

SECTION II: INVENTORY AND ANALYSIS

A. POPULATION CHARACTERISTICS AND LAND USE

The Orleans County shoreline Towns of Kendall, Carlton and Yates possess varied land use and socioeconomic characteristics. This section will describe these characteristics, so important to community life and development.

1. Socioeconomic Characteristics

Although the three lakeshore towns possess the same Lake Ontario shoreline and similar size population, there are considerable differences among the towns reflecting different opportunities, historical development and geography.

a. Historic Overview

Orleans County is located on the fertile Lake plain in Western New York State along Lake Ontario (see Map 2.1). The County is the smallest in both population (38,496) and area (396 square miles) among the eight western counties. It is located between the Rochester and Buffalo/Niagara Falls metropolitan areas which have introduced significant urban influences into parts of the County. Nearly 40% of the County's employed residents work outside the County. Although rural, the County is part of the federally designated Rochester Standard Metropolitan Statistical Area (SMSA).

The proximity to the urban areas has had a pronounced effect upon the County's development patterns. The historic Ridge Road (Route 104) first served as an Indian trail, then as a war route during the Revolutionary War and War of 1812 connecting the Genessee River with Lewiston and Fort Niagara. The County, however, remained largely undeveloped until the 1820's when the Erie Canal was constructed through the central part of the County. Growth came rapidly to the area particularly through the central corner of Holley, Albion (the County seat) and Medina. This central, east-west corridor contains over one-third of the total County population.

The northern towns remained sparsely populated and largely in agriculture or forests until the 1870's. At that time, a new railroad, the Rochester-Lockport-Buffalo route, was laid through the towns approximately two miles inland from the lake. Communities such as Lyndonville, Ashwood, Carlton Station, Kent, Kendall, and Morton grew along the line; only Lyndonville ever incorporated as a village.

The railroad had a dramatic effect upon the development of the lakeshore towns. Not only did the railroad strengthen agriculture, create communities based on the agricultural trade, and stimulate development, it also caused the lakeshore towns to develop an independent character. They were no longer so dependent upon the "canal communities" for trade and livelihood, although substantial linkages remained. The railroad also opened a new era of lakeshore resorts, most notably Shadigee, Point Breeze, Lakeside, and Troutburg (adjacent to the Salvation Army Camp),

that brought city residents via the railroad to posh resorts. Although major settlements did not develop at these places (except Shadigee), they nevertheless developed as concentrations of second homes and tourist trade. At Shadigee, a pier was built into the lake with cross lake shipping and passenger service prevailing into the 1930's.

The period from the 1920's to about the mid 1950's was a time of declining prominence of the shoreline and declining growth in shoreline towns. The great depression brought a dramatic end to shoreline resort activity and was a severe blow to agriculture. The coming of World War II hastened an out-migration of youth and ex-farmers to rapidly expanding factories in Erie, Niagara, Monroe and Genessee counties. This trend continued into the early 1950's. The end of rail passenger service on the "Hojack" railroad line, as it had come to be known, also occurred at this time.

The 1950's in New York State was a time of major industrial expansion and a degree of affluence in New York State never before known in the United States. Second cars and cottages became demand items. In spite of the lakeshore towns' relative isolation, cottages and second homes were constructed in rapid numbers. Between 1950 and 1960 the lakeshore towns' combined population of 5,204 jumped 22% to 6,343, compared to the County's 15% increase. Carlton's population increase alone exceeded 46%! The trend continued into the 1960's with another 11% increase to 7,026 in 1970.

The late 1960's and 1970's saw another major change in the area. Plans were announced in the 1960's for a major state park (Lakeside Beach State Park) and construction of a parkway from Niagara Falls, through the Orleans County shoreline and into Rochester. Although tightened State finances caused these plans to be substantially scaled back (the Robert Moses State Parkway ended near Youngstown and the Lake Ontario State Parkway at Lakeside), in 1972 the thirty mile, four lane Lake Ontario State Parkway (LOSP) between Lakeside Beach State Park and Charlotte within the City of Rochester opened. This road now provided a direct, limited access highway to shoreline areas. The shoreline towns' population growth, which had exceeded the County's growth rate since the 1950's, now soared to triple the County rate. Carlton, by the 1980's, had become the County's second fastest growing town, with Kendall tied for third fastest.

b. People and Housing

In 1980, 7,653 people resided in the shoreline towns. The U.S. Bureau of Census estimates that the population increased by 7.4% from 1980 to 1986.

The median age of area residents is 29.4 years, versus 30.5 years for the County as a whole.

While the population of the area increased 9% between 1970 and 1980, the number of housing units increased much more rapidly. This general

trend is common as household composition has changed and family sizes have become smaller.

Cottages comprise 42% of Yate's total non-village housing (migrant farm housing units are also included in this category but are a very small proportion of these units).

Median housing values and income (described later) vary dramatically among the three towns. Kendall's median housing value is the County's third highest, reflecting the high income levels of Monroe County and its real estate market. By contrast, Yates has the County's lowest (excluding village) housing values, and Carlton the second lowest.

c. **Income, Education and Occupation**

The wide variance in median housing values is reflective of similar variances in income, education and place of work. Kendall has the County's highest median household income at \$22,145 (1979), while Yates, outside of the village, has the County's lowest among towns, at \$14,972. (The Villages of Medina and Albion have lower median incomes.) Households under the poverty level number a County high of 13% in Carlton, 10% in Yates and 8% in Kendall; the County average is 10%. Ironically, Kendall's poverty rate increased 35% between 1970 and 1980, while Yates and Carlton's increased 20%, and the County as a whole, 10%.

The three towns are part of three, separate school districts. The Town of Kendall, located entirely in the Kendall Central School District, has 70% of its residents with a high school degree or advanced education. Carlton, located in the Kendall, Albion, and Lyndonville districts, has 59% of its residents with a high school degree or higher education level. The Town of Yates, located primarily in the Lyndonville Central School District, has a 62% completion rate.

The largest occupation category employing Carlton and Yates residents, at 17% and 20%, respectively, was machine operators, assemblers and inspectors. Precision production craftsmen and repairs was the largest category in Kendall at 26%, with the machine categories at 16%. Those engaged in farming, fishing and forest occupations in Carlton, Kendall and Yates were 11%, 8%, and 8.5%, respectively.

Higher income jobs exist in the industrial Niagara Frontier and Monroe County. Therefore, figures on occupation and income take on added meaning when occupation location is factored in. In Kendall, those who work out of the County exceed locally employed workers by nearly a 2.5 to 1 ratio. In Carlton the ration is one to one, while in Yates it is 2.5 to 1. Although Yates has the lowest commuter rate, some local employers in Lyndonville have highly trained and well paid work forces. Lyndonville has the highest percentage of professionals, managers, and administrators of any municipality in the County by a large margin. However, very few of the people have chosen to live outside the Village, thereby depressing income and related figures in Yates.

d. Taxes

The County of Orleans conducted a revaluation program in the early 1980's resulting in a 100% full value taxing system. During that revaluation process, lakeshore property owners saw substantial increases in their assessments. Lakeshore assessments have continued to increase at higher rates than on non-lakeshore properties. The completion of the I-390/LOSP is generally acknowledged as having made shoreline property more valuable due to reduced commuting times of up to 15 minutes to Rochester.

There are only two special districts (other than fire and lighting) within the WRA. The entire Town of Carlton is a water district with a special tax levy. Differential rates are in effect for service and non-service areas. (Water service areas are described in the infrastructure subsection.) A small water district also parallels Route 63 beginning at Shadigee.

2. Land Use

The real property tax roll of 1986 was used as the basis for examining land use and cover within the WRA. Data were aggregated into five general categories: Residential, Agricultural, Recreational, Commercial, and Vacant/Transitional. Surface water and floodplain areas were not included in the land use calculations due to their limitations for development. The exception is the Johnson Creek floodplain in the Towns of Carlton and Yates.

a. Coastal Overview

The total land area within the coastal area is approximately 6314 acres (containing 2138 properties), stretching over a length of 25 miles (see Map 2.2). For purposes of the LWRP, the WRA is divided into three subareas: East (Town of Kendall), Central (Town of Carlton) and West (Town of Yates). The dominant land use is agriculture, comprising 40% of the total coastal land area. However, the distribution of agricultural uses varies markedly among the towns, concentrating in the Town of Carlton.

Residential property accounts for nearly 22% of total coastal land area. The predominant settlement pattern is strip development year-round homes and seasonal cottages, with riparian rights to the shoreline. Of the 1212 residential properties, 854, or 71%, are used for seasonal residence, indicating that second homes are thriving in the coastal area. Approximately 70% of these properties are owned by persons residing outside Orleans County.

Over one-fifth of the coastal land area (885 parcels) is in vacant or transitional status. This consists primarily of small, unoccupied lots in residential subdivisions along the coast and an assemblage of land in single ownership in the Town of Yates. Nearly 35% of these vacant properties have riparian rights to the shoreline.

Nearly one-fifth of the WRA is devoted to recreational use. This is likely to increase as the area's sport fishery exerts continued pressures for recreational and support facilities. Boating accounts for 80% of all public recreational facilities and is primarily oriented to the non-resident population. Public camping comprises 30% of all recreational facilities, ranging from tenting areas to service sites and cottages. Commercial support facilities, located near recreation facilities, occupy only .4% of the coastal land area. The distribution of these land uses among the three towns is highly variable.

b. Kendall

The Town of Kendall contains 11.5% of the coastal area due to the proximity of the coastal boundary to the shoreline. Predominant land use is residential and recreational. Fifty-four percent of residential property is seasonal use, 17 percentage points below the coastal average. Nearly 80% of these seasonal units are in absentee ownership. With 104 year-round units, the Town is witnessing growth due to direct access to the Rochester area. The concentration of recreational facilities is located on the eastern portion of the shoreline on two properties, Eagle Creek Marina and the Salvation Army summer camp.

c. Yates

The Town of Yates comprises 28% of total coastal area. The primary land use is residential, while the vacant/transitional category consumes a vast area of the Town's coastal region. Seasonal cottages account for 94% of all dwellings, nearly double that in Kendall and 23% above the WRA average. An 800 acre group of parcels known as the Morrison Site, owned by the New York State Electric and Gas Company (NYSEG), represents the majority of vacant land. The remainder of vacant land is situated along the coast and the Johnson Creek floodplain.

d. Carlton

The Town of Carlton encompasses nearly 60% of total coastal area and is characterized by concentrations of residential, agricultural and recreational uses. One-half, or 607, of the residential properties in the entire coastal area are located in Carlton, and 63% of these are occupied seasonally. The agricultural category contains 1738 acres, 40% of which is in three parcels located on the east side of Point Breeze. Agricultural intensity of this area has diminished over the years with the removal of large orchards and the conversion to dairy production. This same area has also been optioned at various times for non-agricultural development (see subsection B). Recreational uses are concentrated in the Town of Carlton primarily because of the sport fishery and direct access to Lake Ontario. Over 87% of the recreational acreage in the coastal area is located in the Town. However, 731 of the 925 acres are taken up in the Lakeside Beach State Park. The remaining acreage consists of small private campgrounds, private marinas and boat liveries, Orleans County Marine Park (11 acres) and Oak Orchard Marine Park (80 acres).

B. WATER-DEPENDENT AND -ENHANCED USES

Water-dependent uses are land uses, structures and/or economic activities that would not exist without a waterfront location. Water-enhanced uses are land uses that receive added value or importance because of proximity to a shoreline. Frequently, they function as support services for water uses. Water-dependent uses play an essential role in determining a shore's economic importance, and public acceptance of its worth as a public resource needing careful planning.

1. Overview of the Shoreline

The Orleans County waterfront is dominated by water-enhanced uses. These uses, as shown on Map 2.3, are primarily shoreline cottages, second homes, and the Lake Ontario State Parkway. Water-dependent uses are predominantly marinas, public and private docks/launches, a federal breakwater, a utility-owned reservoir and dam, and water purification plants. There are no goods transfer points, swimming facilities, processing plants, scientific facilities or other similar uses on the waterfront.

a. Kendall

The Kendall shoreline contains one water-dependent use, Eagle Creek Marina and charter boat service. Water-enhanced uses include cottages and second homes, the Lake Ontario State Parkway, and the Salvation Army Camp near the Monroe County line.

b. Yates

The Yates shoreline is primarily in water-enhanced uses consisting almost entirely of cottages and second homes. The only water-dependent uses are a small boat launch at the Lakeland recreation area, and the Lyndonville water treatment plant and intakes at Shadigee.

The NYSEG Morrison Site, the largest privately owned assembly of parcels on the County shoreline, is not considered water-dependent or -enhanced due to its inactive underutilized status. However, this property holds the potential for those kinds of uses.

c. Carlton

Carlton's diverse lake and stream shorelines contain the area's greatest number of water-dependent uses. These uses include: several marinas, charter boat services, boat launching facilities, the Albion water treatment plant, and the Niagara Mohawk hydroelectric dam at Waterport.

The hydro facility was constructed in 1921. One turbine generating unit was installed in the initial construction, and a second unit was installed in 1924. The turbines operate under 78 feet of head and provide approximately 4.65 megawatts of capacity, with average annual generation of 11.5 million kilowatts/hour. The powerhouse is cast concrete, and the dam is a 760 foot long, 82 foot high earth fill structure with a concrete core. The facility requires a constant supply of water, and

in the summer may need to augment supplies by diverting water from the Erie Canal.

Numerous water-enhanced uses in Carlton include: a large number of seasonal and second homes, restaurants that cater to the fishing traffic, bait and tackle shops, and a campground near Waterport.

2. Problems and Opportunities

a. Demand For Water-Dependent Uses

The demand for water-dependent uses, particularly recreational facilities, is driven by the cold water sports fishery resource of Lake Ontario. Various studies and surveys show a continual and increasing demand for such uses dating from the late 1970's, and relate directly to State policies on salmonid fish stocking and facility development.

The impact of non-resident anglers fishing in Orleans County is significant. According to Sea Grant Extension (1988), non-resident fishing sales in Orleans County increased by 22,117 since 1972, the highest of any Great Lakes county.

The County's dependence on non-resident anglers is higher, by a large margin, than neighboring counties and the State average.

According to a Sea Grant Report, anglers spent \$1.8 million in Orleans County in 1984. During the 1988 Empire State/Lake Ontario (ESLO) fishing derby, non-resident anglers spent an estimated \$679,376 in Orleans County over the four days of the derby.

Demand for access to the sport fishery is also demonstrated in the large number of licensed fishing charter services. In the early 1970's there were perhaps ten captains based in Orleans County. Today there are 96, concentrated in Oak Orchard River. Competition for dock space is keen since most charter captains do not own adjacent lands, and the available space is limited to the lower reach of Oak Orchard River, downstream of The Bridges.

Pressures for development of this area will continue to be exerted since the policy on the upper reach of the Oak Orchard River is intended to discourage commercial growth and preserve the natural features of the area.

b. Problem

While Point Breeze is consistently ranked among the three most popular boat launching areas during the ESLO Derby, anglers report deficiencies in public restrooms, boat launch sites, fishing information, parking and hotels/motels. These needs, in addition to the need for boat slips and fish cleaning stations, were confirmed in a study prepared for the Orleans County Tourism Advisory Board Fishery Committee (Development Planning Services, 1988).

The principal deterrent to further growth in recreational water-dependent uses has been high development costs, resulting, principally, from the general scarcity of shoreline land, and the fragmented and uncoordinated development review process. Shore land costs and demand for property have increased rapidly in the last few years, largely the result of the 1983 linkage of the Lake Ontario State Parkway and Interstate 390 (the Rochester beltway), cutting up to fifteen minutes in travel time to Rochester. Kendall is now a 25 minute drive from Rochester, while Carlton is a 35 to 40 minute drive.

While the Parkway provides vehicular access to Lakeside Beach State Park, Point Breeze, and Eagle Creek Marina, it limits pedestrian access to the shore, particularly in Kendall. Thus, the Parkway acts as a barrier to development of water-dependent and -enhanced uses. The predominance of cottage strip development and use of private roads for access also limits development opportunities.

Additionally, the financial community views the future prospects for seasonal recreation facility development cautiously. Financing has either been denied or speculative lending terms (higher interest rate and high equity to debt ratio) have been imposed.

c. Opportunities

State policies to fund public access programs, as outlined in the "Strategic Plan for Economic Development through Expansion of Waterway Access to the Great Lakes" (December, 1982), while being generally welcomed, have compounded the dilemma of private operators. The public initiatives are viewed by merchants and lenders as subsidized competition to private marinas, boat docking storage and launching sites, and further reduce lending possibilities.

However, the New York State Urban Development Corporation, in cooperation with the New York State Department of Economic Development, has developed an incentive program for tourism destination development. A recent allocation of \$2.5 million was made under the Regional Economic Development Partnership Program to provide funding for construction of new facilities where: 1) a shortage of tourism-related attractions or services has deterred business growth, and 2) the proposed facility would significantly increase overall business activity and the marketability of a location as a tourism destination.

The lag in development of facilities owned by the New York State Office of Parks, Recreation and Historic Preservation (OPRHP) Genesee Region during the 1970's, compared to master plans for those facilities, has affected recreational development. Master plans for Lakeside Beach State Park and Oak Orchard Marine Park (west side) were indefinitely delayed during that period. This uncertainty stymied other public and private development plans for similar projects. The above-mentioned strategic plan, the first scheduled parks improvement plan in years, appears to hold the promise of multi-year funding and action.

The completion of the Oak Orchard Marine Park west side launch adds a needed water-dependent use; however, the facility competes for scarce State funding with its own launch ramp on the east side (see subsection C3 below). The OPRHP has considered closing the east side ramp while keeping the parking lot and comfort station open. The K-Y-C Board considers both facilities necessary to accommodate the number of boating anglers using the Point Breeze area. (The estimated number of users of the east side ramp in 1988 was 126,000.) Ownership of the east side facility by a local municipality would present an opportunity to maintain and enhance its use.

Another past State policy which affected shoreline land use was the elimination of more capital expenditures at Lakeside Beach State Park, resulting from funding cutbacks and the curtailment of further western expansions of the Parkway. While the Parkway is not likely to be completed, the "Strategic Plan," coupled with a positive attitude exhibited by the Parks Commission Management in the 1980's, suggest that these facilities will be completed. Should swimming facilities and access to Lake Ontario be incorporated at Lake Beach State Park, this facility would become a water-enhanced use.

C. UNDERUTILIZED, ABANDONED AND DETERIORATED SITES

Much of the development of the shoreline has occurred in the last thirty years. Prior to that time, shoreline development concentrated at Shadigee (Yates) and Point Breeze (Carlton), with the remainder of the shoreline either farmed or leased to seasonal cottage development (see subsection 1). Deteriorated and abandoned sites arose in areas of concentrated use in and along the Oak Orchard River, where public or private financial resources were lacking. Also, the lack of a marketing strategy for locations such as the Morrison site resulted in their underutilization. As a consequence, shoreline revitalization is needed in scattered concentrations rather than along the entire shoreline. Nonetheless, elements of deterioration are present at waterside accessory uses (docks and camps) and in the form of substandard lot sizes for seasonal and year-round housing, some of which do not receive even minimal municipal services due to the existence of private roads on the properties. These private roads have a further inhibiting effect on backlot development.

Map 2.4 shows underutilized, abandoned and deteriorated sites along the entire shoreline. The subsections below describe these sites and present development constraints and opportunities.

1. Morrison Site

The Morrison Site, as it is locally known, is an 800 acre undeveloped parcel of land in the Town of Yates, owned by New York State Electric & Gas (NYSEG). It represents the largest privately owned undeveloped parcel of shoreline frontage in Orleans County, and one of the largest such parcels remaining on Lake Ontario's entire shoreline.

Beginning in the 1960's, NYSEG began assembling parcels of land in the Town of Yates and the neighboring Town of Somerset in Niagara County for the purpose of constructing an atomic electric generating station. Under an Article

XII proceeding of the Public Service Commission law, NYSEG had to select and acquire a preferred site (Somerset) and an alternate site (Yates) for power generation purposes; both sites had to undergo extensive scrutiny for licensing.

Although the New York State Atomic and Space Development Authority (ASDA) certified the site was suitable for construction of an atomic power plant in 1973, continued public opposition, the 1973 Arab Oil Embargo and the discovery of an earthquake fault near the area, caused NYSEG to abandon plans for Yates and concentrate on Somerset. The Somerset site was approved in 1977 and a coal-fired facility opened on the site in August, 1984. Nonetheless, the ASDA purchased from NYSEG the first rights of refusal to purchase the site for future use for \$376,546 on January 18, 1974; those rights remain in effect today.

In 1981, the County of Orleans Industrial Development Agency (COIDA) obtained approval from the New York State Public Service Commission, the New York State Energy Office, New York State Energy Research and Development Authority (NYSERDA) and the NYSEG Board of Directors to purchase a one year option and first rights of refusal on the property for the purposes of developing a \$25 million Roll-On-Roll-Off transshipment facility between New York State and Toronto. Although the project never materialized due to under-financing, the IDA first rights of refusal did not revert back to NYSERDA (the successor agency of the ASDA) until 1984. The Public Service Commission, however, still has not revoked its approval to sell the parcel to Orleans County should it and NYSEG come to terms. The NYSERDA rights remain unknown.

When the COIDA was seeking to purchase an option from NYSEG, it encountered unusual delays from NYSERDA. It was later to come to light that NYSERDA, using the first rights of refusal granted it in the 1974 agreement, was investigating the site (along with two others in Yates), for the location of a State operated toxic and hazardous waste disposal plant and therefore delayed its release to the COIDA. (NYSERDA selected a site in Sterling in Cayuga County but it was never built.) Local officials were alarmed when the news became public after the Sterling announcement. They realized that NYSERDA could have overridden local zoning and used eminent domain to acquire the site with the Town having little legal recourse to question or stop the project.

The combination of these three, major development proposals have caused local officials to realize the vulnerable position they are in regarding undesirable use of that parcel. It has also brought a realization of the development potential of the site and its current underutilized state.

The Ontario Shore Land Committee, a group of concerned citizens and local investors, had in 1986 proposed to acquire the site for a multi-use development. A feasibility study indicated a market potential for camping, flea markets, a pioneering village, senior citizen housing, and light industrial and commercial growth. The group later incorporated, but recently dissolved after a suitable developer could not be found.

NYSEG will reportedly entertain offers to purchase the site for less than the original \$1.6 million asking price. In particular, the 3000 feet of frontage property is now being marketed for development that would be consistent with

Town of Yates zoning policies. NYSEG has suggested residential development to a depth of 400 feet along the lakeshore, should public water be extended to the site.

The LWRP will set forth desirable development for the site, and, through the LWRP consistency provisions, give the Town the enforcement ability to prevent undesirable uses.

2. Oak Orchard Marine Park (east side)

Oak Orchard Marine Park is located at the mouth of Oak Orchard River at the federal channel and breakwater occupying both the east and west sides of the channel (see Map 2.4). The federal facilities consist of two 1000 foot jetties and a 550 foot long pond concrete breakwater equipped with navigational aides creating a Harbor of Refuge. They were completed in 1975 by the US Army Corps of Engineers. The State facilities total 81 acres with 1000 feet of stream frontage and 800 feet of lake frontage. The properties were acquired in the late 1960's.

The east side of the park is a five acre site consisting of a three-bay boat launch, parking for 25 car/trailer combinations, restrooms and a handicapped fishing location. The site is subject to intensive use and congestion. The site is fully developed and is unlikely for expansion due to lack of available land. The east side ramp remains in a state of disrepair. A cooperative effort among State, county and local governments may help to revitalize this facility for safe use. (See also Public Access, subsection D.)

3. Bennett Farm

The Bennett Farm is a 1000 acre dairy farm divided by the Lake Ontario State Parkway at Point Breeze (see Map 2.4). The northern 480 acres has significant frontage on Lake Ontario and Oak Orchard River. The site wholly surrounds the Route 98 exit (Point Breeze) of the Parkway. A public water supply fronts the property which is zoned for commercial and recreational use. These factors point to the prime development potential for recreational facilities.

In 1980, a Rochester construction firm, Canrel Construction, began quietly acquiring options on lands in the area for the purpose of developing a convention center hotel, year round resort and condominiums. The cornerstone of the proposal was acquisition of the Bennett Farm and the land under the Parkway Bridge (now Orleans County Marine Park). The firm planned to locate their resort at the Parkway exit with hopes of developing a larger marina on Oak Orchard under The Bridges. However, due to economic factors, the project had not materialized by 1982.

In December 1988, Western Basin Development Corporation, with some of the principals of the Canrel group, announced a proposal for a similar resort complex encompassing nearly 1,500 acres. The multi-phased project called for a marina extension, renovation of an existing golf course, a 300 site campground, a 100 unit motel, and restaurant to be completed in 1989. A second marina, sports center, and condominium project would be developed later. However, necessary land transfers did not take place and required permit applications were not

submitted to the various local, county and State agencies. It became apparent that even the minor parts of the project would not proceed.

The site remains a dairy farm and is not being utilized at its highest and best use for the Point Breeze area. Nor does it serve as an attractive gateway to this popular fishing area due to the use and deteriorated condition of the structures.

4. Salvation Army Camp

The Salvation Army Camp at Troutburg, in the Town of Kendall, is a 130 acre quasi-public recreational facility occupying 5/8 mile of lake frontage. The site was originally purchased in 1940 by the Salvation Army to serve as a children's summer camp for underprivileged children in the Rochester and Orleans County area. By 1950 the facility served over 300 such children and currently serves nearly 600 clients, age 6 to 12, referred by area social welfare departments. On-site amenities include an in-ground pool and bath house, eight dormitories, court game areas, a chapel, dining hall, several storage buildings, and a package sewage treatment plant. Access is provided directly at the Lake Ontario State Parkway via State Route 272. A ten foot wide macadam drive provides internal circulation. Security and privacy are afforded by fencing, wooded areas, and hedge rows.

The facility is open to clients approximately eight weeks during the summer (late June to mid-August) in three ten-day sessions and two five-day sessions. The Salvation Army also allows overnight stays to Kendall school students under an arrangement with the district. According to the Salvation Army Rochester service office, there are no current plans for expansion of facilities or season opening, although there is capacity for increased utilization of the site. This seems to present itself in as yet untapped opportunities for lakefront boating, fishing, and swimming access. Multiple use opportunities such as ice skating, cross country skiing, snowmobiling, and ice-fishing in winter remain to be examined.

The primary constraints to enhancement of the facility appear to be Salvation Army policy on public use and liability concerns. There would appear to be benefits the Salvation Army could accrue from operation of a facility serving a larger public including revenues for continued maintenance. Joint ventures with area school systems should be expanded. Any arrangement will require active discussion with local governments.

5. Private Roads

As was reported in previous subsections, cottages and second home development is an extensive land use of the Orleans County shoreline. These developments are nearly 100% served by private roads in Yates, 85% in Carlton, and 75% in Kendall.

In earlier days, private roads were not an issue. Shoreline housing developments were primarily seasonal cottages. Relatively few residents commuted to jobs from these units, even in summer, due to poor roads. That was changed by the Lake Ontario State Parkway.

The opening of the Parkway in 1972 made it feasible for many cottage owners to consider year round residency. Suddenly, the private roads that previously adequately provided summer time access developed chuck holes from spring and fall use. More importantly, residents were reminded by Town officials of the "private" road status of their roads when lakeshore residents petitioned for Town snow plowing services and were denied.

The conversion from seasonal to year round residency accelerated during the 1970's and 80's promoted by a strong Rochester area economy, retirements at these units, the LOSP/I-390 link, and a 1981 tax revaluation resulting in sharp assessment increases in shoreline properties. The matter of private roads is an issue of both potential underutilization and deterioration. With lakeshore residents' assessments likely to rise and more landowners becoming permanent Town residents, the expectation for Town services will increase. Nonetheless, the private roads will continue to be an effective barrier to nearly all Town services. Such a standoff prevents the towns from obtaining any access to their shoreline in this area, while encouraging shoreline owners to neglect their property to deter further assessment increases.

This issue is perhaps one of the most complex and evasive issues in the shoreline area. Conventional subdivision regulations are ineffective as the shoreline area has already been fully developed. The annual cost to the Town to construct and then maintain these roads would be immense, given the minuscule new revenue generated by any increased land values resulting from the new road. Self imposed taxes, through creation of an improvement district, has not been fully explored in any town. However, lakeshore residents are unlikely to impose further taxes upon themselves, particularly the remaining seasonal residents. While the need for solutions to this problem will need to be addressed to forestall future deterioration of these properties, it is unrealistic to expect that a solution will be implemented as a result of this program in the near term. Development of "targeted" projects at the ends of public roads may, however, start to reverse this trend.

6. Waterside Accessory Structures

Several, privately owned accessory structures along Oak Orchard River are in a deteriorated state or are abandoned and detract from the scenic quality of the river gorge. Docks, stairs, camps and boathouses are typical of these structures. Regulatory methods could be used to phase these out of existence if abandoned for a certain period of time. Requirements for upkeep of structures, particularly in the upper reach of the Oak Orchard River, should also be considered.

D. PUBLIC ACCESS AREAS AND RECREATIONAL FACILITIES

In most cases of Lake Ontario shoreline, access and recreation are considered the same issue. Most of the competition for shoreline use is between private, personal use and public or semi-public recreation use.

1. Public Access Issues

a. Public Lands

Public lands or facilities are held by the State, federal or local government in fee simple or less than fee simple ownership. Lands that fall into this category include Lakeside Beach State Park, Oak Orchard Marine Park, Orleans County Marine Park, DEC's Fishing Easements Program and public rights-of-way.

1) Lakeside Beach State Park

Lakeside Beach State Park is a 731 acre public camping facility possessing 1.5 miles of lake frontage. The Park was originally designed for swimming, camping, and day use activities. Located at the western end of the Lake Ontario State Parkway, the Park is 30 miles from Rochester and 35 miles from Youngstown and Fort Niagara State Park.

Although opened in 1972, only the camping facilities and day use area were ever completed. Pool construction was a victim of budget cutbacks, leaving Orleans County the only County on a New York Great Lake or ocean without a State operated swimming facility.

A 5,000 square foot swimming pool has been designed to accommodate 200 swimmers. The OPRHP requested construction funding of \$760,000 in 1991, but monies have not been allocated. None of the six park facilities (tent/trailer, picnic tables, biking, playground, cross-country skiing, snowmobiling) are operated on a year round basis, nor are they water-dependent or -enhanced. The 1983 Statewide Comprehensive Recreation Plan, however, identifies water contact (beach and pool complex) and water access (launching, fishing, marina) development as long term (fifteen years) potential. Environmental education, cultural and performing arts, and special events were also identified as having long term program service potential. However, the feasibility of implementing any of these facilities is based on intensive management planning analysis, and any component could be dropped at any time.

2) OPRHP Land Purchase

Nearly all the land adjacent to Johnson Creek, from the Village of Lyndonville to Lakeside Beach State Park, is privately owned.

Much of this land is used in farming, and as a result, public access to this warm water fishery is severely restricted.

In October, 1987, at the urging of the NYS Department of Environmental Conservation (NYSDEC) and local groups, the OPRHP purchased a 6.6 acre parcel of land on Johnson Creek adjacent to Lakeside Beach State Park (see Map 2.4). The intent of this purchase was to provide an area for cooperative development and maintenance of an access facility by State and local governments. The purpose was to provide parking and boat access to Johnson Creek for small craft and to allow larger craft access to Lake Ontario one mile downstream.

A modest investment of funds and manpower could get site design and development underway in a cooperative venture, among State, county and town governments, and the county federation of sportsmen's clubs, similar to that at the Lake Alice Launch Ramp (see below). Off-site improvements would require navigation markers at the mouth of Johnson Creek due to a constantly changing channel.

3) Oak Orchard Marine Park

The facility, owned and operated by the OPRHP Genesee Parks Region, occupies a prime location at the mouth of Oak Orchard River. The east side facility offers three-slip boat launching, parking, and a comfort station. The five acre site also provides shoreline fishing (the area's only handicapped fishing access point) and scenic vistas. It is one of two publicly owned boat launching facilities in the county.

The west side of the park, a 76 acre parcel, until recently remained undeveloped except for a small parking facility. In May 1989, the facility opened with a four-bay launch ramp, temporary docking for ten boats, parking for 96 car/trailers and 25 cars. A comfort station was added in 1990. The use of the east side facility has continuously grown since its opening in 1980, with 77,000 users in 1984, 120,000 in 1986, and 127,000 in 1987. Extreme boating and automobile congestion occurs frequently, particularly during fishing derbies, due to the site's small size (5 acres), physical constraints, and prime location. A particular problem is the parking conflict caused at the site by those wishing to fish off the jetties or view the area's scenic vista, versus those wishing to launch boats.

4) Orleans County Marine Park

This site was acquired in the late 1960's by the NYS Department of Transportation for construction of the twin Lake Ontario State Parkway bridges over Oak Orchard River. When the property's jurisdiction (east side of the river only) was turned over to the Genesee State Parks Region in the early 1970's, the Region

developed a master plan for this 11.8 acre site, calling for boat launching, docking and comfort facilities. The State budget crisis of the mid-1970's caused the plans for the site to be scrapped.

In December, 1981, the County and the OPRHP executed a 25 year lease to develop the property as a marine park. Several attempts to obtain private involvement did not materialize despite the availability of \$100,000 in State seed money to encourage development. Public/private discussions broke down over issues of providing facilities available to the general public and of charging private developers the equivalent of property taxes through rental fees and gross receipts assessments. Private developers found they could not realize an adequate return on investment under those terms.

Once attempts to solicit private sector involvement had failed, the County issued a Request for Proposals in October 1984 to prepare a site analysis, conceptual plan and design. After reviewing seven alternative designs, the County Legislature chose a phased design approach. Phase I, at an approximate cost of \$600,000, included 72 boat slips, fishing access, a 57-space paved parking area, comfort station, picnic facilities, fencing, walkways, scenic overlooks and signs. Phase I was completed in the Spring of 1988. All 72 slips have been leased under three-year agreements, with a majority of the lessees non-resident boaters. Phase II was completed in 1991 and includes expanded parking for approximately 30 car/trailers, a fish cleaning station, a second comfort station, and a communication center.

Management of the site is now under the County highway department. The management plan was prepared in cooperation with the OPRHP and input from area marina operators. Their involvement was critical in providing services that would not duplicate or compete with those offered by the private sector. This facility is one of only a few open-to-the-public recreation facilities on the upper reach of the river (see Map 2.3).

5) Lake Ontario State Parkway (LOSP)

The Lake Ontario State Parkway extends across 12.5 miles of the Orleans County shoreline from State Route 390 in Monroe County to Lakeside Beach State Park. This limited access highway represents a substantial barrier to public access in the area. In the Town of Kendall, the Parkway's construction in the early 1970's took the Town park and beach on Lake Ontario and most of the Town's shoreline. Besides the dramatic effect this action had on the Town's tax base and lakeshore farm land, the Parkway became a barrier which Town residents could not cross to reach the Lake. Although two Parkway pull-offs (one in Kendall, one in Carlton; see Map 2.3) were built along the LOSP in the early 1980's, the minimal investment placed in them enables little more than shoreline fishing (which is poor due to local shoreline

characteristics in the area) and scenic viewing. Access can only be gained by west bound vehicle travel on the Parkway itself.

A designated biking lane exists along the Parkway from Lakeside Beach State Park east to the County line. No special facilities are provided to bicyclists.

While directional signage appears adequate along the LOSP, maintenance of signs appears sporadic. Information and service facility signage is nonexistent. With numerous recreational and service facilities in the Point Breeze area, the potential exists for such signage at the Point Breeze interchange and Lakeside Beach State Park terminus.

6) The Bridges Project

The hamlet of The Bridges is located at the juncture of the Marsh Creek and Oak Orchard River. Named for its three bridges, it is a waterfront community with numerous marine and commercial developments resembling a New England fishing village. The hamlet serves as a transition point between the commercialized lower reach of Oak Orchard River and the scenic, largely undeveloped area extending south from The Bridges to the Niagara Mohawk power generating dam, near Waterport. The Town of Carlton comprehensive plan policies identify the upper area of the gorge as unique, which character and environmental resources are worth preserving.

The Oak Orchard River Road Bridge (see Map 2.3), a County bridge over 77 years old, which had been flagged as structurally deficient by the NYSDOT, had restricted upstream access by large vessels due to its low vertical distance to the river. As a result, intensive marina development is limited upstream of this area. This bridge was recently replaced with a one-lane bridge crossing over the Oak Orchard River. The replacement bridge is at a slightly higher grade.

The feasibility of constructing a larger north-south bridge over Marsh Creek was evaluated by the NYSDOT. This review determined that the new bridge should be at a scale similar to the old bridge.

A bridge over Oak Orchard River would restrict upstream access, likely prevent the upper gorge from experiencing growth pressures, and maintain upstream areas as separate and distinct from downstream areas, preserving their scenic and environmental character. Removal of the bridge would enable further growth of private fishing and boating facilities, and increase property values and development potential to a wide area of the Town. Similarly, it would potentially reduce congestion by spreading out boat launching and docking areas over a wider area than the 1.8 miles between the lake breakwater and The Bridges. Any bridge

improvement program in The Bridges area should strive to retain a physical barrier over Oak Orchard River.

b. Private Lands For Public Use

Private lands allowing public use are typically service oriented businesses such as marinas, boat launches, charter boat services, and other water-dependent uses described earlier. Other privately owned properties allow access either informally or by formally sanctioned means, such as leases or easements.

1) NYS Department of Environmental Conservation Public Fishing Rights Program

This program involves the public purchase of permanent fishing access easements, allowing the public to fish along a tributary stream on a 33 foot deep strip of land. In Orleans County, the NYSDEC is offering fishing easements for \$11,200. per mile on Johnson and Marsh creeks, and \$20,000. per mile on Oak Orchard River and Sandy Creek. (None are authorized for Waterport Pond because it is not a stream.) The NYSDEC has notified property owners along tributaries in the County, however, that to date, no easement agreements have been executed within the WRA, due largely to a lack of funding. Opportunities to assist in local marketing of this program should be explored further.

In the Spring of 1989, the NYSDEC completed an appropriation of lands at Park Avenue Extension (see Map 2.3) under this program. Parking access is now being evaluated. Access to this area is particularly important during the fall salmon run, up Oak Orchard River.

2) Ends of Roads

The area around the termini of public roads offers opportunities for small scale recreational development. Private road ends, which exist mainly in the form of fire lanes, however, restrict expansion of public access. The area at Shadigee at the end of State Route 63 has an improved parking area constructed on land owned by the Village of Lyndonville for their water treatment plant. Nearby is a small restaurant and cottages. Access to the water is restricted there, however, due to a high bluff.

3) Niagara Mohawk Power Corporation Lands

This public utility operates a hydroelectric generating facility on Waterport Pond (locally known as Lake Alice) and a reservoir on upper Oak Orchard River in the hamlet of Waterport. The utility also owns land surrounding Waterport Pond and along Oak Orchard River. Two parcels on Waterport Pond characterize the formal/informal access issue (see Map 2.3).

The tail race at the dam bottom is a popular fishing area year round for salmon, brown trout and steelhead trout. Access to the dam on the company's private roads and paths leading from the top of the gorge to the gorge bottom is not restricted, although under Public Service Commission rules, Niagara Mohawk is not required to provide public access. The land is posted, however, to reduce any liability to the company in the event of accidents and personal injury.

This unofficial access point has generated concern as littering, fish cleaning, and occasional public disturbances occur due to the area's relative isolation. The County Fishery Committee organized a meeting, in 1986, among involved parties to address these problems. An annual plan was put in place providing sanitary facilities, information displays and brochures. Financial and program support are provided by the Town of Carlton, Orleans County, OPRHP, and Niagara Mohawk. This low key effort has apparently solved most of the problems with public access. With the construction of a privately operated fish cleaning station, nearby, additional oversight is provided.

Niagara Mohawk's position on Waterport Pond is somewhat different. Informal boater access had been allowed for years at a stone launch ramp. The Orleans County Federation of Sportsmen's Clubs became aware of a safety problem here and approached Niagara Mohawk and the County Legislature for assistance. Cooperatively, and for a nominal investment, a concrete ramp, rip rap, parking and signage were installed.

Unlike the informal dam access, Niagara Mohawk required a lease and insurance coverage from the County. Fluctuating lake levels and the fact that boats are involved on the property are contributing factors to this requirement. Launch ramp and water speed limit rules have been adopted, as well.

Waterport Pond provides multiple recreation pursuits which, at times, are not compatible with one another. As an excellent bass habitat, the lake generates a large amount of high powered bass boat traffic by both students and non-students. Waterport Pond is also popular for water skiing and canoeing due to the relatively calm waters. As a result, conflicts often develop among lake uses seasonally. A Lake Alice Waterfront Owners Association was formed in October, 1988 as a forum to address these and other issues. In a 1990 survey of owners, 83 percent responded that water safety is of great concern.

2. Recreational Opportunities

The continued growth of the Ontario salmon and trout fishing is the greatest recreational opportunity in the area. Since 1979, when restocking of salmonid species returned full swing, more than 5.3 million fish have been stocked annually into Lake Ontario and its tributaries. As reported previously, the

economic impact of sport fishing upon Orleans County in 1984 was \$1.8 million. A later study revealed that Orleans County generates the lowest amount of sport fishing of three area lakeshore counties (Development Planning Services, 1988).

The phenomenal success of the stocking program, combined with strong legislative acceptance, is likely to insure its continuance well into the future. However, necessary direct and indirect support facility development has lagged well behind the rapid growth of sport fishing. Parking congestion, a deficit of accommodations and lodging, and a shortfall in boat slips have resulted (Development Planning Services, 1988).

There is a critical need for additional launching sites, parking, and most particularly, lodging facilities to generate increased angler expenditures in the County. Despite the fact that Oak Orchard River is considered the second most popular fishing location on Lake Ontario (after Sodus Point), fishermen will go to areas where facilities are available to accommodate them.

a. Seaway Trail

The potential for a scenic touring trail along Lake Ontario, Lake Erie and the St. Lawrence River was recognized in the mid-1960's at both the national and State level. In 1978, the New York State Legislature passed legislation officially designated the Seaway Trail, a corridor extending from Massena in St. Lawrence County to Niagara Falls in Niagara County. The Trail was later extended to Fair Haven and then to Ripley at the Pennsylvania border, covering 454 miles and running through 64 municipalities (see Map 2.6).

Seaway Trail, Inc. was created in 1978 to represent the Trail region as a tourist destination and to promote regional economic development through tourism. Seaway Trail, Inc. maintains offices in Oswego and operates on a \$500,000 annual budget supported by State budget appropriations and member municipalities.

In 1984, the Trail was dedicated a National Recreation Trail as a result of a National Park Service study of the area and is the longest such trail in the United States. Comprehensive planning for trail use was begun in 1987, resulting in a Seaway Trail Action Plan highlighting the Trail's tourism resources and markets, and presenting a framework for trail development.

The Plan divides the Trail into ten "development zones," for which individual plans will be formulated. Zones are delineated based upon physiography, demography, resources, themes, image, and product. Orleans County comprises Development Zone 4. Opportunities for touring spurs and loops include the Seaway Trail/Erie-Barge Canal linkage and the development of the history theme as related to the coast, canal and cobblestone architecture.

A signage program was undertaken consisting of a War of 1812 theme of 51 historic markers along the Trail. Two information kiosks have been supplied by Seaway Trail which the County has erected at Lakeside

Beach State Park and Orleans County Marine Park. The kiosks contain a Seaway Trail map, County tourist destinations, and locally placed promotional material. Service signs should be considered along the LOSP, as indicated in subsection D1.

E. SCENIC RESOURCES

Scenic resources include both natural and cultural features of the landscape. A particular combination of landform and surface attributes defines a "character area" with a distinct visual identity. The scenic quality of these character areas is directly related to accessibility, presence of unique features, presence of eyesores, landscape diversity and a host of other abstract and measurable dimensions. Several character areas are identifiable in the WRA. These areas and scenic vistas are described below, along with opportunities and limiting factors (see Map 2.5).

1. Oak Orchard River Gorge

The Oak Orchard River Gorge character area, extending from the Waterport hydroelectric dam to the area of Orleans County Marine Park, is a scenic corridor providing a diversity of visual experiences. The river flows in a series of entrenched meanders cut into the shale bed, forming steep 50 foot cliffs. The walls and rim of the gorge are covered with a mixed hardwood and evergreen forest. The river, itself, supports a variety of aquatic plants, fish, and birds.

To fully experience this area access must be gained by boat. The lands bordering the river are, for the most part, in private ownership, restricting public access. One opportunity for land side access is the Orleans County Marine Park, which offers a scenic overlook of the gorge. Acquisition of scenic easements along narrow strips of private land bordering the gorge offers another, albeit costly, approach.

Numerous neglected and dilapidated structures dot the banks of the gorge, detracting from its scenic quality. Examples include deteriorated boat houses, slap dash camp structures, docks constructed of rubber tires, and various structural debris. Many of these structures extend far into the boating channel due to considerable siltation along the shoreline. Few, if any, of these structures are removable from the water, and are thus subjected to weathering and stresses of ice, further contributing to deterioration. An avenue of protection, which has been explored by the Town of Carlton, is the designation of a preservation overlay zoning district.

The Oak Orchard Gorge character area contains two subareas, one at Waterport Dam and the other at The Bridges. Each has its own amenities and problems.

a. Waterport Dam Area

The Waterport Dam character area contains a hydroelectric dam and a waterfall on the abandoned Hojack rail line. The deep gorge contrasts sharply with the generally flat terrain of the surrounding area, and the man-made features of the hydro facility accentuate the depth of the gorge. The area below the dam is a popular place for salmon fishing during the fall spawning run, as it is the first impassable barrier on Oak Orchard

River. The unimproved land on the west side of the river, at the brink of the falls, offers a scenic view of the foliage and the river gorge, and has potential for public access improvement. See also subsection D1 for public access issues.

b. The Bridges

The Bridges is a fishing hamlet, quintessentially New England in character, situated at the confluence of Oak Orchard River and Marsh Creek. It represents the transition point between the relatively undeveloped upstream reach of Oak Orchard River, and the more heavily developed recreational/commercial area downstream. As a transition area it is quaint yet subjected to water pollution and access pressures. In addition, public parking is limited and restricts full enjoyment of this very active area by tourists.

2. Lake Ontario Vistas

The Seaway Trail corridor follows the Lake Ontario State Parkway to Lakeside State Park, then continues westerly on Route 18. Two fishing access pull-offs on the LOSP provide a panoramic view of Lake Ontario; direct access, however, is limited to west bound traffic. East bound, there is a five mile distance between Parkway interchanges. There are no public facilities (picnic tables or historic markers) at the pull-offs. The LOSP portion of the Seaway Trail also bypasses the scenic opportunity at The Bridges, although it passes in close proximity to it. The Orleans County Tourism Advisory Board (the official I LOVE NEW YORK Tourist Promotion Agency) encourages use of the Seaway Trail, emphasizing the nearby scenic and recreational features through a self-guided tour map and brochure.

Northerly oriented roads terminating at the Lake Ontario shoreline offer limited opportunities to experience a lake vista. Full public access to lake vista is provided at the Point Breeze jetty via Point Breeze Road. At Shadigee, in the Town of Yates, a lake vista opportunity has recently been lost with construction of a fence at the Lyndonville water treatment plant. Elsewhere, most roads are privately owned fire lanes which limit public accessibility. Land at the road ends is also largely in private ownership, allowing no parking or expansion for access.

F. HISTORIC AND ARCHEOLOGICAL SITES AND STRUCTURES

Several historic and architecturally significant structures and sites could enhance the scenic and cultural aspects of the coastal area, if properly protected. These structures and sites are of local importance and for the most part rest in private ownership. None have been nominated for listing on either the State or national registers of historic places.

1. Kendall

At the present location of Eagle Creek Marina lies a Norwegian settlement site dating to 1825. A log house, now in private ownership, is believed to be one of the original buildings of the settlement.

2. Yates

On the north side of Lake Shore Road, near the Town Line Road, stand two cobblestone houses. They are exemplary of this type of architecture of the early to mid 1880's. Both are privately owned. On the south side of Lake Shore Road stands a privately owned six-sided house circa 1840-50. An accessory barn, with numerous advertising signs covering the roof, however, detracts from the site. A state historic marker also stands on the property.

3. Carlton

At The Bridges are four Italian style villas exhibiting the Gothic style of the mid 1850's. These structures are privately owned. Long-term preservation of these and two other stone buildings on Route 18 in Carlton depends on the owners' interests in maintaining the property, and may be questionable due to the high costs of appropriate materials.

The Oak Orchard River area has long been known for its early occupation by Indian tribes. On the west side of Oak Orchard River, near Point Breeze, lies a prehistoric Indian site originally reported in 1959. Four 25 foot square excavation units produced over 600 netsinkers, fishbones, and approximately two pounds of pottery, indicating heavy Iroquoian occupation dating to 1400 A.D. Depth of the occupation zone varied from 13 to 20 inches. The site was locally considered to be the most heavily occupied fishing village in Orleans County.

Later, in 1970, SUNY College at Brockport conducted limited excavation at the site. The site again yielded netsinkers, hammerstones, pottery shards, and fragments of bone. Excavation and artifact analysis indicated a second cultural affiliation, probably Owasco, dating from 600 to 800 A.D.

4. Opportunities For Preservation

The cobblestone structures in the WRA have particular historic significance to Lake Ontario, as most of these structures were built between 1825 and 1860 using water washed stone, gathered from the lake. The Orleans coastal area is within a concentrated region of cobblestone architecture along southern Lake Ontario, where 90 percent of the cobblestone buildings in the world are found within a 75 mile radius of Rochester, New York. The Cobblestone Society, a non-profit organization, was established in 1960 to preserve these structures and provide information on this lost art of building. A resource center serves as archive for pictorial and narrative histories of such structures across North America and provides preservation and information to the cobblestone homeowner.

The NYS Office of Parks, Recreation and Historic Preservation (OPRHP), in planning for boat access development at Oak Orchard Marine Park, conducted an archeological assessment of the adjacent Indian fishing site. In March, 1984, the OPRHP commissioned the Research Division of the Rochester Museum and Science Center to assess the archeological sensitivity of the project area and to evaluate the cultural resource base. Survey methods included interviews, site walkover, subsurface excavation, and laboratory analysis.

In addition, the site of the Lake View House Hotel, circa 1850-1900, was identified and examined. Information from prehistoric fishing villages is considered extremely rare and the local site is estimated to contain much information.

The report concludes that while both sites are considered significant cultural resources, only the Indian village site would appear to be directly and adversely impacted by the marina development. Should the OPRHP concur with these findings, the Center recommends conducting further investigations to determine if the site qualifies for inclusion in the National Register of Historic Places.

The three towns have established historic districts. Development in these districts is subject to site plan approval and certain requirements to minimize development impacts on buildings or uses of historic or architectural significance.

G. SIGNIFICANT FISH AND WILDLIFE HABITATS

Three significant fish and wildlife habitats have been designated in the WRA of Orleans County pursuant to 19 NYCRR 602.4. (See Appendix A for a detailed description of these habitats.) The designated habitats, Oak Orchard Creek, Johnson Creek and Sandy Creek, became effective October 15, 1987. In addition, one wetland has been designated under the State Freshwater Wetlands Act, 6 NYCRR Part 662 (see Map 2.7).

The designated habitats and wetland all are tributary to Lake Ontario, the smallest (7,340 square miles) and most easterly of the Great Lakes. These habitats serve wildlife endemic to this area as well as migratory water fowl. Some species may face depletion as winterers, breeders, or migrants in the area.

While the fundamental purpose of the habitat program is to preserve the viability of designated habitats, development is not assumed to be necessarily detrimental to a habitat and will be evaluated on a case by case basis. A number of habitat types offer opportunities for marina, campground and other recreational development. In these instances, the benefits and cost of development must be balanced with those of the habitat. The significant habitats in the WRA are described below.

1. Oak Orchard Creek

The Oak Orchard Creek habitat extends approximately six miles from the mouth at Point Breeze to the Waterport Dam, and includes the entire stream channel and associated islands and wetlands. The habitat also includes an approximate two mile segment of Marsh Creek, which flows into Oak Orchard Creek about one mile south of Point Breeze. (A one mile segment of Marsh Creek is a State designated Class I Freshwater Wetland encompassing 35.5 acres.)

The hamlet of The Bridges is a point of transition in land and water usage along the Creek. The area above the hamlet is relatively undeveloped with minimal habitat disturbance, while the segment below the hamlet is intensively developed with marinas, boat launches, residences and bulkheading. Large areas of emergent wetland vegetation and submergent aquatic beds occur in undisturbed shoreline areas bordering along this lower section of the Creek.

Oak Orchard Creek is the largest stream in Orleans County, and is one of about ten major tributaries in the Great Lakes Plain ecological region of New York. Undisturbed tributary streams that provide habitat for major spawning runs by salmonids and other lake-based fish populations are especially important in this region. Beds of emergent and submergent aquatic vegetation in the Creek contribute to the maintenance of fish populations and serve as valuable habitats for wildlife.

Large concentrations of chinook and coho salmon and brown trout migrate from Lake Ontario into the Creek each fall, from late August through December (September - November, primarily), when salmonids ascend tributary streams to spawn (although unsuccessfully in most instances). Steelhead (lake-run rainbow trout) migrate into Oak Orchard Creek during the fall and between late February and April. These fish populations are the result of an ongoing effort by the NYSDEC to establish a major salmonid fishery in the Great Lakes through stocking. A combination of siltation from runoff, slow upstream water flow, and high water temperatures has inhibited development of natural spawning habitats. The continuation of an aggressive fish stocking program is, therefore, critical to the maintenance of the fish population and the sport fishing industry. This industry generates a large economic impact seasonally and during area fishing derbies.

Oak Orchard Creek also contains a diverse warm water fishery. The area supports substantial natural reproduction by smallmouth bass, northern pike, rock bass, black crappie, brown bullhead, and largemouth bass. Oak Orchard Creek also provides a limited smelt fishery in the spring.

The wetlands and undisturbed woodlands bordering the Creek provide valuable habitats for wildlife that are uncommon in Orleans County's WRA. A variety of bird species inhabit the area, including great blue heron, greenbacked heron, mallard, wood duck, belted kingfisher, marsh wren, common yellowthroat, red-winged blackbird and swamp sparrow. During spring and fall migrations, Oak Orchard Creek and Marsh Creek serve as resting and feeding areas for locally significant concentrations of waterfowl. Other wildlife include muskrat, mink and raccoon.

The fish and wildlife resources associated with Oak Orchard Creek attract a significant amount of recreational use, although access to the area is limited by the steep banks and private land ownership. This is one of the most popular recreational fishing streams on Lake Ontario, due to the large salmonid runs in the area. Fishing pressure is concentrated below the confluence of Oak Orchard and Marsh creeks, and in the area immediately below Waterport Dam. The intervening segment offers abundant warm water fish species accessible by small boat or canoe.

Concentrated residential and commercial development at Point Breeze, the area's prime fishing center, is suspected of introducing pollution into the Creek from poorly functioning septic systems. Non-point source pollution, such as agricultural runoff, is also believed to be delivering high loadings of phosphorus to streams. It has also been suspected that dredging of streams removes bottom material and a food source essential to fish habitat. The bass population has experienced localized losses as a result. Finally, upstream water withdrawals

may diminish water quality at least temporarily. Water withdrawals, stream bed disturbances and effluent discharges are of particular concern during fish spawning runs.

2. Johnson Creek

The Johnson Creek habitat extends approximately seven miles from the hamlet of Lakeside on Lake Ontario to a low dam (the first impassable barrier) in the Village of Lyndonville. The Creek is bordered by woody vegetation along portions upstream of the Harris Road crossing. Downstream, the vegetation turns to grass and brush growth. From the State Route 18 crossing at Kuckville, downstream, the land use changes to seasonal and year-round residential use. The last mile of the Creek flows through the undeveloped west end of Lakeside Beach State Park.

Johnson Creek is second in size to Oak Orchard River and supports largemouth and smallmouth bass, northern pike, walleye, and whitesucker. In the fall (late August through December), however, concentrations of coho and chinook salmon enter the stream to spawn (although unsuccessfully in most instances). Although these species are not stocked in Johnson Creek, they are stocked by the NYSDEC in other tributaries of Lake Ontario, and many move into Johnson Creek during the fall spawning run. Other salmonids present in the Creek during this period include brown trout and steelhead (lake-run rainbow trout).

The fall salmonid run has the potential for attracting large numbers of anglers; however, access opportunities are limited to areas downstream of the Harris Road crossing, with the prime opportunity on Lakeside Beach State Park land. Much of the upstream reach is not navigable by even canoe during the summer due to low water depth and reduced flow. The spring runoff debris literally dams the entire channel, requiring several portages.

3. Sandy Creek

Sandy Creek flows through the towns of Hamlin (Monroe County), Kendall and Murray. The habitat includes the Creek channel and associated wetlands and islands, extending approximately fourteen miles from the mouth of Sandy Creek (at Sandy Harbor Beach) to the confluence of the west and east branches of Sandy Creek, just south of NYS Route 104. While woody vegetation borders most of its length, the lower three miles of the Creek, including a wetland, have been degraded by livestock grazing, shoreline property development and use of motorboats.

Sandy Creek is one of about ten major New York tributaries to Lake Ontario. Despite a variety of habitat disturbances, Sandy Creek has significant spawning runs (unsuccessful in most instances) of coho and chinook salmon in the fall (late August through December). Coho salmon and steelhead (lake-run rainbow trout) are stocked in Sandy Creek by the NYSDEC. Spawning runs occur as far inland as Albion on the West Branch, and Holley on the East Branch, but actual population levels in these reaches are not well documented. Brown trout occur only in the lower reaches of Sandy Creek during the fall spawning period. From the County Route 19 bridge, in the hamlet of North Hamlin, downstream to the mouth of Sandy Creek, there is also a productive warm water fishery. Warm

water species present include northern pike, smallmouth bass, and brown bullhead. Smallmouth bass spawning activity throughout Sandy Creek produces a large portion of the smallmouth bass population in this section of Lake Ontario.

4. Freshwater Wetlands

Freshwater wetlands in the WRA provide both natural and economic benefits. Not only do they support aquatic plant and animal life and migratory bird species, but they also serve as settling basins for silt which would otherwise obstruct streams and harbors. This capacity to absorb and hold water also controls flooding. In addition, wetlands offer recreational opportunities for fishing, hunting, hiking and birdwatching.

The NYSDEC has identified and mapped one wetland, pursuant to the Freshwater Wetlands Act, in the WRA. This wetland is designated a Class I Freshwater Wetland (#KT-9) and occupies 35.5 acres on approximately one mile of Marsh Creek in the Town of Carlton (see Map 2.7).

5. Lake Ontario and its Shoreline

This relatively deep lake is part of the Saint Lawrence Seaway, discharging into the St. Lawrence River and linked with Lake Erie by the Niagara River and Welland Canal, and with the Hudson River by the Erie-Barge Canal. It serves as municipal water supply, cold water sport fishery, recreation resource, and as a link in Great Lakes shipping commerce.

An emerging threat to the Lake Ontario ecosystem is the recent discovery of a small freshwater mollusk called the zebra mussel (*Dreissena polymorpha*), so named for the alternating light and dark bands along its elongated shell. This organism poses serious problems for boating and shipping, sport fishing and water supplies (see subsection N), with enormous economic and environmental costs.

Zebra mussels are native to the Black and Caspian Seas and other European waters and are believed to have been transported to the Great Lakes in the ballast tanks of European freighters. The mussel is introduced when the ballast tanks are discharged. First discovered in Lake St. Clair in June 1988, the mussel spread eastward to the Niagara River by January 1990.

The range of the mussel could expand to inland waterways through the Erie-Barge Canal by attaching itself to boat hulls, turtles and crayfish. They colonize lakeshores and riverbanks, and nearly any hard surface to a density of 100,000 per square yard and may accumulate to six inch depths on shallow lake bottoms.

The impacts on sport fishing are manifested in a depletion of microscopic plants (phytoplankton) and algae that are eaten by zooplankton which are, in turn, consumed by bait fish which are then eaten by large predator fish. If the bait fish are no longer available as forage, then trout, salmon, walleye and other sport fish species will be depleted. New York Sea Grant estimates the annual impact on the sport fishery to be \$27 million for Lake Ontario.

With regard to the lakeshore and nearby agricultural lands (excluding the tributaries previously described), these areas are of seasonal value to migrating waterfowl, shorebirds and songbirds. Waterfowl, migrating in the spring and fall, often use farm fields heavily for feeding and resting. Woodlots and areas of mixed vegetation are important to many species of songbirds. As elsewhere along the lake, bald eagles and other raptors are known to fly along the shore when migrating.

6. Opportunities for Habitat Improvement

The Town of Carlton has amended their zoning ordinance to create a stream preservation overlay district along the Oak Orchard River, from The Bridges upstream to Waterport Dam. The district would enhance the State Habitat designation by controlling land development a certain distance from the shore in an area of local environmental concern. Erosion, scenic quality and development intensity are main features in the Town's intent to preserve this tourism resource.

The Town of Carlton considers the freshwater wetland along Marsh Creek to be of local significance. The Town zoning ordinance established a Conservation Overlay District upon this and other wetlands to promote their preservation. The guidelines and regulations of the Freshwater Wetlands Act have been adopted and incorporated by reference into the ordinance.

The Orleans County Sanitary Code regulates the installation of individual household septic systems to ensure adequate operation. This will help reduce the cumulative effects of non-point sewage seepage to the habitat.

With regard to zebra mussel control, various biological and physical methods are available. Studies have shown, for example, that use of diving ducks have been successful in some European lakes at water depths less than fifteen feet.

H. AGRICULTURE

Agriculture is the predominant industry in Orleans County, with a 1987 market value of agricultural products sold totaling \$50.8 million. Market value of products has continually risen (by 26 percent since 1978) despite a decrease in the number of farms and a stable amount of land in farms. Just over 60 percent, or 152,000 acres, of the total land area in the County is farm acreage according to the 1987 Census of Agriculture, 2414 acres of which are situated in the WRA.

The demand for certain crops produced may be lowered with the departure of several food processing companies (e.g. H.J. Heinz, Birds Eye, Lipton, and Albion Produce).

Although a large portion of the WRA is covered with "unique" soils identified by the Soil Conservation Service, and soil classes 1 through 4, no more than 38 percent of the WRA is in active agriculture. Agricultural districts have been created, under Article 25AA of the State Agriculture and Markets Law, in the Town of Kendall (Districts 3 and 4), in the Town of Carlton (District 9) and in the Town of Yates (District 10). Portions of these districts overlay the WRA (see Map 2.8).

1. Problems

Although development pressures on these agricultural lands are not great, potential conflicts exist in two specific coastal areas with regard to unique soil designations and soil classes 1 to 4. The Morrison Site in the Town of Yates, and Point Breeze in the Town of Carlton (see Section IV), represent potential conflicts between agricultural preservation and development potential.

Virtually the entire Morrison Site (see subsection C1) is covered with soil classes 1 to 4, although only portions of the site are actively farmed. Farming is practiced through lease arrangements between the owner, New York State Electric and Gas Company (NYSEG), and farmers. However, rental rates are reportedly less than half that for nearby farmland along State Route 18. NYSEG continues to market the entire site for industrial or mixed use development, while farmers petitioning for creation of the Yates Agricultural District have recognized the site's development potential by excluding it from the district.

Recreational development pressures have been brought to bear on the Point Breeze area, south along State Route 98, to The Bridges hamlet. Much of this area contains soil classes 1 to 4.

In 1981 a development firm acquired options on 2,000 acres of farmland, largely the Bennett Farm property, for resort condominium development. In 1988 a similar project was proposed, including condos, camping, an inland harbor, motel and public parking. Although neither project materialized, continued pressures are expected due to the expanding sport fishing industry in this area and recent development of public fishing facilities. Much of this area has also been excluded from Agricultural District 9.

2. Analysis and Opportunities

It is apparent that a relatively small portion of the WRA is in active farming even though most of this area exhibits high quality soils. Agricultural use in the WRA constitutes only 1.5 percent of the total county-wide agricultural land supply. However, orchard crops, such as apples and cherries, thrive in the WRA because of the tempering effects of Lake Ontario. Cool temperatures in the Spring delay blossoming and provides protection from frost damage.

Orchard crops are situated in unique soil areas and do not conflict with development opportunities, and enjoy protection through agricultural districts. The agricultural districts have been created (and proposed) with planning forethought, including areas of viable farming, excluding areas with development potential.

The Morrison Site and Point Breeze are well-defined areas of potential growth which will not take large tracts of farmland when developed. Nor will they promote scattered, low density growth. In addition, there is very little alternative land in the WRA suitable for commercial or industrial growth. Strip residential development dominates the coastline, leaving isolated "back lots" with no infrastructure or access.

Point Breeze is a high density area with infrastructure in place. A need exists for facilities that support the growing sport fishing industry here. Local zoning policies discourage agriculture and encourage recreational and commercial uses in this area. The Town of Carlton real property tax base and personal income are among the lowest in the County. A major recreational complex could add significantly to the area economy in property and sales taxes and jobs.

I. WATER QUALITY

The coastal area's water resources, both on the surface and underground, are an important public asset and have influenced the present character and extent of uses along the lakefront and tributary fringe. Water quality will play a large role in the future character of the area. Maintaining high quality water offers advantages in health, recreation, scenery, and economic vitality, and is dependent on the proper use and management of this resource and its surrounding land resources. This subsection describes surface water limnology and groundwater resources in the coastal area, water quality problems associated with land use, and opportunities for abatement of problems.

1. Surface Water

The WRA's major surface water resources are Oak Orchard River, Johnson and Marsh Creeks, and Lake Ontario into which these streams drain. Oak Orchard River measures 4.8 miles in length from Waterport Dam to its mouth, and drains 223 square miles of land downstream of the dam. Marsh Creek is tributary to Oak Orchard River. Its drainage area, downstream of its confluence with Beardsley Creek, is 39 square miles and measures 1.06 miles from that point to The Bridges. The coastal boundary encompasses 10.5 miles of Johnson Creek from its mouth to the Lyndonville Village line. Its drainage area is 113 square miles.

Maintaining good stream habitat quality is necessary to support the fish species. To this end, agricultural management programs for reducing non-point phosphorus loading of streams have been evaluated by Cornell University, the U.S. Soil Conservation Service, Cooperative Extension, and Soil & Water Conservation Districts. This is part of a statewide effort mandated by the U.S. - Canada Great Lakes Water Quality Agreement. A \$300,000 research program has been initiated to demonstrate remedial measures to control agricultural non-point runoff of phosphorus to Oak Orchard River.

The present and desired uses of these waters and suitability for varied uses is directly tied to water quality.

Only the coastal waters (Class A) are suitable for the widest range of uses, including water supply, bathing, and fishing. The highest uses in the tributaries are limited to fishing and boating. Water quality problems are evident, to varying degrees, on the coastal waters and tributary streams.

In 1981, the NYSDEC identified segments of Oak Orchard River as "stressed" due to several non-point pollution sources. Sources outside the WRA include urban storm runoff and combined storm sewer overflows in the villages, and Class D stream runoff. Within the coastal region failing on-lot septic systems are the most widespread contributors. Cropland and pasture runoff occur both within

and outside the WRA. Several farm feed lots bordering Johnson Creek allow livestock into the channel. In addition, several municipal, industrial and commercial point-source discharges affect the stream and lake water quality.

NYSDEC PERMITTED DISCHARGES

FACILITY NAME	FACILITY LOCATION	RECEIVING WATERS
Salvation Army Camp	Town of Kendall	Groundwater
Village of Lyndonville Sewage Treatment Plant	Village of Lyndonville	Johnson Creek
Lakeside Beach State Park	Town of Carlton	Johnson Creek
Village of Albion Water Treatment Plant	Town of Carlton	Lake Ontario
Village of Lyndonville Water Treatment Plant	Town of Yates	Lake Ontario
Village of Medina Sewage Treatment Plant	Village of Medina	Oak Orchard River
Black North Inn	Town of Carlton	Oak Orchard River
Harbor Point Country Club	Town of Carlton	Oak Orchard River
Oak Orchard Marine Park	Town of Carlton	Oak Orchard River
Orleans County Marine Park	Town of Carlton	Oak Orchard River
Village of Albion Sewage Treatment Plant	Village of Albion	Sandy Creek-West Branch

Resulting water quality problems are aquatic damage by sedimentation, infectious agents, excess nutrients, and increased oxygen demand.

In 1982, the Orleans County Department of Health discovered significant levels of coliform bacteria in Oak Orchard River at its confluence with Marsh Creek at The Bridges. The total coliform level, which indicates the presence of organics, measured 79,500 parts per 100 m.l. The health standard is less than two parts per 100 m.l. Fecal coliform, which is bacteria originating in the intestinal tract of vertebrates, measured 490 parts per 100 m.l. The high total coliform levels could be due to Marsh Creek draining large areas of land rich in organic and agricultural loadings. Dairy farms, beef cattle, and other domestic farm animals are commonly raised in the area draining to Marsh Creek. In 1982, the County Health Department reported that agricultural runoff could be causing organic and inorganic chemical concentrations in streams.

The fecal coliform levels may be an indication of sewage pollution along Marsh Creek. The tributaries of Marsh Creek, although small, are quite extensive and many are in close proximity to individual residences. The County Health Department reported that, "the fecal coliform levels at Point Breeze give a strong indication of sewage pollution," apparently due to the combination of small residential lots and seasonal high density population. Individual household sewage systems are an ineffective method, and the Health Department recommends a community wide sewage disposal plan. Commercial facilities in the area have upgraded their sewage systems and are continually monitored. Improper boat discharges are also suspected.

The Erie-Barge Canal provides flow augmentation to these streams, fire control, pollution control, flood control, and agricultural irrigation, while creating enhanced salmon stream runs in the growing Lake Ontario sport fishing industry. The canal is supplied largely from the Niagara River and receives various point-source discharges from area industry. Nitrogen and phosphorous levels indicate that canal waters could be considered slightly enriched. Nitrate levels are highest near the agricultural sections of the canal.

2. Groundwater Quality

Orleans County is underlain by sedimentary deposits of sandstone, siltstone, shales, dolomites and limestones formed some 350 million years ago on the bottom of then Lake Iroquois. The WRA consists of a shale unit (Queenston Formation) which can exist to 1000 feet deep, yet depth from the surface is only a few feet.

As noted in subsection N, groundwater is the principal water source for coastal residents; efficient and proper use of this limited resource is critical if it is to continue as a major water source. Both water quality and quantity are erratic in the coastal area, resulting from a combination of man-made activities and natural characteristics. Subdivisions approved in the mid-50's for vaulted privies have been developed with inadequate septic systems due to small lot sizes and poor soil conditions. Development on existing approved subdivisions should meet current standards. The concentration of cottages on small lots with individual septic systems causes localized groundwater pollution problems. This septage infiltration into wells is increased where shallow depth to bedrock occurs. Groundwater yield is often inadequate due to the small size of vertical and bedding plane interstices. Lakeshore wells either dug or drilled into the shale typically yield hard and mineralized water and often produce brackish water. The best areas for springs, shallow wells, and aquifers are in soils dominated by sand and gravel, which are a scarcity in the coastal area.

3. Existing and Proposed Abatement Efforts

The Village of Medina sewage treatment plant (STP), which discharges into Oak Orchard River, was upgraded to secondary treatment in 1986 with the installation of an aerobic digester. The facility design flow is 2 million gallons per day (g.p.d), and the plant is expected to remove 6,000 g.p.d. of sludge (at 4 percent solids). The Village of Lyndonville STP, which discharges effluent to Johnson Creek, was converted to secondary treatment in 1981 with the addition of two

rotating biodisc contactors. The plant's design flow of effluent is 150,000 g.p.d., and it is estimated that 15 tons per year of dry sludge is removed.

The investigation of non-point pollution sources has gained renewed State attention. In 1984, the NYSDEC, in cooperation with the County Health Department, began research to assess the delivery of phosphorus to Lake Ontario from cultivated Elba and Manning mucklands in the Oak Orchard River watershed.

At the federal level, the Clean Water Act was amended in 1987 to include a new section 319 authorizing federal assistance for non-point source programs. It also required the states to prepare a non-point source assessment and management program. The assessment report lists priority water bodies found to be impaired by non-point pollution. Although none of the tributaries in Orleans County are currently listed, provisions are made to nominate additional water bodies impacted by non-point pollution.

Sandy Creek is within the Lake Ontario West Basin, as defined by the Rochester Embayment Remedial Action Plan. County officials are members of a subcommittee overseeing the west basin study, which will include a stream survey in the summer of 1990. The survey will identify erosion problems, point and non-point source discharges, land use and other water quality factors. As data are gathered on County tributaries they may then be considered for priority water problem status based on impairment.

J. FLOOD HAZARD AREAS

Certain areas of flat terrain along the shores of Lake Ontario and its tributaries are subject to flooding. The most serious problems are along the lakeshore where there are no bluffs. The flooding potential is an important consideration when guiding land use in these areas. Flooding could seriously threaten property and lives. In addition, new development could aggravate the flooding problem by creating impermeable surfaces and by removing vegetation, thereby increasing surface runoff.

1. Principal Flooding Program

The HUD Federal Insurance Administration studied in detail the entire lengths of Oak Orchard River, Johnson and Marsh Creeks, and the Lake Ontario shoreline. These studies found that the flood plains of the tributary streams are mostly wooded and agricultural areas and are moderately populated. The studies conclude that, "Stream flooding exists in areas along the streams where the banks and terrain abutting the streams are relatively flat and unable to contain flood levels within the channel. Due to the topography, these areas are susceptible to frequent minor flooding, but because of uniform rainfall distribution, they are not subject to high peak flows."

"Most of the stream flood problems occur in agricultural areas and residential developments along the streams being studied. The floods in the spring are normally caused by snow and ice melts. Thunder storms during the growing season cause some cropland flooding, but the extent of flooding is usually minimal. Coastline flooding is significant in areas where there are no bluffs to

protect property from inundation. Many cottages are located less than 100 feet from the lake and less than five feet above the mean water level."

On Oak Orchard River, in the Town of Carlton, development conflicts are minimal due to the steepness and depth of the creek's gorge. In addition, the Waterport Dam, operated by the Niagara Mohawk Power Corporation, regulates Oak Orchard River flows for power generation, thereby moderating high and low flow conditions at various times during the year. Water levels on Waterport Pond, however, have fluctuated severely as a result of power generation needs. This has resulted in damage to private in-water structures.

In the Town of Kendall, the designated 100 year coastal flood area extends up Eagle Creek, covering Eagle Creek Marina and crossing the Lake Ontario State Parkway. The marina is a small, commercial harbor with little protection from coastal flooding. The demand for recreational and support facilities has prompted a proposal for expansion of the site and additional in-water facilities. The extent of flooding and conflicts in resource use and preservation will be determining factors in the future operation and development of the marina.

Development conflicts in the Town of Yates are minimal on Johnson Creek, as the floodway and fringe primarily cover agricultural areas and cropland. On Johnson Creek, the flood fringe abuts or crosses some roads and encompasses farm buildings inland.

2. Abatement Efforts

To address these concerns, each of the towns has developed flood management measures which regulate land use in floodplain and flood prone areas, and meet the requirements of the National Flood Insurance Program. All have entered the regular phase of the program, Carlton in November of 1978, Kendall in May of 1978, and Yates in September of 1978, with the second level of insurance now available at actuarial rates. Flood Insurance Rate Maps, delineating flood insurance zones and flood elevation lines, have been completed for each town (see Map 2.10). Each of the coastal towns adopted a local law (revised in 1987) for flood damage prevention. These have been approved by the NYSDEC.

In the Town of Yates, two culverts have been installed on Town Line Road over Johnson Creek to accommodate high flows. Also, the elevation of the road bed has been raised.

K. COASTAL EROSION HAZARD AREAS

The coastal features of Orleans County range from low, gently rolling topography to high bluffs. Each landform is affected in varying ways and extent by lake wave action. The processes of both erosion and accretion are at work on the shoreline, eroding soil from the shore and transporting and depositing it by prevailing lake currents to the east. The magnitude of resulting property damage has a direct relation to the number, type, and proximity of structures on the shoreline, property value, and vulnerability. The control of erosion is addressed by both structural and regulatory means.

1. Problems and Issues

The rate of coastal retreat is variable along the Orleans County lakeshore depending on wave energy, geology, topography, human activity and other factors. Several structural hazard areas and natural protective features (bluffs) have been designated along the shoreline in accordance with the State Coastal Erosion Hazard Area Program (CEHA) (see Map 2.10). The bluffs rise to a height of approximately ten feet. These erosion-prone areas are receding at an average rate of one foot or more per year. During storm periods unprotected areas have lost 5 to 10 feet of shoreland to the lake, yet no principal or accessory dwelling units have been lost. Older cottage developments are situated in these erosion-prone areas. In some instances, cottages are located within a few feet of the edge of bluffs or are even overhanging a bluff, supported by stilts. However, the dangerous practice of locating structures too close to the edge of bluffs and other erosion-prone areas will be prevented in the future by local and State CEHA regulations which require safe setbacks (see K3).

Many of the structures used to protect the erosion areas are visually unattractive. They may also impact fish habitats and affect silt deposition patterns. However, it is not possible at this point to identify the cumulative effects of these structures.

Elsewhere along the Orleans County lakeshore, in the low-lying areas, littoral drift redeposits eroded material which, in turn, interferes with boating access. An example of this process occurs at the mouth of Johnson Creek, where the channel is continually shifting and shallow gravel shoals have formed.

Erosion also occurs along the tributaries to Lake Ontario. In one instance of considerable importance at the Point Breeze jetty/breakwater complex, fluvial drift originating along Oak Orchard River has filled the channel mouth, at a rate of 500 cubic yards per year, to 4 to 5 feet below the water's surface. This has, in turn, caused unsafe and inadequate navigation conditions for deep draft recreational sailing vessels. At issue is the maintenance of a passable channel at Point Breeze, the principal lake access point for pleasure boaters and fishermen in Orleans County. Dredging the mouth of the Creek would not only provide safe passage, but would also stimulate the waterfront area and increase recreation benefits.

2. Structural Control

Construction types of shoreline protection structures vary widely and very few appear to offer permanent protection. A range of structural types are used, primarily by individual land owners, including varying sizes of rip rap, concrete revetments, massive concrete blocks, concrete poured over low bluffs, and timber revetments. According to U.S. Army Corps of Engineers data, lakeshore defensive structures (breakwalls, rip rap, revetments) numbered 206 in 1982 (see figure below). The majority of these structures (77%) were constructed prior to 1969, and since that time only 48 structures (protecting 6400 feet of lakeshore) have been added.

NUMBER OF EROSION CONTROL STRUCTURES

	BUILT BEFORE 1969	BUILT AFTER 1969	TOTAL
YATES	42	37	79
CARLTON	68	9	77
KENDALL	48	2	50
TOTAL	158	48	206

Source: U.S. Army Corps of Engineers, Buffalo Region (1982 data)

Currently, protection is provided to approximately 6.5 miles of property frontage, or 26.8 percent of total County lakeshore.

In 1973, the Federal Operation Foresight Program provided \$5,000 grants for erosion control to shoreline owners who incurred damages caused by Hurricane Agnes. Few landowners used the funds for protection devices. Those devices that were constructed offer a certain degree of protection not obtained elsewhere.

These structures are, usually, formed concrete revetments extending along several properties, gabions, or stone levies, yet even these are being undercut by hydraulic impact of waves. They defend approximately 4,800 feet, or 3.8 percent of the County's lakeshore. Emplacement of rip rap is one of the most common methods of stabilization used by individual property owners. Placed in discontinuous fashion, wave action erodes the coastline around and ultimately behind rip rap and other structures.

3. Regulatory Controls

The three towns have established Waterfront Residential districts with setbacks of 20 feet. This is an improvement over previous setbacks which were as little as 5 feet in certain instances. In addition, the Coastal Erosion Hazard Area program is now in effect in the three towns (Kendall and Yates have both adopted local CEHA regulations acceptable to NYSDEC; Carlton elected to have NYSDEC administer the State CEHA regulations for the Town.) In designated erosion-prone areas, setback requirements may be more restrictive than local zoning setbacks.

L. AIR QUALITY

The WRA is located within the Genesee/Finger Lakes Air Quality Control Region. A manual air quality monitoring site is located in the Village of Albion.

Two specific air pollution generators are the New York State Electric and Gas, Inc. coal-fired power plant at Somerset, Niagara County, five miles west of the Orleans County line, and the Lake Ontario State Parkway within the WRA. Although the area is subject to prevailing westerly winds, neither source presents major air quality concern.

The Somerset Generating Station went into service in August, 1984, with a generating capacity of 625,000 Kilowatts. A 600 foot emission stack provides local protection while the plant's flue gas desulfurization system, commonly called a "scrubber," removes up to 90 percent of the sulfur dioxide emitted in the plant gases. It is regarded as a state-of-the-art facility.

Lake Ontario State Parkway extends from Lakeside Beach State Park, in Carlton, easterly to the City of Rochester. Its length in the County is approximately 12.5 miles. Highway counts reveal that average daily traffic volumes do not contribute significantly to air quality degradation, although average flows do fluctuate widely due to seasonal tourism and fishing activities.

Total suspended particulates are well below State and federal ambient air quality maximum standards, according to the NYSDEC Division of Air Resources.

M. SOILS AND TOPOGRAPHY

The topography of the Orleans County WRA, which is located in the Ontario Lake Plains, is characterized by gently to moderately sloping landforms. The lakefront often descends gently to the level of the gravel shore. In localized areas the edge of the lakeshore rises abruptly in a bluff ranging up to 10 feet in height (see Map 2.10).

Soils near the lakeshore are dominated by the Collamer-Niagara Association on nearly level to sloping topography (see Map 2.11). These soils are deep, poorly to moderately drained, and have a seasonal high water table. Seasonal wetness, moderately slow to slow permeability, and erosion hazard pose the primary limitations for farm use and development.

Inland, along Johnson Creek, the Teel Wayland Association covers the flood plain with deep, moderately well drained to very poorly drained soils. These soils are nearly level and have a seasonal high water table often at or near the surface. Farm use and development are limited by the high water table and susceptibility to flooding, yet potential is good for recreation.

The upper reaches of Oak Orchard River are dominated by two associations. The Hilton-Appleton Association has deep, moderately well drained and somewhat poorly drained soils on nearly level to gently sloping topography. They exhibit a seasonal high water table perched generally above the moderately slowly permeable substratum. Drainage is the main limitation for farm and non-farm uses as much of this association is nearly level. The Alton-Phelps Association is located on nearly level, gravelly areas and is somewhat excessively drained to moderately well drained. Slopes range from 0 to 8 percent. Soils have a temporary high water table during wet periods. The course texture, droughtiness, and seasonal high water table are the primary limitations for farming and development. Soils in this association have potential for fruit and vegetable crops, gravel pits and recreation.

N. INFRASTRUCTURE AND PUBLIC FACILITIES

1. Public Water Supply

There are two public water systems located in the WRA, in the Towns of Carlton and Yates, which provide only limited service to this area (see Map 2.9). The

Village of Albion takes its water supply from Lake Ontario through an intake and water purification plant (constructed in 1963), located on the shore adjacent to Wilson Road, in the Town of Carlton. A 24-inch intake extends 1,500 feet into Lake Ontario at a fixed level 18 feet below mean lake level. The maximum capacity of the plant is reportedly 2.6 million gallons per day (m.g.d.). A 16-inch transmission main extends from the plant south along Wilson Road, Route 18, and Route 98 to the Village of Albion.

With one exception, the distribution system is a "deadend" type, with terminal lines branching from the transmission main. An 8-inch line serves Lakeside Beach State Park and residents of Oak Orchard On-The-Lake. A 10-inch line has been extended north along Oak Orchard Road to serve the Point Breeze area. This then branches easterly on Lake Shore Road with an 8-inch line. In 1988, an 8-inch line was extended from the main along Park Avenue and Park Avenue Extension. There are no storage facilities located in the WRA.

The Village of Lyndonville also uses Lake Ontario as its supply source and maintains a water filtration plant on the shore at Shadigee, at the terminus of Route 63 in the Town of Yates. The plant, constructed in 1922, draws water from the lake via a 10-inch intake extending 800 feet into the lake. The plant has a rated capacity of 0.2 m.g.d. A 10-inch transmission main follows Route 63 south to the Village, serving the coastal hamlet of Shadigee. There are no storage facilities located within the coastal boundary. In 1984, the Lyndonville Village Board commissioned a study of the 60-year old system. The final report, completed in November, 1984, recommends redesign of the water intake pipe into the lake, replacement of the existing filter system, replacement of two 40-year old pumps at the station, and distribution improvements in the Village at an estimated cost of \$46,021. The report recommends making these priority improvements over a nine month period. No service expansions are immediately contemplated for the coastal area.

There is no water distribution system within the coastal boundary in the Town of Kendall. In all three towns on the lakefront, supplies from individually dug or drilled wells are generally inadequate under heavy usage and during dry periods.

The general lack of public water supplies contributes to a lowered fire insurance rating on lakeshore structures. None have an "A" rating (highest), although at Point Breeze and Waterport areas, structures within 5 miles of the Waterport fire station and within 1,000 feet of a hydrant have a "B" rating. Most areas along the coastal area have a "C" rating. This situation is worsened by the fact that fire companies cannot utilize lake water due to debris which clogs pumps and hoses. These factors, together with private maintenance of fire lanes, inefficient north-south vehicle routes, and the State parkway, as a barrier present a serious fire hazard to lakeshore residents.

A major, immediate impact on public water intakes results from zebra mussel infestation (see subsection G5). Water intake structures draw a continuous flow of water laden with the microscopic plants which the zebra mussel feed on. They may colonize any surface or pipeline in the water distribution system, obstructing water flow and causing corrosion. Physical control methods, such as scraping of intake pipes, pipe screening, chlorination and flushing with heated water, may add ten percent to the cost of supplying drinking water.

2. Opportunities for System Expansion

Opportunities for expansion of the water supply distribution system appear limited. The relatively long distances between residences or clusters of homes, with an overall low housing density, are inhibiting factors. The Town of Yates explored the feasibility of service along Lakeshore Road; service to waterfront cottages, however, was infeasible. The Village of Lyndonville supply system reportedly does not have excess capacity; the Village of Albion system, however, does have potential for expansion. The Towns of Kendall and Yates may have greater opportunities for service extension by tapping into nearby systems in Monroe and Niagara counties. This may be the alternative of choice since the zebra mussel may inhibit supply capacity at existing water intakes.

3. Public Sewer Services

There are no public sewage facilities located within the WRA. All systems are private, on-lot septic tanks with leach fields. Significant pollution problems have been discovered on Oak Orchard River in the relatively dense areas of Point Breeze and The Bridges, indicating septic tank failure. This issue is addressed in greater detail in subsection I.

4. Transportation Facilities

The coastal area depends entirely on the local road and highway system to meet its transportation needs (see Map 2.1). The Lake Ontario State Parkway is the area's major east-west corridor, extending from Lakeside Beach State Park in Carlton, through Kendall to Rochester. This is a limited access parkway, with five interchanges in Orleans County, and is restricted to non-commercial vehicles. The State parkway is the sole limited access arterial in the coastal area.

The State parkway and State Route 18 are the area's links in the Seaway Trail System. Both are seasonal use routes as indicated by large fluctuations in traffic volume during peak and off-peak periods. Peak summer traffic nearly doubles off-peak volumes in Spring and Fall.

Lakeshore Road, a County highway, runs east-west through the entire WRA, primarily serving local residents. Private fire lanes give lakeshore cottage residents access to Lakeshore Road.

The main north-south route serving the WRA is State Route 98, which runs north from the New York State Thruway interchange at Batavia. South of The Bridges this route becomes Point Breeze Road, extending 1.2 miles to the State parkway interchange and beyond to Point Breeze. Traffic volumes on this section showed an increase of over ten percent between 1979 and 1980. Route 18 and Marsh Creek Road converge at The Bridges.

5. Transportation and Safety Issues

The ability of existing roadways to conveniently, efficiently, and safely serve present and future travel demands is directly related to highway condition and maintenance, as well as adjacent land use. The magnitude of existing traffic concerns and potential new coastal development indicate a need for coordinated

land development/transportation planning activities among local, State, and federal government agencies.

The deep gorge carved by Marsh Creek at The Bridges results in steep highway grades, while two stop signs further slow north-south travel. Severe winter weather conditions and congestion during the summer tourism season aggravate traffic flow and create hazardous driving conditions. At The Bridges, a County bridge spanning Oak Orchard River was replaced, as was the bridge over Marsh Creek which was closed.

Highway conditions vary throughout the WRA; only a few road sections, however, are highly rated. Development pressures on already deteriorated transportation facilities will increase safety hazards to pedestrians and cyclists. This is of particular concern because this program should encourage growth of recreational facilities, which may include pedestrian traffic. Route 18 is of special concern because of its Seaway Trail designation. Maintenance has been deferred, resulting in potholes, cracks, disintegration of the shoulder, and debris. Wider lane width and shoulders, with a designated bicycle lane, are needed to accommodate both anticipated demand and traffic safety.

Concentrated development at Point Breeze presents unique problems and opportunities not found in other areas of the coast. The growing sport fishing industry attracts anglers here to gain access to Lake Ontario and its tributaries, exerting increasing pressures for expansion and development of facilities. Demand for improved highway facilities is increasing with the development pressures evolving at Point Breeze. Orleans County Marine Park, Oak Orchard Marine Park, and the Bennett Farm, which are served by public water and the adjacent State parkway interchange, represent opportunities for development.

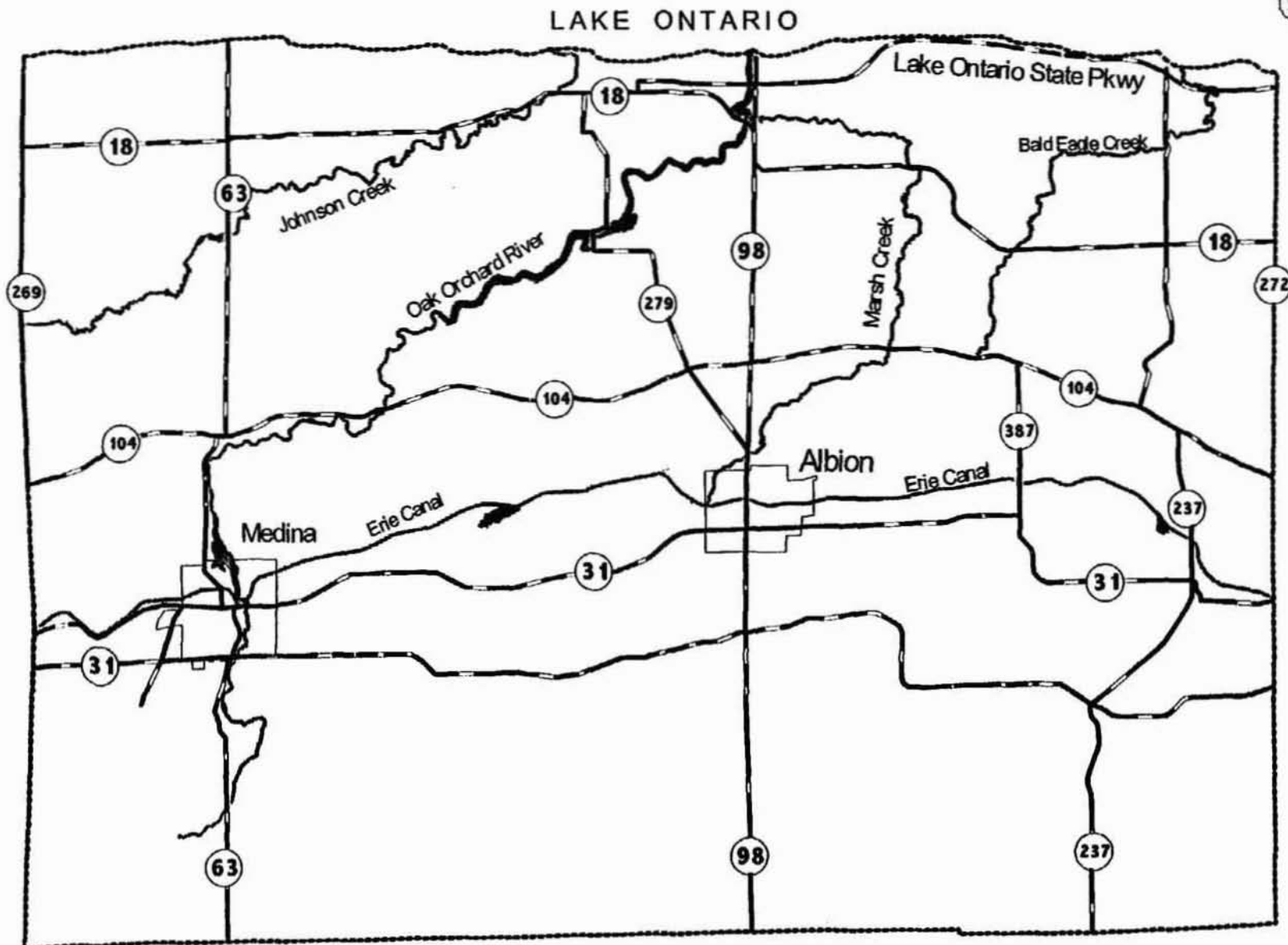
The parkway connection with Route 390 in Rochester also decreases the travel time to Orleans County. However, the State parkway works both as a development incentive and a physical barrier to growth. The resulting growth pattern will likely be compact north of the parkway. Because of the existing mixed-use character of Point Breeze (open space wetland, recreational, commercial, agricultural, and residential) and small lot sizes, continued in-fill and concentration of uses could result in further traffic and parking congestion, incompatible uses, and water pollution.

New development along the coastal area will result in concomitant traffic demands, with a need to improve both north-south and east-west transportation corridors. Continuous coordination of waterfront projects and highway infrastructure projects will need to be achieved to ensure efficiency and comprehensiveness in waterfront planning. The local County representative to the Genesee Transportation Council should be the liaison to encourage coordination of local development and the five-year Transportation Improvement Program. County and State highway officials have begun the discussion stage of a process to solve the transportation problems at Point Breeze and The Bridges.

K-Y-C LWRP

Map 2.1 Location

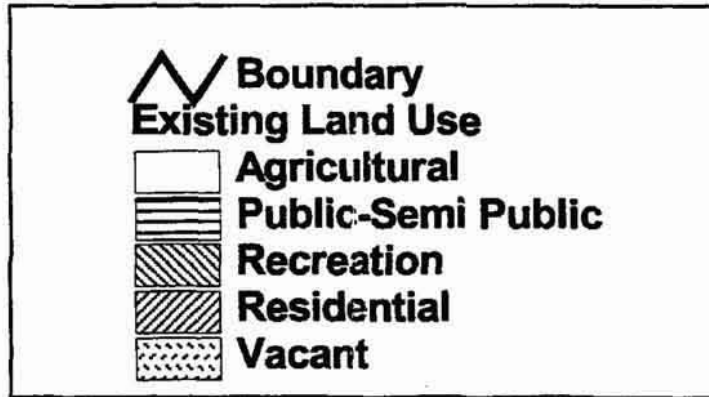
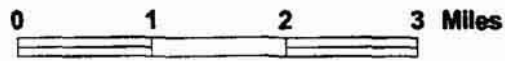
ORLEANS COUNTY, NEW YORK



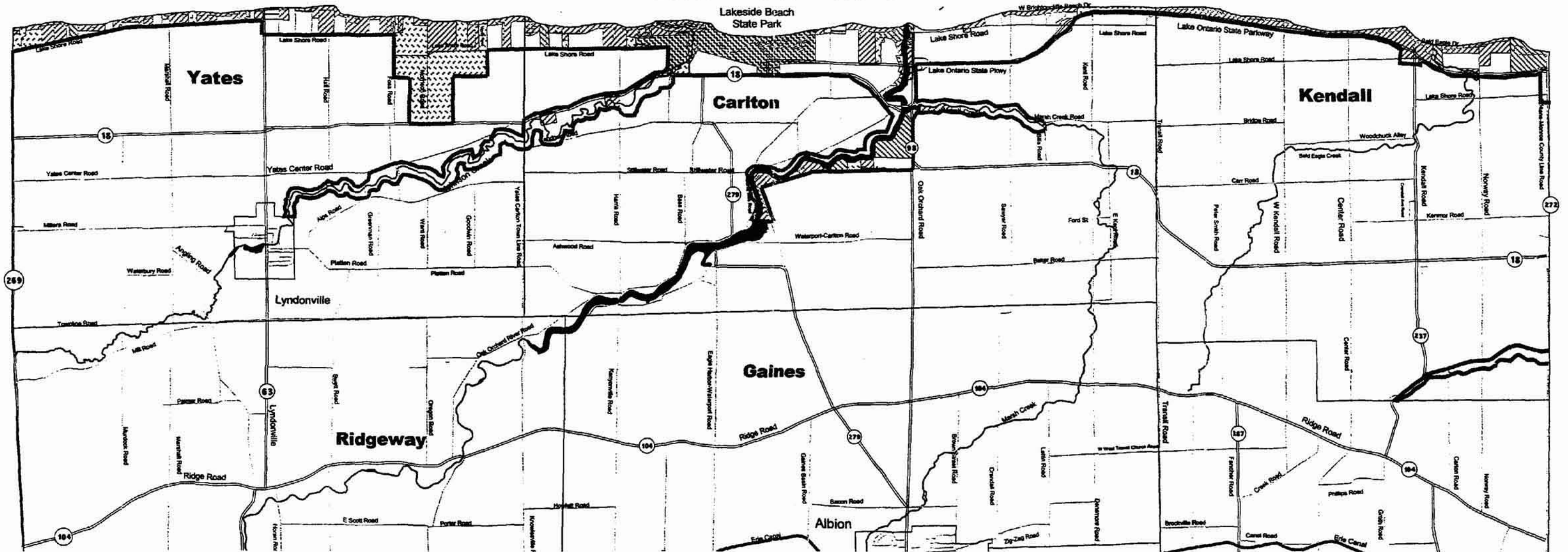
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Map 2.2 Existing Land Uses

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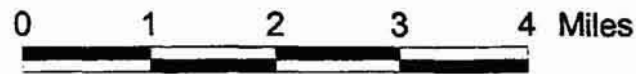
LAKE ONTARIO



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Map 2.3 Water-Dependent and -Enhanced Recreational Facilities

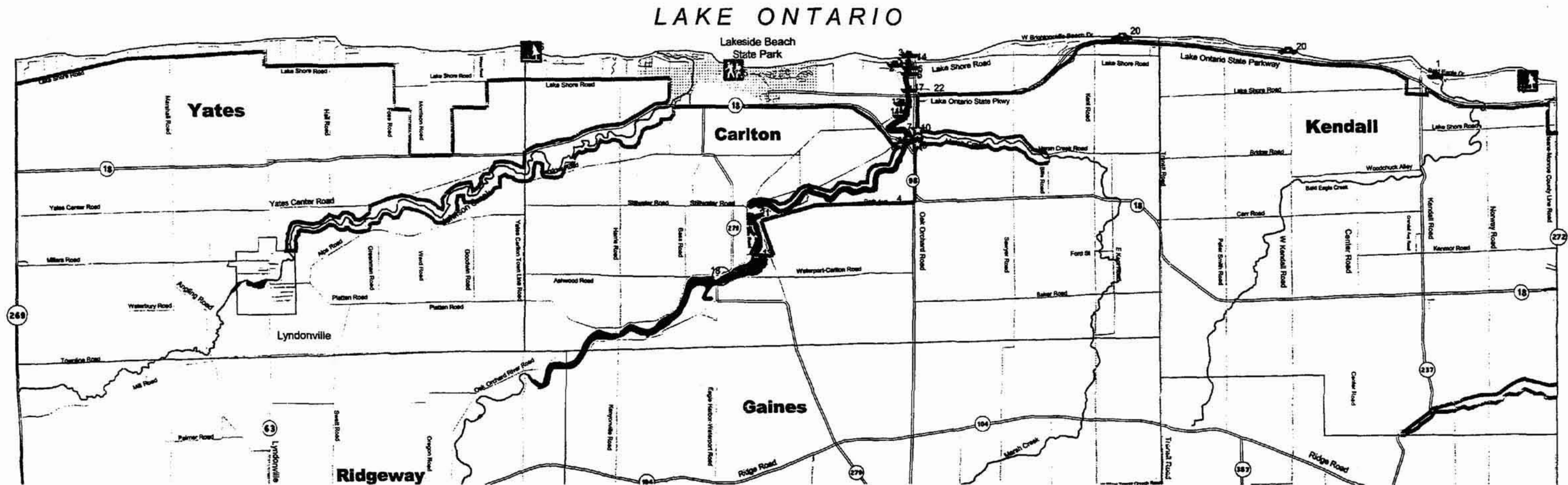
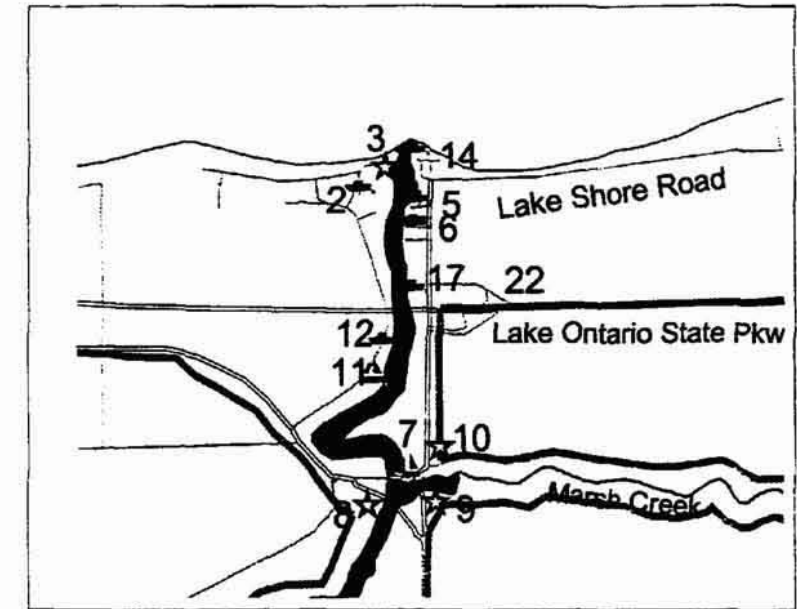
**ORLEANS COUNTY
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Water Dependent Sites

- ☆ Bait and Tackle
- ⚓ Boat Launch
- 🏕️ Campground
- 🎣 Fishing Access
- ⚓ Marina
- 🚰 Pull-Off
- 🏞️ State Park
- ⚓ Yacht Club
- ⚓ Boundary

- | | |
|--------------------------------------|--|
| 1. Bald Eagle Marina | 12. Leonard's Marina |
| 2. Oak Orchard Marine Park | 13. Niagara Mohawk Property |
| 3. Point Breeze Bait and Tackle | 14. Oak Orchard Marine Park-East |
| 5. Four C's Marina | 15. Lakeside Beach State Park |
| 6. Oak Point Marina | 16. Green Harbor Campground and Marina |
| 7. Point Breeze Yacht Club | 17. Orleans County Marine Park |
| 8. Harry's Bait Shop and Boat Livery | 18. Boat Launches |
| 9. Lizzy's Landing | 19. Salvation Army Campground |
| 10. Narby's Tackle | 20. Parkway Pull-Off |
| 11. Oak Orchard Yacht Club | 21. Fishing Access |
| | 22. Lake Ontario State Parkway |



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Map 2.4 Underutilized, Abandoned and Deteriorated Sites

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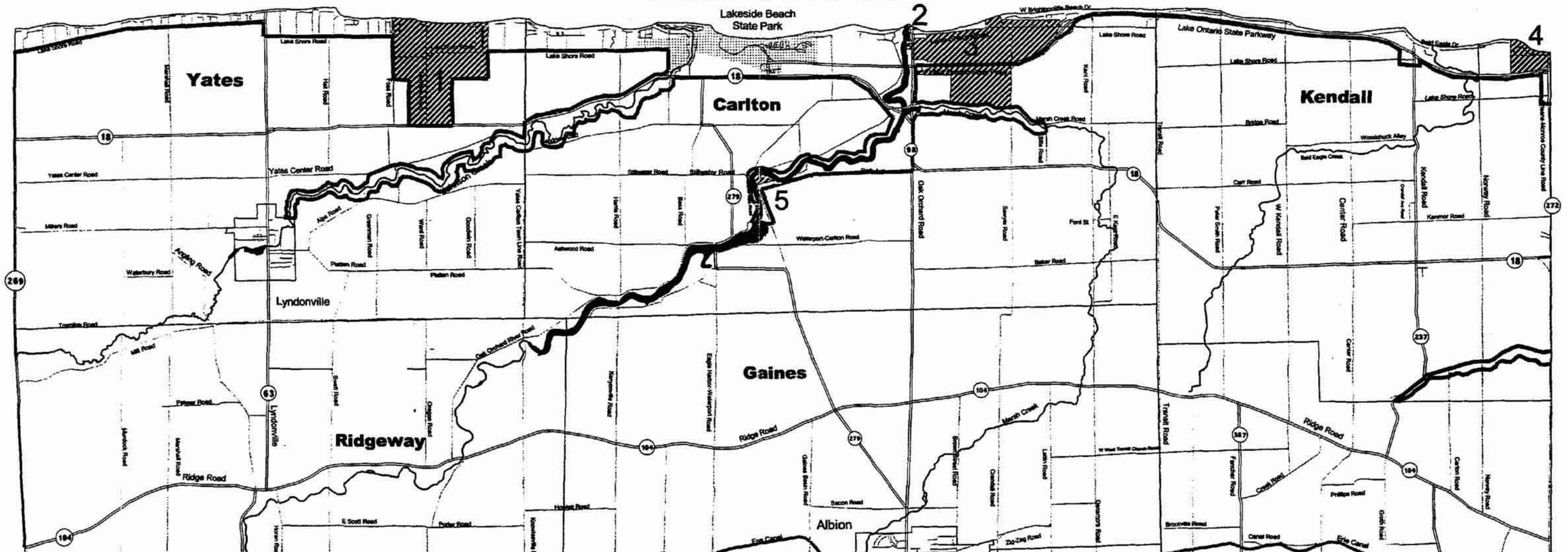


Boundary
 Target Sites

1. Morrison Site
2. Marine Park
3. Bennett Farms
4. Salvation Army Campground
5. State Acquisition Lands



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Map 2.5 Scenic Vistas and Areas

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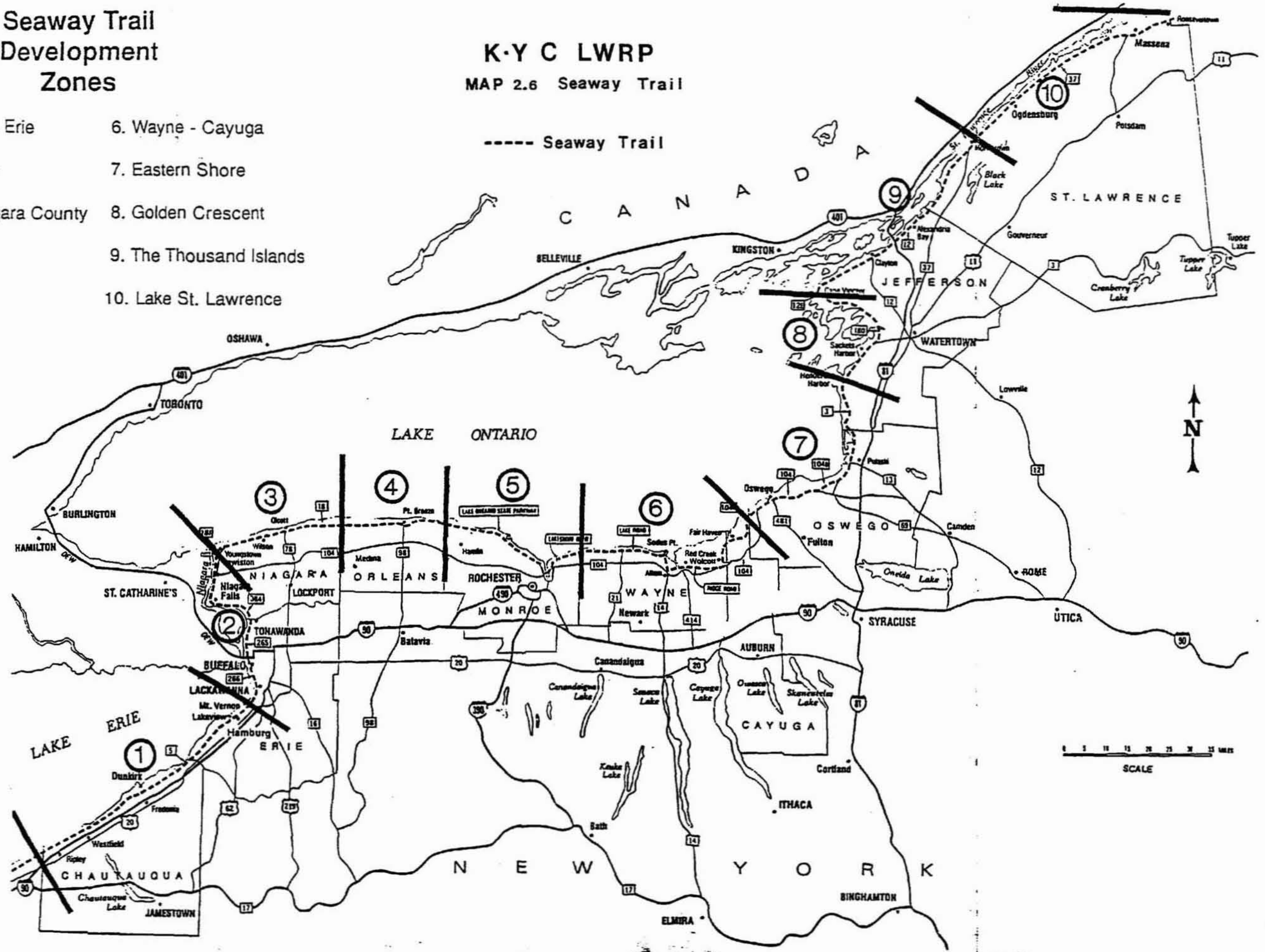
Boundary
Scenic Sites
○ **Area**
✦ **Vista**



Seaway Trail Development Zones

- | | |
|----------------------------|-------------------------|
| 1. Chautauqua - Erie | 6. Wayne - Cayuga |
| 2. Niagara River | 7. Eastern Shore |
| 3. Northern Niagara County | 8. Golden Crescent |
| 4. Orleans | 9. The Thousand Islands |
| 5. Monroe | 10. Lake St. Lawrence |

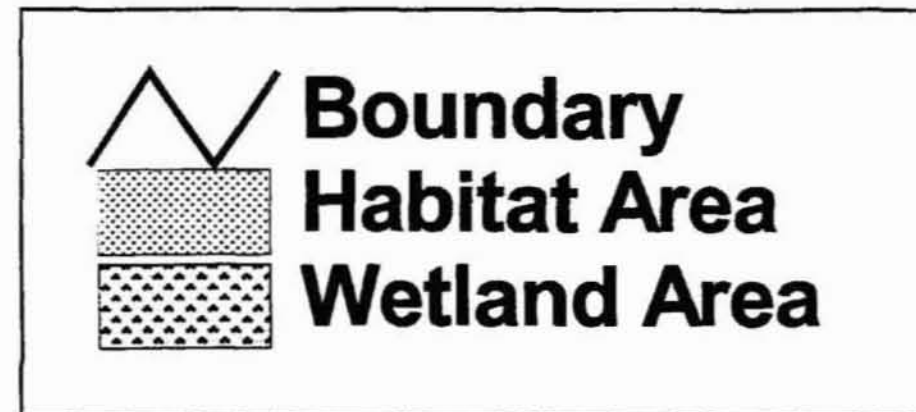
K-Y C LWRP
MAP 2.6 Seaway Trail



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Map 2.7 Significant Fish and Wildlife Habitat Areas/Freshwater Wetlands

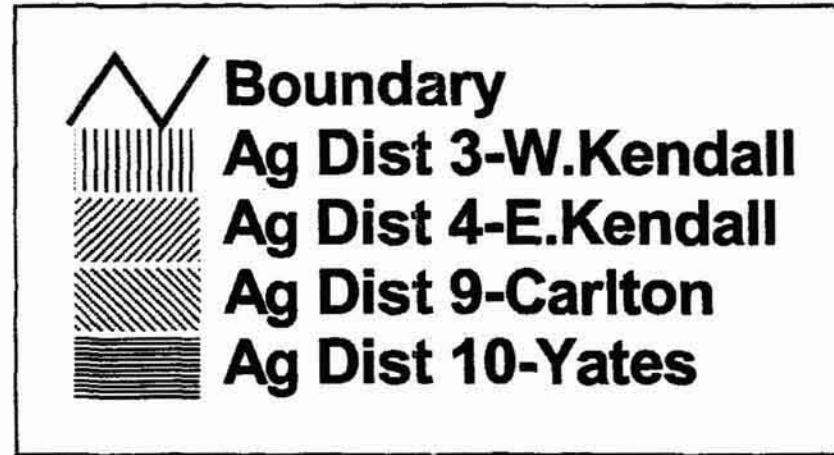
**ORLEANS COUNTY
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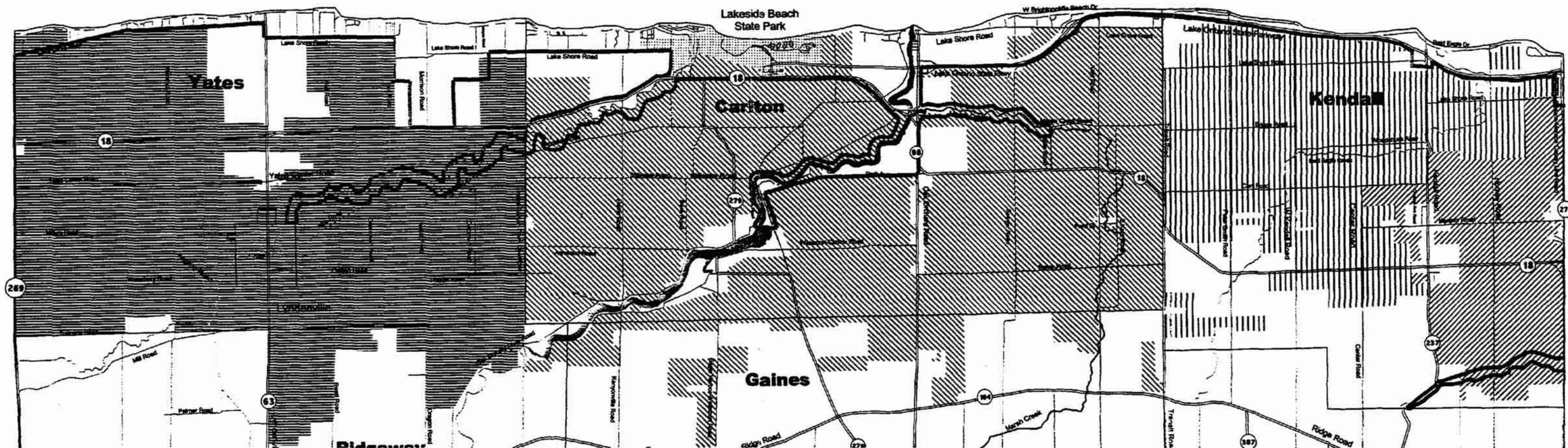
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Map 2.8 Agricultural Districts

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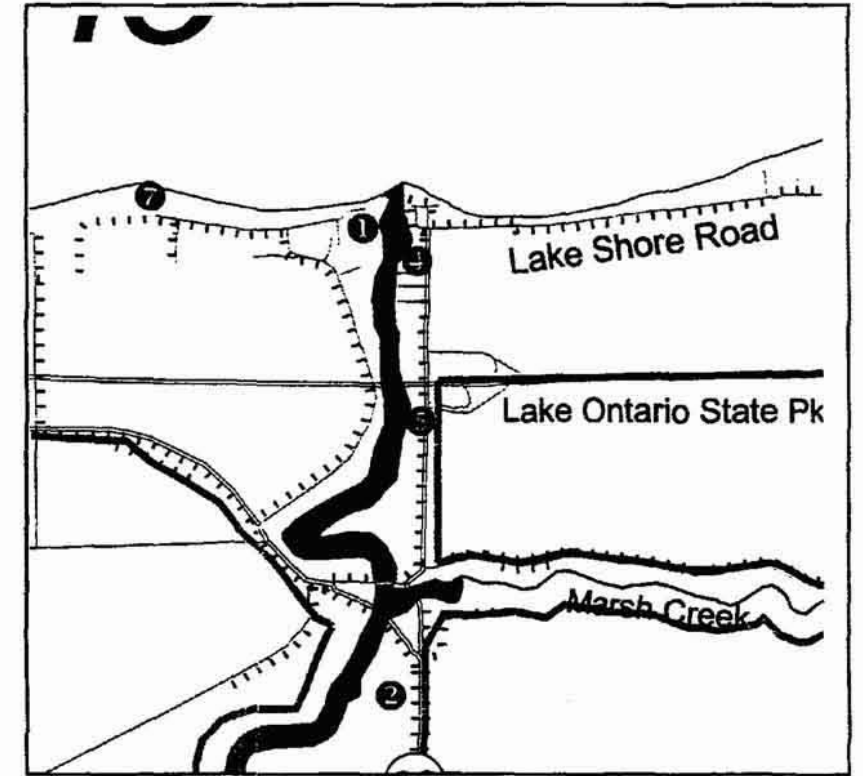
Map 2.9 Public Water Service and Permitted Wastewater Discharges

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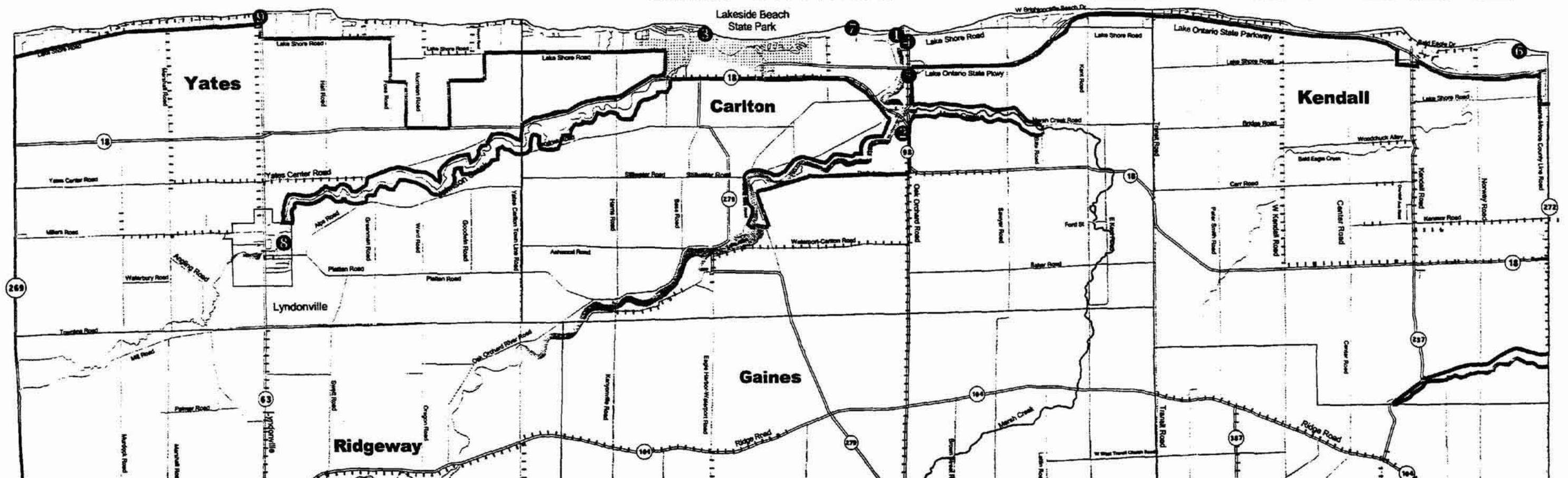


Water Uses

- ① Black North Inn Restaurant
- ② Harbor Point County Club Golf Course
- ③ Lakeside Beach State Park
- ④ Oak Orchard Marine Park
- ⑤ Orleans County Marine Park
- ⑥ Salvation Army Campground
- ⑦ Village of Albion Water Treatment Plant
- ⑧ Village of Lyndonville Sewage Treatment
- ⑨ Village of Lyndonville Water Treatment P



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MAP 2.11 Soils Association Map



Scale of Map



SOIL ASSOCIATIONS

- 1 DEEP, DOMINANTLY WELL DRAINED AND MODERATELY WELL DRAINED SOILS FORMED IN GLACIAL TILL
- 2 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN GLACIAL TILL
- 3 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN GLACIAL TILL
- 4 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN GLACIAL TILL
- 5 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN GLACIAL TILL
- 6 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN GLACIAL TILL

- 7 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN SANDY BELTIC AND GLACIO-LACUSTRINE SEDIMENTS
- 8 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN SANDY BELTIC AND GLACIO-LACUSTRINE SEDIMENTS
- 9 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN SANDY BELTIC AND GLACIO-LACUSTRINE SEDIMENTS
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- 21 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN SANDY BELTIC AND GLACIO-LACUSTRINE SEDIMENTS
- 22 DEEP, DOMINANTLY MODERATELY WELL DRAINED AND SOMEWHAT POORLY DRAINED SOILS FORMED IN SANDY BELTIC AND GLACIO-LACUSTRINE SEDIMENTS