscapes and includes many specific types of landforms, such as kames, eskers, moraines, kettles and outwash, among others.

⁴ Glacial Deposits: This refers to the rock and soil that is picked up and transported by glaciers as they create new landscapes and are eventually deposited by melting and retreating glaciers.

⁵ Potential Natural Area: Important ecological natural communities dominated by native vegetation identified by the Michigan Natural Features Inventory (MNFI). These sites represent the least disturbed natural areas remaining in the county. Initial delineation was done through aerial photo interpretation, with emphasis placed on intactness, wetlands and wetland complexes, riparian corridors, and forested tracts. Prioritization (ranked Priority One, Two and Three) is based on size, core area, stream corridors, land connectivity, vegetation quality, fragmentation and restorability of surrounding lands.

⁶ Oakland County Juvenile Corrections Center (Children's Village): A county operated youth home was established in 1929 to provide a detention facility for troubled youth and juvenile offenders. In 1952, the concept of a shelter care cottage to house abused and neglected children was developed. A centrally located campus providing medical, educational, and food services was completed in 1975 and is known today as the Children's Village. Children's Village, a division of Oakland County's Department of Health and Human Services Department, provides a unique approach to treatment of youth that fall under the authority of Oakland County Circuit Court Family Court or with the State of Michigan Department of Human Services. The facility adjoins Waterford Oaks to the south. www.oakgov.com/childvil

⁷ General Land Office: On April 25, 1812, by an Act of Congress the General Land Office was created within the Treasury Department. In creating the General Land Office, Congress combined the functions previously scattered among three Federal agencies—Treasury, War, and State. The Secretary of the Treasury had directed the survey and sale of public lands. Treasury also maintained records and accounts. The Secretary of War administered military bounties and bounty lands. Patents were issued by the Secretary of State. As of 1949, the General Land Office is part of the Bureau of Land Management within the Interior Department, which manages the archive of public land records (BLM).

⁸ Oakland County Sheriff's Office Parks Unit: This office provides law enforcement services to 11 county parks, including Waterford County Parks. The park officers provide both a visible patrol force and supervise work details of prisoner "Trustees" who help keep our parks among the most clean and beautiful in the state. Deputies provide a number of services including citizen assists, traffic enforcement, and responding to dispatched calls for police services within the parks. www.oakgov.com/sheriff/about/div_law_patrol_parks.html