LITTLE TRAVERSE BAY BANDS OF ODAWA INDIANS
PLANNING DEPARTMENT

LITTLE TRAVERSE BAY BANDS OF ODAWA INDIANS

MASTER LAND USE PLAN

A POLICY PLAN FOR LAND DEVELOPMENT AND ACQUISITION

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MASTER LAND USE PLAN

CHAPTER ONE
INTRODUCTION

INTRODUCTION

THE LTBB MASTER LAND USE PLAN

BACKGROUND

On Sept. 21, 1994, the Little Traverse Bay Bands of Odawa Indians (LTBB) were federally reaffirmed with the signing of Public Law 103-324. A seven member Tribal Council, with staggered terms, governs the tribe. The tribe has approximately 3800 members with a large number living within Charlevoix and Emmet Counties. The Little Traverse Bay Bands of Odawa Indians presently employs about 145 full and part-time employees. The historically delineated reservation area, located in the northwestern part of Michigan's Lower Peninsula, encompasses approximately 336 square miles of land within the two-county area. The largest incorporated cities within the reservation boundaries are Petoskey, Harbor Springs, and Charlevoix. See Map 1, *Reservation Overview.*

The reservation area of the Little Traverse Bay Bands of Odawa Indians encompasses the majority of Emmet County and a portion of Charlevoix County. This particular area has experienced tremendous growth in recent years, particularly in the number and area of residential developments. The population of Emmet County, which was 25,040 in 1990, is expected to increase by over 21% in the coming decade. 70% of that population growth will take place in the 3 townships that surround Little Traverse Bay. Since 1990, the number of new housing starts has averaged 368 per year, with the majority of these again being in the southwestern area of the county.

As originally stated in the 1971 Emmet County Future Land Use Plan, and repeated in the 1997 revision of that plan,

"*Emmet County's resource base must be viewed as an important element of the ecological structure of Michigan and the (entire) Upper Midwest. Deer hunting…and clean waters represent major factors in the local economy and are attractions which account for the increasing demands upon the rural environment.*" (Abridged, emphasis added.)

With the advent of gaming and other revenue to the Tribe, more opportunities exist for both land acquisition and property development. The rapid growth of tribal programs and services also place pressure on the Government to fully provide the infrastructure needed to deliver them. It is against this backdrop that the LTBB Master Land Use Plan is being developed.

The resources utilized to prepare and review the plan consist primarily of Planning Department staff. To ensure the highest quality content for the Plan document, a Master Land Use Plan Working Group was formed by the Tribal Administrator to act as an editorial committee. This Working Group includes staff that has prior experience with Land Use Planning and the process of developing this kind of document. The work effort was begun in earnest in late fall of 2003, with initial drafts complete in early fall of 2004.

DOCUMENT POINT OF VIEW

1) **Purpose.** The LTBB Master Land Use Plan is a precursor in the development of a Land Acquisition Policy for the tribe. The reasoning is that before land acquisition decisions can be made there needs to be an understanding of both current

development patterns in the Reservation area, as well as the direction the larger community is taking. This, and the priorities of the tribal membership, can only be addressed by a Master Land Use Plan. The Plan is a policy guide for Tribal decision-making. It does not carry the force of law or statute, but may be utilized to generate Tribal statutes or other public policy tools as may be necessary for the Tribal Council to achieve the goals and objectives in the Plan.

a. The Plan will be a resource document for Tribal Council and staff to gauge how the proposed acquisition will "fit" and whether it is advisable to pursue.

b. The Policy, developed from the Plan, will provide the guidance on what types of acquisitions should be pursued, and what factors any particular acquisition should be judged against.

c. The Plan is not a substitute for detailed site planning and site plan review of proposed developments, either Tribal or otherwise. While the Tribe's "Land Base Restoration Plan" (last updated in 1999) provides general direction for which uses the initial tribal land acquisitions should be put to, they and all other development sites still must rely on original and on-site data gathering for best results.

2) **Governmental Context**. As a practical matter, the Little Traverse Bay Bands of Odawa Indians only has jurisdiction over land use on property it owns and has placed in trust. This means that land use decisions elsewhere are made at the Township, City, or County level, depending on who has been granted zoning authority. Thus, any land use plan developed by the Tribe must take other plans into consideration. Therefore, a great deal of our analysis focused on these "external" plans and ordinances.

The external reservation boundaries of the LTBB encompass 12 Townships, 3 Cities and 2 Villages or Names Places. This, in addition to the County governments of both Emmet and Charlevoix, as well as sometimes distinct or overlapping Federal authority can create a jurisdictional patchwork that is sometimes difficult to negotiate. Nevertheless, and largely because of the sovereignty of the Tribe, any land use decisions made at any level of government can have an impact on all the others.

3) **Process.** To create a Master Land Use Plan for the tribe, a great many factors must be considered. This includes information about trends in the larger population, tribal populations, current and historic land use information, and the capability of the land itself to support development.

Traditionally, future land use plans and policies are based on elements such as:

a. The needs and desires of the citizenry and elected public officials, in this case citizens of the Little Traverse Bay Bands of Odawa Indians and it's Tribal Council;

b. The location, number, and quality of existing public facilities (infrastructure) such as roads, water, sewer, parks, and other elements of the built environment;

c. The capability of undeveloped land to sustain proposed uses, along with the type and extent of any limitations thereof;

d. The existing land use and land cover distribution; and

e. The quantitative need for various types of land uses such as commercial, residential, and industrial.

This last element can be easily derived for the area as a whole, but is almost impossible to gauge for the future development of the Tribe. Therefore, this plan relies most heavily on the first four elements for guidance. It is these elements, along with the availability and timing of revenue, which will determine the last factor in all likelihood.

The work plan for the document was as follows:

a. Staff from the Planning and GIS Departments gathered data and other information while formatting it for presentation in charts, maps, and graphs. Meanwhile, the Working Group authored the goals, objectives, and strategies for the document. In addition, this Working Group assisted with public participation meetings.

b. Next, the Planning Department analyzed the data gathered by staff, and assembled descriptive text for the information. At the same time, public input was obtained in several ways. A survey was sent to all Commissions and all Program Directors soliciting input regarding future land needs for the Tribe. This was part of a presentation shown at public meetings to the Elders, and tribal members around the state in Lansing, Grand Rapids, Escanaba, and Harbor Springs. Their input and rankings were then added to the plan.

c. Finally, all information, input, maps and written documentation were assembled into the final product by the Work Group and presented to Tribal Council by the Planning Department, after public input was gathered on the draft document.

4) **Structure.** Originally, the need for a Master Land Use Plan was brought in to sharp focus by the ability of the Tribe to make more frequent land acquisitions. It is generally accepted by Tribal Council that a set of criteria or guidelines are needed to make better land decisions. This led to the desire for a "Land Acquisition Policy" that will outline the goals, objectives, and specific information needed to make a land purchase decision.

This Land Acquisition Policy will be based on facts, the desires of the tribal membership, and the direction of Tribal Council. Because of this, an integrated "plan" document is needed, and in this case it is an ideal opportunity to put together a Master Land Use Plan for the LTBB Reservation. This Plan will provide the information and procedures necessary for Tribal Council and staff to make land purchase recommendations with a record of why or why not the purchase should be made.

The basic structure of this document begins with a presentation and analysis of area demographics. This includes information presented in the Emmet County Master Plan and more recent information assembled by Tribal staff.

Next, the physical features and development infrastructure are discussed. Existing land use, zoning, soil capabilities and other development limitations are analyzed. This will then result in a third component of the Plan, Development Sustainability Indicators.

Finally, these elements will be compared with the extensive public input gathered in meetings across the State, from Tribal Commissions, and from Program Directors in the Government.

A BRIEF HISTORY OF NON-TRIBAL DEVELOPMENT IN THE AREA, FROM A NON-TRIBAL PERSPECTIVE[1]

"Emmet County is at the top of the Michigan mitten. Its northern tip bumps into the Straits of Mackinac and Lake Michigan outlines its western boundary. At first, Ottawa Indians, … occupied the lakeshore rim. Beyond the water's edge there was only the forest, the lakes, the streams, and some swamps dismal enough to discourage a traveling bear. Its strategic location on the great lakes waterways, however, marked it for early discovery by white men and the point of control for the whole upper great lakes territory. By the time Michigan became a state, well over one hundred years of … history was already behind it.

Recorded history started about 1715, the year the French built Fort Michilimackinac on the Straits, at present day Mackinaw City. The history of the area revolved around this fort for the next 66 years. For the first 46 years, until 1761, the French were in control. The Indians were generally [loyal] to them. They agreeably [returned with] …the furs, and just as agreeably sent war parties far distances to harass the British forces at war with the French. France lost this final aspect of the struggle to get control of the fur trade, called the French and Indian War, and by treaty provisions, the vast great lakes country. British forces moved into Fort Michilimackinac when the French moved out in 1761. With the exception of one little set back, they were there until 1781.

The setback occurred on June 2, 1763 …by an efficient massacre of most of the garrison. This was the most blood-curdling episode in the territorial period of the county's history. It took about two years after the massacre for the British to reestablish themselves at the Fort. They were there when the Revolutionary War was fought. Two years before the end of that historic struggle the Fort Commandant had a new fort built on the more Gibraltar-like Mackinac Island. Old Fort Michilimackinac was abandoned in 1781 and the beehive center of the fur trading, military and political doings shifted from the mainland to that island.

The Indian settlement on the western lake shore rim of the county, however, continued to flourish. In 1840, the year Emmet achieved shape and form as a county of the State of Michigan; Indian villages were almost continuous along the shore line from today's Harbor Springs to Cross Village. The area was still a wilderness, the Indians, by treaty provision with the U.S. Government, having the right to occupy the land. The county continued to be mostly Indian reservation until 1875. In that period of time it was used pretty much as a political football and went through numerous changes in shape and size.

In 1840 the State Legislature, wishing to take the basic steps necessary to insure proper development of the whole state, passed Act No. 119 laying off and outlining the boundaries of certain northern counties. These counties were unorganized, or prospective only. Section 28 of that Act described the boundaries of Emmet County as that portion of

[1] Abridged from the official Emmet County website, compiled by Harriet Kilborn, Emmet County Clerk, 1967-1980.

the State lying north of the line between towns 36 and 37 north, and west of the line between ranges 4 and 5 west. The Act designated it as the County of Tonedagana. Two years later another act changed the name to Emmet. Why an area with such a long … Indian history was required to sacrifice its original name to some Irish patriot remains a mystery. These unorganized northern counties were attached to the organized Mackinaw County for judicial purposes.

In 1847 a colony of Mormons under King James J. Strang settled on Beaver Island. Feuding, worse than the Hatfields and McCoys, started immediately between them and [residents] in the Mackinaw and Charlevoix areas. The Mormons had the short end of the stick for the Mackinaw group had charge of law and order. In 1852, King Strang, by a brilliant political maneuver, managed to become a member of the House of Representatives of the State Legislature. By January of 1853 he had ushered through Act No. 18 of the Sessions Laws of 1853 entitled, "An act to organize the County of Emmet". The Act provided that the islands contiguous to the counties of Emmet and Charlevoix, together with so much of range 4 west as was theretofore included in Cheboygan County should be annexed to Emmet County and that the former County of Charlevoix should be a township of Emmet County. King Strang now had some law and order of his own and a much larger area of control. There is plenty of evidence, but no official records, to show that he made haste to properly organize the now greatly enlarged Emmet County and put the legal machinery in motion. County business was certainly transacted at St. James on Beaver Island and Mormons were, naturally, the county officials."

A HISTORY OF THE LITTLE TRAVERSE BAY BANDS OF ODAWA INDIANS[2]

The Little Traverse Bay Bands of Odawa Indians or Ottawa people have been in this geographical area of Michigan long before the Europeans arrived here on Turtle Island, known as Canada, North and South America. The Odawa were a migratory people, traveling from the Upper Peninsula and the northern area tip of Michigan in the fall, to the southern part of Michigan, where the climate was more hospitable during the winter months.

In the spring, the Odawa people returned to their homelands to collect maple syrup, fish and plant crops. When they weren't tending their gardens or doing their day-to-day chores, they gathered fruits, herbs, medicines, as well as any other food products they could dry and put away to be used during the long winter months.

After the Europeans came and settled in what is known as Escanaba, NocBay, Mackinac, Cross Village, Good Hart, Middle Village, Harbor Springs, Petoskey and the Bay Shore Area, the Odawa ceased to migrate to the southern areas of the state. This was due to the new immigrants or early settlers, who brought with them new food staples and work, which the tribal people took advantage of. Permanent housing, schools and churches were then established and the Native people went to work for the settlers or began their own businesses to make their living.

After the 1836 and 1855 Treaties were signed, the benefits the U.S. Government promised the Tribes, did not materialize. The Ottawa's from this area began to organize to sue the US Government to try and recover monies agreed upon from the government.

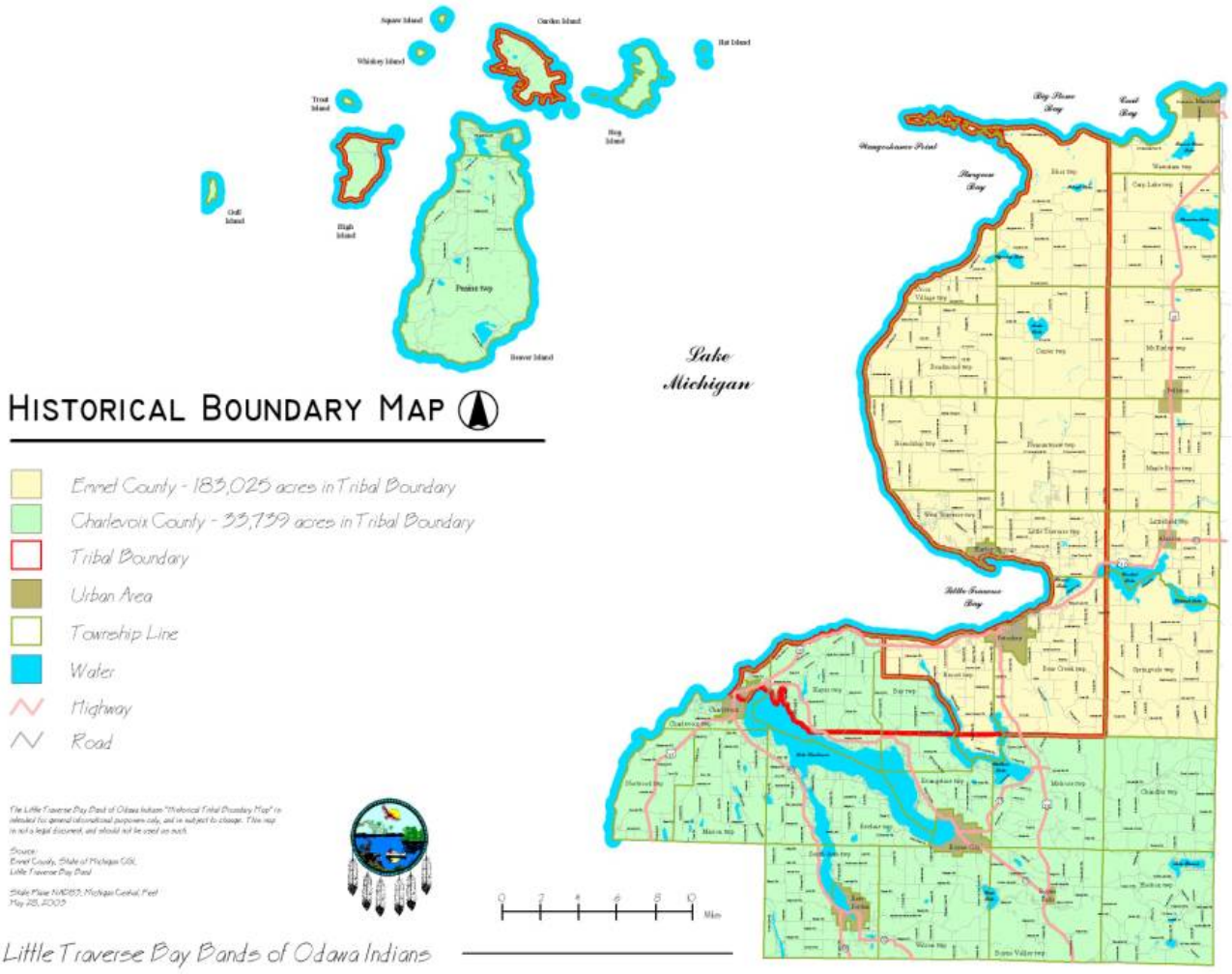
There were three (3) main groups who worked together to unite the Ottawa people politically, to make the US Government aware of their treaty agreements. They were: the Michigan Indian Defense Association of 1933, The Michigan Indian Foundation 1947 and the Northern Michigan Ottawa Association in 1948. The Northern Michigan Ottawa Association was the "Parent" to all of the Federally recognized tribes because they were an organization.

[2] History and Timeline courtesy of: LTBB Archives/Records Department.

The Little Traverse Bay Bands was originally known as the NMOA, Unit 1. Unit 1 began to file for Ottawa fishing rights (1980's) in the Federal courts. The Federal Courts would not recognize NMOA Unit 1, because they were an organization.

The tribe reorganized and took the name Little Traverse Bay Bands (Nov. 29, 1982). Again the Federal Court would not allow the tribe their rights, this time because they were not a Federally recognized tribe. The Little Traverse Bay Bands did not want to be Federally recognized under the Bureau of Indian Affairs, instead, they went for Reaffirmation by the Federal Government because of the treaties. On Sep. 21, 1994, President Clinton signed the bill that gave the Little Traverse Bay Bands of Odawa Indians, Federal recognition through Reaffirmation.

Map 1



MASTER LAND USE PLAN

CHAPTER TWO
LTBB RESERVATION AND COUNTY PROFILE

LTBB RESERVATION AND COUNTY PROFILE

THE LTBB MASTER LAND USE PLAN

POPULATION AND ITS CHARACTERISTICS

The human population of an area, its distribution and makeup, are a major factor in the land use decision-making. To study the population as it relates to the LTBB Master Land Use Plan, data for those Minor Civil Divisions (MCD) that make up the LTBB Reservation area were compiled and examined in various ways. This will give us a picture of the past, present, and future of the population, both tribal and otherwise.

Evaluating the quality of life in a township or city is a vital and necessary responsibility of those governmental agencies involved with the delivery of human services. Knowing where the population is concentrated or perhaps more specifically, where the elderly population is concentrated helps officials and staff to better understand the demographic makeup of their jurisdiction. Knowing where and how many housing units are available or what the mean rent is for an area is also useful information.

Age Distribution by MCD

The Table "LTBB Reservation – Age Distribution by MCD" (Table One) shows us the actual number of persons in either 18 or 9 different age groups (called cohorts), for each Minor Civil Division in the LTBB Reservation. The table with the larger number of groups is presented for completeness; this analysis will focus on the summary table below it. An analysis of a community's population breakdown by age cohort is important when trying to forecast the infrastructure, housing, and social services needs for the future.

As can be seen in the table, the distribution of population in the various age groups is fairly constant over the entire area, with perhaps two exceptions. By a slight degree, the population is generally older in the more urbanized areas, particularly in the City of Petoskey. Conversely, the population is youngest in those areas that are growing the fastest, i.e. Bear Creek Township. Of particular interest is the relatively large concentration of population in the 55+ age groups. This can also be seen in Charlevoix County, particularly in the City of Charlevoix. With only 60% of the population of Bear Creek Township, they nonetheless have a nearly equivalent number of persons over the age of 75. The inverse of this can be seen in the faster growing areas by the larger percentage and number of persons in the age groups under 19 years old.

The implications of these two patterns are primarily important in terms of the public infrastructure, i.e. schools, police, fire, and medical care facilities. In other words, a bulge in the population at younger ages will, over time, require greater expenditures in areas like schools and recreational facilities. Likewise, an aging population will need to be dealt with by use of public resources like police, fire, and ambulance services, and of course will put greater strains on availability of medical care.

Of particular concern to any plan for the future is the age distribution of the population. Trends, or exceptions to trends in this area are of paramount concern for the region as a whole when trying to forecast the infrastructure, housing, and social services needs for the future. For our purposes, it

is these changes that will in part drive development in the area of the LTBB Reservation. In any case, the tribal member population living in this area is by definition a part of these trends in age distribution. This is shown in Table _ . As can be seen in this table, and Figure _ that accompanies it, there is not a great deal of variation in the age cohort distribution between MCD's in the Reservation area. As is typical,

Population Density/Distribution

The graph "LTBB Reservation – Population Density"(Graph One), and the matching Table Two that precedes it, show us the density of population in persons per square mile, for each Minor Civil Division in the LTBB Reservation area. In addition, the table then connects this information with the number of housing units, and their density per square mile.

In the table, one pattern is immediately obvious, which is that the highest density populations live in the incorporated cities of Charlevoix, Harbor Springs, and Petoskey. Likewise, areas with the lowest total populations also have the lowest density. It is telling, though, that the municipality with the second highest population in the area has a population density that is roughly one tenth that of the City of Charlevoix. This holds true in the area of housing as well, particularly in Charlevoix, where there is nearly one housing unit per person, but they are squeezed into only 2 square miles of area.

Contrasting the clearly urban pattern of development in the City of Charlevoix and other similar areas is the low density of Bear Creek Township. This pattern has important implications for the future land use of rural areas, since the greater efficiencies of higher population and housing density must be planned for and regulated in order to happen. The obvious trend is that newer growth tends to take up more land than older growth did, with larger and larger lot sizes, and the higher cost of public services that this brings with it.

As the Little Traverse Bay Bands of Odawa Indians begins to make a greater number of development decisions relating to this growth, the positive and negative aspects of the current growth pattern need to be kept in mind in order to both maximize the value of Tribal investment and ensure the greatest life span for that investment. In other words, it may not make sense in some cases to capitalize on a development pattern that will eventually collapse on itself due to inefficiency and inability to maintain land values.

As can be seen in the table, and the graph that follows, the general pattern is that population density is relatively high only in the Cities of Petoskey, Charlevoix, and Harbor Springs. Elsewhere, in the townships, density is only a fraction as much. This is to be expected, given the rural land use pattern of forests and farms. Of interest, though, is moderately high density in Bear Creek, Resort, and West Traverse Townships. Not as densely developed as the cities, but four to six times as dense as the "rural" areas in Emmet County. This, along with other evidence, gives us a clear indication of the growth pressure on these three areas.

Educational Attainment as Percent of Population Age 18+

The graph labeled "LTBB Reservation – Education Attainment as Percent of Population Age 18+" (Graph Two) and the table found above it (Table Three) shows us both the actual numbers of persons over the age of 18 at the time of the 2000 Census. It also shows what portion of them did not graduate from High School with a diploma, possesses a High School diploma, has some college, and attained a Bachelors Degree or more college education.

As can be seen most clearly in the graph, for the reservation area as a whole, approximately 89% of all persons older than 18 have a High School diploma or more education. The pattern within the area municipalities is also interesting to observe. Those areas growing most quickly are likely to have a higher percentage of residents that are better educated. Not necessarily the highest percentage of all areas, but high nonetheless. Likewise, those areas most rural and sparsely populated, such Bliss Township, are likely to have lower educational attainment overall, compared to the rest of the area. Note that, in no case does the percentage of those with a Bachelors Degree or greater fall below approximately 15%, a respectable figure.

This information has implications similar to the age distribution of the population. It is not necessarily that those persons of higher or lower education require more or less in the way of municipal services. Instead, it has been shown that the difference is much more in kind that in degree. Again, this speaks to the ability of local, regional, and Tribal governmental officials to plan for the right mix of services and level of service, in the right geographic location.

Persons per Household and Average Family Size

Two closely linked, yet different numbers, are Persons Per Household, and Average Family Size. The next table and graph pair (Table 4 and Graph 3) depict each of these figures from 2000 Census data, for the MCD's in the LTBB Reservation area. The key difference between the two is that Average Family Size is only computed using households that identify themselves as having a family present. Persons Per Household uses all persons, and all households, to come up with a result.

In addition, as stated previously, the number of persons per household, and persons per family, is another key indicator of economic direction and development capability. From the table, we can see that, as a rule, there are more households than families, and thus the population in households is greater. If we examine only families, as can be seen in the graph, we can see that there is considerable variation in the number of persons per family. Although from the table one could come away with the conclusion that the average is roughly 3 persons per family, the geographic variability of this figure may be closely linked to the average age figure discussed earlier.

From a land use perspective, shrinking family size, and likewise shrinking household size, is an extension of a decades-old trend. Fewer persons per household means more individual households for a given population level, which means more land taken up in dwelling units. The increase in the number of dwelling units, increasing size of dwelling units, and the generally large area taken up for each unit in rural areas then results in a quadrupling of the land needed for residential development in come cases.

Another factor contributing to this trend is the lower birth rate trend. As couples wait longer and longer to marry, the teen birth rate is declining, and the numbers of children produced are all going down. This mirrors the national and statewide trend as well.

From the perspective of Tribal development, these factors are important in several ways. First, although in general Tribal household sized are still larger than average, the trends are difficult to ignore. This will mean increased demand for things such as elder housing in the future, as well as larger number of acres needed for single family housing. Secondly however, the ratio of households to families may indicate something about the nature of the population in a given area, and taken with other factors, is used to predict such things as the need for apartments versus single-family homes for instance.

School District Tabulations

The summary table "LTBB Reservation – School District Tabulations by District" (Table 6) and the two graphs that accompany it (Graph 4, Graph 5) depict actual and computed data for the six school districts that have either some or all of their area within the LTBB Reservation boundaries. Actual data is for the 2002-2003 school year, as provided to www.greatschools.net and its affiliated data programs. This data can also be seen on Map Two.

As can be seen from the table, the districts tabulated represent a variety of sizes and capabilities. The largest district, Public Schools of Petoskey, has over 3000 students at 7 facilities, and covers 174 square miles, the second largest area of all those summarized here. This gives it an average of 433 students per facility, again the second highest of those listed.

Perhaps most valuably, we can see for each district the average number of students per facility, and the area in square miles that each average facility must cover. Therefore, we note, for example, that while Littlefield Public Schools has only one facility, that facility must service all 456 students, highest in this listing, and cover 41 square miles.

This may give us an idea of the growth potential for each district as well. If, for example, there is a small number of students per facility in the district but a large area is covered, that has perhaps more potential for growth than a district that is small and built-out.

On the following page are tabulations of more traditional measures of a school districts capability. For each of the six districts, we present the total number of staff in each of six categories, and compute the number of students per staff member. This is then compared against the average for the State of Michigan.

Rather than comment or point out data on individual school districts, we can perhaps indicate that this data is subject to change on an annual basis, as staff are added or eliminated. As a snapshot of existing conditions, however, this information has a great deal of value in several areas. Students per teacher, or average class size, are important indicators of educational quality for most districts. In addition, related to that, is the number of administrators. The relationship between number of teachers, number of administrators, and the total enrollment may indicate something about the allocation of budget dollars within the district.

Population Change Tabulation

The table "LTBB Reservation – Population Change Tabulation" (Table 7) and the graph that accompanies it (Graph 6) illustrate important trends in population change among, and within, the municipalities in the LTBB Reservation area. In it, we examine the total population for each MCD, given in the 1970 Census, the 1980 Census, the 1990 Census, and the 2000 Census. Thus, we have three decades of population change with which to develop trend information. This data is also displayed via Maps 3 and 4.

As can be seen in the table, the vast majority of MCD's have gained population in the 30-year time span, but not all. Several have lost population either in the last decade, or indeed every decade reviewed here. This distinction is important because, while the region as a whole is growing at a relatively fast rate, the movement of population within the region, i.e. between municipalities, will give us a better more precise idea of how to predict future growth. For example, both the City of

Charlevoix and the City of Petoskey have lost population during this time frame, though Petoskey did show a very slight gain in population between 1990 and 2000.

The graphic illustrates the other side of this picture more vividly. As can be seen in the graph, several communities have seen population growth each decade from 1970 to 2000, and in Pleasantview Township in particular the percentage of growth has increased steadily. Even among communities that saw little or no growth during the 1980's, as was common, population increases rebounded significantly during the 1990's.

These sorts of trend indicators are useful in making development decisions for several reasons. First, and perhaps most obviously, they give us an idea of which areas are growing and which are not. But just as importantly, it gives us a better data model upon which to base projections of future population, by continuing those trend lines on a community by community basis. There are more geographically specific ways to project population, but at this point the law of diminishing returns sets in, and it is difficult to make population projections for periods of greater than 30 years at any rate.

To get further insight into growth patterns, we will examine the total population and the change in that population over time. Population change can be highly variable; however over long periods of time patterns will emerge that can be used to predict future growth. As can be seen in the table, after a period of low growth in the 1980's, Bear Creek Township and other townships in the area have enjoyed tremendous surges in population.

However, of similar concern is the pattern of dropping population in the City of Charlevoix. This can be more clearly seen in the graph. Although the percentage of reduction is getting smaller as the decades progress, the pattern is still obvious. It may be, however, that a turnaround is taking place in that general area, as the 67% growth in population for Charlevoix Township attests to.

As stated in the 1997 Emmet County Master Plan, "The five townships which surround Little Traverse Bay account for only about 1/3 of County land area, yet in the last 30 years they have accounted for about 70% of the total County population growth."

Racial Distribution

The table entitled "LTBB Reservation – Race of Population by MCD" (Table 8) depicts the number of persons in each MCD as distributed by race according to the 2000 Census. The table is virtually self-explanatory, as a not-very diverse picture emerges. In fact, the only sizable minority population in most communities is the Native American population, in some areas approaching 5% of the population, and nearing 10% in the City of Harbor Springs.

It may instead be more worthwhile to examine this data to specifically understand where Native Americans live within the Reservation boundaries. As can be expected, sizable concentrations of Tribal membership are located in the cities of Petoskey, Harbor Springs, and to a lesser extent, the City of Charlevoix.

In Table 8 the distribution of race in the LTBB Reservation area is presented. A look at this table shows clearly that racial diversity is not to be found in Northern Michigan. However, it is also clear that the second largest racial group in nearly all MCD's is "American Indian and Alaska Native". Of particular interest is the concentration of Native Americans in cities of Harbor Springs, Petoskey, and to a lesser extent, Charlevoix. Outside of these, larger numbers can be found in Bear Creek Township, Resort Township, and as is traditionally the case, Cross Village Township.

Population Projections

Carrying this reasoning one step further, we must look into the future. Population projections can be developed using many methods, however in rural areas such as Northern Michigan the simplest techniques will most likely produce the most accurate results. In addition, the choice of method (in this case a straight-line progression) reflects that used by the State of Michigan for most purposes.

As can be seen from Table 9, both Charlevoix and Emmet Counties can reasonably expect to see population increases near 10,000 persons over the next 25 to 30 years. Graph 7 illustrates the problem with this simple approach. In effect, the ratio of population distribution between the various units of government is permanently fixed, and so only total County population is accurately projected. Changes in population amongst the MCD's are not accurately portrayed.

Perhaps a better way to look at population distribution within a County is shown in Table 10. This method takes a 30-year historical snapshot of population in a jurisdiction, and essentially continues the trend that averages out, for that jurisdiction. Thus, it is more likely to show patterns of change, i.e. population moving from one township to another. Graph 8 and Table 11 both display the result.

HOUSING CHARACTERISTICS

Housing in the area covered by this plan varies enormously in availability, cost, and quality throughout the Reservation area. The use of land for housing and shelter represents a significant proportion of all land uses in most areas. Generally, changes in statistical information related to housing and shelter mirror important changes in the character of an area. Therefore, the change in the number of housing units, percentage of owner-occupied units, or increases in building permit activity over time are all important factors that shape planning decisions.

Dwelling Unit Percent Change 1990 – 2000

Graph 9 is entitled "1855 LTBB Reservation Lands – Dwelling Unit % Change 1990-2000" and depicts the growth or decline in the actual number of dwelling units, by area municipality, between the 1990 Census and the 2000 Census. A dwelling unit can be a single-family house, a condominium unit, an apartment, or any other structure that can be permanently lived in. The source of this graph is shown as Table 12.

This graph gives us a clear indication of which areas are experiencing the most residential growth pressure. Most importantly, however, when used in conjunction with other data on land use it gives us a good way to predict where residential development opportunities might exist in the near future. This can be seen further in Maps 7 through 10, which show the data evolving over time.

Housing Characteristics Tabulation

Related directly to the population demographics of an area are the characteristics of the housing base. The use of land for housing and shelter is a significant portion of all land uses in most areas. Generally, changes in statistical information related to housing and shelter mirror important changes in the character of an area. Officials and citizens alike cite the need for adequate housing, and for housing that matches the demographics of the area.

Table 13 is entitled "LTBB Reservation – Housing Characteristics Tabulation", and depicts the distribution of housing types among the municipalities in the Reservation area.

As we can see in the table, the vast majority of all housing in the area is one-family detached housing, i.e. the typical single family home. Coming in second (in most areas), is the mobile home. This is probably under counted, however, due to the fact that many "double-wide" mobile homes essentially become one-family detached housing once permanently sited. In some areas, such as the City of Petoskey and West Traverse Township, the number of single-family *attached* dwellings (typically a condominium or townhouse) actually exceeds the number of mobile homes. In the City of Petoskey this is perhaps due to the fact that it would be extremely difficult to site a traditional mobile home in the City, and to some extent this is true of West Traverse Township as well, however the average income level plays a role here also.

The distribution of housing types in an area plays a role both as a cause of, and a reaction to, population growth or decline. Inadequate existing housing stock can be ameliorated somewhat over time by the construction of new housing, but in general new housing is more expensive than existing. Thus, the trend in older cities towards the conversion of larger single family homes into multiple family dwellings, often apartments.

Most development is either guided by, or a reaction to, market forces. The current distribution of housing stock is one aspect of the larger marketing picture that must be taken into account when discussing any new development initiatives.

Dwelling Unit Growth/Change Tabulation

Again referring to the large table called "LTBB Reservation – Dwelling Unit Growth/Change Tabulation" we present important data regarding the area housing stock and how it has changed over time. It compares data from the 2000 Census with that of the 1990 Census for all municipalities within the Reservation area.

The bottom third of the table presents a summary of the changes in housing stock between the two Census years, with "N/V" being the computational result of zero data for that category in both Census datasets. Also see Maps 9 and 10 for another view of this information.

This can illustrate trends for us such as the large increase in the number of Mobile Homes for Charlevoix Township between 1990 and 2000. Bear in mind, though, that large increases such as this one over a ten-year span may be just the result of a single new development. In the case of the 600% increase in one-family attached dwelling units in Hayes Township, this is almost certainly true.

Key trends to look for, though, include moderate increases or decreases in any category, particularly one with a large number of units to begin with. For example, a gradual decrease in the number of single family homes with a corresponding increase in multiple family dwellings may indicate a major shift in the demographics of an area, and should be examined in light of per capita income and average family size as well.

Population vs. Housing Units

The graph labeled "LTBB Reservation – Population vs. Housing Units" (Graph 10) illustrates for us the relationship between two important demographic indicators, total population and total number of housing units, for each MCD in the Reservation area. This data is taken from the 2000 Census.

Although fortunately there are no areas where the number of housing units exceeds the total population, there are in fact several areas where the total population greatly surpasses the number of housing units. In general, this correlates well with the family size data discussed earlier, but a large disparity between the two can also be taken as a sign of increasing urbanization. This appears to be the case in areas such as Bear Creek Township, for example.

ECONOMIC CHARACTERISTICS

Annual Payroll by Sector – Emmet County

Table 14, "Annual Payroll by Sector – Emmet County", and Graph 11 that accompanies it, use Census Economic Sectors to describe the payroll impact of different types of businesses in Emmet County. This data is from 1997, the most recent year available.

As can be seen clearly in the graph, the largest payroll sectors are Health Care, Retail Trade, and Manufacturing. This is followed closely by Hospitality, which is no doubt growing in recent years. Note that this information presents total payroll per sector, not necessarily persons employed. Therefore, a sector such as wholesale trade may employ a fairly large number of persons, but if they are paid less than is typical for another sector, the total payroll number will be smaller.

The great reliance on the Health Care sector is typical of both older population bases, and an economy based in part on seasonality. This, in turn, implies an increasing reliance on aspects of the economy such as Hospitality and Tourism.

More than is perhaps commonly thought, it appears that Emmet County is somewhat dependant on the Manufacturing sector, with a fairly large percentage of the whole economy being based there. Although not shown here, this appears to be distributed relatively evenly from a geographic standpoint, while still being predominately found in the more urbanized and heavily developed areas nearest to Petoskey and Bear Creek Township.

Many areas of the economy are inter-dependent, and linked in ways that are not immediately obvious. In addition, economics is a science, but certainly one of the less exact ones. Small-scale economies are relatively more sensitive to sudden, large impacts, such as a plant closing, or even the opening of a large gaming operation.

LTBB Reservation – Poverty Rate

The graph entitled "LTBB Reservation – Poverty Rate (Census 2000)" (Graph 12) and Table 15 above it illustrate for us the diverse pattern of household income that is present in the municipalities that make up the area covered by the Tribe's Reservation. Income data reported in the Census is based on the last whole year of income; therefore the table depicts household income and per capita income from 1999.

As can be seen in the graph, poverty rates are generally higher in those areas of larger population. Strikingly, though, the poverty rate in the City of Petoskey is between 2 and 3 times the rate of other large municipalities in the Reservation area. Conversely, and nearly as surprising, is the relatively low rate of poverty in the rural areas of Emmet County, even quite inland areas. Although this is the pattern is larger urban areas, that is to say, suburbs have lower poverty than inner cities, and we are by no means dealing with a typical urban area within the LTBB Reservation. It is difficult to say

precisely why this is the case, although it may have to do with the high incomes associated with lakeshore living, and the seasonality of the economy.

In an absolute sense, this means that a higher percentage of the population of the entirety of Emmet and Charlevoix Counties is likely to be in poverty, a fact that has important repercussions for development and growth. If in fact we have an economy that is becoming more divergent instead of less, i.e. greater wealth in some areas balanced by greater poverty in persistent geographic locations, that will tend to be a damper on growth at some point. Therefore, the type and location of economic development initiated by either the Tribe or other municipalities becomes key to determining whether this trend continues.

Per Capita Income Tabulations

Closely related to household income and poverty is Per Capita Income, or PCI. In Table 16, entitled "LTBB Reservation – Per Capita Income Tabulations (1989-1999)", we see the change in PCI between the 1990 Census (1989 income figures), and the 2000 Census (1999 income figures). The result, as a percentage change, is shown in Graph 13, below the table.

As is probably becoming clear by now, each graph and table presents a slightly different aspect of the demographic environment that the LTBB Reservation coexists in. Sometimes the results are consistent with established perceptions, and sometimes larger and more varied information must be looked at before the picture becomes clear. In this case, it is interesting to note the large gains in PCI over much of the area, not necessarily just those areas experiencing rapid growth. Also interesting is that areas with lower PCI growth are not necessarily those areas with higher poverty to begin with. In fact, a lower rate of PCI growth might just indicate that incomes were higher than average to begin with, and, due to stagnant population growth or movement, a greater PCI is not possible until more change in population takes place, as can be seen more clearly in Maps 11, 12, and 13.

However, in this case, the answer more likely is somewhere else. Note from the table that, while the poverty rate of Bliss and Center Townships are fairly low, even in the 2000 Census they had the lowest PCI in the area. This can generally be explained by a correspondingly low household size (persons per household), something explored previously.

MASTER LAND USE PLAN

CHAPTER THREE
PHYSICAL FEATURES OF THE LTBB RESERVATION

PHYSICAL FEATURES OF THE LTBB RESERVATION

LAND USE CHANGE, 1978 TO 1998

Graph 14 is entitled "LTBB Reservation – Land Use % Change (1978-1998)" and shows us which of the land use/cover types have gained or lost the most area, as a percentage of their original area. The data is presented in 13 broad areas or groupings of land use/cover classifications. This data is taken from MIRIS, the basis of which is discussed earlier.

As is evident from the graph, of the 13 major classifications, only 3 have lost area, and only 2 in any significant sense. What this means, of course, is that the other 10 categories of land use have seen major gains, and all of those gains have come at the expense of agricultural and forested land, by and large. To be more specific, in the 20 years between 1978 and 1998, over 40 percent of the land classed as agricultural is now devoted to some other use. For orchard land, the change has been even more extreme. Over 92 percent of land classified as orchard in 1978 was classified as something else by 1998.

The implications of this loss of agricultural land, and its conversion into residential, commercial, and industrial development, are profound. Already there is a significant shift in public opinion towards protection of "open space" and those lands generally perceived as undeveloped. In the future, non-tribal development in this area could be greatly constrained, and will at the very least, be a good deal more regulated than it is today.

This, in turn, has ramifications for tribal development, if the nature of our development depends on existing development or anticipated patterns of development. Studying existing patterns of land use and land use change, and attempting to predict where non-tribal development will be greatly restricted in the future is half the battle in placing the tribe in the right position to maximize development potential of its land.

Culturally Significant Areas

The 'Culturally Significant Areas' map (Map 14) represents portions of Emmet and Charlevoix counties that contain the LTBB reservation boundary.

The intent of this map is to gather those areas deemed 'culturally significant' to the Little Traverse Bay Bands of Odawa Indians, which can mean "anything that is vital to the continuity of our cultural beliefs and practices, past and present." (Wes Andrews 10/04) The next step is to then spatially map their geographic locations.

To begin this process, LTBB has formed a work group comprised of the LTBB Tribal Administrator, Cultural Preservation Director, Cultural Preservation Coordinator and the GIS Director. This group is charged with developing those policies and procedures necessary to maintain a high degree of confidentiality in regards to data gathering, data access and application, and to ultimately present these conditions to LTBB tribal council for approval.

By spatially mapping these cultural resources, it becomes possible to compare and prioritize these locations in relation to other factors, such as areas of high development or environmental concern. Also, by identifying and acquiring these locations, they can hopefully be preserved for future LTBB generations.

Development Patterns

The 'Historical Development Patterns' map (Map 15) represents concentrated development for Emmet and portions of Charlevoix counties for the years of 1978 and 1998. The LTBB reservation boundary falls within this geographic extent.

Historical Development Patterns for 1978 and 1998 were created by selecting all developed lands* from the 1978 and 1998 MIRIS land use layers, then establishing a 330' buffer around all these lands. Areas in which these buffers overlap were deemed to be a 'highly developed' region, and then digitized to create 'regions of high development' on the 'Historical Development Patterns' map.

By overlaying the 1978 and 1998 regions, those areas within Emmet and Charlevoix counties which exhibit areas of high development become easily identifiable. Not surprisingly, these areas primarily exist around inland lakes, established urban centers (Harbor Springs, Petoskey, Charlevoix and Bay Harbor) and along the shore of Lake Michigan (Little Traverse Bay north along the shoreline to Cross Village Township).

Developmental trends within the LTBB reservation and surrounding areas can have a major impact on many aspects of tribal operation. For example, culturally significant areas located on the shore of Lake Michigan or any surrounding inland lakes could be given a higher priority for acquisition than those areas located outside of a highly developed region.

Developed lands include the following MIRIS land use classifications: Residential, Commercial, Extractive, Institutional, Industrial, Transportation, Communications, Utilities, Outdoor Cultural, Outdoor Recreation, and Public Assembly.

MIRIS Land Use

The "1998 Land Use" map (Map 16) represents land uses for Emmet and portions of Charlevoix counties for the year of 1998. The LTBB reservation boundary falls within this geographic extent.

MIRIS, or Michigan Resource Inventory System, land use is usually created by on-screen digitizing (drawing lines around) individual land uses in Geographic Information Systems (GIS) or Computer Aided Drafting (CAD) programs referencing current aerial imagery collected by airplane. The end result of this operation is a series of adjacent polygons, each of which is assigned an individual land use code according to the MIRIS land use classification system*.

The original MIRIS land use classification system was developed by the Michigan Department of Natural Resources in 1978, and was based upon land use data collected from county or regional planning commissions, and then formatted into a CAD/GIS compatible state-wide coverage using the Michigan Georef coordinate system.

Current land use data is a very important tool for many tribal departments. For example, by comparing land use from different time frames, it becomes possible to determine where, how much, when development has occurred, and on what type land use. Another way to look at this statement

would be to say "over the last 10 years, 5000 acres of agricultural land has been lost to residential development, with 2500 acres of lost agricultural land coming from Bear Creek Township alone." As you can see, current land use forms a key component for many types of analyses.

TOPOGRAPHY AND SURFACE FEATURES

Topography

The topography of an area is usually the result of both the underlying geologic makeup and forces on the surface that effect that geology. In northwest Michigan, two topographic features stand out as being clearly iconic. The topography of the LTBB Odawa Reservation is shown on Map 17.

Septic Suitability

The pie chart labeled "Septic Suitability" (Graph 15) shows us, for the entire LTBB Reservation area, the distribution of land areas with limitations for septic-based wastewater treatment. It is based in large part on soils analysis, with each soil type being rated for a variety of factors and capabilities. This data is taken in part from the engineering table that describes "Limitations of soils for residential and industrial development and related non-farm uses." This table is also used as the basis for Map 18, "Soil Septic Suitability."

Soils with slight limitations for septic systems will have an appropriate rate of percolation for drain fields, and have the accompanying proper particle size for filtration of the waste stream. Given the lack of municipal wastewater treatment in most of the rural areas within the Reservation, areas with slight limitations for septic systems are more attractive for development, all things being equal. As can be seen by the graph, there are 83,131 acres of such soils within the Reservation boundaries. This represents approximately one-third of the entire area available for development.

However, those areas with severe or moderate limitations for septic systems constitute over half of the area. Severe limitations for septic might include poor percolation rates caused by excessive clay in the soil, or rocky-barren soils with poor filtration ability. The rating of severe indicates that "the soil is poorly suited to the use specified and that intensive engineering practices are needed to overcome the limitations."

Hydric Soils

The "Hydric Soils" graph (Graph 16) refers to the presence or absence of water in a soils makeup. Excessive water bound to particles in the soil causes inability to drain, support foundations, and a host of other limitations. As can be seen by the graph, the vast majority of all soils found in the Reservation area are Non-Hydric in nature.

Drainage Potential

The graph labeled "Drainage Potential" (Graph 17) refers to a more specific type of "drainage" that that discussed above. A soil can have severe limitations for septic systems, and still be "well" drained, as can be seen by the graph. Over 138,000 acres of the Reservation area are classified as "well" drained, far in excess of the area rated acceptable for septic systems. This is perhaps more clearly represented by Map 19.

Conversely, poorly drained soils will tend to hold water at the surface or bound up in the upper layers of the soil.

Erosion Potential

Erosion potential, or "K" Factor, describes a soils tendency to erode, or the ease with which particles can be carried away by wind and water. Graph 18 and its companion Map 20 are entitled "Erosion Potential" and tell us that approximately half of the land area in the Reservation has moderate erosion potential, with roughly 56,000 acres having high erosion potential.

Infiltration Rate

Another component of Septic Suitability, Infiltration Rate describes the ability of water to pass through, or infiltrate, a particular soil. The graph labeled as Graph 19 shows us that well over half of the area in the Reservation has a high infiltration rate. In general, the sandy soils prevalent in this area have a high infiltration rate. While this can be useful for septic systems where the underlying geology can protect the aquifer, it can also be a hazard in areas where the aquifer is not protected. As can be seen in Map 21, the overwhelming characteristic of the soils in the area is a high infiltration rate, with its concurrent danger to area groundwater supplies.

Wetlands Map

The map entitled "Wetlands" (Map 22) shows the locations of various types of wetlands found on the LTBB Reservation. Wetlands can be broken down in specific types based upon their unique characteristics. Examples from each type of wetland can be found on the LTBB Reservation; however the Forested-Deciduous and the Forested-Coniferous type wetlands occupy the most area. Overall approximately 15% (32,557 acres) of the LTBB Reservation is covered by wetlands.

Wetlands are fragile communities that offer a range of environmental and natural resource benefits. Wetland systems act as natural filters and are capable of mitigating some forms of pollution, wetlands also help reduce and minimize flood potential, help to reduce stream velocities, maintain natural stream paths and flow and reduce erosion. Wetlands are also tremendously diverse areas. Many of the Reservation's wetlands are found along or near creeks, streams, lakes or other water bodies. Their unique mixture of water and resources allow many types of species (including endangered and threatened) to flourish. Wetlands are often also very important to number of fish, reptiles, amphibians and migratory bird species for laying eggs and rearing their young.

The wetlands of the LTBB Reservation, often due to their geographic location, also provide the Reservation's wildlife with natural ecological corridors or "wild links" to and between larger undeveloped sections of the Reservation. These corridors allow the wildlife to move across the Reservation allowing then to access different habitats as may be seasonally required. These "wild links" help to lessen the negative impacts of habitat fragmentation.

Surface Water Resources

This map, (Map 23) although provided mostly for reference, does show the large and diverse number of water bodies found in the Emmet/Charlevoix area, and it can be easily inferred how that might affect the character and economy of this area. According to the 1997 Emmet County/City of Petoskey Comprehensive Plan, "Spectacular views, clean unpolluted surface waters, and the

tranquility of the lakes are all part of the natural ambiance of Emmet County. These resources also contribute to a viable recreational economy."

Watershed Boundaries

Map 24 displays boundaries for major watersheds located within and adjacent to The LTBB treaty delineated reservation area. A watershed is the area of land that catches rain and snow and drains or seeps into a marsh, stream, river, lake or groundwater. Watersheds are inherently defined by topography as water always follows the path of least resistance. As a result, all activities within a watershed affect the quality of water as it percolates through and runs across developed landscapes. The reservation area is divided by two large watersheds: Lake Michigan to the West and Lake Huron to the East.

Domestic Well Water Depth

This map of domestic well water depths (Map 25) illustrates the dependence of the surrounding area on groundwater quality. Every citizen of this region is dependent on ground water for their drinking water source. The quality and quantity of these resources are important to the Tribe and surrounding community members for more then just our household uses. These vast aquifers are the driving force of the areas environmental and economic health. Thousands of people travel to this area each year for the beauty of our lakes and Rivers and the prolific wildlife that abounds due to groundwater's influence on surface bodies of water.

Without adequate ground water the health of our lakes, rivers and wetlands would be dramatically affected. Many of the LTBB Tribal members depend on fishing, hunting, and gathering for cultural and subsistence motives. This way of life is depended on groundwater quality. The tourist that visit the Tribal businesses and developments that located in this area come indirectly because of groundwater's affect on our surface water. The biggest threats to this resource is failing septic systems, and leaking underground storage tanks. Protecting this resource is important for the long term health of Tribal members.

Prime Farmlands

The 'Prime Farmlands' map (Map 26) represents prime agricultural lands within Emmet and Charlevoix counties. The LTBB reservation boundary falls within this geographic context.

Prime farmland is defined by the USDA as "land that has the best combination of physical and chemical characteristics for producing food, feed, forage, fiber, and oilseed crops. Prime farmland has the soil quality, growing season, and moisture supply needed to economically produce sustained high yields of crops when treated and managed according to acceptable farming methods." (Watershed Resource Papers, Lang worthy, Strader & LeBlanc & Associates, Inc.)

Preserving farmland is becoming increasingly difficult. The irony of this issue is that many non-farming residents want to preserve existing farmlands, while farmers themselves may also want to preserves their farms, but at the same time want to retain their right to sell.

From an environmental perspective, agricultural lands can offer floodplain protection, areas of groundwater recharge and wildlife habitat. From a development perspective, agricultural lands can offer a low to flat developable surface, large parcel sizes and a willing seller. Indeed, some farmers have begun to view their land holdings as a land retirement accounts.

It is important to note that some areas on the 'Prime Farmlands' map identified as prime farmland have already been converted to an alternate form of land use.

Land Cover

The 'USGS 1992 Land Cover' or Map 27 represents land cover for Emmet and portions of Charlevoix counties for the year of 1992. The LTBB reservation boundary falls within this geographic extent.

Land cover is often mistaken for the MIRIS (Michigan Resource Inventory System) land use classification system. A MIRIS land use is composed of a series of polygons (vector format), each of which is assigned a land use code according to the MIRIS land use classification system*.

While similar, land cover is actually created from multi-spectral satellite imagery, and stored in multiple layers in a raster (image) format. Individual land uses reflect different wavelengths of color along the electromagnetic spectrum. By assigning different colors to each layer, it then becomes possible to differentiate varying land cover classifications.

Analysis of land cover data can yield many different types of information which can be useful to tribal operations. Examples of this data would be vegetation type and density, or areas of high and low residential density, or wetland locations. This type of information is important from a tribal perspective as it can aid in developing a more complete natural resources management plan. For example, by comparing land use coverage's from different time frames, a tribal forester could evaluate changing forest densities and more accurately plan a timber harvest. Also, a tribal planner could compare residential densities of a neighboring subdivision in relation to a planned tribal housing development.

ZONING

State Equalized Value Patterns

The map labeled "State Equalized Value Patterns" (Map 28) depicts, for all of Emmet and part of Charlevoix County, the approximate State Equalized Value or SEV for each parcel of land. SEV is one end product of the assessment and equalization process that each county goes through in order to distribute property tax assessments more fairly. The SEV system assumes that the end value should be roughly one-half the market value of a piece of property at any given time.

As can be seen from the map, the highest value parcels fall into two general categories. First, large inland parcels that might typically be associated with a seasonal land use, i.e. ski resorts or golf courses, or in some cases certain types of agricultural enterprises. Second, and perhaps most obviously, the large number of small but highly valued parcels along the Lake Michigan shoreline.

The effect of having so much SEV concentrated in so little geographic area is hard to analyze unless we take into account the reason for the concentration. Essentially, people want to live along the lakeshore, and since no more lakeshore is being created any time soon, the resultant rise in demand over supply causes the price to rise and remain high.

On the other hand, this does leave quite a bit of the county at the lower end of the SEV spectrum. Bear in mind, though, that a large portion of the land classed as having low or no SEV

actually is county, state, or federally owned. This is somewhat hard to differentiate, since there is so much land area on the map classed this way. Regardless, this does provide for substantial economic opportunity provided other minimum requirements for development are met, such as infrastructure.

LTBB Uniform Zoning Classification System

This section describes the Little Traverse Bay Bands of Odawa Indians Geographic Information Systems Department methodology for the compilation of a digital county-wide zoning layer for Emmet County.

Emmet County handles zoning classification for the county as a whole for all but the following jurisdictions: West Traverse Township, Little Traverse Township, Pleasantview Township, Resort Township, Petoskey, Harbor Springs, Mackinaw City, and the villages of Pellston and Alanson.

LTBB GIS acquired a digital zoning layer from Emmet County Mapping and GIS for those jurisdictions that use county services for zoning purposes. This data is in the MI State Plane Coordinate system, NAD83, with units in feet. In addition, Resort Township has given LTBB a copy of their digital zoning layer, in shapefile format. The referenced coordinate system is the same as the Emmet County data, MI State Plane, NAD83, units in feet.

The remainder of the jurisdictions were not in a digital format but were digitized individually in the ArcView environment, referencing hard copy zoning maps and zoning ordinance. Once complete, all digitized zoning layers were merged together to form a complete coverage for Emmet County. A separate column was created in the resultant zoning coverage database table, which contained an assigned LTBB zoning classification. This enables LTBB to represent all zoning as one contiguous layer. This was accomplished by adding a field in the Emmet County parcel database table, and keying in an LTBB zoning classification. Additionally, each municipality's original zoning code classification is in the resultant database table for cross-reference. The result is graphically presented as Map 29.

Transportation System

An important part of the physical features encountered in any landscape is the network of roads, bridges, and paths that carry automobile and other traffic. This can be clearly seen in Map 30 for the LTBB Odawa Reservation area.

The transportation system is often defined as the physical and operational infrastructure which accomplishes the movement of people and goods from place to place. As a practical matter, the total transportation system is broken into a number of subsystems known as modes (including, but not limited to: highway, transit, rail, air, pedestrian, waterborne, and pipeline) and involving different types of vehicles and routes.

The total transportation system in our world is a complex one, not only due to its size, but also because of the mix of public and private ownership of various parts of the system. Highway transportation, for example, involves a combination of public ownership and maintenance of the roads and highways, and private ownership of the vehicles operated on those roads and highways.

It has been stated that proper transportation planning clarifies the need for a better understanding of the interrelationship between transportation facilities and land use controls. Transportation facilities are very expensive to build and maintain, yet all too often they have become prematurely inadequate because of a failure to appreciate the relationship that exists between land use and transportation facilities, to plan accordingly, and to institute the necessary design of land use

controls. This problem involves not only the safety and convenience of public transportation investments, but the welfare of land owners abutting transportation facilities and of the traveling public in general.

These interrelationships are mutual. Land use, and thus land use controls such as zoning and future land use plans, affect transportation service and transportation service influences land use. Various land use characteristics have very marked effects on transportation facilities in any area. These include: type of development, intensity, location, design and location of access to the use, and site design. These and other factors help to determine the nature of traffic generated in the areas, which is a principal determinant of the adequacy of the surrounding transportation facilities. These facilities, especially highways, in turn have a substantial impact on surrounding development and land use.

This mutual interdependence has often resulted in a transportation-land use cycle. Overtaxed facilities, such as dirt or unpaved roads (or non-existent ones) prompt the construction of new and improved facilities. This leads to better access, which prompts more intensive use of the surrounding land (taking the form of higher density residential development, or new commercial development). This more intensive use, which has all too often been unexpected or inadequately controlled in the past, generates more traffic. Often, this added traffic causes the premature obsolescence of the new facility. Consequently, the success of the new transportation facility in creating new access has often elicited its own obsolescence.

The problem of balanced transportation facility development and protection could be approached by attempting to control major traffic generators and overall traffic generation from a larger area by controlling the type, intensity, and location of land uses. The prime motive is the control of traffic levels and traffic load characteristics for such areas, so as to be compatible with the characteristics of the transportation system in the area. This, and the reduction in local expenditure that comes with it, is one of the prime motivators for proper planning and zoning.

In our area, this can be seen in both Map 15 “Historical Development Patterns”, and Maps 31 and 32, “Daily Traffic Volumes 2004”and “Historic Traffic Volumes”.

MASTER LAND USE PLAN

CHAPTER FOUR
DEVELOPMENT SUSTAINABILITY MODEL

DEVELOPMENT SUSTAINABILITY MODEL

THE LTBB MASTER LAND USE PLAN

THE NEED FOR A PREDICTIVE DEVELOPMENT MODEL

In order to properly evaluate proposed locations for tribal development, the nature and extent of other development activity in the LTBB Reservation area must first be understood. While it is relatively easy to examine current land use and developmental patterns, and research will reveal both past patterns and the direction of change that led to the current pattern, by themselves these will not assist in the prediction of future likelihood of development. Further, there exist certain sections of the Reservation area in which any development at all would conflict with the stated goals and objectives of the Tribe, e.g. environmental preservation, open space protection and so forth.

Several reasons exist why a "parcel-specific" land use plan for areas not currently controlled by the Tribe cannot be developed at this time. It is not always known in advance when the opportunity to purchase a particular parcel of land will present itself. Nor can it always be known when the tribe will have a requirement for land. Third, market forces often dictate either the location of an available parcel, or the economic need for one. Lastly, specific requirements for a parcel often relate to the particulars of a proposed development. Therefore, it is not possible to indicate on a map those specific areas of the LTBB Reservation lands that will be pursued, and in what time frame.

Therefore, it became necessary to construct a method, or mechanism, to both predict future development, and evaluate its impact on tribal objectives. This became the root motivation for the creation of a model, using the Tribe's Geographic Information System, that would weigh the appropriate criteria and present a graphical result in an interactive fashion if need be.

In this manner Tribal Council and other elected or appointed decision-makers for the Tribe can interactively and quickly determine the development related impact of a proposed acquisition. This, together with analysis from staff, can assist in determining both the initial desirability of a site, as well as it's relative worth to the Tribe. Over time, the data used can be updated, and the assumptions modified to reflect changing priorities or better understandings of various relationships.

For example, it is possible to add a new highway or arterial roadway link to the transportation network dataset (i.e. traffic volume vs. relative capacity) and then calculate its potential impact on land use. When adding socio-economic data (e.g. demographic changes, income, employment), the model is able to generate spatial scenario simulations on a wider regional scale that can be interpreted by staff on a parcel-by-parcel basis.

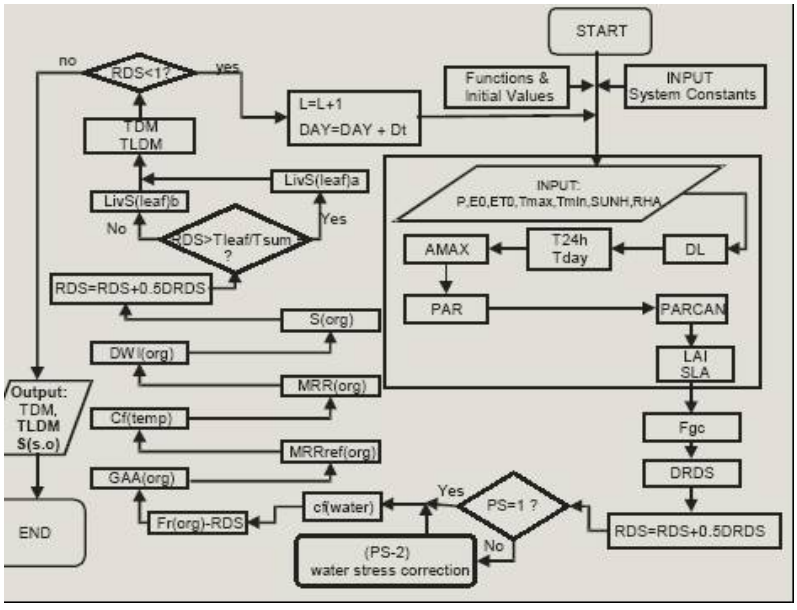
This need for a predictive mechanism for land acquisition decisions was discussed at some length by the staff team when developing this document. It was decided early on that a causal attractant-repellant type of model would most easily be integrated into the unique variety of land uses and landforms in this part of Michigan[3], although the prevailing methodologies would need to be greatly streamlined and simplified.

Therefore, a base list of factors and characteristics was drawn up, assigned to either increase the potential for development at a particular site, or increase the limitations on development (from the Tribe's presumed point of view, of course). A rating system was then applied, whereby the factors that rank high in development potential or limitations were given up to 10 points, and a reduction in either influence then reduces the score all the way down to 1 point for very slight potential or limitation.

While clearly the model is not sophisticated enough for more thoroughly developed urban areas, in rural areas such as northwest lower Michigan there are a relatively smaller set of variables that promote the likelihood of development. Conversely, the overall sense or desire for acknowledgment of the environmental limitations on development is relatively constant across populations in this area.

For an example of a more detailed model, the graphic below shows us a land use vs. crop yield model recently developed for agricultural evaluation in The Netherlands. As can be seen, the level of detailed data, amount of data input, and sequence of analysis is much greater.

Graphic: "Regional Analysis of Maize-Based Land Use Systems for Early Warning Applications", Doctoral thesis (2002) ISBN 90-5808-584-8 Wageningen University, The Netherlands



Technical Methodology

[3] Verburg, P. H., G. H. J. de Koning, et al. (1999). "A spatial explicit allocation procedure for modeling the pattern of land use change based upon actual land use." Ecological Modeling 116(1): 45-61.

For completeness's sake, the following is the technical process by which the Geographic Information Systems Department actually constructed the model. The initial listing of data layers and ranking criteria used follow this. The end result can be found in Appendix C of this document.

1. Septic suitability, etc.

    a. Download SSURGO soils data from the State of Michigan CGI for Emmet County and extract to \\prime570\GIS_data\data\Shapefiles\Soils\Emmet\

    b. Use CHXsoils.shp acquired from Charlevoix County GIS through use of an intergovernmental data sharing agreement and extract to \\prime570\GIS_data\data\Shapefiles\Soils\Charlevoix\

    c. Add fields named 'potential' and 'limit' to attribute tables for Emmet and Charlevoix SSURGO soils shapefiles as a short integer, 0 precision.

    d. Using the MUNAME soil series field, 'select by attributes' based on septic limitations referenced in Emmet and Charlevoix Soil Survey compiled in May, 1974 by the United States Department of Agriculture Soil Conservation Service as severe, moderate, slight or variable.

    e. Use field calculator to enter appropriate values: Selection set (severe, moderate, slight, variable) = x (ranking value for severe, moderate, slight, variable)

    f. Dissolve features in Emmet and Charlevoix soils shapefiles based on 'potential' development field using Geoprocessing Wizard

    g. Dissolve features in Emmet and Charlevoix soils shapefiles based on development 'limit' field using Geoprocessing Wizard

    h. Merge Emmet and Charlevoix septic 'potential' shapefiles using Geoprocessing Wizard

    i. Merge Emmet and Charlevoix septic 'limit' shapefiles using Geoprocessing Wizard

    j. Clip septic development potential to model extents Geoprocessing Wizard, save to C:\\extents\seppot.shp

    k. Clip septic developmental limitations to model extents using Geoprocessing Wizard, save to C:\\extents\seplimt.shp

2. Transportation Infrastructure, etc.

    a. Download Emmet County roads framework version 4 from the State of Michigan CGI and extract to \\prime570\GIS_data\data\Shapefiles\Emmet\TIGER_95\

    b. Download Charlevoix County roads framework version 4 from the State of Michigan CGI and extract to \\prime570\GIS_data\data\Shapefiles\Charlevoix\TIGER_95\

c. Merrge Emmet and Charlevoix Roads using Geoprocessing Wizard <merge_roads>.shp.

d. Create a 33' buffer around <merge_roads>.shp using the Geoprocessing Wizard <merge_roads_buffer>.shp

e. Add fields named 'potential' and 'limit' to attribute table of <merge_roads_buffer>.shp as a short integer, 0 precision.

f. Using 'select by attributes' based on the FCC (Framework Classification Code) rank according to the following classifications:
A11 - A13 = Interstates
A21 - A23 = State Highway
A31 = Principal Arterial
A32 - A36 = Minor Arterial, Collectors
A41 - A49 = Local Roads
A51 - A73 = Seasonal/Unclassified Roads

g. Clip <merge_road_buffer>.shp to model extents using Geoprocessing Wizard <merge_road_buffer_clip>.sh

h. Union <merge_road_buffer_clip>.shp with model extents and save to C:\\extents\road.shp

3. Traffic Volumes (Steps a-c completed by a consultant)

a. Pull arterial road classifications (FCC code A31) from Emmet and Charlevoix roads framework version 3 from the State of Michigan CGI website and save as Emmet_Traffic_SPC_polyline.shp and Charlevoix_Traffic_SPC_polyline.shp.

b. Obtain ADT (average daily traffic counts) from Emmet and Charlevoix County Road Commission's for arterial road classifications

c. Add field ADT in in Emmet_Traffic_SPC_polyline.shp and Charlevoix_Traffic_SPC_polyline.shp an d enter ADT data, save as emmet_adt.shp and Charlevoix_adt.shp.

d. Buffer emmet_adt.shp and Charlevoix_adt.shp 33', save as emmADTbuffer.shp and charADTbuffer.shp.

e. Clip emmADTbuffer.shp and charADTbuffer.shp with model_extents.shp using the geoprocessing wizard

f. Merge emmADTbuffer.shp with charADTbuffer.shp using the geoprocesing wizard, save as merge_adt.shp

g. Clip merge_adt.shp using mode_extents.shp as overlay with the geoprocessing wizard, save as merge_adt_clip.shp

h. union merge_adt_clip.shp with model_extents.shp then save as adt.shp to C:\\extents\adt.shp.

4. Local Zoning Ordinances.

    a. Use complete_emmet_zoning.shp, ltbb_chandler_zoning.shp, ltbb_melrose_zoning.shp, ltbb_bay_zoning.shp, HAYzoning.shp, EVAzoning.shp, ltbb_char_zoning.shp and MARzoning.shp, merge using the LTB_Zon field with the gepprocessing wizard, save as zon_merge.shp.

    b. Clip zone_merge.shp with the model_extent.shp using the geoprocessing wizard, save as zoning.shp.

    c. Add fields 'potential' and 'limit' to the attribute table of zoning.shp

    d. Select by attributes those LTBB zoning classifications fitting the ranking system

    e. With records selected, use the field calculator to populate the attribute table with appropriate rankings

5. Proximity to Surface Water

    a. Download Emmet County roads framework version 4 from the State of Michigan CGI and extract to \\prime570\GIS_data\data\Shapefiles\Emmet\TIGER_95\

    b. Download Charlevoix County roads framework version 4 from the State of Michigan CGI and extract to \\prime570\GIS_data\data\Shapefiles\Charlevoix\TIGER_95\

    c. reproject Emmet and Charlevoix lakes and rivers to spnad83

    d. merge Emmet and Charlevoi rivers using the geoprocessing wizard

    e. merge Emmet and Charlevoix lake using the geoprocessing wizard

    f. merge rivers and lakes using the geopreocessing wizard

    g. buffer surfacewater.shp ¾ mile in 660' zones.

    h. clip resultant layer using the model_extent.shp

    i. save as surfacewater.shp in C:\\extents

6. Current Land Use

    a. use 98lu.shp

    b. add fields 'potential' and 'limit'

    c. clip 98lu.shp using model_extents.shp using geprocessing wizard

    d. select by attributes using the CODE field according to the following:

Conservation = 19 - Open Land and Other, 4 - Forest Land, 6 - Wetlands
Open Space = 2 - Agricultural Land, 3 - Grass and Shrub Lands, 7 - Barren Lands
Single Farm Residential = 113 - Single Family, 1132 - Duplex
Multi-Family Residential = 112 - Multi-Family, 115 - Manufactured Home Park,
Industrial, Commercial, Institutional, Office Space = 12 - Commercial, Services, 13 - Industrial, 14 - Transportation, Communication, Utilities, 17 - Extractive

Ranking System for Model

Base Map	**Output Map**
Population-block group	P,L
Per Capita Income	P
Educational Attainment	P
School District	P
Aquifer Vulnerability	P,L
Septic Suitability	P,L
Transport Infrastructure-FCC Network	P
Traffic Count	P
Zoning	P,L
Proximity to Surface Water	P,L
MIRIS 1998 Land Use-update 2004	P,L
Culturally Significant Areas (update)	L
Proximity to Developed Lands	P
Wetlands	L
Prime Farmland	P,L

Scale (1-10) 1=best, 10=worst

Septic Suitability

Potential(P)	Category	Limitations(L)
1	Severe	10
5	Moderate	5
8	Slight	2
5	Variable	5

Population Block-Group- Not yet implemented

Educational Attainment

Potential(P)	Category
2	No H.S. Diploma
4	H.S. Graduate
6	Some College
8	Bachelors or higher

School District (Students per Teacher)

Potential(P)	Category
9	15.9-16.4
7	16.5-17.0
6	17.1-17.5
5	17.6-18.0
4	18.1-18.5

Transportation Infrastructure

Potential(P)	Category	Limitations(L)
10	Interstates	1
7	State Highways	2
5	Arterial Roads	4
4	County Roads	5
2	Local Roads	7
1	Seasonal Roads	10

Traffic Count

Potential(P)	Category	Limitations(L)
2	0-2500	10
4	2501-5000	8
6	5001-7500	6
8	7501-10,000	4
10	>10,000	2

Zoning

Potential(P)	Category	Limitations(L)
1	Conservation	10
3	Agriculture/Open Space	7
5	Low Density Residential	5
7	High Density Residential	3
9	Commercial/Industrial	1

Proximity to Surface Water

Potential(P)	Category	Limitations(L)
10	<.25	1
8	.26-.50	2
6	.51-.75	4
5	.76-1.00	5
4	1.01-1.25	8
2	1.26-1.50	10

MIRIS Land Use

Potential(P)	Category	Limitations(L)

1	Conservation	10
3	Open Space	8
5	Single Fam Residential	5
7	Multi-Fam Residential	3
9	Industrial/Com./Inst./Off.	1

** Conservation= Forest, Wetland, Public
Open Space= Agriculture, Grass/Shrub
Multi-Fam Residential includes Manufactured Housing

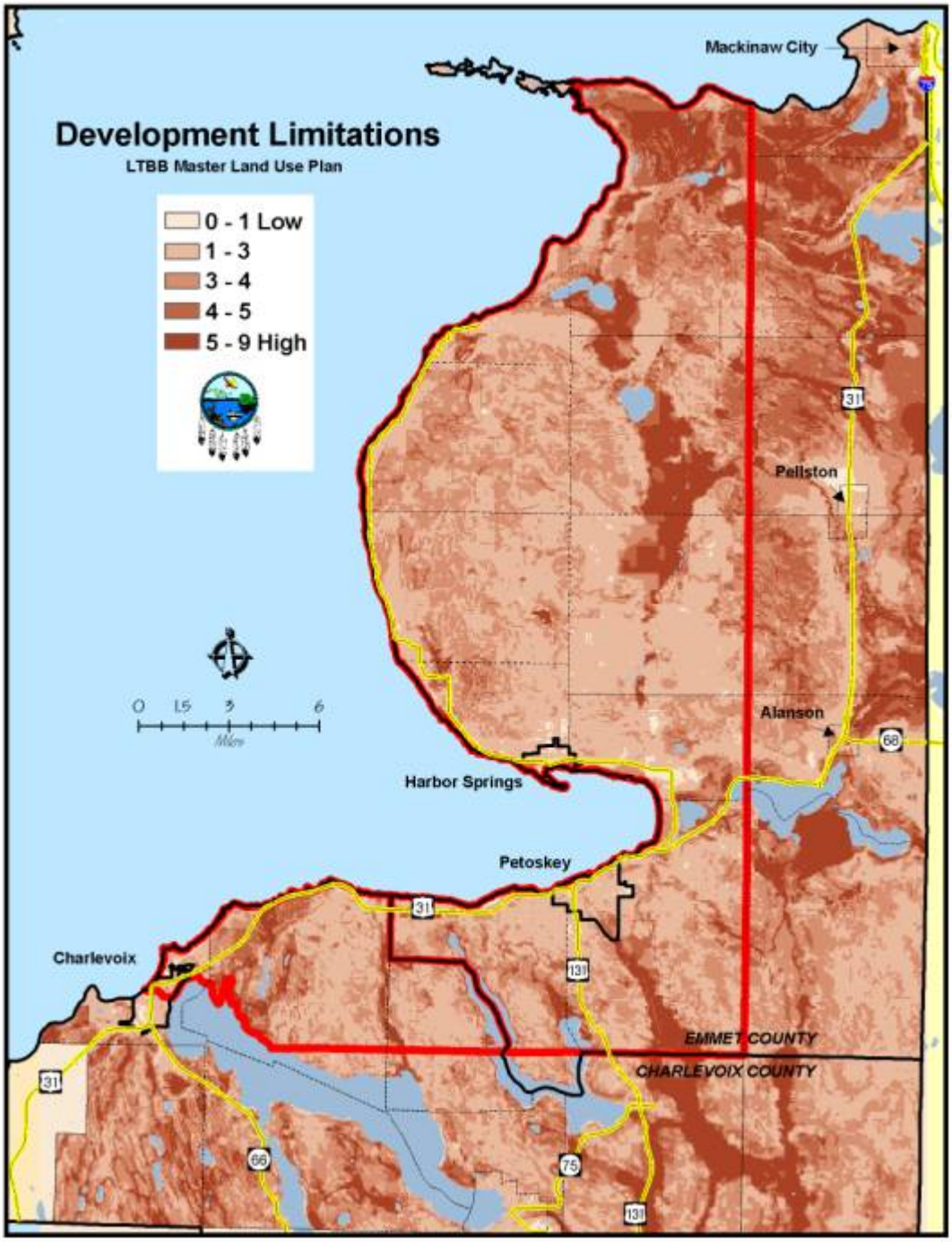
Proximity to Developed Land

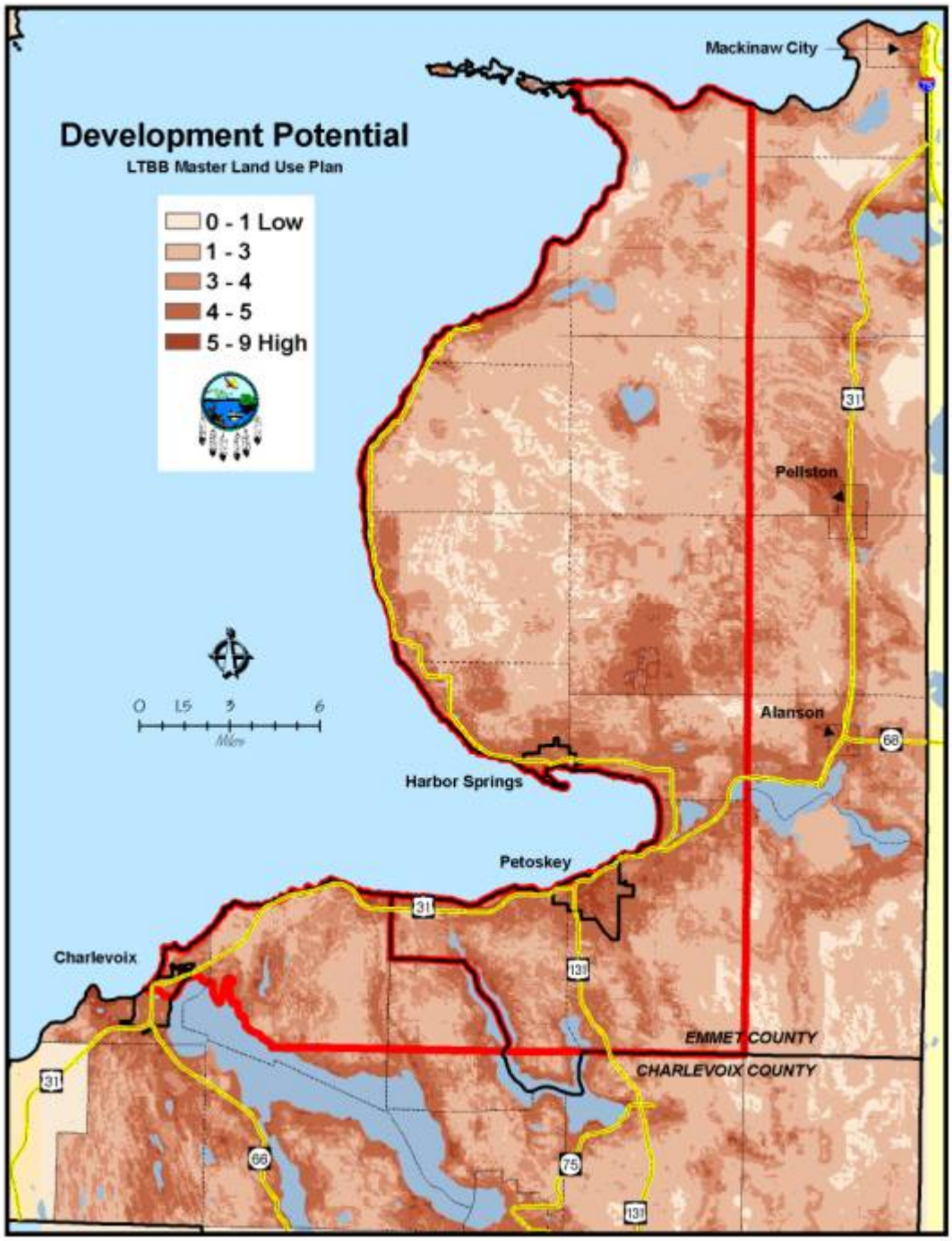
Potential(P)	Category
10	<.25
8	.26-.50
6	.51-.75
5	.76-1.00
4	1.01-1.25
2	1.26-1.50

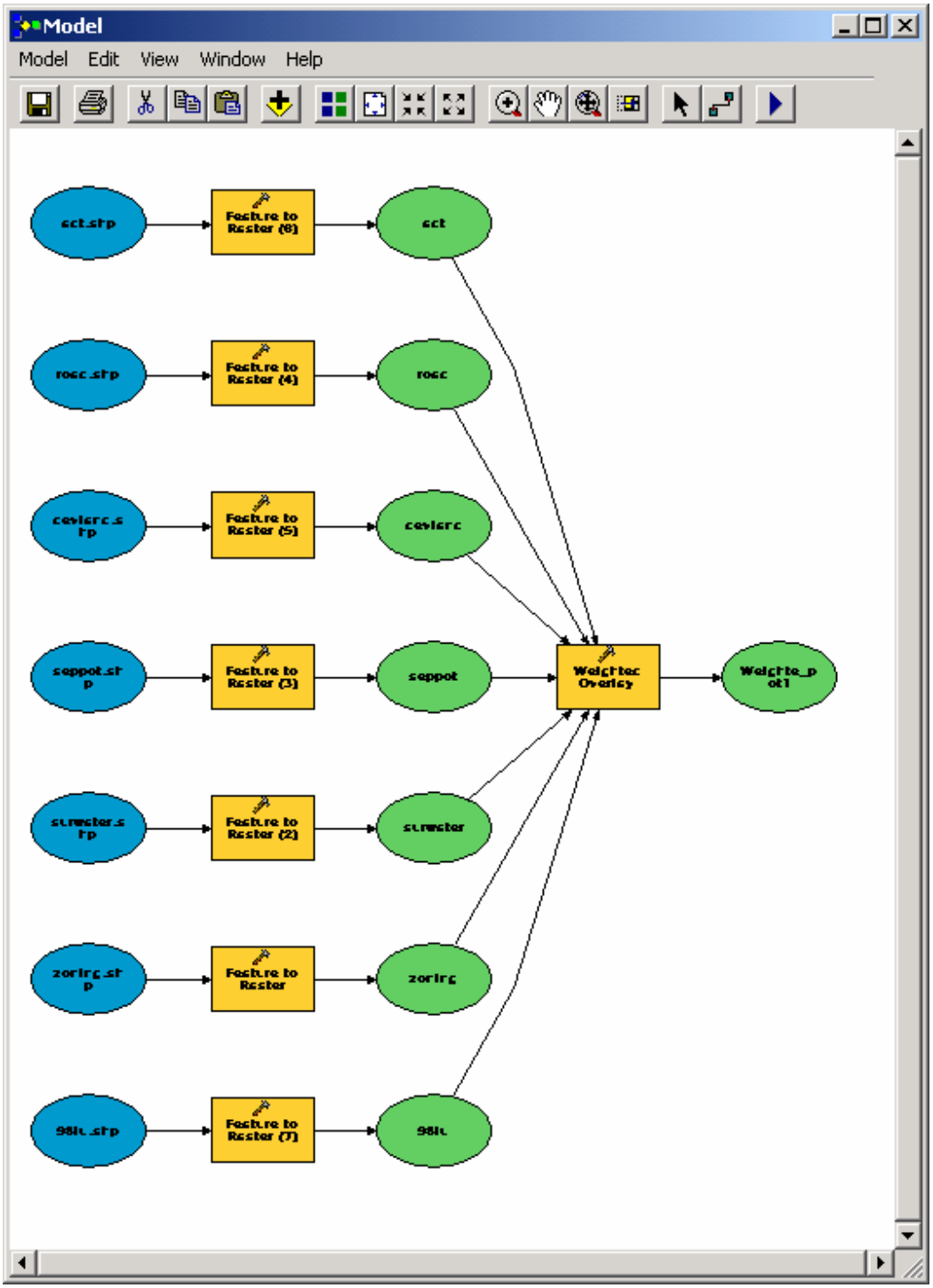
Culturally Significant Areas- Limitations score a 10 at all times

Wetlands- Limitations score a 10 at all times

Prime Farmland - Not yet implemented


Development Limitations
LTBB Master Land Use Plan
0 - 1 Low
1 - 3
3 - 4
4 - 5
5 - 9 High
0 1.5 3 6
Miles
Mackinaw City
Pellston
Alanson
Harbor Springs
Petoskey
Charlevoix
EMMET COUNTY
CHARLEVOIX COUNTY
31
68
131
65
75


Development Potential
LTBB Master Land Use Plan
0 - 1 Low
1 - 3
3 - 4
4 - 5
5 - 9 High
0 1.5 3 6
Miles
Mackinaw City
Pellston
Alanson
Harbor Springs
Petoskey
Charlevoix
EMMET COUNTY
CHARLEVOIX COUNTY
31
68
131
66
75


Model
Model Edit View Window Help
sct.shp
Feature to Raster (8)
sct
rocc.shp
Feature to Raster (4)
rocc
cevlsrc.shp
Feature to Raster (5)
cevlsrc
seppot.shp
Feature to Raster (3)
seppot
Weighted Overlay
Weighted_pot1
streams.shp
Feature to Raster (2)
streams
zorirg.shp
Feature to Raster
zorirg
98lc.shp
Feature to Raster (7)
98lc

Development Limitations

As can be seen by the draft illustrations above and by the final maps later on in the Appendix, the model validates fairly well against current development patterns. Although adjustments may need to be made later on as experience with the model builds, the initial set of parameters and weighting values seems to result in a mapped dataset that will reflect the Tribe's concerns and values regarding development protections.

In particular, we can see that development limitations are high in the area around Wilderness State Park, Pleasantview Swamp, the area immediately south of Wycamp Lake, and the shore of Lake Michigan in general. This reflects well various concerns regarding development in or near wetlands, and the delicate nature of the dunes and slopes near the Great Lakes. In addition, development limitations are lower in areas close to currently developed sections of the Reservation, such as the City of Petoskey and the industrial areas nearer to the City of Harbor Springs. This tends to affirm that the model is reflecting the economy of developing where infrastructure is already present and similar types of development have already occurred.

Development Potential

Similarly, we can see that development potential also seems to mirror either common perceptions of development suitability, or known patterns of land use in the LTBB Reservation area. For instance, while the Lake Michigan shoreline ranks high in the area of Development Limitations as discussed above, it also ranks highly for Development Potential. This is largely due to the scenic nature of the area, the current existence of highly valued real estate along the shore, and the higher educational attainment of the existing population there.

In addition, the area of highly likely development near the middle of the Reservation area corresponds closely with the existing, and highly valuable, development of ski resorts and golf courses in the general vicinity. Finally, development nearest the south end of the City of Petoskey seems likely as well, most probably due to the availability of transportation, concentration of similar land uses, and recent changes in zoning patterns.

In general, these validating scenarios can be said to do nothing more than reflect commonly held perceptions of area residents, "common sense" if you will. But, because the model is repeatable, flexible, and can be entirely directed and dictated by the goals and objectives of the LTBB, it is more useful in a wider range of circumstances than mere "common sense". Indeed, even if an opinion poll were taken of the greater population in the Reservation area regarding areas most likely to be developed and those most in need of environmental protection, the results would reflect the priorities of that population, at that moment in time. This is to say nothing of the impracticality and cost of repeating the experiment due to changes in development patterns and local concerns.

Bear in mind that these maps define areas of development suitability based upon land capability and infrastructure capacity as described above. These maps are not a replacement for more detailed planning or zoning. The development capabilities maps depict at a regional scale those areas considered to be most and least suitable for development and are intended as a supplement and a tool for site-specific planning and evaluation activities.

MASTER LAND USE PLAN

CHAPTER FIVE
LTBB MEMBERSHIP INPUT AND NEEDS ASSESSMENT

GOVERNMENT PROGRAM DATA – FINANCIAL STRATEGIC PLANS

In 2001 and 2002, as the LTBB Tribal Government was completing a multi-year project of department-level and overall Tribal Strategic Plan development, implementation steps for many of those plans revolved around the relationships between program needs and the financial ability to meet those needs. Therefore, as a final step in the initial Strategic Plan project, each program developed Financial Strategic Plans, highlighting both staffing and capital improvement needs.

While the plans served their own purposes, these capital improvement need lists were then utilized by the staff team assembling this document to create a core list of tribal needs related to land acquisition and building construction. The raw data from these surveys was re-categorized and related with individual surveys submitted by each department for the purposes of this plan. These additional surveys dealt only with land acquisition, however.

The result of this effort became a "prompting list", as described later in this chapter, that was used at the initial public meetings to generate participant reaction and further input.

CITIZEN INPUT FROM PUBLIC MEETINGS

For several years the Planning Department of the Little Traverse Bay Bands of Odawa Indians has been involved in gathering Tribal Member input for planning and development activities. These have included two public hearings early in the development of the Wah-Wahs-Noo-De-ke housing site, and numerous visits to concentrations of tribal population around the state in preparation for the LTBB Strategic Plan project.

In most, but not all of these instances, the Planning Department elected to utilize a form of Nominal Group Technique or NGT to promote and manage group input. This method is a structured process that identifies and ranks the major problems or issues that need addressing. For this method to be a success, a minimum group size is advantageous, but this requirement has not always been met.

In the context of the LTBB Master Land Use Plan, the public participation issues can be narrowed to three open areas of concern. They are, in no specific order,

For what purposes should the tribe obtain land?;

Of all the functions the Government needs to perform for tribal members, where would land be ranked?; and

Given a fixed annual amount of money for land acquisition, how much would you devote in actual dollars?

It is from these basic questions that the public participation strategy was generated.

LTBB MASTER LAND USE PLAN PUBLIC PARTICIPATION STRATEGY OPTIONS

1) Traditional Survey. In this method, a survey instrument (paper survey) is delivered via mail to each household, or perhaps to each tribal member. The surveys that are returned constitute the information sample, and results are tabulated from that sample. Question formulation, neutrality of verbiage, and sample size versus total population are just some of the variables inherent in this method.

2) Public "Comment Box". This method is more suited to longer time-frames and specific issues than those being dealt with here. Improvements in customer service or process-related issues can benefit more from this technique. One benefit of this approach is that ideas are more freely generated and submitted, using the relative privacy of the comment box.

3) Focus Group. Focus groups are a powerful means to evaluate services or test new ideas. Basically, focus groups are interviews, but of 6-10 people at the same time in the same group. As with any method based on asking users what they want -- instead of measuring or observing how they actually use services -- focus groups can produce inaccurate data because users may think they want one thing when they need another.

5) Nominal Group Technique. Essentially a combination of the best features of the Comment Box and Focus Group, this approach is a group technique, but only nominally so. People are assembled into a group, but they both generate and submit ideas individually and in private. Those ideas are anonymzed and evaluated in public, by groups that ascend in size and specificity.

During the months of April and May of 2004, a team of LTBB staff visited 4 sites around the State of Michigan to gather Tribal member input. Meetings were held in Grand Rapids, East Lansing, Harris (Escanaba/Hannahville area), and Harbor Springs. The staff team consisted of:

Bryan Gillett, Planning Director

Alan Proctor, Geographic Information Systems Director

Doug Craven, Natural Resources Director

Rachel Schwarz, Environmental Services Director.

Al Colby Jr., Tribal Administrator

Purpose of Public Forum

The statewide meetings were seen as a method of obtaining Tribal member input for the Master Land Use Plan; a method of educating participants on the process and purposes of the Master Land Use Plan; and a method of informing membership about the contents of the Master Land Use Plan all in one event, at a well known location near or in a population center for Tribal members.

Process for gathering Membership input

The team spent an evening with the Tribal members that chose to attend, utilizing a prepared presentation that highlighted selected data as later presented in this Plan. The presentation explained the reasoning behind both a Master Land Use Plan and a Land Acquisition Policy; and connected that with the method chosen to obtain public input. This presentation made up the first half of the meeting.

During the second half of the meeting, participants, gathered at round tables in groups of 4 to 8 persons, were given an opportunity to react to and expand upon input obtained previously.

A "prompting list" was reviewed first, presented in categories. They were Recreation, Commercial, Government Development, Industrial, Conservation/Management, Community and Culturally Significant Sites, Housing, and Other Land Issues. This list, as explained above, was a compilation of various areas of proposed capital improvement or facility construction.

Next was an extended opportunity for participant input on the list, through individual and group idea generation. Members were encouraged to either speak up directly or raise their hand to announce whatever ideas came to mind as the list was read. Utilizing group interaction, facilitator prompting, and through the answering of any other questions attendees asked of staff, a great deal of input was gathered that covered a wide variety of subject matter.

At the conclusion of this phase of the evening's event, the newly complete list was re-organized, reprinted, and copied for each participant. Attendees were then given a lined yellow sheet of paper and a pencil in preparation for the next phase.

Participants were then asked to prioritize the newly developed and displayed list by ranking the top ten items on their sheet or taking notes and then, individually and without discussion, marking the top ten items on the copy of the list provided to them. Key to this task was the concept that the number one is ranked as the highest priority; ten is the lowest priority of the ones they have chosen. All other items on the list achieve zero priority for that participant.

The Public Input Process as presented to Tribal Council

- Four Community Meetings. These meetings, the specific content of which is outlined in the material above, formed the foundation of the Public Input Process. The public meetings would take place over a period of two months, and conclude before the LTBB Annual Meeting takes place in May. Several staff would attend each, and the emphasis would be on tribal members setting priorities for land acquisition.

- Draft Review Public Meetings. These meetings, to be sometime held after the LTBB Annual Meeting, would allow members to review the draft document in a setting that allows for maximum interaction between staff and membership. These meetings would be held before the draft document was received by Tribal Council, and before final publication.

The resulting lists from each meeting were then combined and tabulated. The first step in the tabulation process was to eliminate from the list items that, while suggested at a meeting, received no votes at any meeting. The end product of this process was a list that contained only items that had been voted on and ranked by participants.

Next, a calculation was done on each individual item to ascertain it's relative strength of support among the various attendees at all of the meetings. Therefore, the result of this calculation indicated not only how many times an item was voted on, but what rank it received and how often it received that rank. For example, if at the conclusion of all meetings a particular idea had received a "1" vote, only once, it would be awarded a total score of 1. If it had received a score of "2", perhaps twice, it would be given a score of .5, twice (once each for every time it got that score), and its resulting total score would also be 1.

A total of 425 total votes were cast at all meetings, on 120 individual items. Of these 120 items, all but 16 received at least one vote during one meeting or more. A total of 71 items were given a final score of 1.00 or higher, indicating that they were either scored a "1" at least once, or were scored a lesser priority a cumulative number of times to equal 1.00 or more. The complete result of this calculation process is presented in Appendix D.

Finally, and also presented in Appendix D, is a table and graph of the top ranking ideas. These are somewhat arbitrarily ended at Number 20, in the interest of space saving. Graphically, however, it is clear that the Victories 2 project commanded a great deal of interest and preference among the meeting attendees. It received a weighted score over twice as high as the next item, at 16.744 points.

If any pattern can be gleaned from these results, it is that, in general, the areas of health care and economic development in one form or another were responsible for the majority of interest. This is not to say that other areas were not represented, just that these two areas received the largest share of total weighted points.

What this means in terms of priority setting and preferences in land acquisition is not completely clear, but rather will have to be ascertained over time. This will happen only as Tribal Council and the new Executive branch of government seek to interpret these results and turn them into actions that benefit the Tribal membership. Depending on resources available at any given time, this may or may not result in land acquisition or property development. It may also result in re-alignment or redevelopment of land currently owned or held in trust relative to the Tribe.

Appendices

A. Proposed Land Acquisition and Land Development Policies

B. Tables and Graphs

C. Maps

D. Survey Data

Appendix A.
Proposed Land Development and Land Acquisition Policies

General Land Development Policies

1. Decisions about land use and development on the LTBB Reservation will be based on area resource characteristics implemented through site-specific plans.

2. LTBB prefers development in areas supported by underutilized infrastructure including land and buildings; transportation facilities; water, sewer and drainage facilities; etc. (For example, redevelopment of an existing site for an industrial use is preferred land use to conversion of farmland for industrial use.)

3. New developments will in most cases be clustered near similar developments in the most appropriate places on the Reservation and will be consistent with local plans where possible.

4. New uses on trust land should be located to improve the appearance of existing and expanded uses where practical.

5. Cluster new uses near similar ones or replace existing uses rather than develop isolated, unrelated sites that promote sprawl and reduce open space in the Reservation. New land uses should be located in areas that are compatible with adjacent land uses. For instance, intense uses should be located in existing areas of intense use, rather than in undeveloped areas. This policy recognizes that some land uses, such as marinas, are exceptions and will not normally be clustered.

6. Where practical, comply with federal, state, and local requirements to avoid floodplain and wetland development.

7. Where practical, comply with federal, state, and local requirements to protect endangered, threatened, and rare species (including state-listed species) and their habitats.

8. Support the regional transportation planning process, including the intermodal transportation goals identified in Intermodal Surface Transportation Efficiency Act, especially the use of mass transportation and bicycle/pedestrian trail linkages.

9. Minimize the cumulative impacts on natural, cultural, and economic resources that result from many individual land development projects being implemented over time. Techniques will be developed to measure cumulative impacts and respond to significant undesirable effects.

10. Rehabilitate and adaptively reuse historic structures where practical.

11. Work to increase and restore wildlife habitat and biological diversity in development projects.

12. Establish an enabling environment for sustainable development to occur, by creating a clear and coherent institutional, financial, and legislative framework; with clearly defined roles, responsibilities, and authority for land development and planning at all levels.

Land Acquisition Implementation Policies and Procedures

1. Put into place an overall administrative structure for the vetting, cataloging, analysis, and review of proposed land purchases and acquisitions.

2. Acquire land for the use of the Tribe that is in the best interests of the Tribe, and that follows the guidelines and ideals for land development laid out in this document.

3. Follow, and adapt if necessary, this procedure when considering the purchase or acquisition of land for the Tribe.

    i. Interested party, either buyer, staff that proposes (i.e. Tribal Department) or seller submits standard package of information to Tribal Administration; Code number established.

    ii. Property package is catalogued and released to staff for administrative vetting; this results in the...

    iii. Preliminary Report from Planning/Environmental Services/GIS Departments.

    iv. Report is reviewed administratively, and parcel is authorized for Model Analysis and Recommendation.

    v. The Land Development Model Analysis and Recommendation Report is forwarded to Tribal Council for review.

    vi. Tribal Council utilizes a Development Matrix consisting of:

        1. Development Model Report (Potential/Limitations)
        2. Citizen Input from LTBB Master Land Use Plan
        3. Budget Distribution or Funding Availability
        4. Past Land Acquisition Practices and Land Base Restoration Plan Inventory

vii. If the parcel is found to fit into the goals and objectives of the Matrix, an offer is authorized.

viii. If the offer is accepted, the Legal Due Diligence process is initiated, consisting of:

1. Detailed survey of the parcel
2. Site visit by appropriate and authorized personnel
3. Phase One environmental report
4. Building inspection if required.

ix. If the Due Diligence process is successfully completed, the parcel is scheduled for closing.

Appendix B.
Tables and Graphs

LTBB Reservation - Age Distribution by MCD

MCD	Total	under 5	5 to 9	10 to 14	15 to 19	20 to 24	25 to 29	30 to 34	35 to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 +
Emmet County																			
Bear Creek Twp	5121	370	408	427	322	270	320	283	333	453	436	451	215	191	162	158	115	111	96
Bliss Twp	598	30	57	48	44	28	48	48	35	65	36	20	51	32	12	14	16	11	3
Center Twp	534	39	51	52	28	15	38	24	27	47	55	39	21	28	15	26	11	6	12
Cross Village Twp	274	5	15	9	28	19	9	4	20	21	28	22	18	33	16	13	5	7	2
Friendship Twp	823	52	66	58	33	44	63	60	53	62	83	68	44	47	26	37	12	9	6
Harbor Springs City	1619	70	98	112	61	45	84	79	118	93	146	119	97	105	93	82	64	71	82
Little Traverse Twp	2415	146	213	145	143	80	94	174	204	204	193	197	153	127	127	109	33	56	17
Petoskey City	6247	350	353	392	566	348	362	349	502	543	518	300	264	210	195	268	249	199	279
Pleasantview Twp	857	44	55	53	56	55	76	94	89	92	57	48	27	35	24	28	15	7	2
Readmond Twp	506	37	22	45	27	14	28	35	43	48	47	44	24	27	18	15	22	8	2
Resort Twp	2472	140	176	235	217	89	112	124	195	267	244	155	79	159	88	98	45	13	36
West Traverse Twp	1479	64	83	117	123	26	41	51	98	109	175	141	74	130	96	73	30	32	16
Charlevoix County																			
Bay Twp	1060	52	73	77	78	29	20	44	66	133	103	59	80	74	60	63	20	20	9
Charlevoix City	2986	203	172	158	174	207	151	199	260	141	208	220	175	147	142	113	139	87	90
Charlevoix Twp	1688	122	125	129	123	62	56	99	130	147	114	142	82	92	59	69	47	47	43
Hayes Twp	1883	82	130	158	99	65	85	112	161	163	158	169	150	101	76	80	58	26	10

Source: 2000 US Census

LTBB Reservation - Age Distribution by MCD

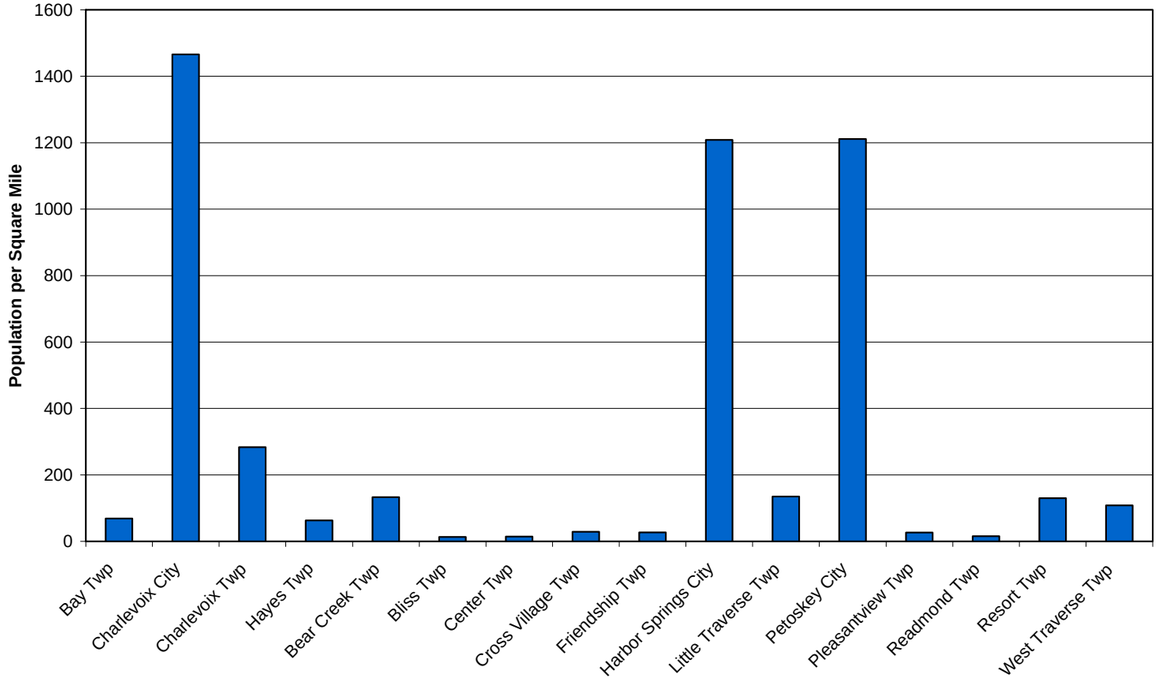
MCD	*Total*	under 5	5 to 14	15 to 19	20 to 24	25 to 44	45 to 54	55 to 74	75 to 84	85 +
Emmet County										
Bear Creek Twp	*5121*	370	835	322	270	1389	887	726	226	96
Bliss Twp	*598*	30	105	44	28	196	56	109	27	3
Center Twp	*534*	39	103	28	15	136	94	90	17	12
Cross Village Twp	*274*	5	24	28	19	54	50	80	12	2
Friendship Twp	*823*	52	124	33	44	238	151	154	21	6
Harbor Springs City	*1619*	70	210	61	45	374	265	377	135	82
Little Traverse Twp	*2415*	146	358	143	80	676	390	516	89	17
Petoskey City	*6247*	350	745	566	348	1756	818	937	448	279
Pleasantview Twp	*857*	44	108	56	55	351	105	114	22	2
Readmond Twp	*506*	37	67	27	14	154	91	84	30	2
Resort Twp	*2472*	140	411	217	89	698	399	424	58	36
West Traverse Twp	*1479*	64	200	123	26	299	316	373	62	16
Charlevoix County										
Bay Twp	*1060*	52	150	78	29	263	162	277	40	9
Charlevoix City	*2986*	203	330	174	207	751	428	577	226	90
Charlevoix Twp	*1688*	122	254	123	62	432	256	302	94	43
Hayes Twp	*1883*	82	288	99	65	521	327	407	84	10

Source: 2000 US Census

LTBB Reservation - Population Density / Distribution Tabulation by MCD								
			Area in square miles				Density per square mile of land area	
Geographic area	Population	Housing units	Total area	Water area	Land area	Geographic area	Population	Housing units
Charlevoix County						Charlevoix County		
Bay Twp	1,068	787	18.85	3.32	15.53	Bay Twp	68.8	50.7
Charlevoix City	2,994	2,096	2.15	0.1	2.04	Charlevoix City	1,465.80	1,026.20
Charlevoix Twp	1,697	942	12.12	6.13	5.99	Charlevoix Twp	283.3	157.3
Hayes Twp	1,893	1,030	43.24	13.14	30.1	Hayes Twp	62.9	34.2
Emmet County						Emmet County		
Bear Creek Twp	5,269	2,969	45.77	6.17	39.6	Bear Creek Twp	133	75
Bliss Twp	572	325	46.24	2.31	43.94	Bliss Twp	13	7.4
Center Twp	499	301	35.29	0.93	34.36	Center Twp	14.5	8.8
Cross Village Twp	294	280	10.23	0.21	10.02	Cross Village Twp	29.3	27.9
Friendship Twp	844	457	31.4	0.01	31.39	Friendship Twp	26.9	14.6
Harbor Springs City	1,567	1,086	1.3	0	1.3	Harbor Springs City	1,208.90	837.8
Little Traverse Twp	2,426	1,555	20.38	2.37	18.02	Little Traverse Twp	134.7	86.3
Petoskey City	6,080	3,342	5.23	0.21	5.02	Petoskey City	1,210.90	665.6
Pleasantview Twp	943	754	35.7	0.01	35.68	Pleasantview Twp	26.4	21.1
Readmond Twp	493	411	30.99	0	30.99	Readmond Twp	15.9	13.3
Resort Twp	2,479	1,215	21.54	2.43	19.11	Resort Twp	129.7	63.6
West Traverse Twp	1,448	1,093	13.36	0.03	13.34	West Traverse Twp	108.6	82

Source: 2000 US Census

Table 2



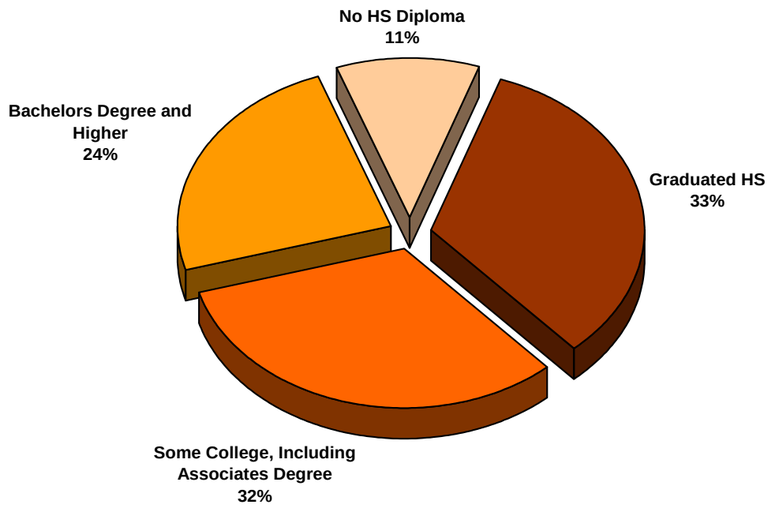
Graph 1

LTBB Reservation - Education Attainment for All Persons 18 Years of Age +					
Area Name	18+ Population	No HS Diploma	Graduated HS	Some College, Including Associates Degree	Bachelors Degree and Higher
Charlevoix County					
Bay Twp	793	85	238	241	229
Charlevoix City	2338	278	847	734	479
Charlevoix Twp	1233	141	343	366	383
Hayes Twp	1451	128	493	536	294
County Total	*5815*	*632*	*1921*	*1877*	*1385*
Emmet County					
Bear Creek Twp	3677	383	1072	1128	1094
Bliss Twp	432	56	193	116	67
Center Twp	367	66	138	106	57
Cross Village Twp	232	45	63	65	59
Friendship Twp	614	49	220	167	178
Harbor Springs City	1292	160	305	407	420
Little Traverse Twp	1823	175	467	705	476
Petoskey City	4838	644	1221	1628	1345
Pleasantview Twp	672	72	282	184	134
Readmond Twp	382	32	115	112	123
Resort Twp	1784	180	533	616	455
West Traverse Twp	1124	72	200	381	471
County Total	*17237*	*1934*	*4809*	*5615*	*4879*

Source: State of Michigan

Table 3

LTBB Reservation - Education Attainment as Percent of Population Age 18+



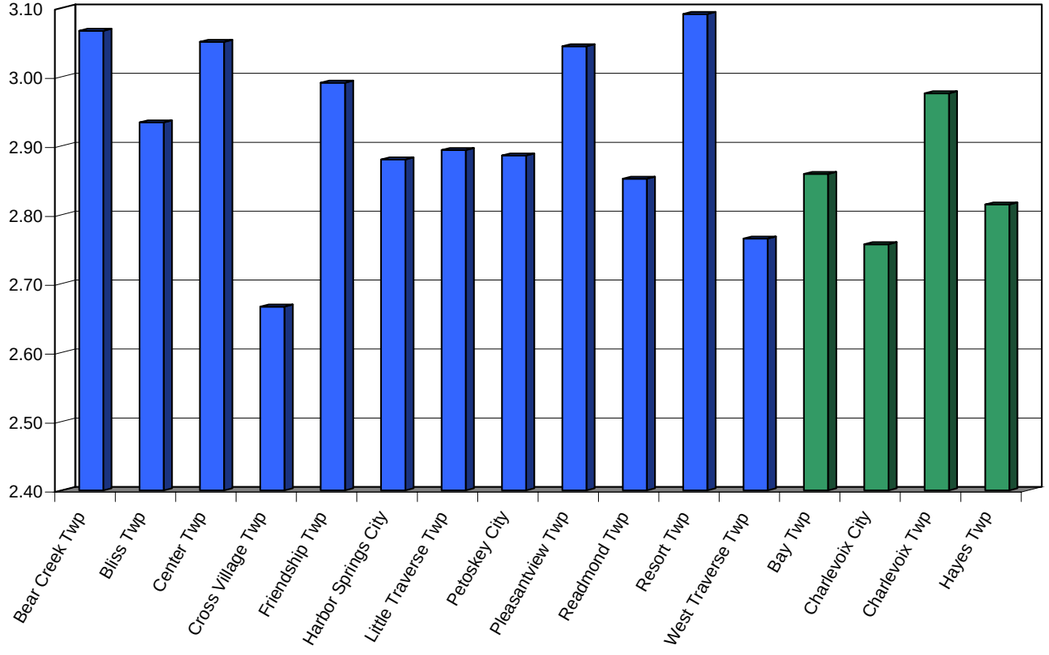
Graph 2

LTBB Reservation - Household and Family Size Tabulation by MCD					
	Households	Population in Households	Families	Population in Families	Average Family Size
Emmet County					
Bear Creek Twp	2,001	5,141	1,417	4,346	3.07
Bliss Twp	234	571	167	490	2.93
Center Twp	192	489	137	418	3.05
Cross Village Twp	132	290	87	232	2.67
Friendship Twp	333	842	240	718	2.99
Harbor Springs City	683	1,461	384	1,106	2.88
Little Traverse Twp	978	2,416	707	2,046	2.89
Petoskey City	2,700	5,772	1,448	4,179	2.89
Pleasantview Twp	313	809	224	682	3.04
Readmond Twp	198	493	149	425	2.85
Resort Twp	894	2,479	722	2,232	3.09
West Traverse Twp	629	1,446	448	1,239	2.77
Charlevoix County					
Bay Twp	429	1,068	327	935	2.86
Charlevoix City	1,375	2,940	812	2,239	2.76
Charlevoix Twp	662	1,652	462	1,375	2.98
Hayes Twp	767	1,893	578	1,627	2.81

Source: 2000 US Census

Table 4

LTBB Reservation - Average Persons per Family by MCD



Graph 3

LTBB Reservation - Household and Family Size Tabulation by MCD					
	Households	Population in Households	Families	Population in Families	Average Family Size
Emmet County					
Bear Creek Twp	2,001	5,141	1,417	4,346	3.07
Bliss Twp	234	571	167	490	2.93
Center Twp	192	489	137	418	3.05
Cross Village Twp	132	290	87	232	2.67
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Harbor Springs City	683	1,461	384	1,106	2.88
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Petoskey City	2,700	5,772	1,448	4,179	2.89
Pleasantview Twp	313	809	224	682	3.04
Readmond Twp	198	493	149	425	2.85
Resort Twp	894	2,479	722	2,232	3.09
West Traverse Twp	629	1,446	448	1,239	2.77
Charlevoix County					
Bay Twp	429	1,068	327	935	2.86
Charlevoix City	1,375	2,940	812	2,239	2.76
Charlevoix Twp	662	1,652	462	1,375	2.98
Hayes Twp	767	1,893	578	1,627	2.81

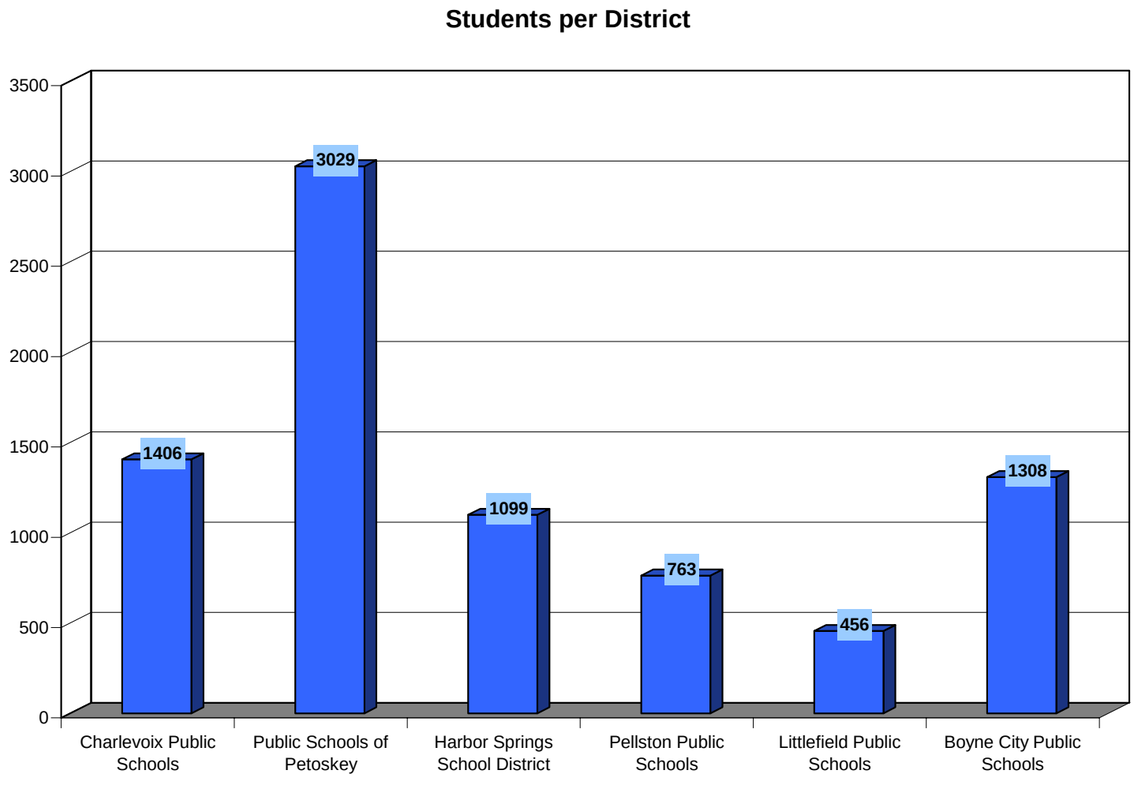
Source: 2000 US Census

Table 5

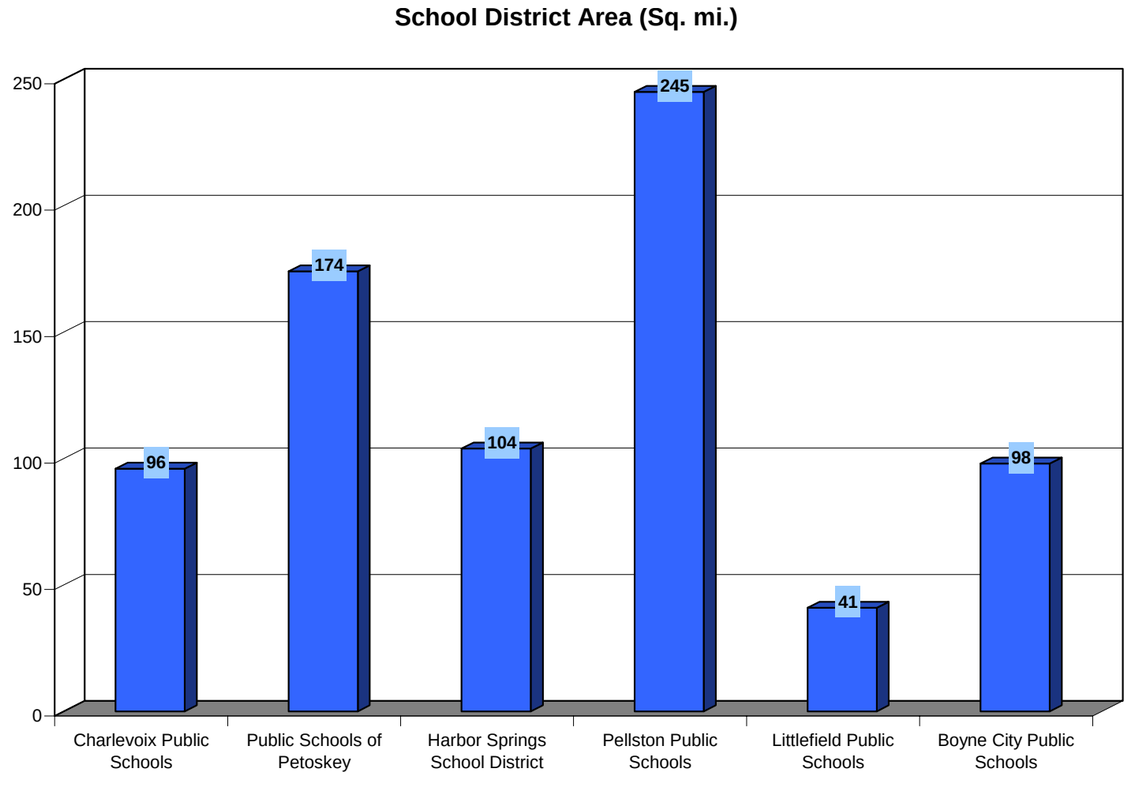
LTBB Reservation - School District Tabulations by District						
District	# Students	Area (square miles)	# Schools	Students / Square Mile	Students / School	Area (square miles) / School
Charlevoix Public Schools	1406	96	4	14.6	351.5	24.0
Public Schools of Petoskey	3029	174	7	17.4	432.7	24.9
Harbor Springs School District	1099	104	4	10.6	274.8	26.0
Pellston Public Schools	763	245	3	3.1	254.3	81.7
Littlefield Public Schools	456	41	1	11.1	456.0	41.0
Boyne City Public Schools	1308	98	6	13.3	218.0	16.3
Area Total	*8061*	*758*	*25*	*10.6*	*322.4*	*30.3*

Source: www.greatschools.net

Table 6



Graph 4



Graph 5

Charlevoix Public Schools			
Grades	*KG-12*		
Number of students	*1406*		
Number of schools	*4*		
	Total Number	**Students per Staff Member**	**State Average**
Teachers	87	16.2	18
Instructional Aides	10.5	133.9	98.4
Guidance Counselors	4	351.5	601.3
Librarians/Media Specialists	3	468.7	1347.2
District-level Administrators	2	703	1404
School-level Administrators	4	351.5	337.1

Public Schools Of Petoskey			
Grades	*KG-12*		
Number of students	*3029*		
Number of schools	*7*		
	Total Number	**Students per Staff Member**	**State Average**
Teachers	164	18.5	18
Instructional Aides	30.5	99.3	98.4
Guidance Counselors	5	605.8	601.3
Librarians/Media Specialists	3	1009.7	1347.2
District-level Administrators	2	1514.5	1404
School-level Administrators	12	252.4	337.1

Harbor Springs School District			
Grades	*PK-12*		
Number of students	*1099*		
Number of schools	*4*		
	Total Number	**Students per Staff Member**	**State Average**
Teachers	65.2	16.9	18
Instructional Aides	12.3	89.3	98.4
Guidance Counselors	2.8	392.5	601.3
Librarians/Media Specialists	2	549.5	1347.2
District-level Administrators	2	549.5	1404
School-level Administrators	4	274.8	337.1

Pellston Public Schools			
Grades	*KG-12*		
Number of students	*763*		
Number of schools	*3*		
	Total Number	**Students per Staff Member**	**State Average**
Teachers	48	15.9	18
Instructional Aides	8.2	93	98.4
Guidance Counselors	2	381.5	601.3
Librarians/Media Specialists	0.9	847.8	1347.2
District-level Administrators	1	763	1404
School-level Administrators	2	381.5	337.1

Littlefield Public Schools			
Grades	*KG-12*		
Number of students	*456*		
Number of schools	*1*		
	Total Number	**Students per Staff Member**	**State Average**
Teachers	27.8	16.4	18
Instructional Aides	6.5	70.2	98.4
Guidance Counselors	0.2	2280	601.3
Librarians/Media Specialists	1	456	1347.2
District-level Administrators	1	456	1404
School-level Administrators	2	228	337.1

Boyne City Public Schools			
Grades	KG-12		
Number of students	1308		
Number of schools	6		
	Total Number	**Students per Staff Member**	**State Average**
Teachers	73.2	17.9	18
Instructional Aides	39	33.5	98.4
Guidance Counselors	1	1308	601.3
Librarians/Media Specialists	1	1308	1347.2
District-level Administrators	2	654	1404
School-level Administrators	4.8	272.5	337.1

Source: www.greatschools.com

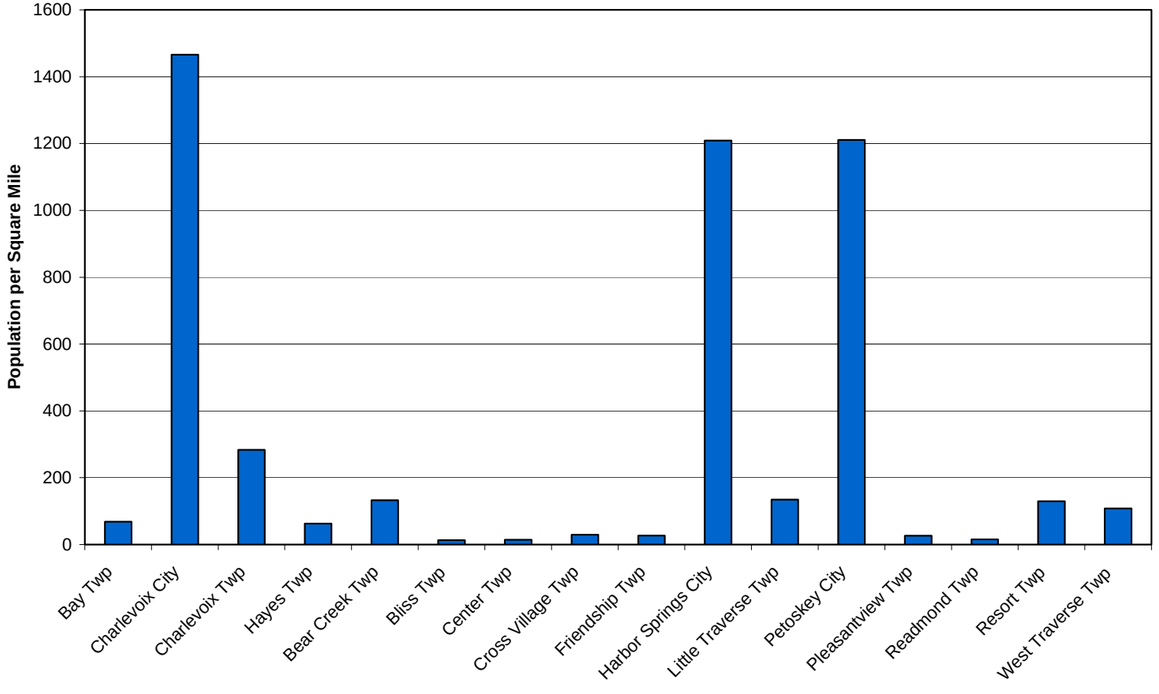
Table 6 a

LTBB Reservation - Population Density / Distribution Tabulation by MCD

Geographic area	Population	Housing units	Area in square miles: Total area	Water area	Land area	Geographic area	Density per square mile of land area: Population	Housing units
Charlevoix County						Charlevoix County		
Bay Twp	1,068	787	18.85	3.32	15.53	Bay Twp	68.8	50.7
Charlevoix City	2,994	2,096	2.15	0.1	2.04	Charlevoix City	1,465.80	1,026.20
Charlevoix Twp	1,697	942	12.12	6.13	5.99	Charlevoix Twp	283.3	157.3
Hayes Twp	1,893	1,030	43.24	13.14	30.1	Hayes Twp	62.9	34.2
Emmet County						Emmet County		
Bear Creek Twp	5,269	2,969	45.77	6.17	39.6	Bear Creek Twp	133	75
Bliss Twp	572	325	46.24	2.31	43.94	Bliss Twp	13	7.
Center Twp	499	301	35.29	0.93	34.36	Center Twp	14.5	8.
Cross Village Twp	294	280	10.23	0.21	10.02	Cross Village Twp	29.3	27.9
Friendship Twp	844	457	31.4	0.01	31.3	Friendship Twp	26.9	14.6
Harbor Springs City	1,567	1,086	1.3	0	1.3	Harbor Springs City	1,208.90	837.8
Little Traverse Twp	2,426	1,555	20.38	2.37	18.02	Little Traverse Twp	134.7	86.3
Petoskey City	6,080	3,342	5.23	0.21	5.02	Petoskey City	1,210.90	665.6
Pleasantview Twp	943	754	35.7	0.01	35.68	Pleasantview Twp	26.4	21.1
Readmond Twp	493	411	30.99	0	30.99	Readmond Twp	15.9	13.3
Resort Twp	2,479	1,215	21.54	2.43	19.11	Resort Twp	129.7	63.6
West Traverse Twp	1,448	1,093	13.36	0.03	13.34	West Traverse Twp	108.6	82

Source: 2000 US Census

Table 7



Graph 6

LTBB Reservation - Race of Population by MCD							
MCD	White alone	Black or African American alone	American Indian and Alaska Native alone	Asian alone	Native Hawaiian and Other Pacific Islander alone	Some other race alone	Two or more races
Emmet County							
Bear Creek Twp	4,945	19	93	10	0	10	44
Bliss Twp	542	0	39	0	0	0	17
Center Twp	504	0	17	2	0	0	11
Cross Village Twp	225	0	33	0	0	0	16
Friendship Twp	782	4	23	0	0	0	14
Harbor Springs City	1,462	12	121	0	0	0	24
Little Traverse Twp	2,347	10	47	0	0	4	7
Petoskey City	5,908	0	252	0	0	15	72
Pleasantview Twp	749	63	11	6	0	8	20
Readmond Twp	483	0	7	0	0	0	16
Resort Twp	2,390	4	58	4	6	3	7
West Traverse Twp	1,438	4	25	4	0	0	8
Charlevoix County							
Bay Twp	1,048	0	4	6	0	0	2
Charlevoix City	2,831	22	57	24	0	12	40
Charlevoix Twp	1,608	9	40	10	2	7	12
Hayes Twp	1,819	3	30	0	0	2	29

Source: 2000 US Census

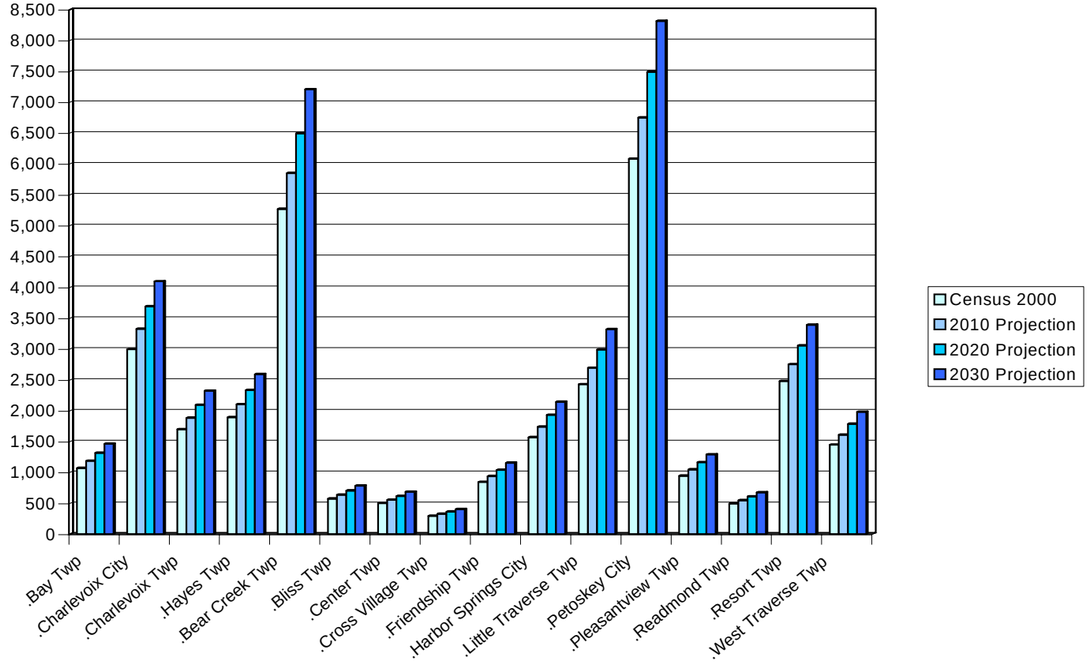
Table 8

LTBB Reservation - Population Projection				
Place	Census 2000	2010 Projection	2020 Projection	2030 Projection
Charlevoix County	26,090	28,960	32,145	35,681
Bay Twp	1,068	1,185	1,316	1,461
Charlevoix City	2,994	3,323	3,689	4,095
Charlevoix Twp	1,697	1,884	2,091	2,321
Hayes Twp	1,893	2,101	2,332	2,589
Emmet County	31,437	34,895	38,734	42,994
Bear Creek Twp	5,269	5,849	6,492	7,206
Bliss Twp	572	635	705	782
Center Twp	499	554	615	682
Cross Village Twp	294	326	362	402
Friendship Twp	844	937	1,040	1,154
Harbor Springs City	1,567	1,739	1,931	2,143
Little Traverse Twp	2,426	2,693	2,989	3,318
Petoskey City	6,080	6,749	7,491	8,315
Pleasantview Twp	943	1,047	1,162	1,290
Readmond Twp	493	547	607	674
Resort Twp	2,479	2,752	3,054	3,390
West Traverse Twp	1,448	1,607	1,784	1,980

State of Michigan projection methodology applied to data sourced from the 2000 US Census (pop + 11% for each of the 10-year increments and calculated at ~1.1% annually.)

Table 9

Population Projection - LTBB



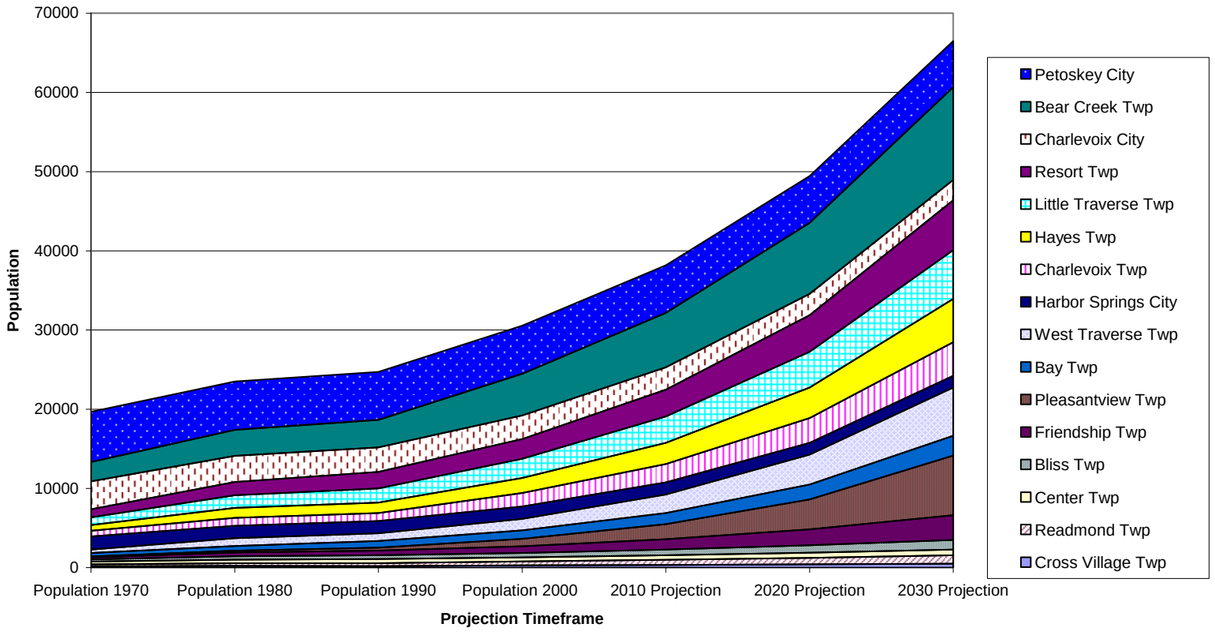
Graph 7

LTBB Reservation - MCD Based Projection							
Place	Population 1970	Population 1980	Population 1990	Population 2000	2010 Projection	2020 Projection	2030 Projection
Cross Village Twp	185	215	201	294	349	414	492
Readmond Twp	234	356	374	493	639	829	1,075
Center Twp	349	435	517	499	566	641	727
Bliss Twp	282	441	483	572	733	939	1,203
Friendship Twp	240	467	591	844	1,305	2,020	3,124
Pleasantview Twp	124	212	375	943	1,884	3,765	7,524
Bay Twp	456	599	825	1,068	1,419	1,886	2,506
West Traverse Twp	420	997	968	1,448	2,337	3,771	6,086
Harbor Springs City	1,662	1,567	1,540	1,567	1,538	1,509	1,481
Charlevoix Twp	720	993	1,016	1,697	2,303	3,127	4,245
Hayes Twp	706	1,274	1,317	1,893	2,698	3,846	5,483
Little Traverse Twp	985	1,574	1,805	2,426	3,307	4,507	6,144
Resort Twp	1,009	1,687	2,068	2,479	3,385	4,624	6,315
Charlevoix City	3,519	3,296	3,116	2,994	2,837	2,689	2,548
Bear Creek Twp	2,450	3,287	3,469	5,269	6,878	8,978	11,720
Petoskey City	6,342	6,097	6,056	6,080	5,995	5,911	5,828
Charlevoix County	16,541	19,907	21,468	26,090	30,404	35,430	41,288
Emmet County	18,331	22,992	25,040	31,437	37,703	45,219	54,233

Source: 2000 US Census (population)

Table 10

LTBB Reservation - Minor Civil Divisions Population History and Projections

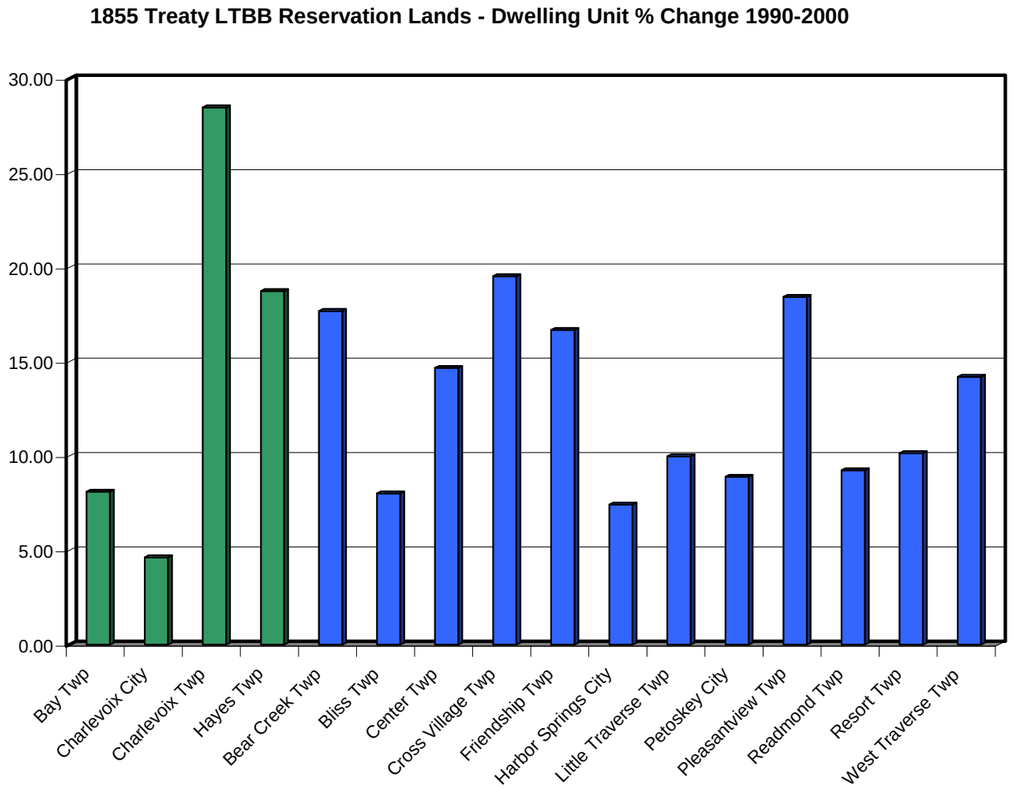


Graph 8

1855 Treaty LTBB Reservation Lands - Population Projection														
	Population 1970	Population 1980	Population 1990	Population 2000	Pop. Change 1970-1980	Pop. Change 1980-1990	Pop. Change 1990-2000	Pop. % Change 1970-1980	Pop. % Change 1980-1990	Pop. % Change 1990-2000	Averaged % Change 1970-2000	2010 Projection	2020 Projection	2030 Projection
Charlevoix County	16,541	19,907	21,468	26,090	3,366	1,561	4,622	20.3%	7.8%	21.5%	16.5%	30,404	35,430	41,288
Bay Twp	456	599	825	1,068	143	226	243	31.4%	37.7%	29.5%	32.9%	1,419	1,886	2,506
Charlevoix City	3,519	3,296	3,116	2,994	-223	-180	-122	-6.3%	-5.5%	-3.9%	-5.2%	2,837	2,689	2,548
Charlevoix Twp	720	993	1,016	1,697	273	23	681	37.9%	2.3%	67.0%	35.7%	2,303	3,127	4,245
Hayes Twp	706	1,274	1,317	1,893	568	43	576	80.5%	3.4%	43.7%	42.5%	2,698	3,846	5,483
Emmet County	18,331	22,992	25,040	31,437	4,661	2,048	6,397	25.4%	8.9%	25.5%	19.9%	37,703	45,219	54,233
Bear Creek Twp	2,450	3,287	3,469	5,269	837	182	1,800	34.2%	5.5%	51.9%	30.5%	6,878	8,978	11,720
Bliss Twp	282	441	483	572	159	42	89	56.4%	9.5%	18.4%	28.1%	733	939	1,203
Center Twp	349	435	517	499	86	82	-18	24.6%	18.9%	-3.5%	13.3%	566	641	727
Cross Village Twp	185	215	201	294	30	-14	93	16.2%	-6.5%	46.3%	18.7%	349	414	492
Friendship Twp	240	467	591	844	227	124	253	94.6%	26.6%	42.8%	54.7%	1,305	2,020	3,124
Harbor Springs City	1,662	1,567	1,540	1,567	-95	-27	27	-5.7%	-1.7%	1.8%	-1.9%	1,538	1,509	1,481
Little Traverse Twp	985	1,574	1,805	2,426	589	231	621	59.8%	14.7%	34.4%	36.3%	3,307	4,507	6,144
Petoskey City	6,342	6,097	6,056	6,080	-245	-41	24	-3.9%	-0.7%	0.4%	-1.4%	5,995	5,911	5,828
Pleasantview Twp	124	212	375	943	88	163	568	71.0%	76.9%	151.5%	99.8%	1,884	3,765	7,524
Readmond Twp	234	356	374	493	122	18	119	52.1%	5.1%	31.8%	29.7%	639	829	1,075
Resort Twp	1,009	1,687	2,068	2,479	678	381	411	67.2%	22.6%	19.9%	36.6%	3,385	4,624	6,315
West Traverse Twp	420	997	968	1,448	577	-29	480	137.4%	-2.9%	49.6%	61.4%	2,337	3,771	6,086

Source: 2000 US Census

Table 11


1855 Treaty LTBB Reservation Lands - Dwelling Unit % Change 1990-2000
30.00
25.00
20.00
15.00
10.00
5.00
0.00
Bay Twp
Charlevoix City
Charlevoix Twp
Hayes Twp
Bear Creek Twp
Bliss Twp
Center Twp
Cross Village Twp
Friendship Twp
Harbor Springs City
Little Traverse Twp
Petoskey City
Pleasantview Twp
Readmond Twp
Resort Twp
West Traverse Twp

Graph 9

LTBB Reservation - Dwelling Unit Growth / Change Tabulation

2000 - Units in Structure	Bay Twp	Charlevoix City	Charlevoix Twp	Hayes Twp	Bear Creek Twp	Bliss Twp	Center Twp	Cross Village Twp	Friendship Twp	Harbor Springs City	Little Traverse Twp	Petoskey City	Pleasantview Twp	Readmond Twp	Resort Twp	West Traverse Twp
1, detached	727	1,283	653	827	2,120	283	263	282	398	784	1,115	1,811	437	347	1,048	984
1, attached	6	15	17	14	48	2	2	0	4	39	27	281	86	12	17	44
2	5	113	26	2	48	0	0	0	3	52	60	253	12	3	21	4
3 or 4	3	106	17	0	181	0	0	0	4	48	148	233	25	0	4	48
5 to 9	15	150	5	0	165	0	0	0	0	41	127	276	123	0	9	5
10 to 19	0	76	0	0	41	0	0	0	0	58	0	275	0	0	0	0
20 to 49	0	141	20	0	73	0	0	0	0	2	0	122	4	0	0	0
50 or more	0	196	0	0	98	0	0	0	0	0	0	101	0	0	0	0
Mobile home	27	16	207	183	230	62	32	27	46	68	98	0	42	22	110	17
Boat, RV, van, etc.	3	7	0	0	0	3	0	0	3	0	0	0	0	0	0	0
Total Units - 2000	*786*	*2103*	*945*	*1026*	*3004*	*350*	*297*	*309*	*458*	*1092*	*1575*	*3352*	*729*	*384*	*1209*	*1102*

1990 - Units in Structure	Bay Twp	Charlevoix City	Charlevoix Twp	Hayes Twp	Bear Creek Twp	Bliss Twp	Center Twp	Cross Village Twp	Friendship Twp	Harbor Springs City	Little Traverse Twp	Petoskey City	Pleasantview Twp	Readmond Twp	Resort Twp	West Traverse Twp
1, detached	586	1215	431	559	1659	230	188	189	266	725	863	1659	271	287	792	690
1, attached	19	36	4	2	52	3	3	0	0	16	67	34	166	2	0	48
2	4	64	21	2	14	0	3	0	2	52	30	245	2	2	17	14
3 or 4	2	82	15	9	19	0	0	3	0	58	113	169	31	0	0	25
5 to 9	3	109	6	7	20	0	0	0	0	15	58	255	2	0	25	0
10 to 19	0	138	0	0	62	0	0	0	0	5	0	329	12	0	0	0
20 to 49	0	25	0	0	0	0	0	0	0	0	0	18	0	0	0	0
50 or more	0	136	0	0	0	0	0	0	0	0	0	72	0	0	0	0
Mobile home or trailer	47	24	47	121	260	54	27	12	53	40	130	2	18	23	138	19
Other	7	88	2	2	15	11	0	4	6	30	28	21	0	5	14	32
Total Units - 1990	*668*	*1917*	*526*	*702*	*2101*	*298*	*221*	*208*	*327*	*941*	*1289*	*2804*	*502*	*319*	*986*	*828*

1990 to 2000 Percent Change - Units in Structure	Bay Twp	Charlevoix City	Charlevoix Twp	Hayes Twp	Bear Creek Twp	Bliss Twp	Center Twp	Cross Village Twp	Friendship Twp	Harbor Springs City	Little Traverse Twp	Petoskey City	Pleasantview Twp	Readmond Twp	Resort Twp	West Traverse Twp
1, detached	24.1%	5.6%	51.5%	47.9%	27.8%	23.0%	39.9%	49.2%	49.6%	8.1%	29.2%	9.2%	61.3%	20.9%	32.3%	42.6%
1, attached	-68.4%	-58.3%	325.0%	600.0%	-7.7%	-33.3%	-33.3%	N/V	N/V	143.8%	-59.7%	726.5%	-48.2%	500.0%	N/V	-8.3%
2	25.0%	76.6%	23.8%	0.0%	242.9%	N/V	-100.0%	N/V	50.0%	0.0%	100.0%	3.3%	500.0%	50.0%	23.5%	-71.4%
3 or 4	50.0%	29.3%	13.3%	-100.0%	852.6%	N/V	N/V	-100.0%	N/V	-17.2%	31.0%	37.9%	-19.4%	N/V	N/V	92.0%
5 to 9	400.0%	37.6%	-16.7%	-100.0%	725.0%	N/V	N/V	N/V	N/V	173.3%	119.0%	8.2%	6050.0%	N/V	-64.0%	N/V
10 to 19	N/V	-44.9%	N/V	N/V	-33.9%	N/V	N/V	N/V	N/V	1060.0%	N/V	-16.4%	-100.0%	N/V	N/V	N/V
20 to 49	N/V	464.0%	N/V	N/V	N/V	N/V	N/V	N/V	N/V	N/V	N/V	577.8%	N/V	N/V	N/V	N/V
50 or more	N/V	44.1%	N/V	N/V	N/V	N/V	N/V	N/V	N/V	N/V	N/V	40.3%	N/V	N/V	N/V	N/V
Mobile home or trailer	-42.6%	-33.3%	340.4%	51.2%	-11.5%	14.8%	18.5%	125.0%	-13.2%	70.0%	-24.6%	-100.0%	133.3%	-4.3%	-20.3%	-10.5%
Other	-57.1%	-92.0%	-100.0%	-100.0%	-100.0%	-72.7%	N/V	-100.0%	-50.0%	-100.0%	-100.0%	-100.0%	N/V	-100.0%	-100.0%	-100.0%
Total Change 1990-2000	17.7%	9.7%	79.7%	46.2%	43.0%	17.4%	34.4%	48.6%	40.1%	16.0%	22.2%	19.5%	45.2%	20.4%	22.6%	33.1%

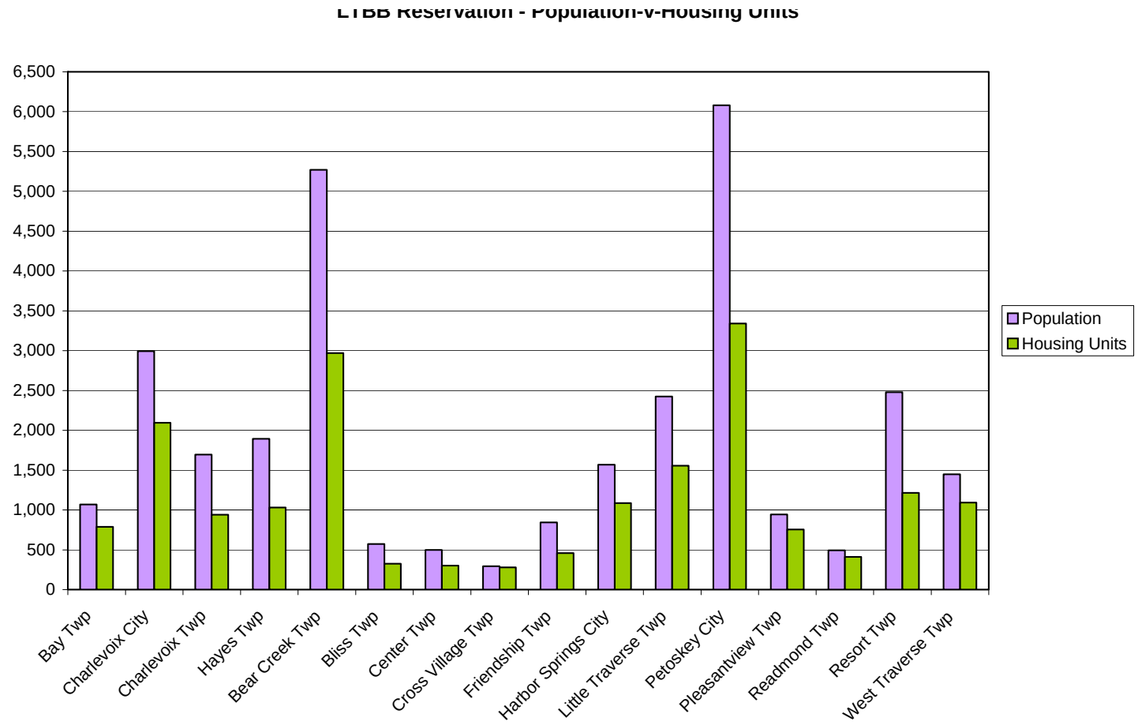
Source: 2000 US Census

Table 12

LTBB Reservation - Housing Characteristics Tabulation											
Units in Each Structure	Total:	1, detached	1, attached	2	3 or 4	5 to 9	10 to 19	20 to 49	50 or more	Mobile home	Boat, RV, van, etc.
Emmet County											
Bear Creek Twp	3,004	2,120	48	48	181	165	41	73	98	230	0
Bliss Twp	350	283	2	0	0	0	0	0	0	62	3
Center Twp	297	263	2	0	0	0	0	0	0	32	0
Cross Village Twp	309	282	0	0	0	0	0	0	0	27	0
Friendship Twp	458	398	4	3	4	0	0	0	0	46	3
Harbor Springs City	1,092	784	39	52	48	41	58	2	0	68	0
Little Traverse Twp	1,575	1,115	27	60	148	127	0	0	0	98	0
Petoskey City	3,352	1,811	281	253	233	276	275	122	101	0	0
Pleasantview Twp	729	437	86	12	25	123	0	4	0	42	0
Readmond Twp	384	347	12	3	0	0	0	0	0	22	0
Resort Twp	1,209	1,048	17	21	4	9	0	0	0	110	0
West Traverse Twp	1,102	984	44	4	48	5	0	0	0	17	0
Charlevoix County											
Bay Twp	786	727	6	5	3	15	0	0	0	27	3
Charlevoix City	2,103	1,283	15	113	106	150	76	141	196	16	7
Charlevoix Twp	945	653	17	26	17	5	0	20	0	207	0
Hayes Twp	1,026	827	14	2	0	0	0	0	0	183	0

Source: 2000 US Census

Table 13



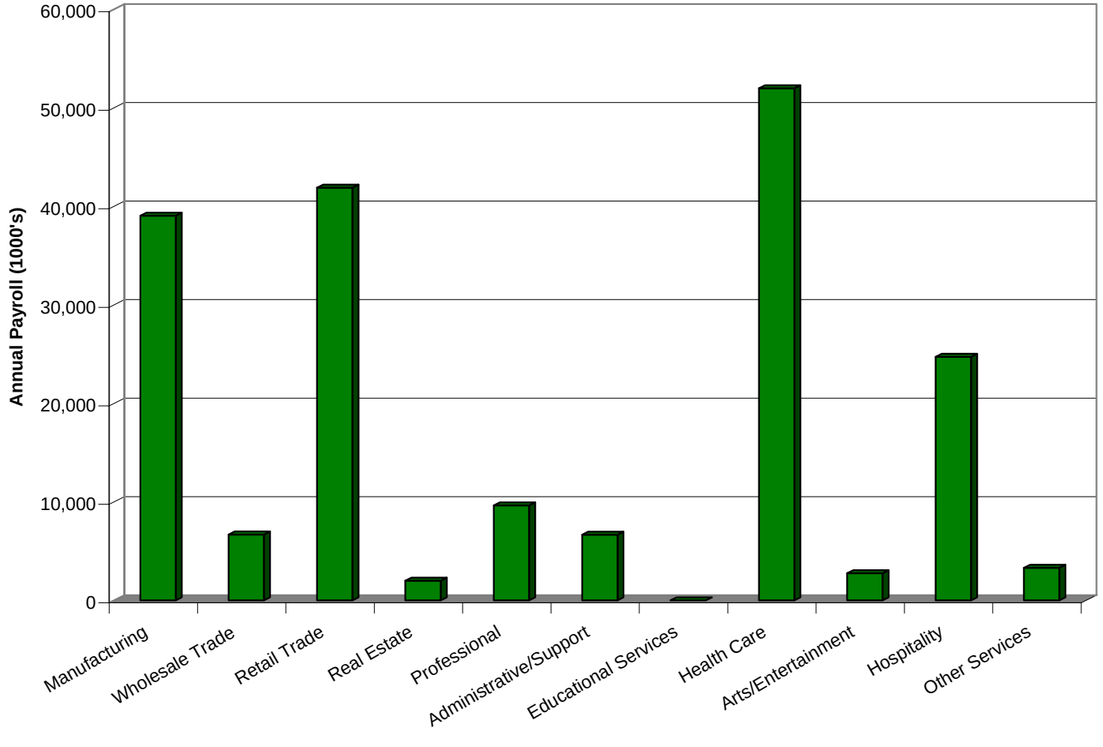
Graph 10

Figure 9

Annual Payroll by Sector - Emmet County	
Description	Annual payroll (1000's)
Manufacturing	39,065
Wholesale Trade	6,699
Retail Trade	41,907
Real Estate	2,011
Professional	9,662
Administrative/Support	6,681
Educational Services	N/A
Health Care	52,001
Arts/Entertainment	2,759
Hospitality	24,732
Other Services	3,328

Source: 1997 US Economic Census

Table 14



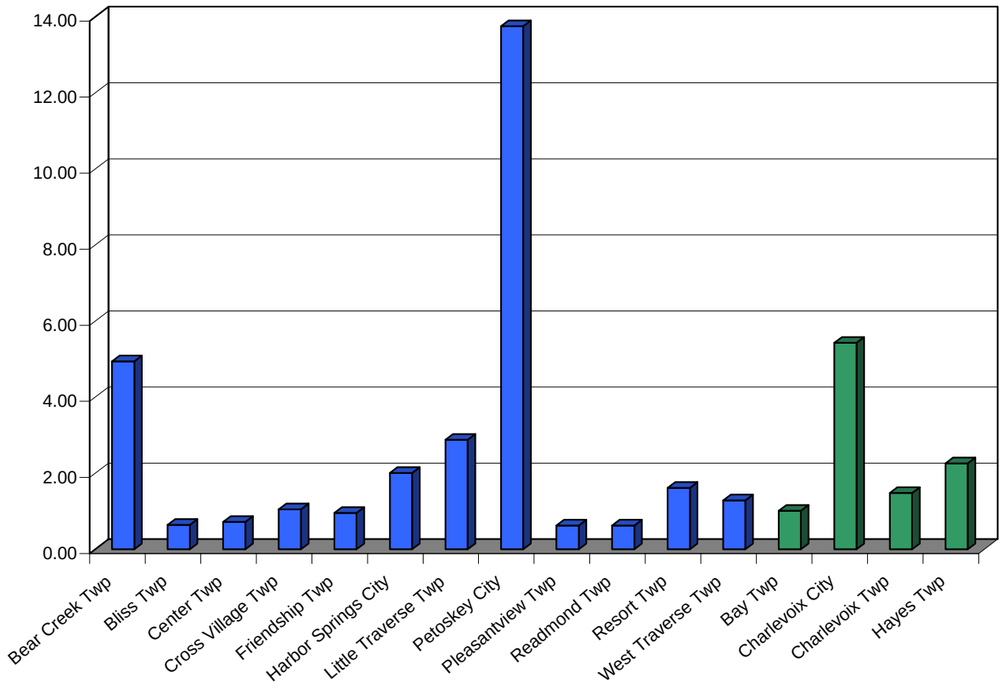
Graph 11

LTBB Reservation - Household Income and Poverty Tabulation				
	Median Household Size	Median Household Income 1999	Per Capita Income 1999	Poverty Rate
Emmet County				
Bear Creek Twp	288	44,129	22,534	4.94
Bliss Twp	35	36,339	17,094	0.64
Center Twp	24	38,333	16,201	0.72
Cross Village Twp	9	46,364	32,535	1.05
Friendship Twp	42	46,000	22,324	0.95
Harbor Springs City	77	35,341	21,876	2.00
Little Traverse Twp	111	41,228	20,830	2.88
Petoskey City	275	33,657	20,259	13.75
Pleasantview Twp	38	42,333	20,332	0.62
Readmond Twp	26	40,114	20,270	0.62
Resort Twp	135	52,772	25,080	1.61
West Traverse Twp	95	64,167	31,136	1.28
Charlevoix County				
Bay Twp	48	48,462	25,594	1.01
Charlevoix City	118	35,284	21,319	5.43
Charlevoix Twp	100	45,758	22,835	1.48
Hayes Twp	107	50,478	25,512	2.26

Source: 2000 US Census

Table 15

LTBB Reservation - Poverty Rate (Census 2000)

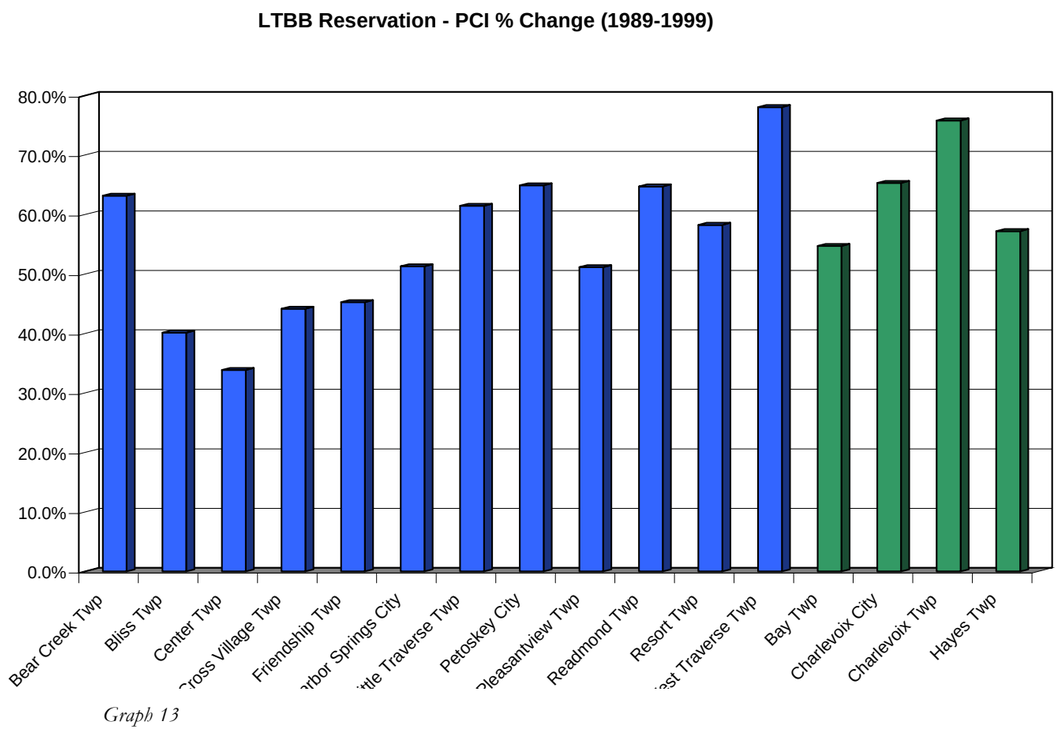


Graph 12

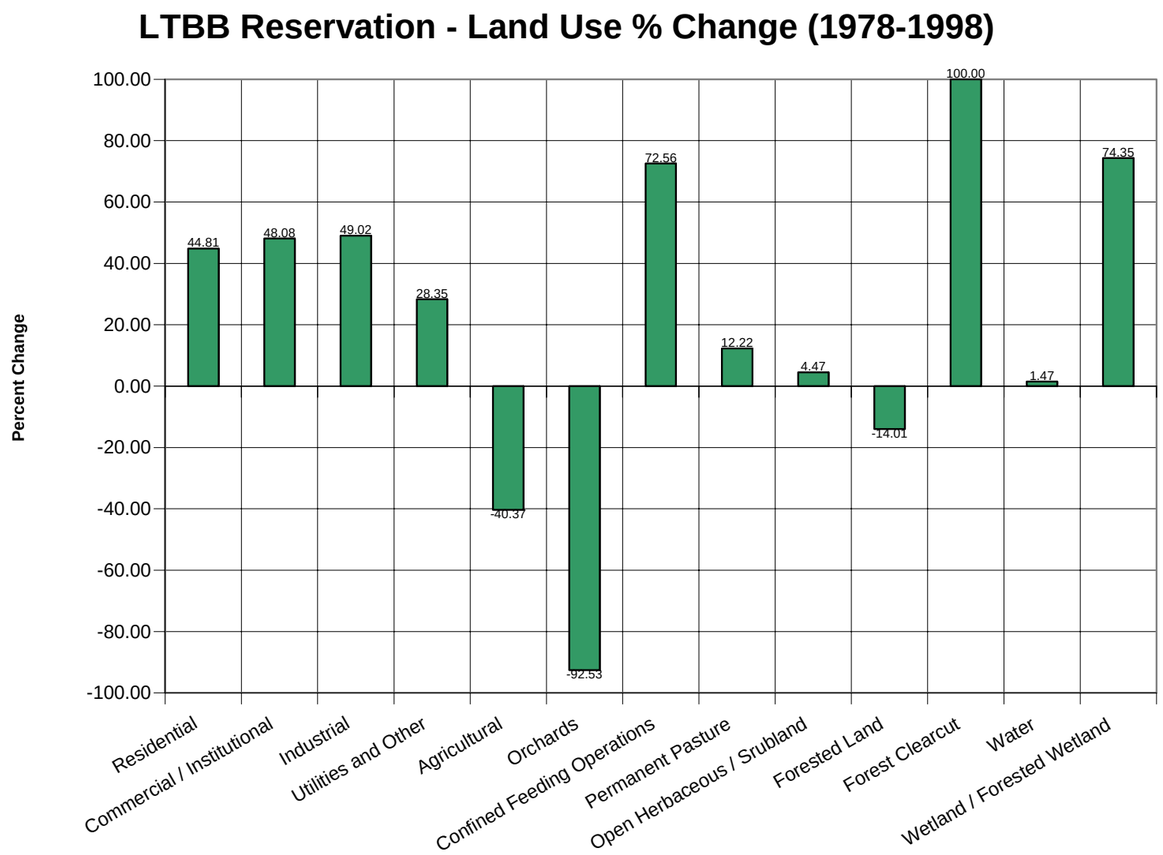
LTBB Reservation - Per Capita Income Tabulations (1989-1999)			
	PCI - 1989	PCI - 1999	Percent change (1989-1999)
Emmet County			
Bear Creek Twp	$14,233.00	$22,534.00	63.2%
Bliss Twp	$9,046.00	$17,094.00	40.1%
Center Twp	$7,632.00	$16,201.00	33.9%
Cross Village Twp	$9,952.00	$32,535.00	44.2%
Friendship Twp	$10,201.00	$22,324.00	45.3%
Harbor Springs City	$11,558.00	$21,876.00	51.3%
Little Traverse Twp	$13,851.00	$20,830.00	61.5%
Petoskey City	$14,626.00	$20,259.00	64.9%
Pleasantview Twp	$11,528.00	$20,332.00	51.2%
Readmond Twp	$14,589.00	$20,270.00	64.7%
Resort Twp	$13,130.00	$25,080.00	58.3%
West Traverse Twp	$17,589.00	$31,136.00	78.1%
Charlevoix County			
Bay Twp	$12,332.00	$25,594.00	54.7%
Charlevoix City	$14,720.00	$21,319.00	65.3%
Charlevoix Twp	$17,082.00	$22,835.00	75.8%
Hayes Twp	$12,889.00	$25,512.00	57.2%

Source: 2000 US Census

Table 16

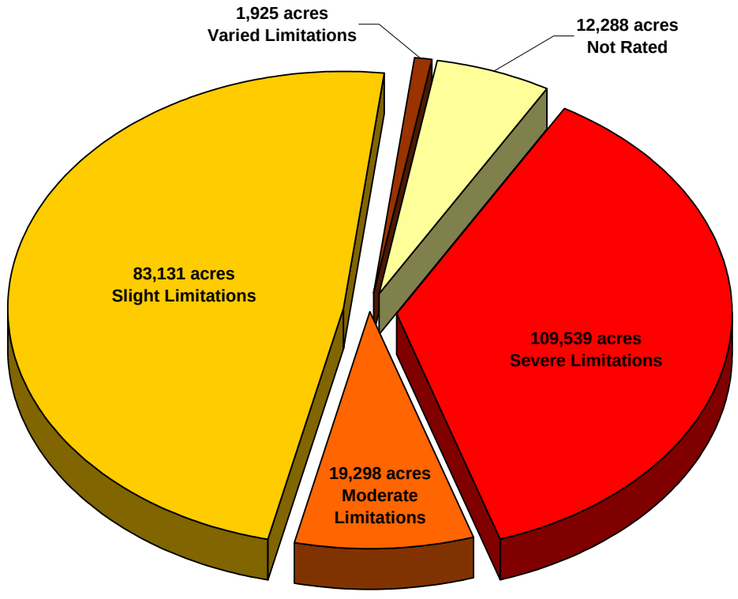


Graph 13


LTBB Reservation - Land Use % Change (1978-1998)
Percent Change
100.00
80.00
60.00
40.00
20.00
0.00
-20.00
-40.00
-60.00
-80.00
-100.00
44.81
48.08
49.02
28.35
-40.37
-92.53
72.56
12.22
4.47
-14.01
100.00
1.47
74.35
Residential
Commercial / Institutional
Industrial
Utilities and Other
Agricultural
Orchards
Confined Feeding Operations
Permanent Pasture
Open Herbaceous / Srubland
Forested Land
Forest Clearcut
Water
Wetland / Forested Wetland

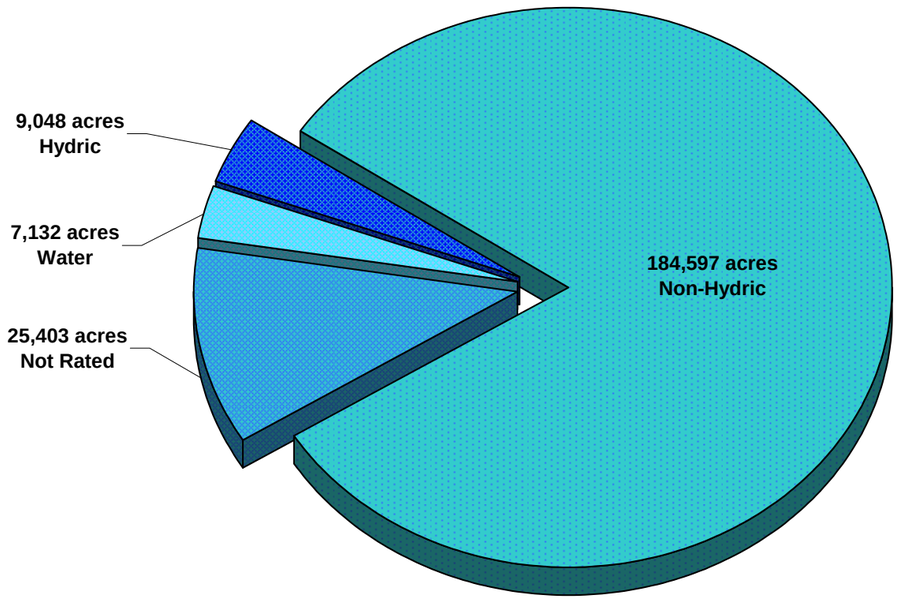
Graph 14

Septic Suitability



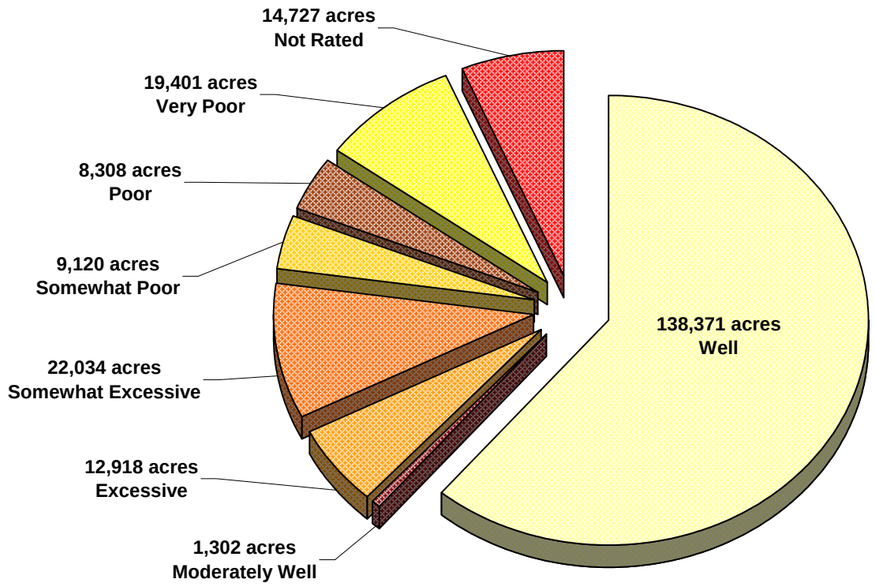
Graph 16

Hydric Soils



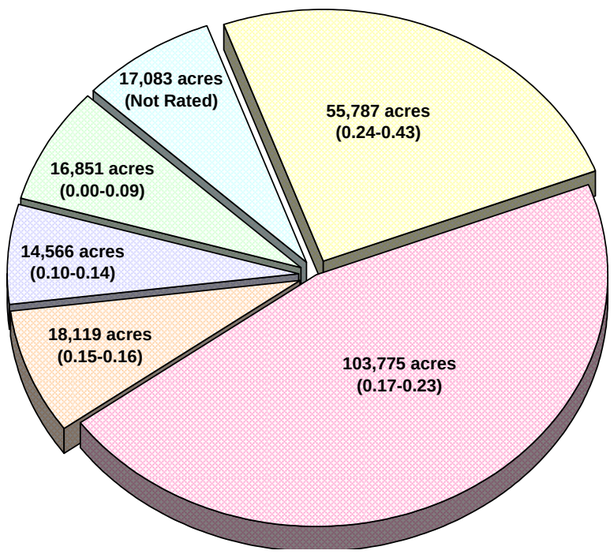
Graph 15

Drainage Potential



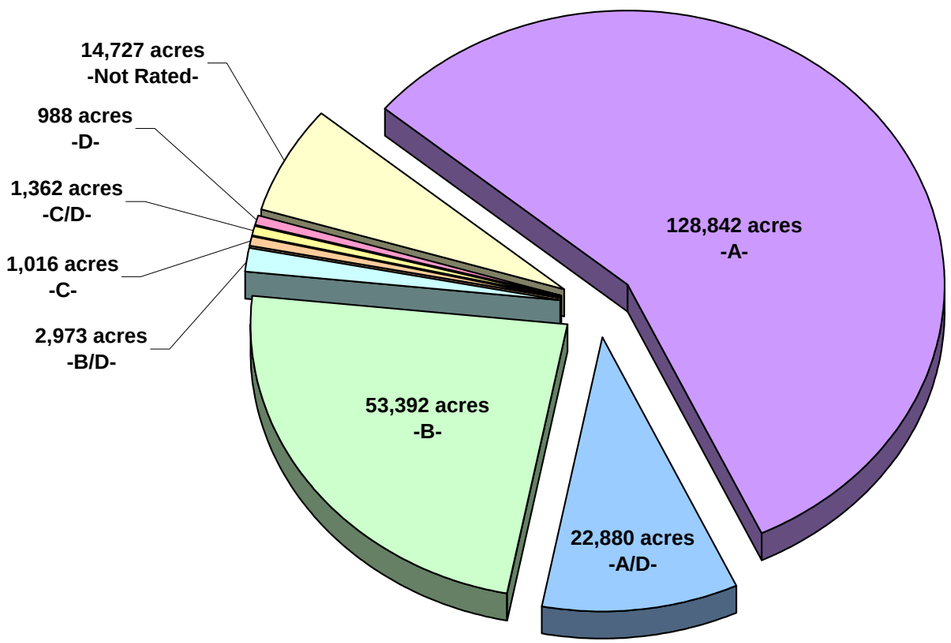
Graph 17

Erosion Potential



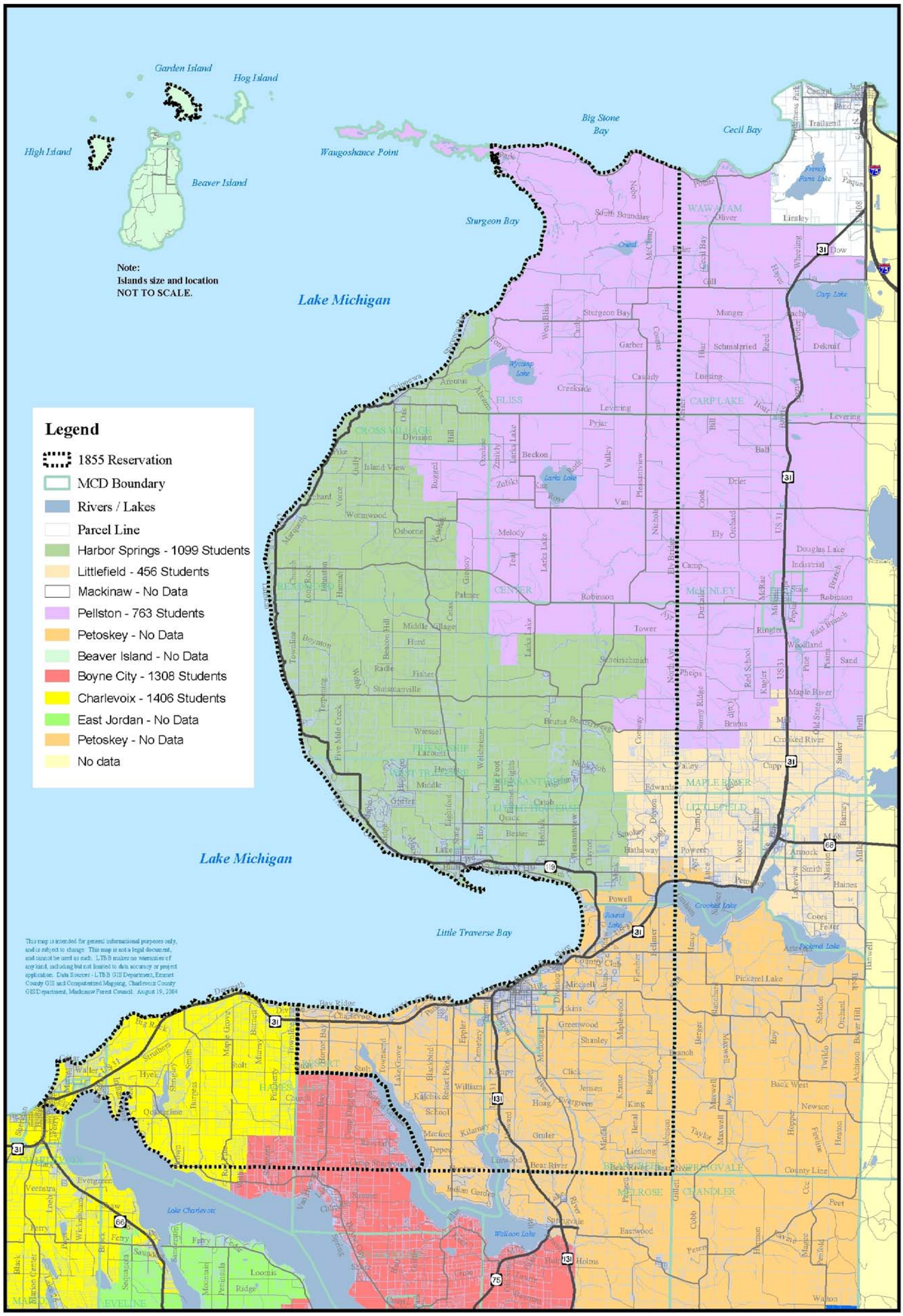
Graph 18

Infiltration Rate



Graph 19

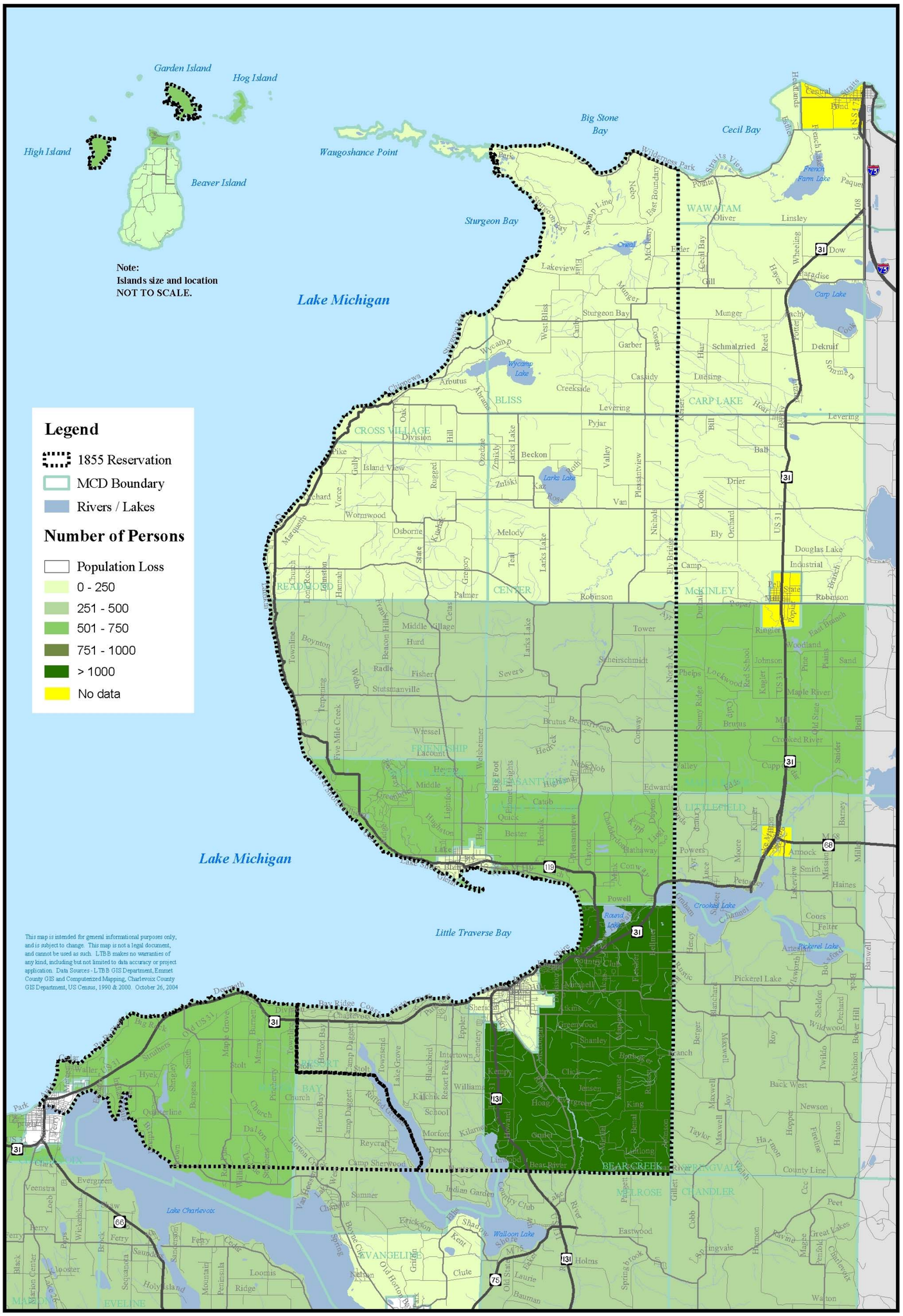
Key to Infiltration Rate graph:
A - High Infiltration Rate
A/D - Group A and D Characteristics (drained or undrained)
B - Moderate Infiltration Rate
B/D - Group B and D Characteristics
C - Slow Infiltration rate
C/D - Group C and D characteristics
D - Very Slow Infiltration Rate
NR - Not Rated



School District Tabulations

Map 2

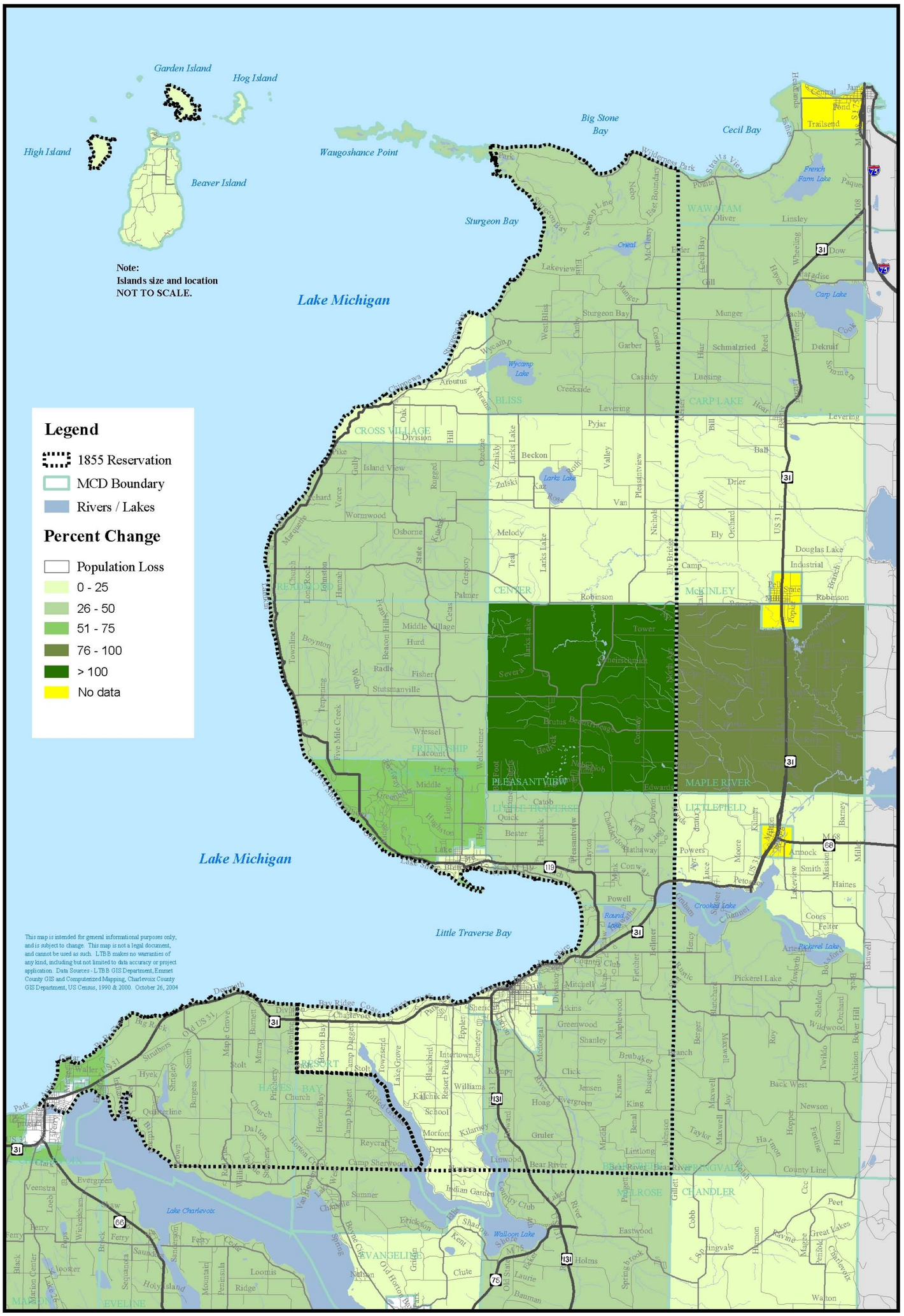
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 3

Population Change 1990 - 2000

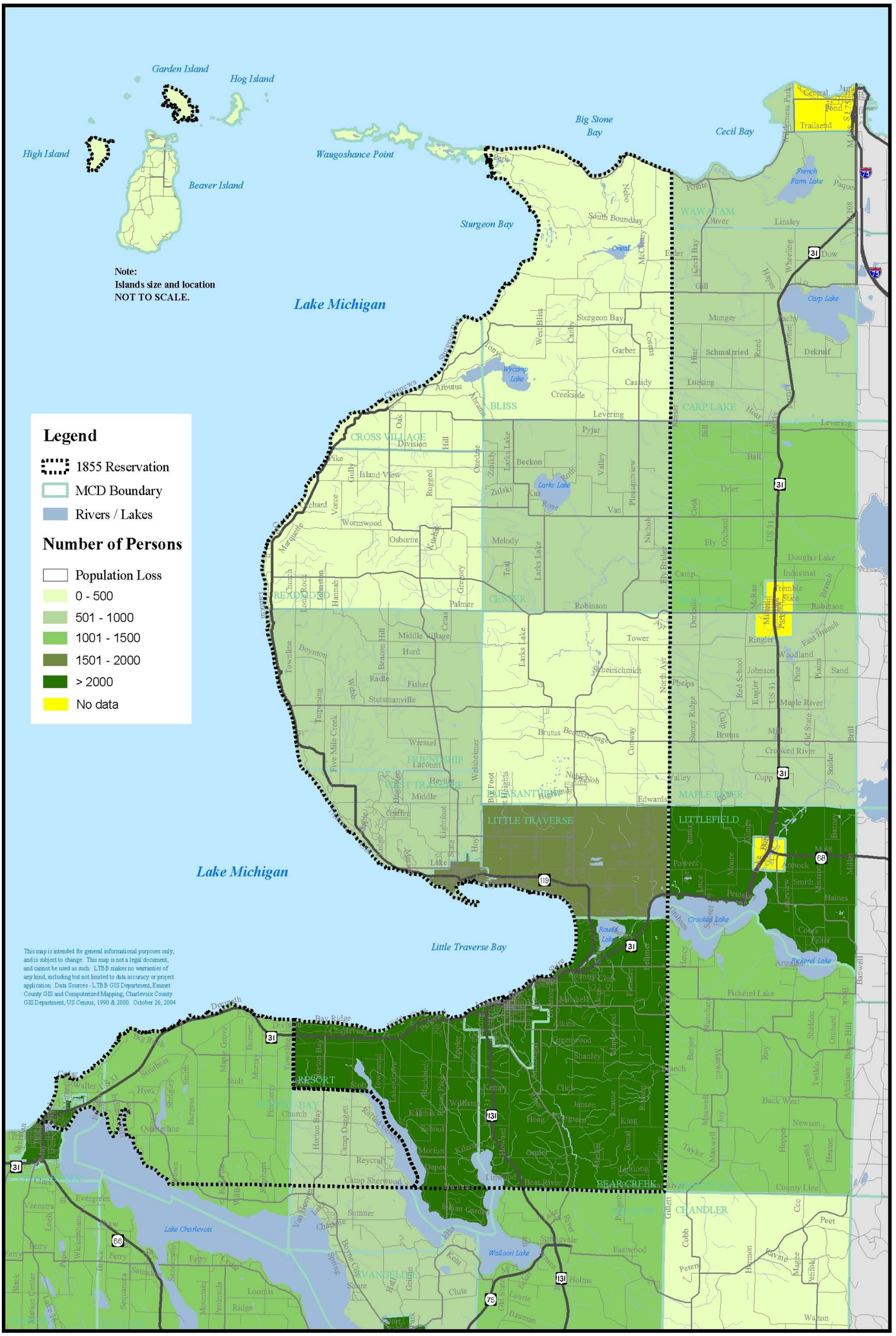
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 4

Percent Population Change 1990 - 2000

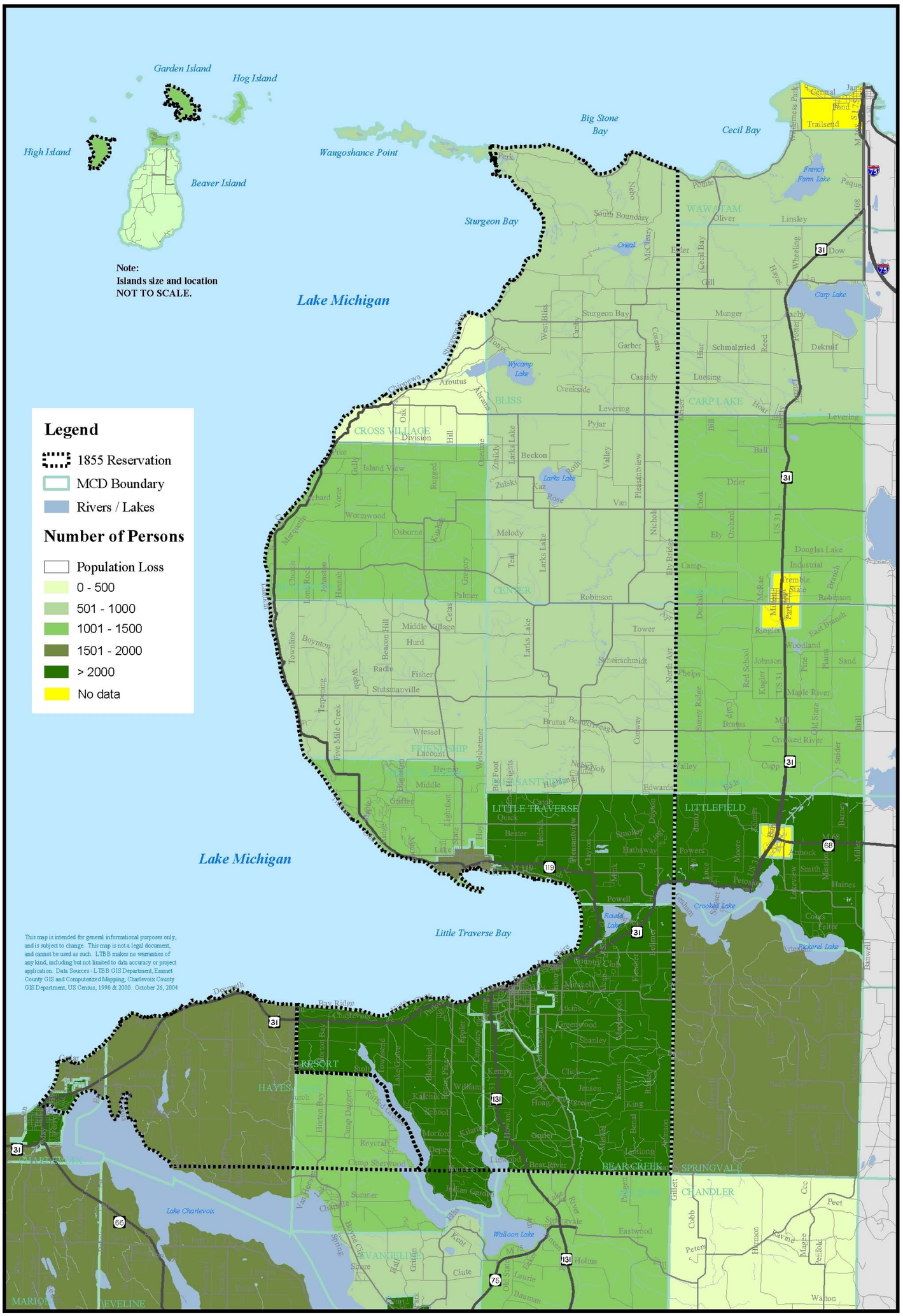
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 5

Total Population - Year 1990

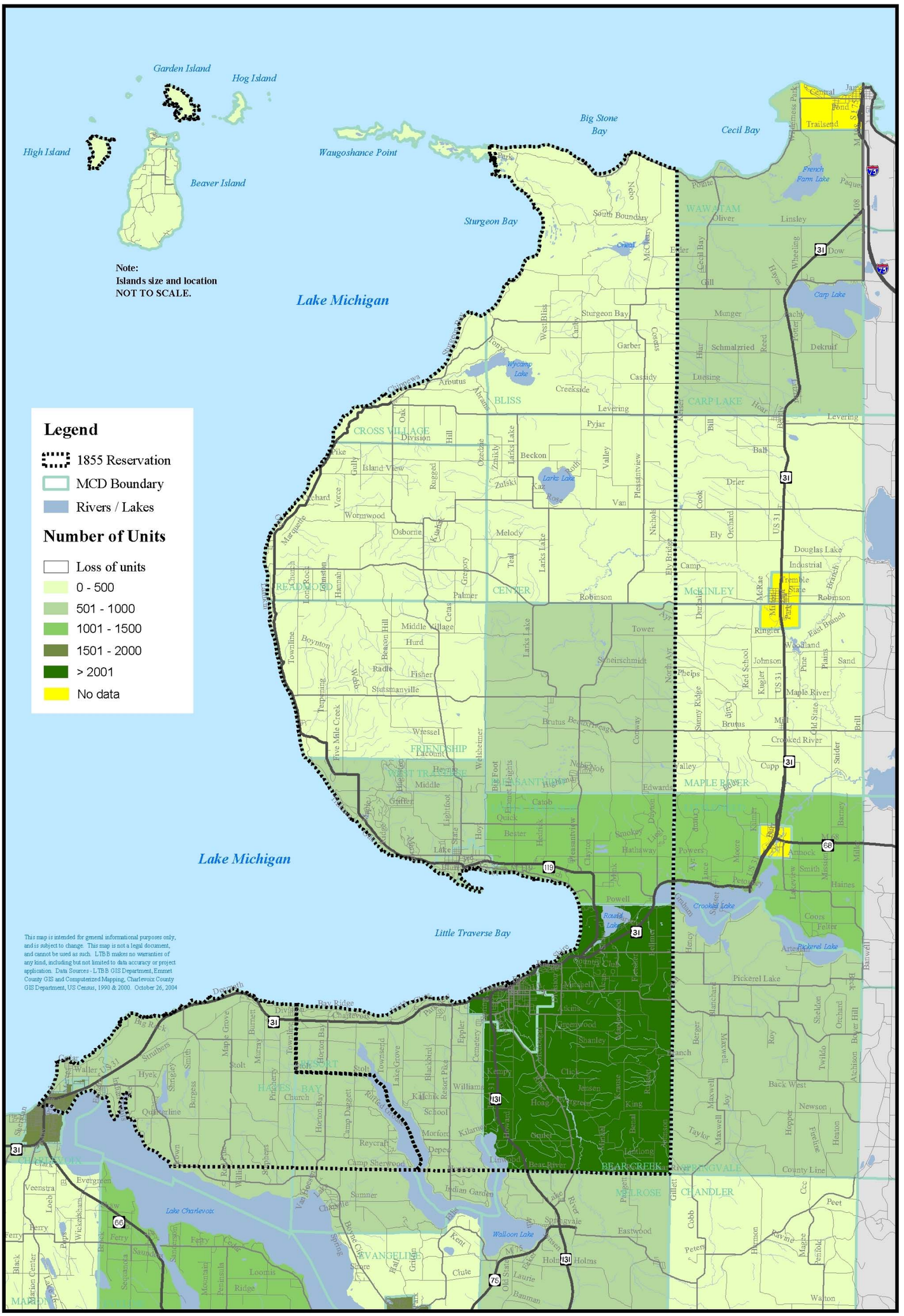
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 6

Total Population - Year 2000

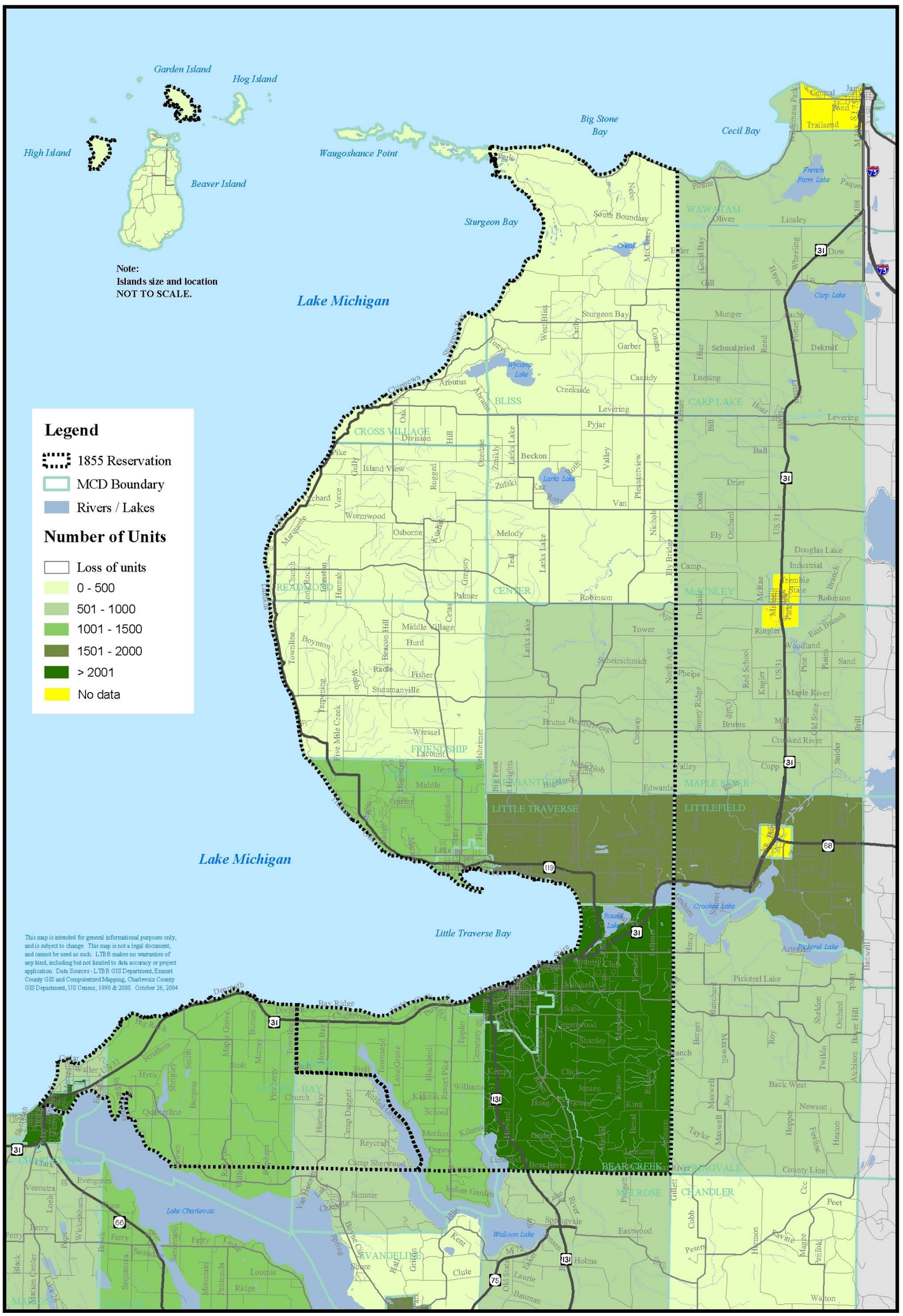
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 7

Dwelling Units - Year 1990

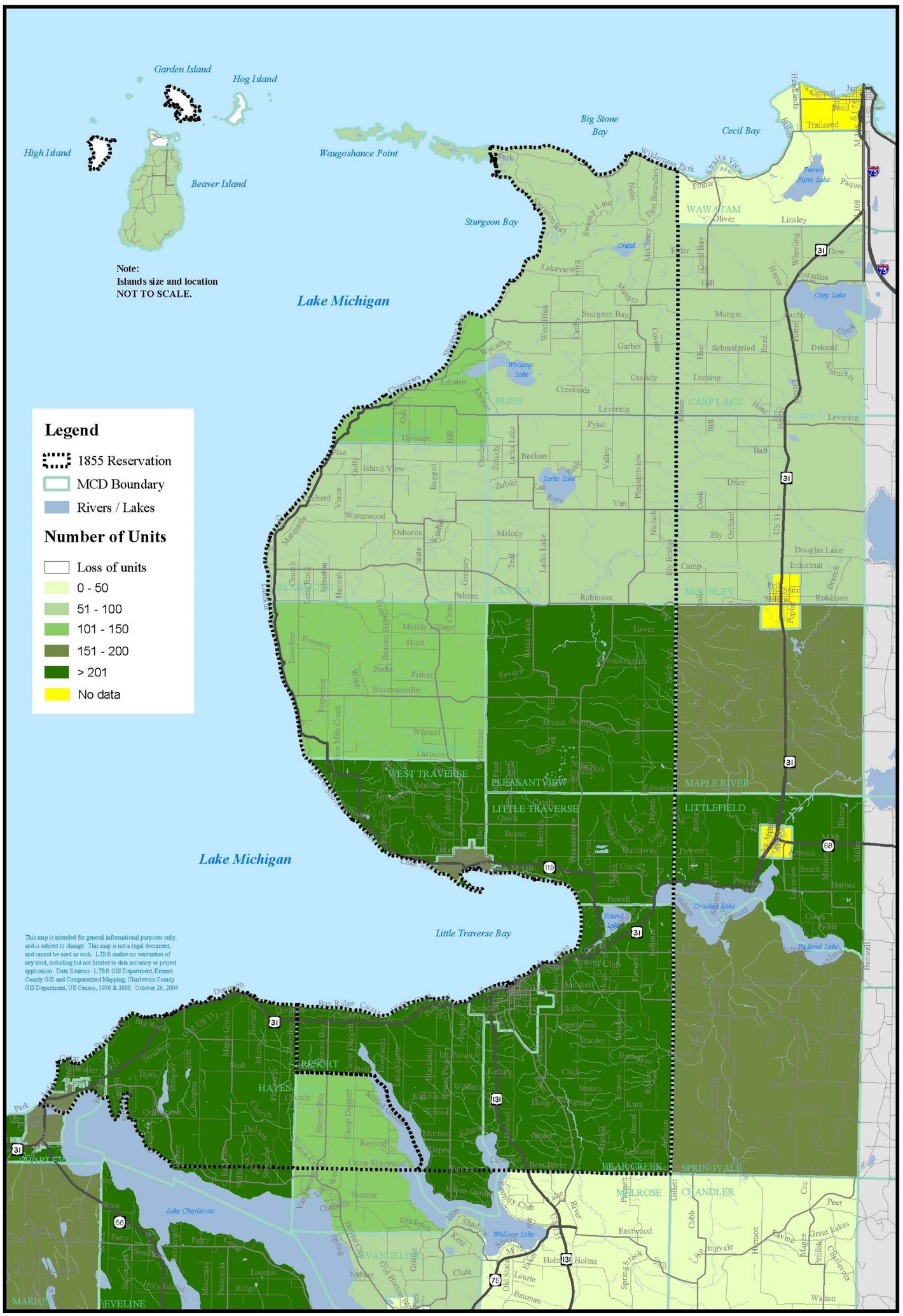
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Dwelling Units - Year 2000

Map 8

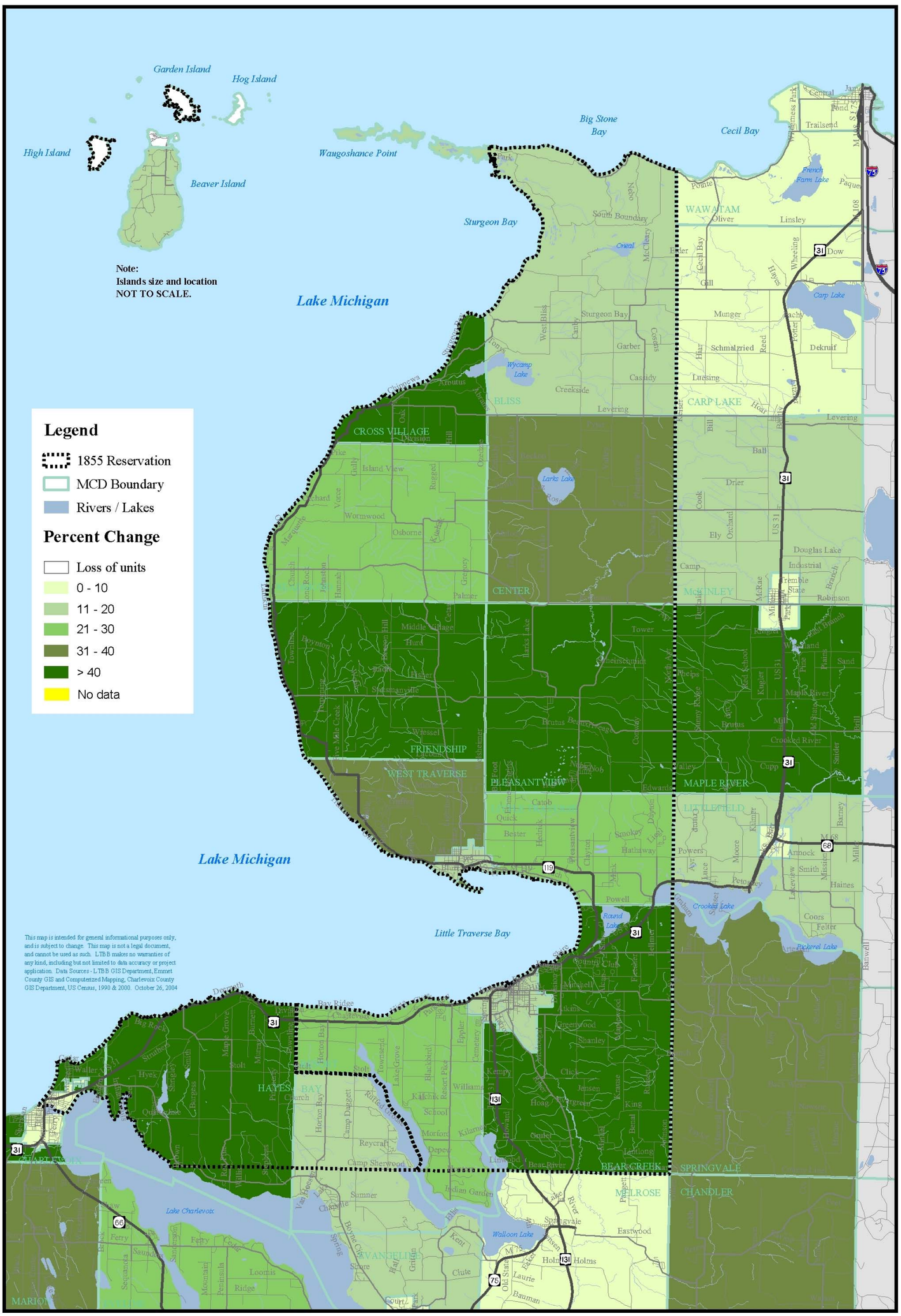
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 9

Change in Dwelling Units - 1990 - 2000

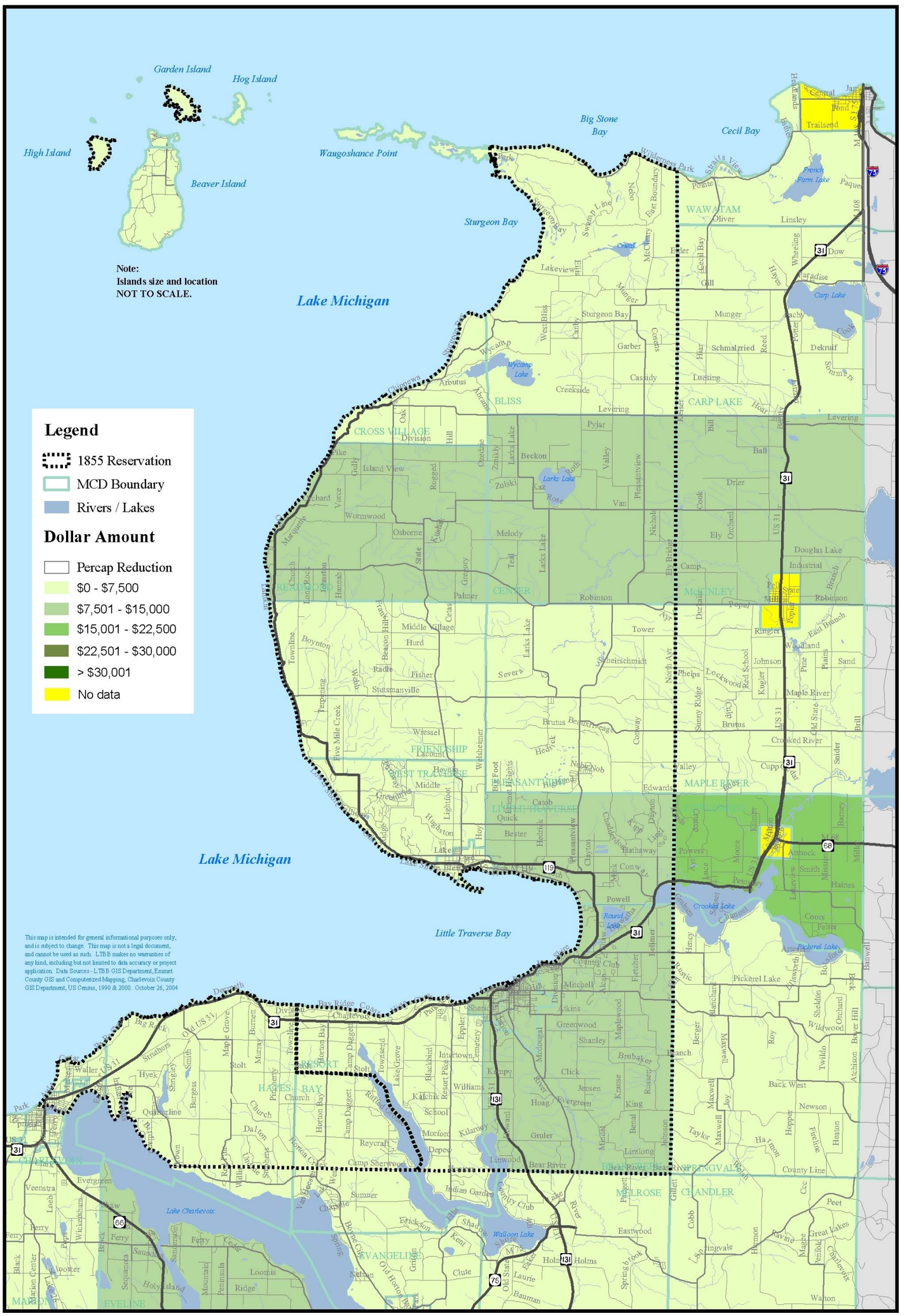
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Percent Change in Dwelling Units - 1990 - 2000

Map 10

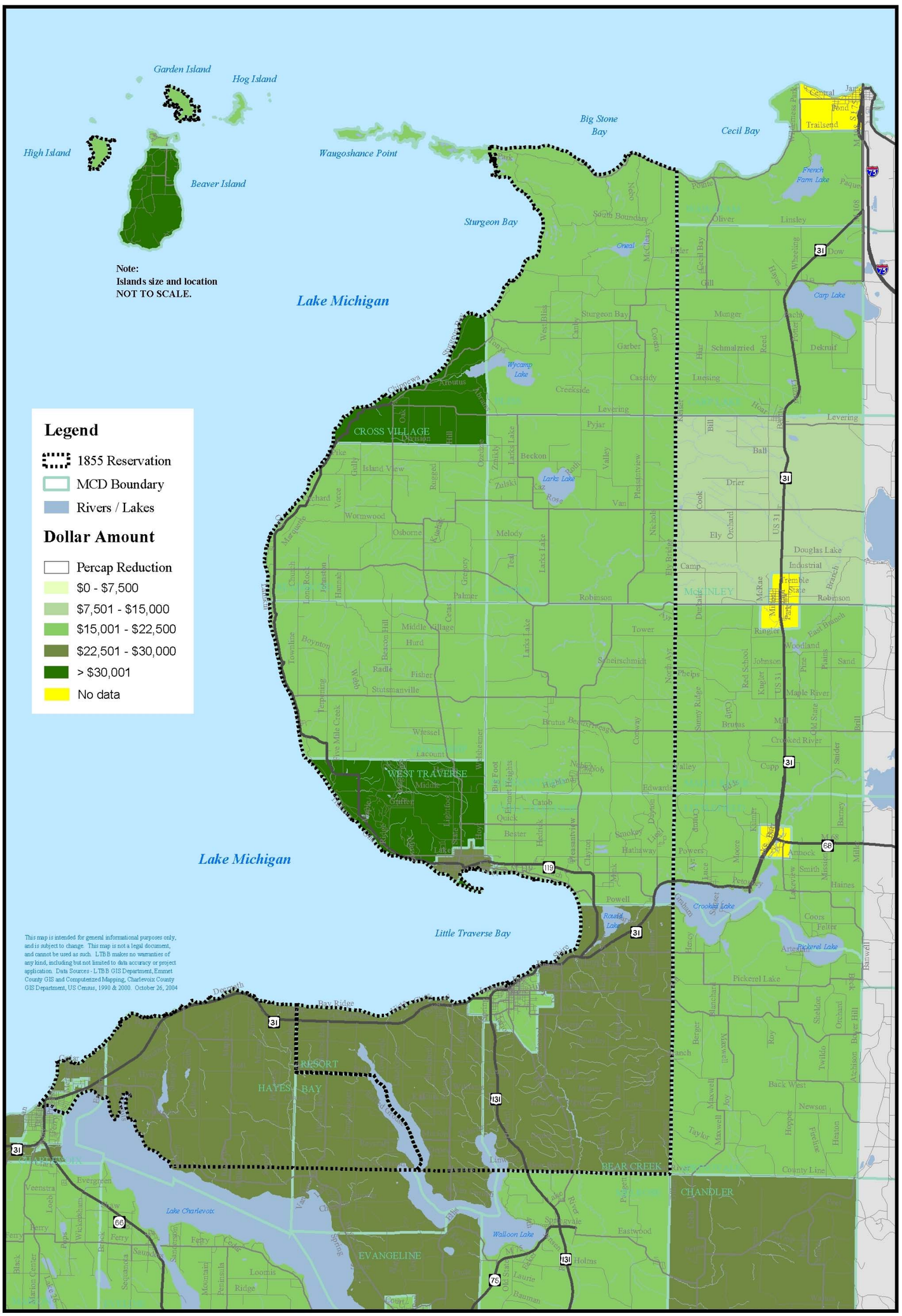
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 11

Per Capita Income - Year 1990

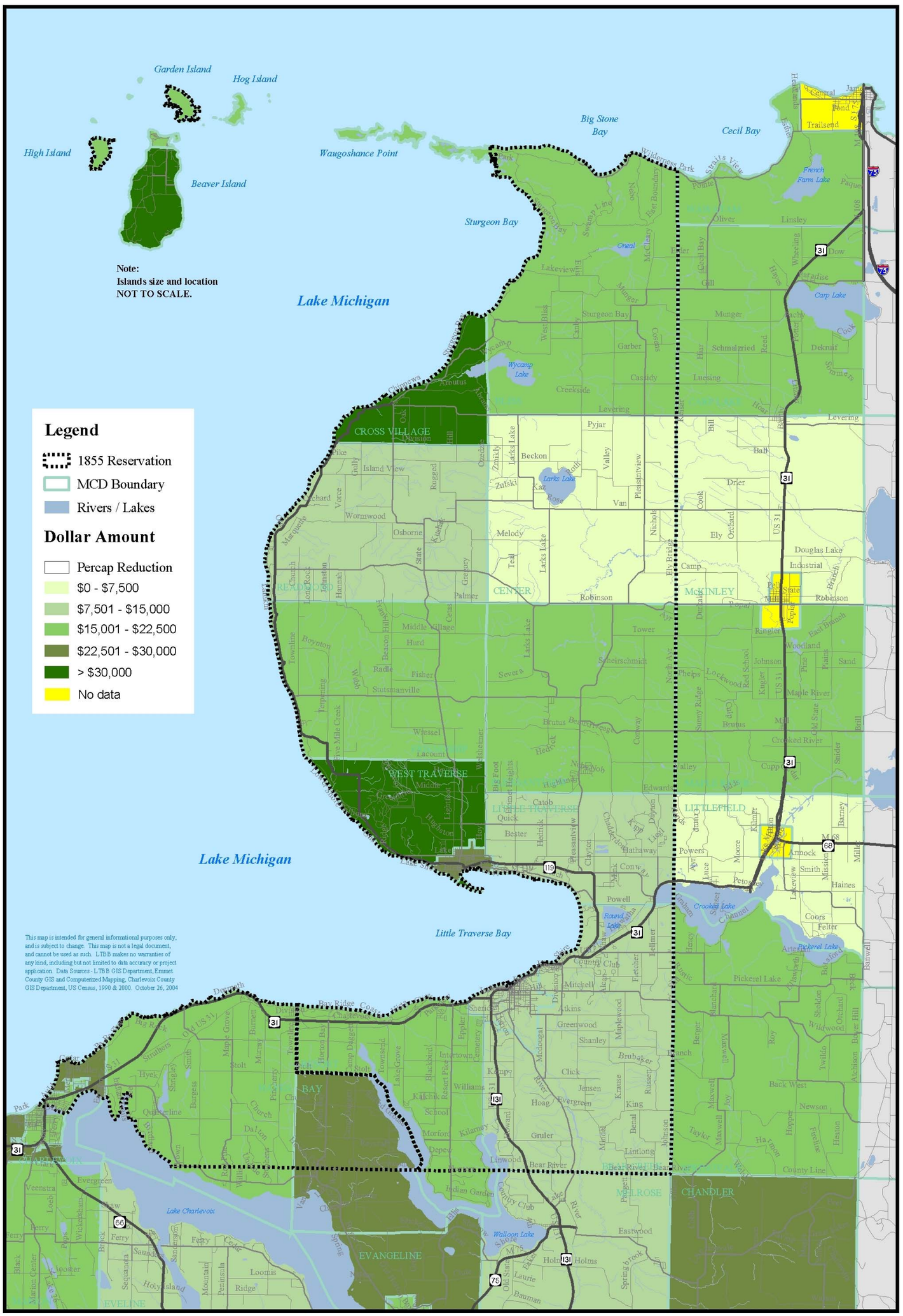
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 12

Per Capita Income - Year 2000

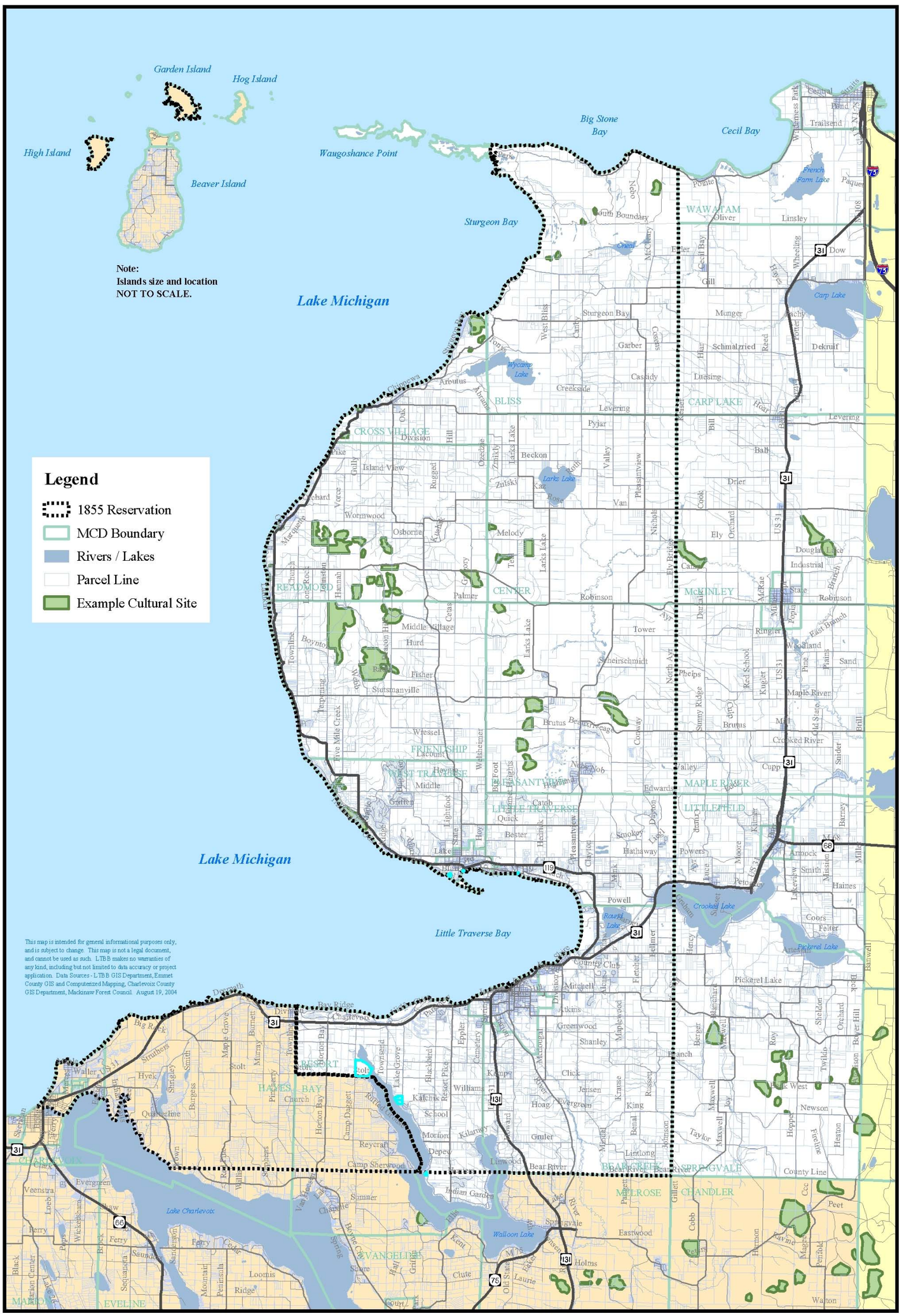
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Change in Per Capita Income - Year 1990 - 2000

Map 13

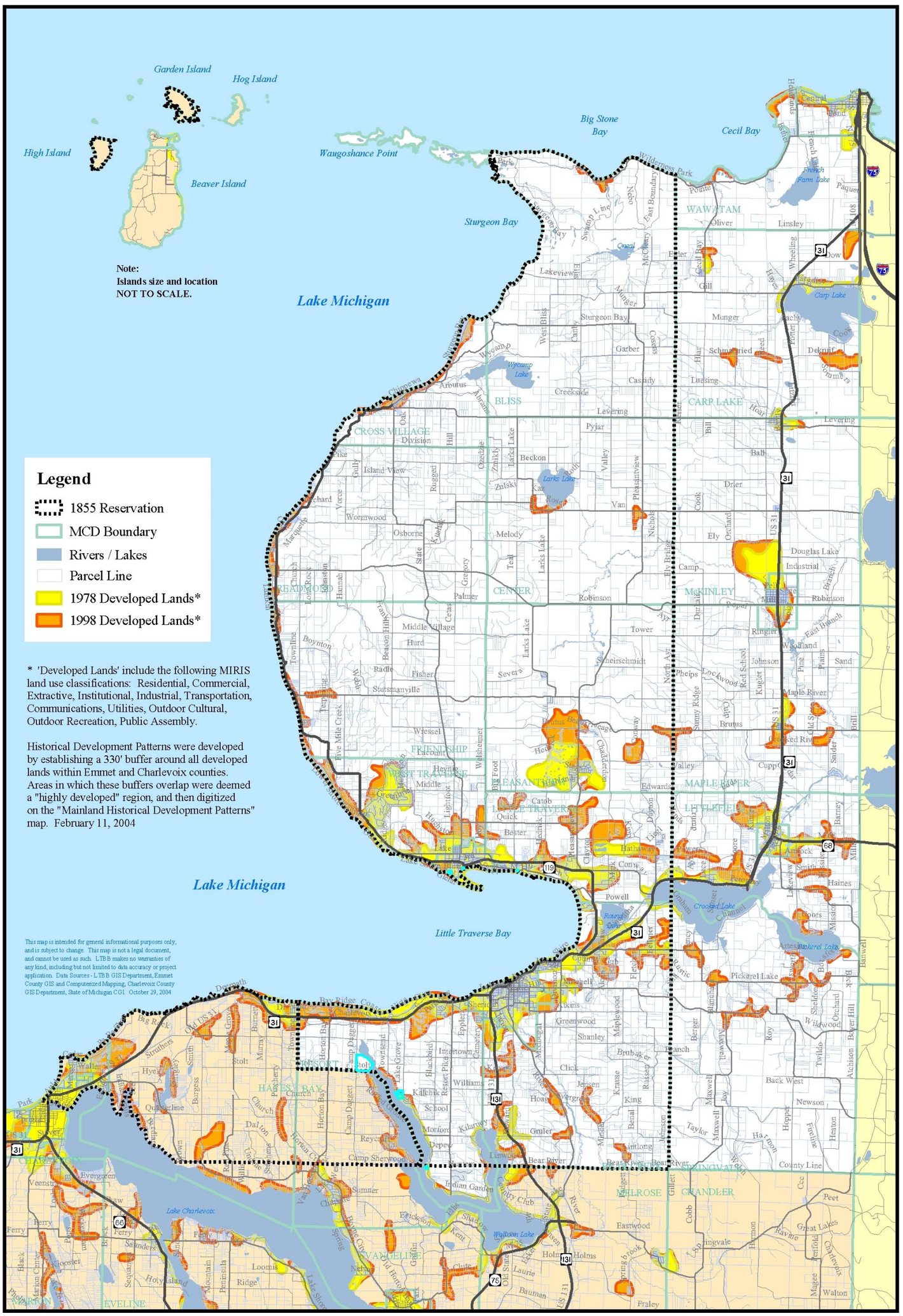
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Culturally Significant Areas

Map 14

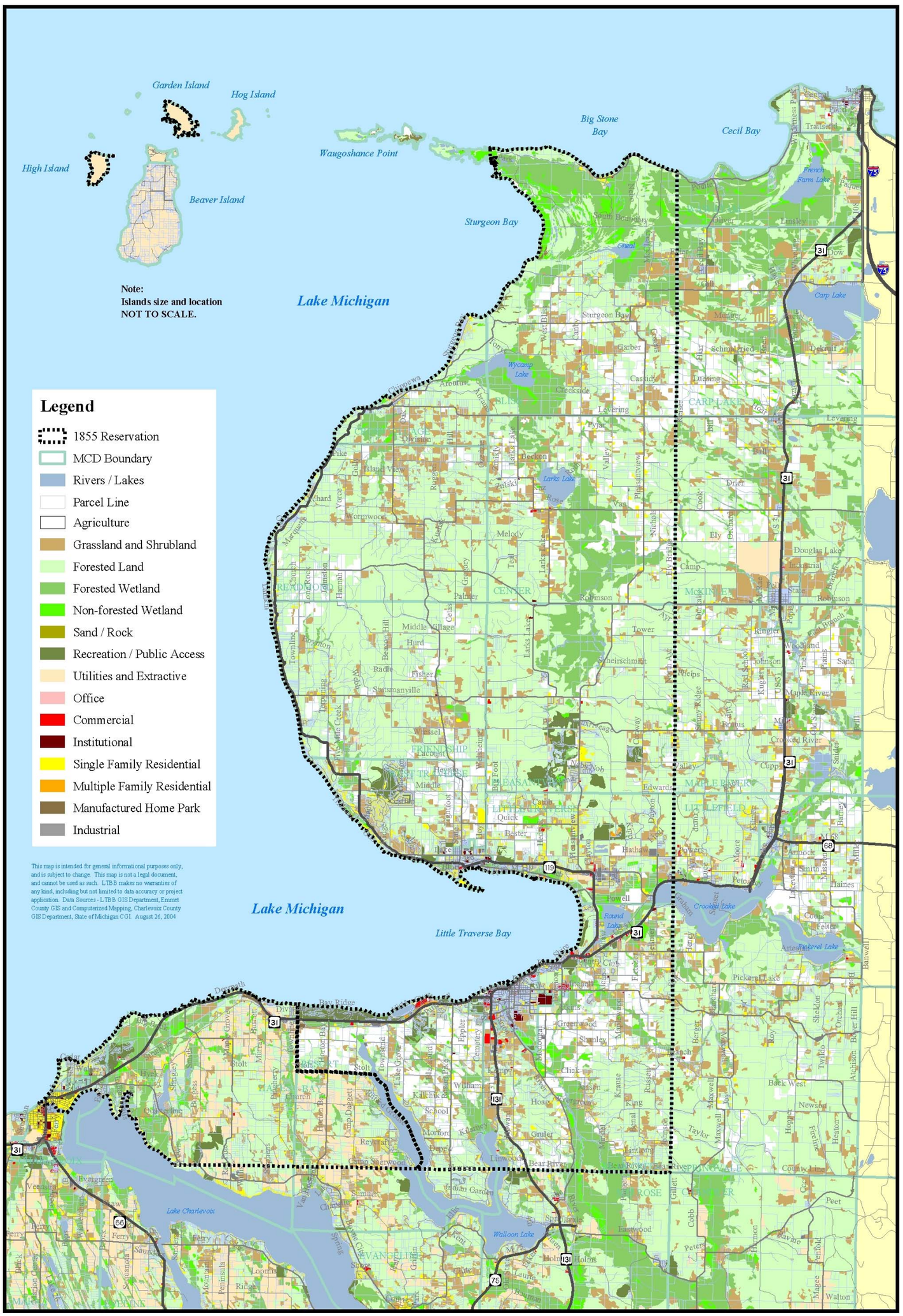
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 15

Historical Development Patterns

Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



1998 MIRIS Land Use

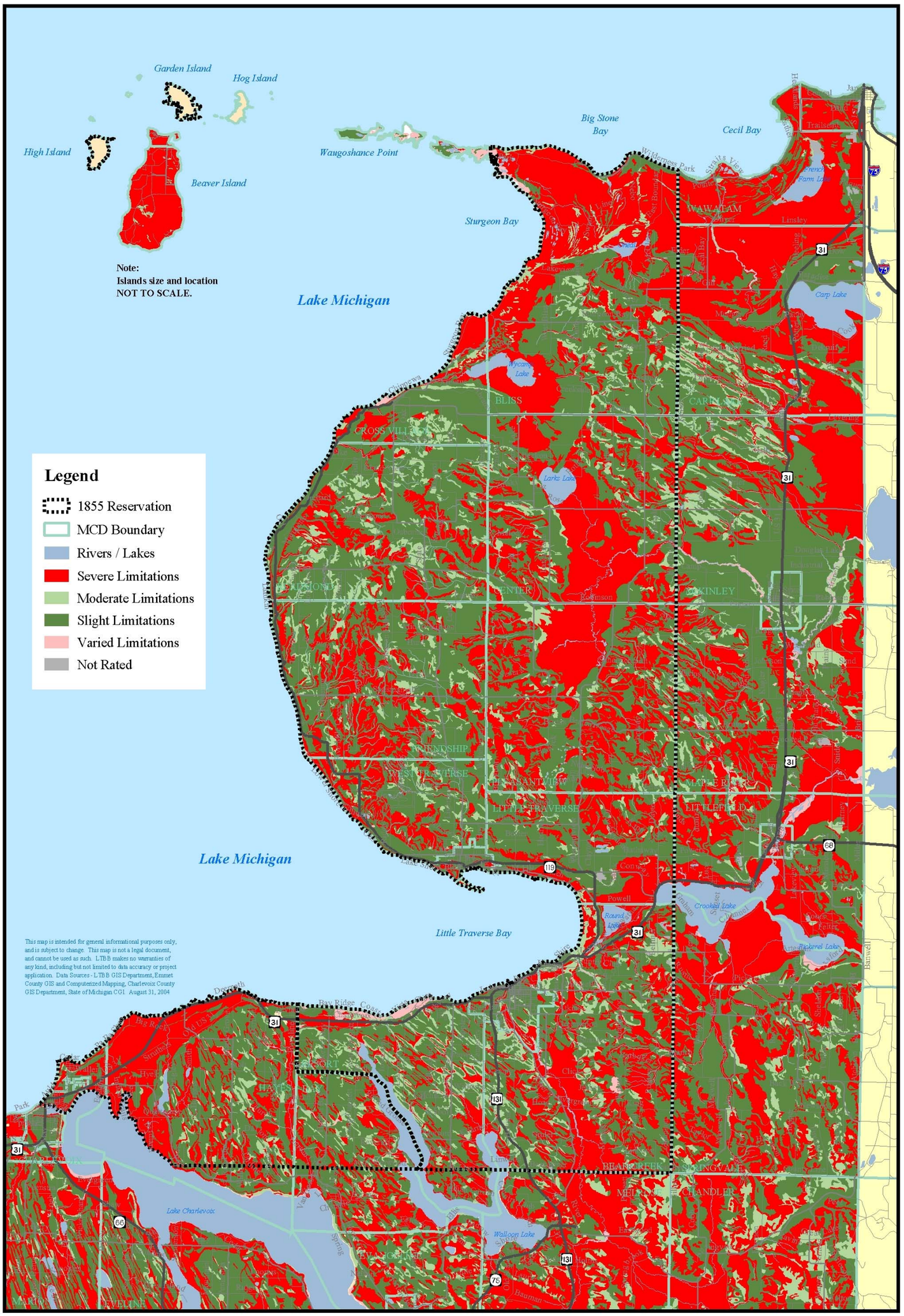
Map 16

Little Traverse Bay Bands of Odawa Indians Master Land Use Plan

Contours

Map 17

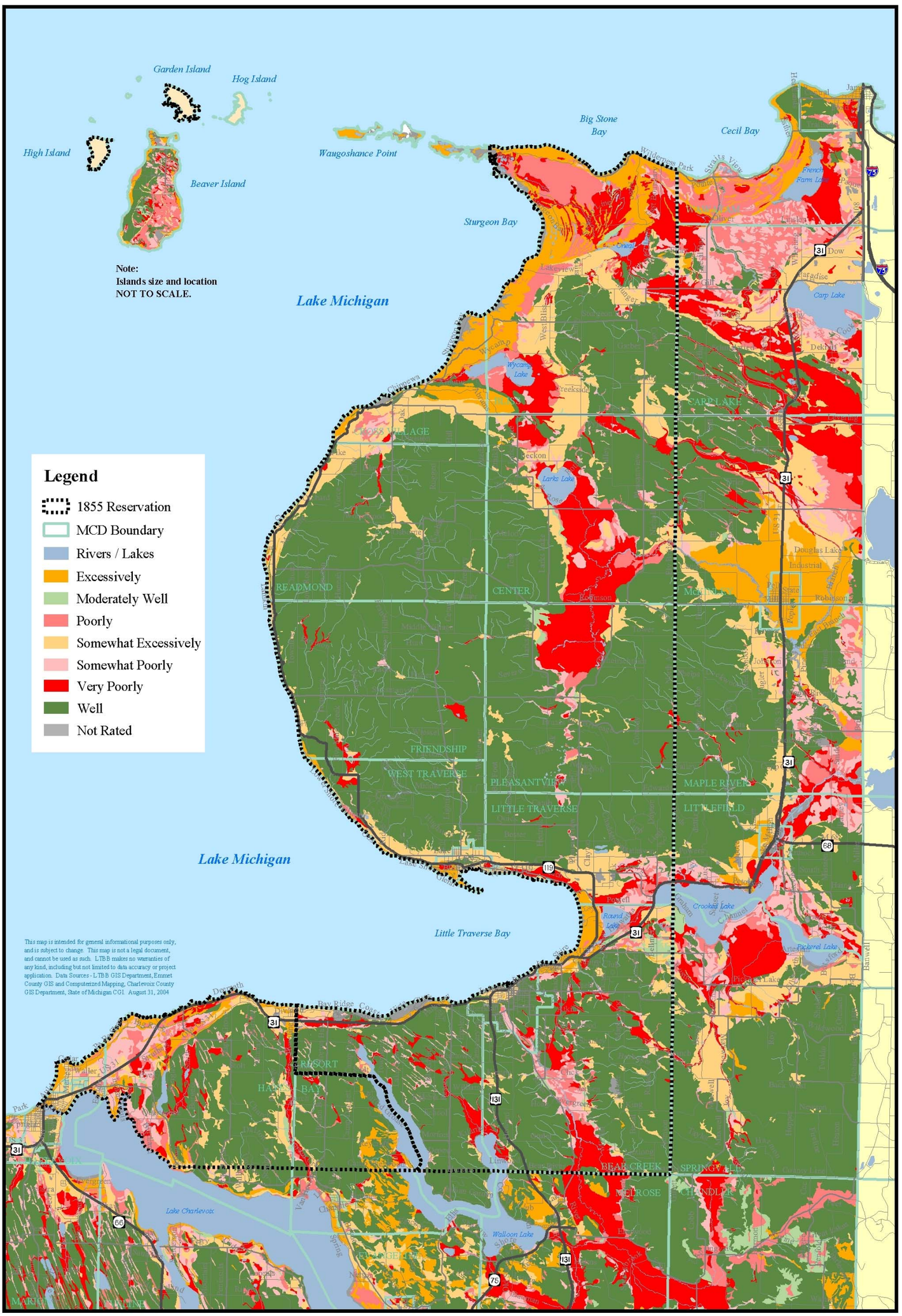
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Soil Septic Suitability

Map 18

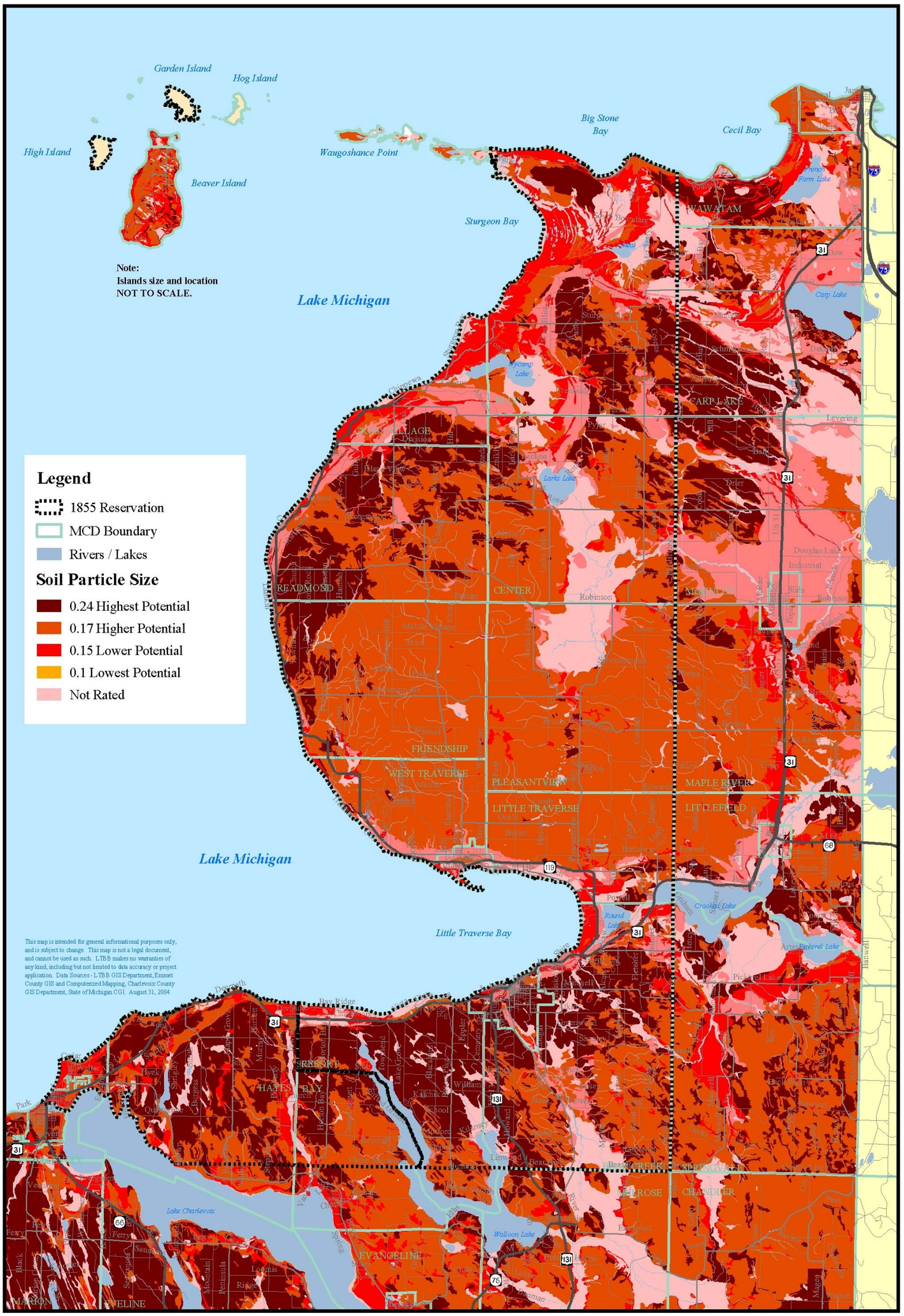
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 19

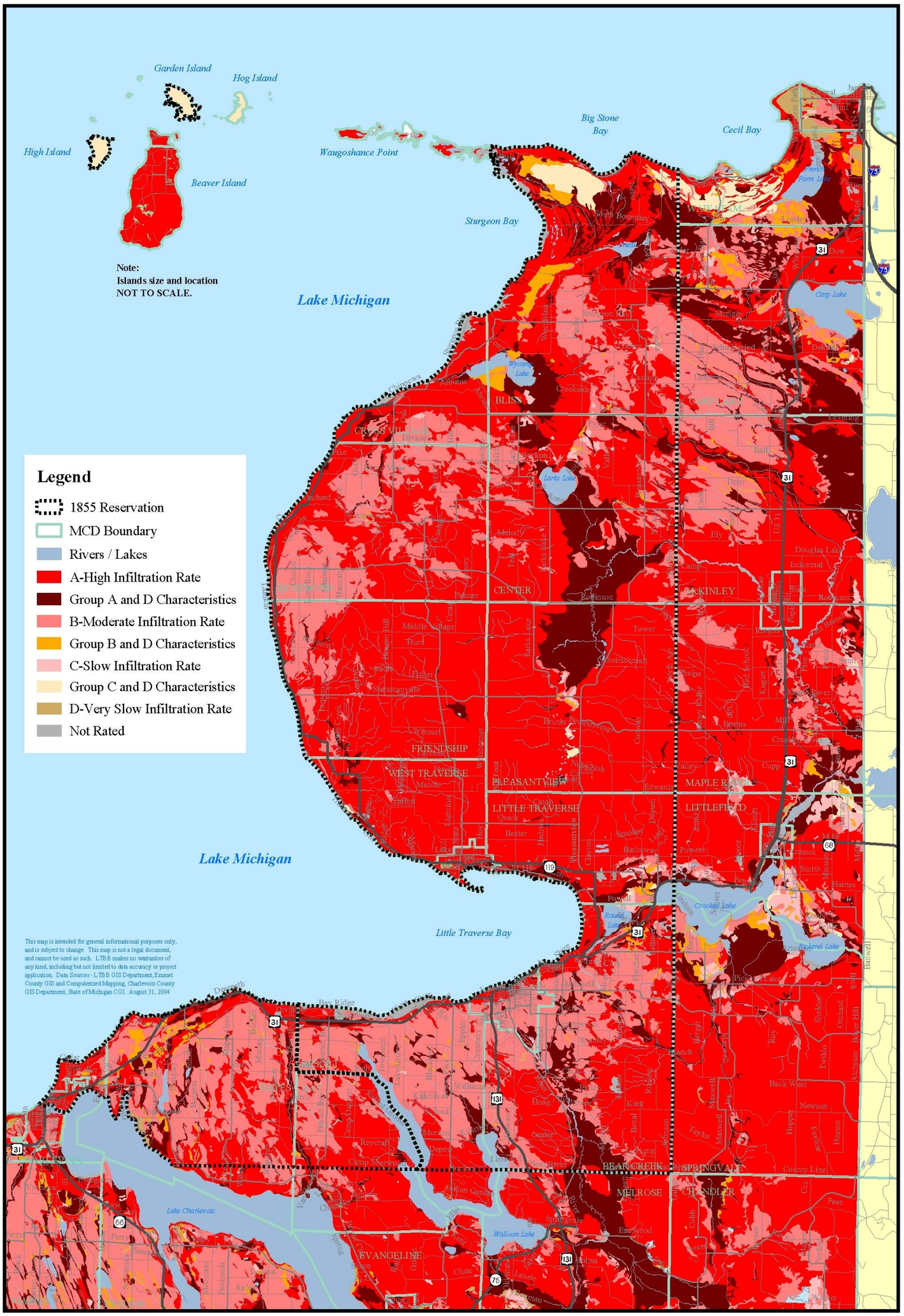
Soil Drainage Potential

Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 20 Sheet and Rill Erosion Potential - K Factor

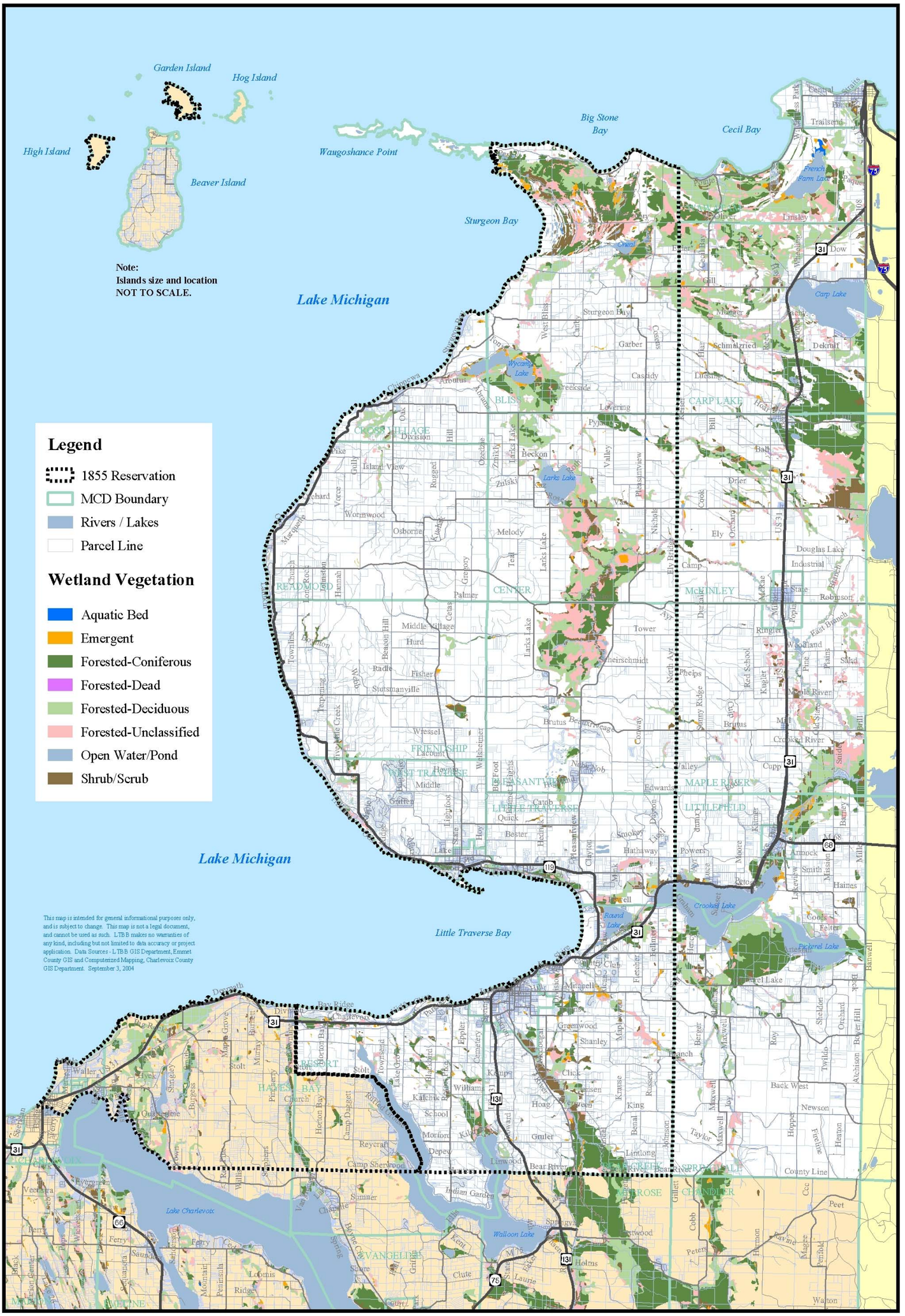
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 21

Soil Infiltration Potential

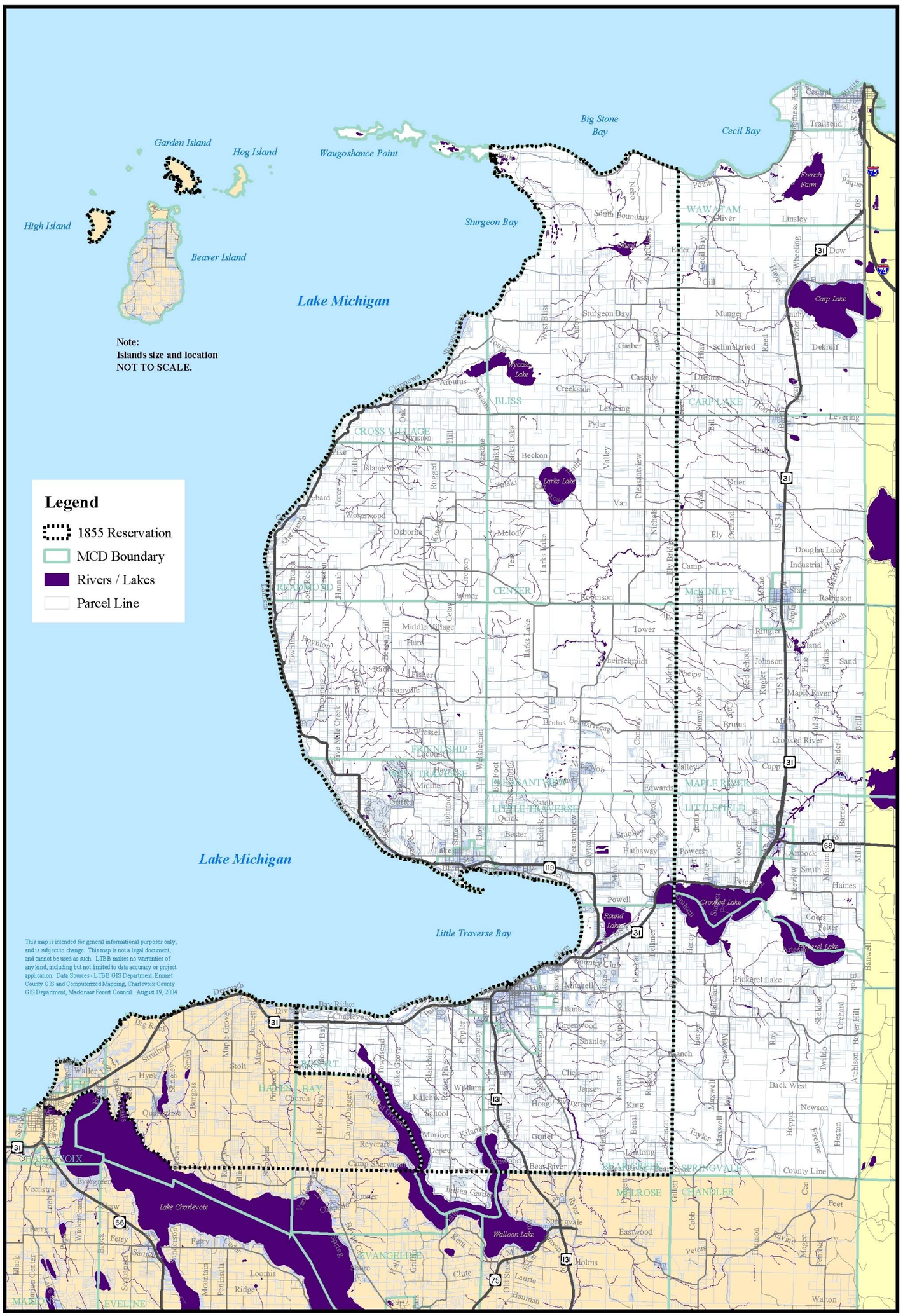
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 22

Wetlands

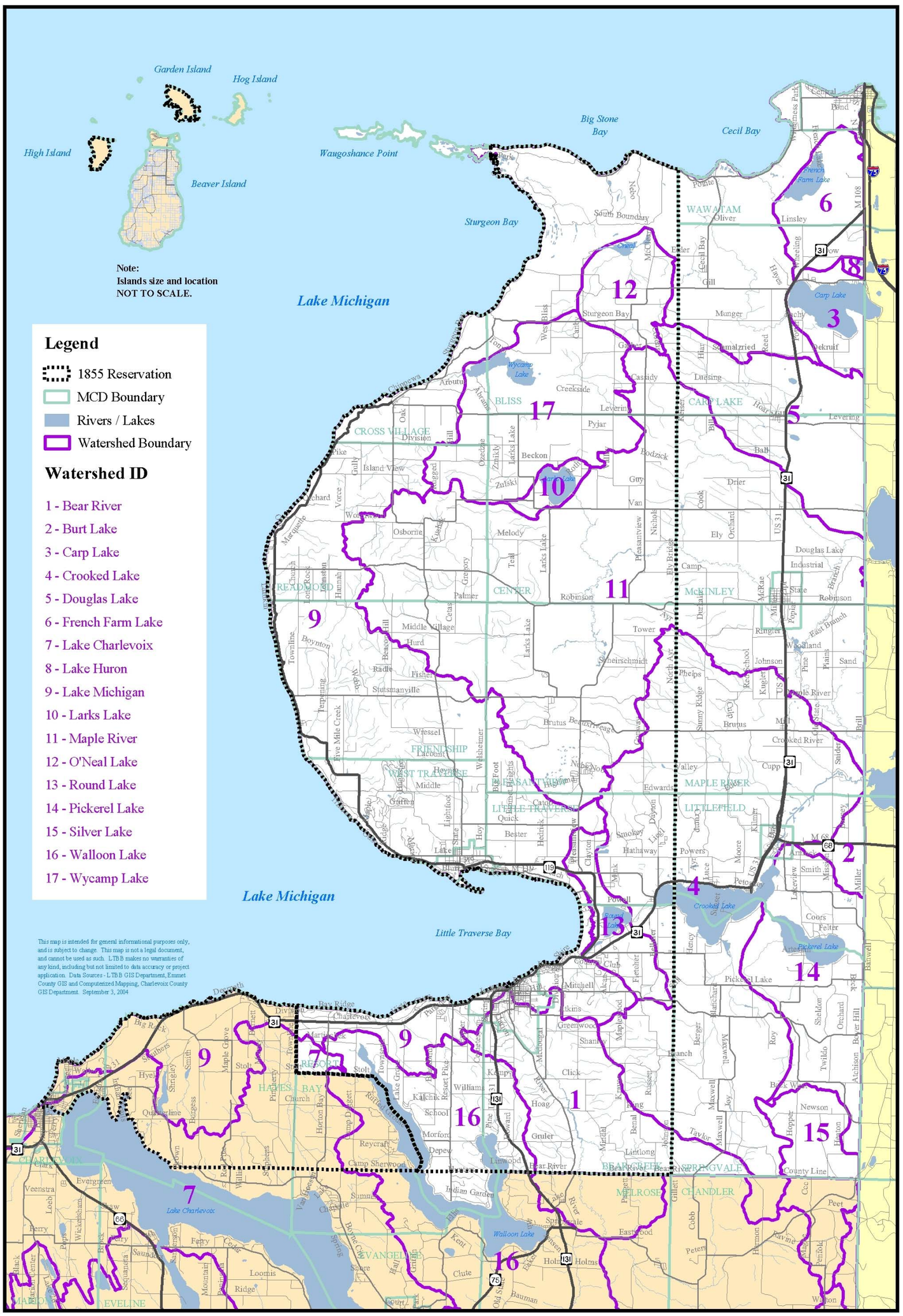
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 23

Surface Water Resources

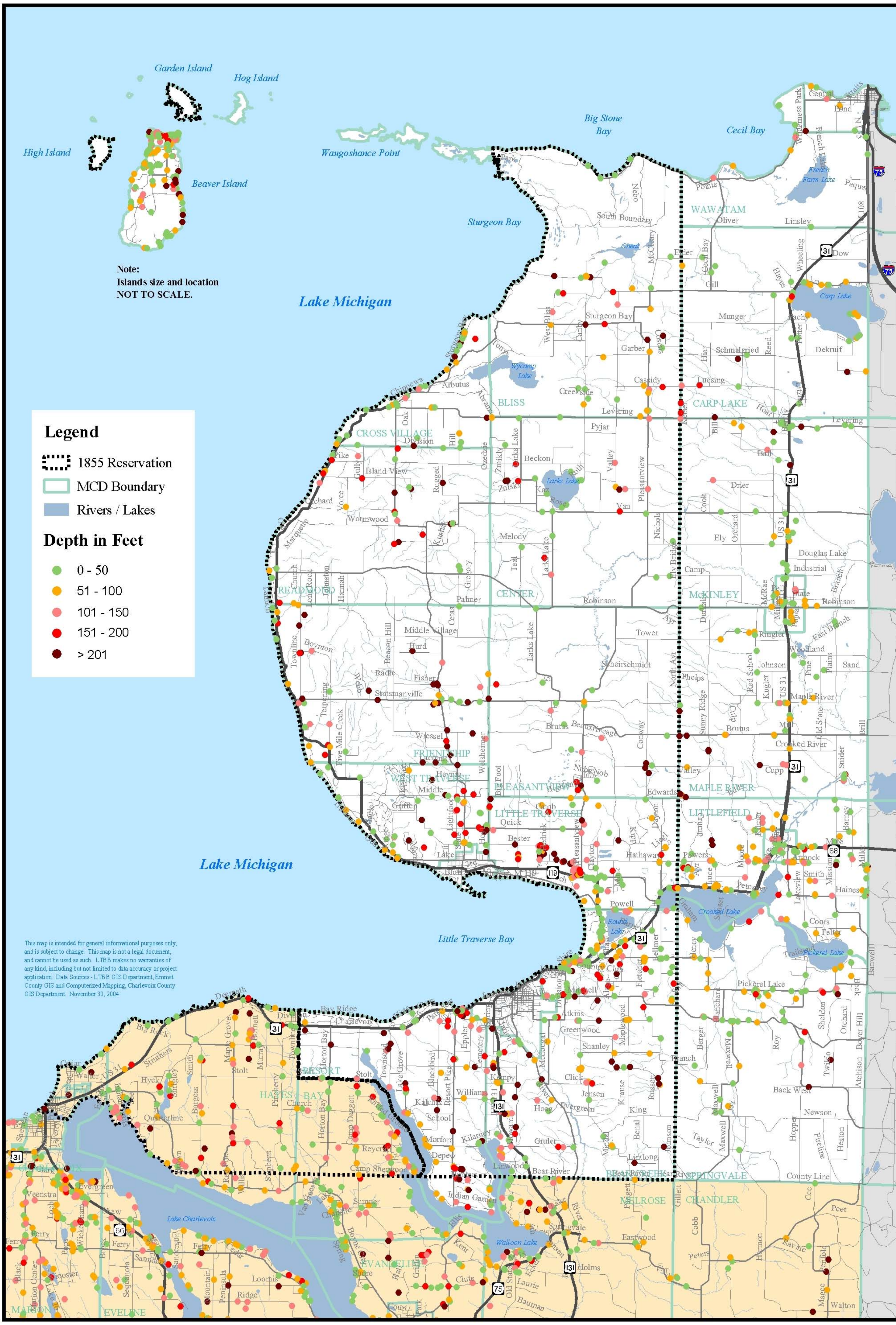
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 24

Watershed Boundaries

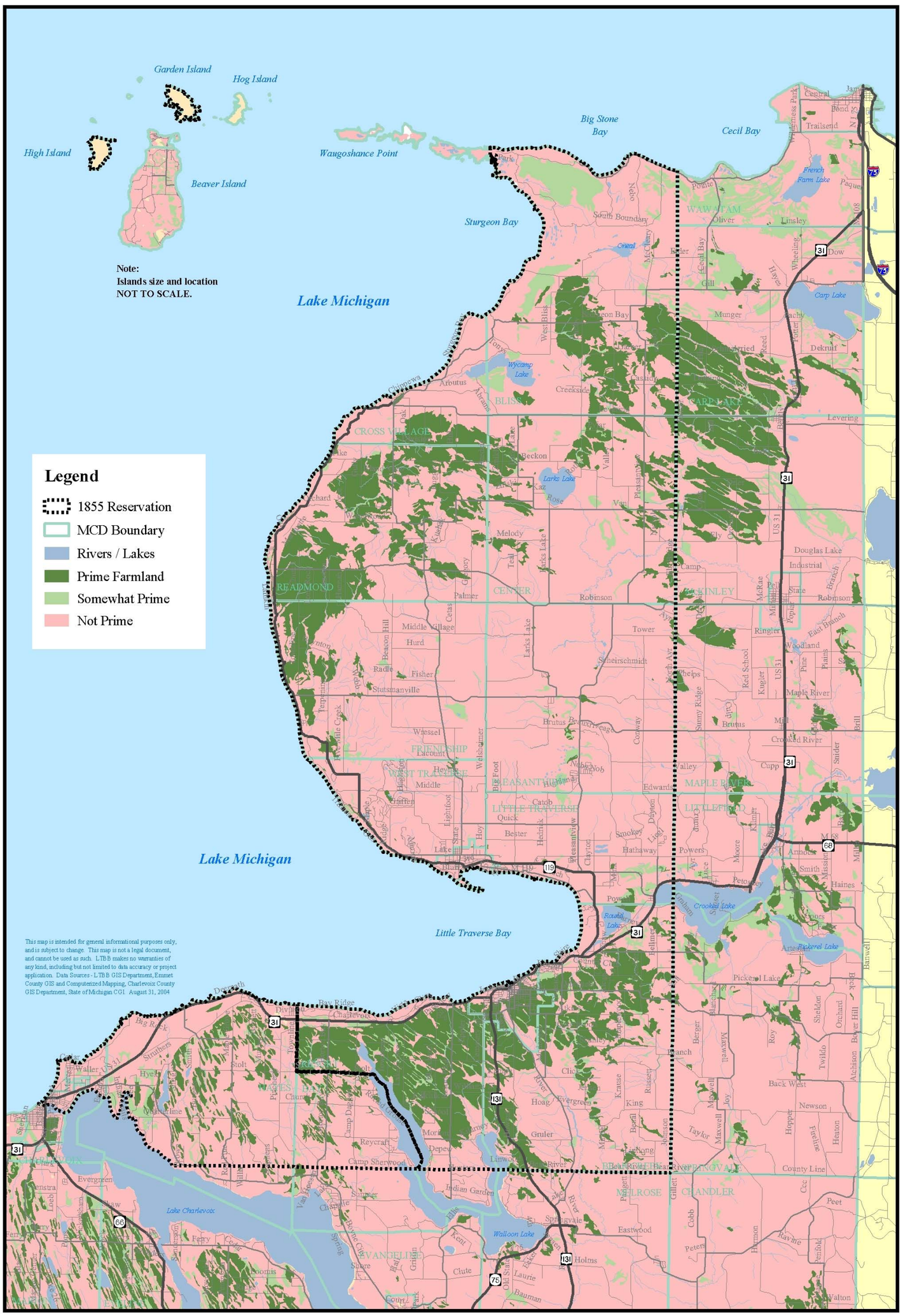
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Domestic Water Well Depths

Map 25

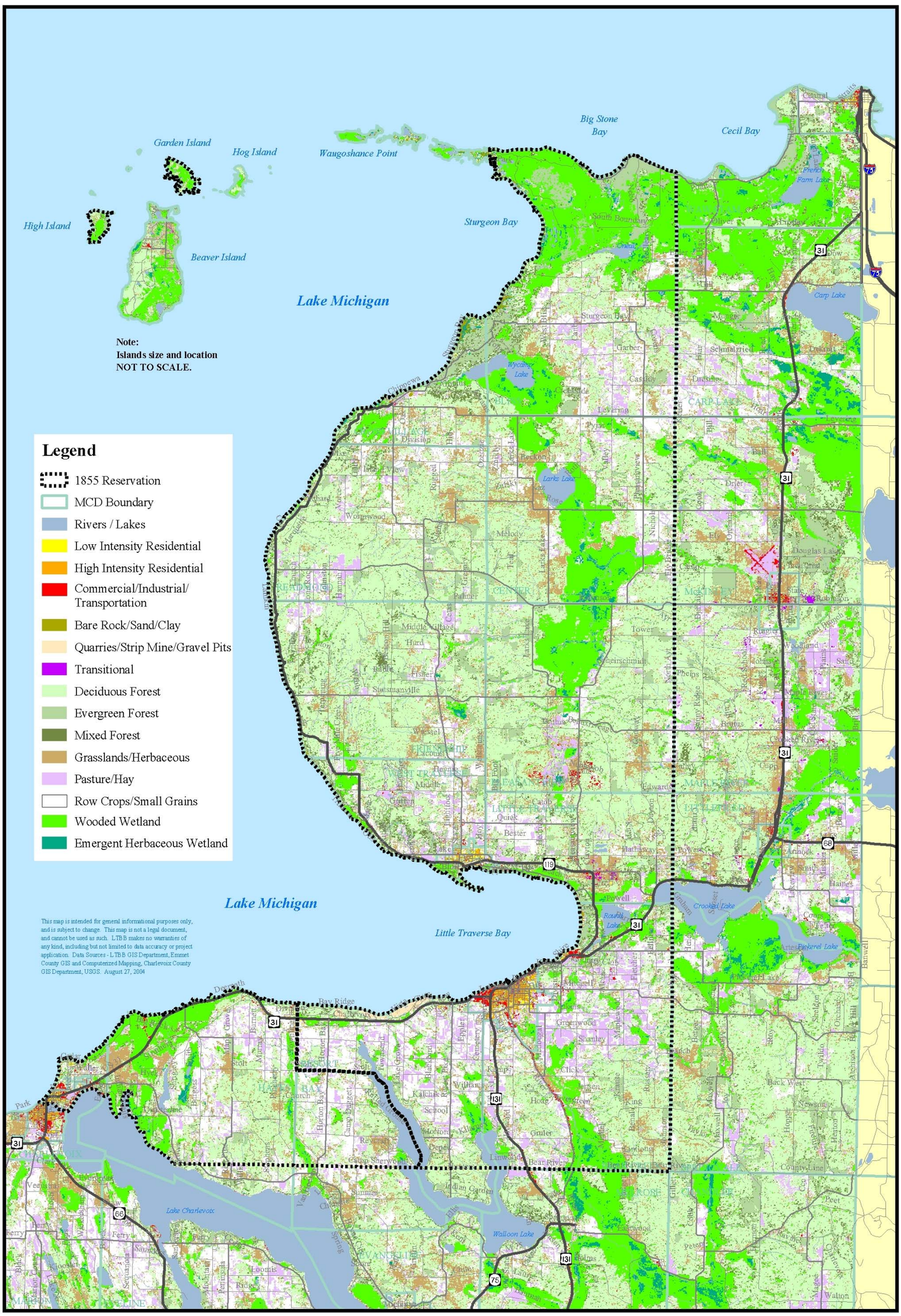
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 26

Prime Farmland

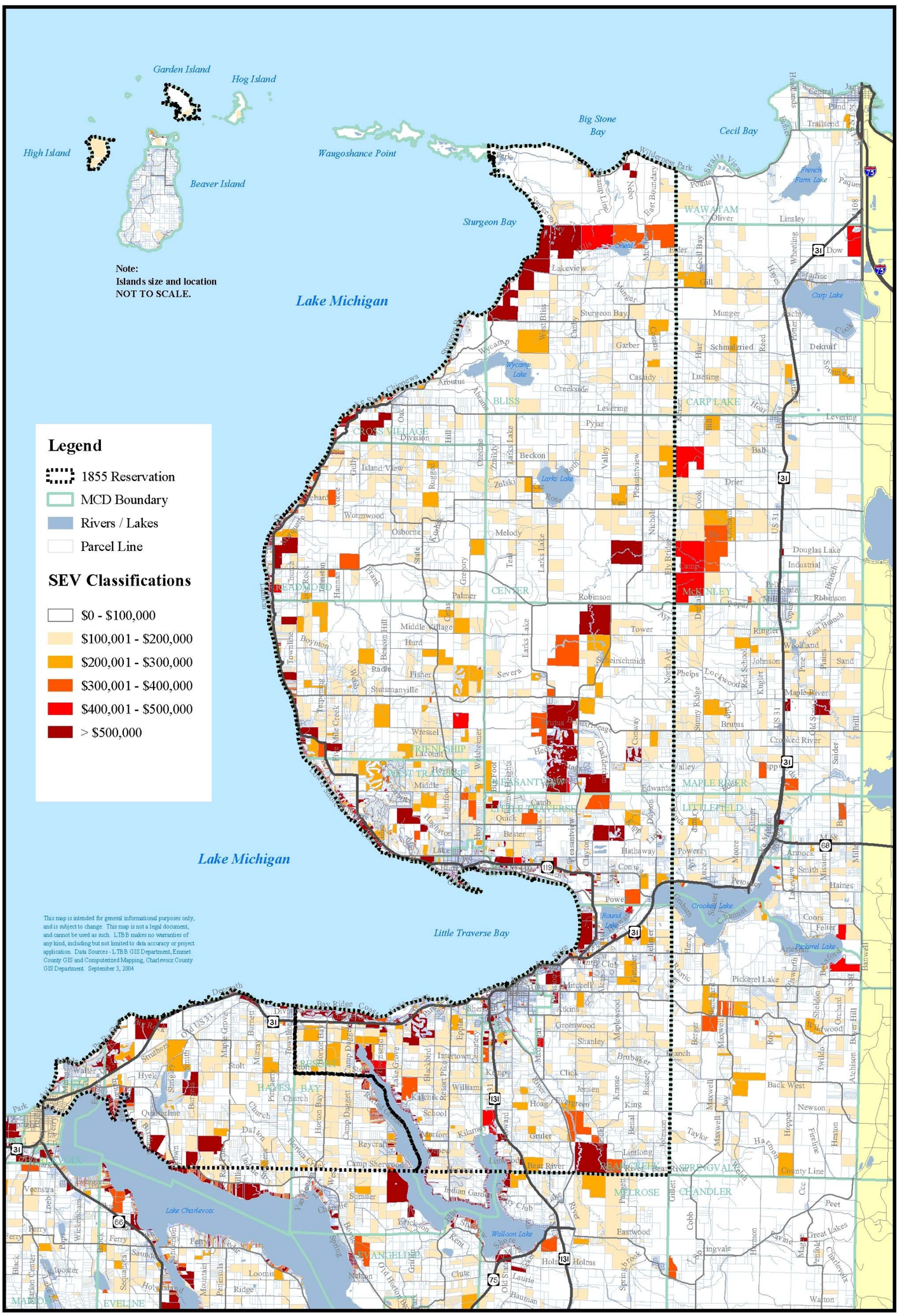
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



USGS 1992 Land Cover

Map 27

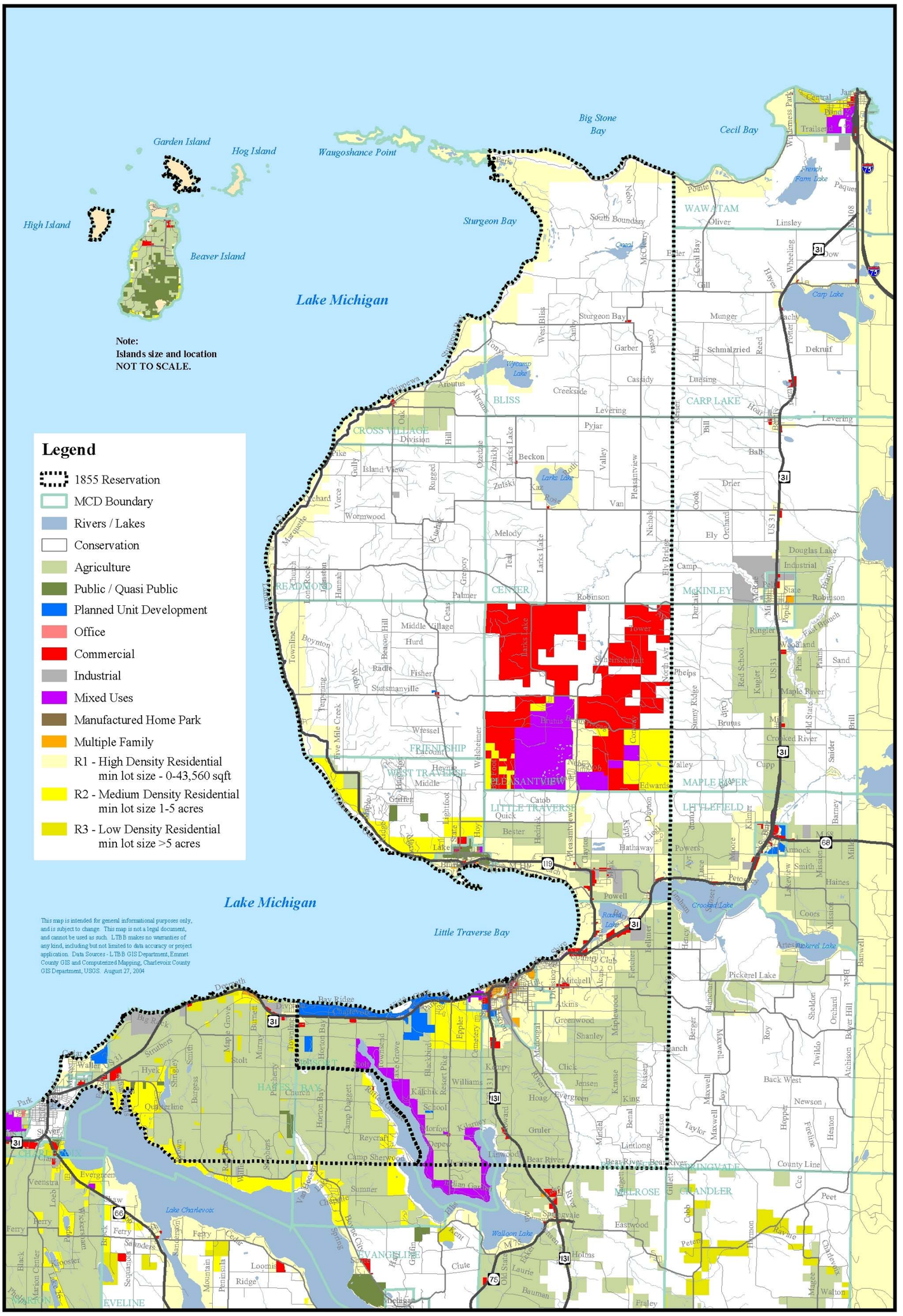
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 28

State Equalized Value Patterns

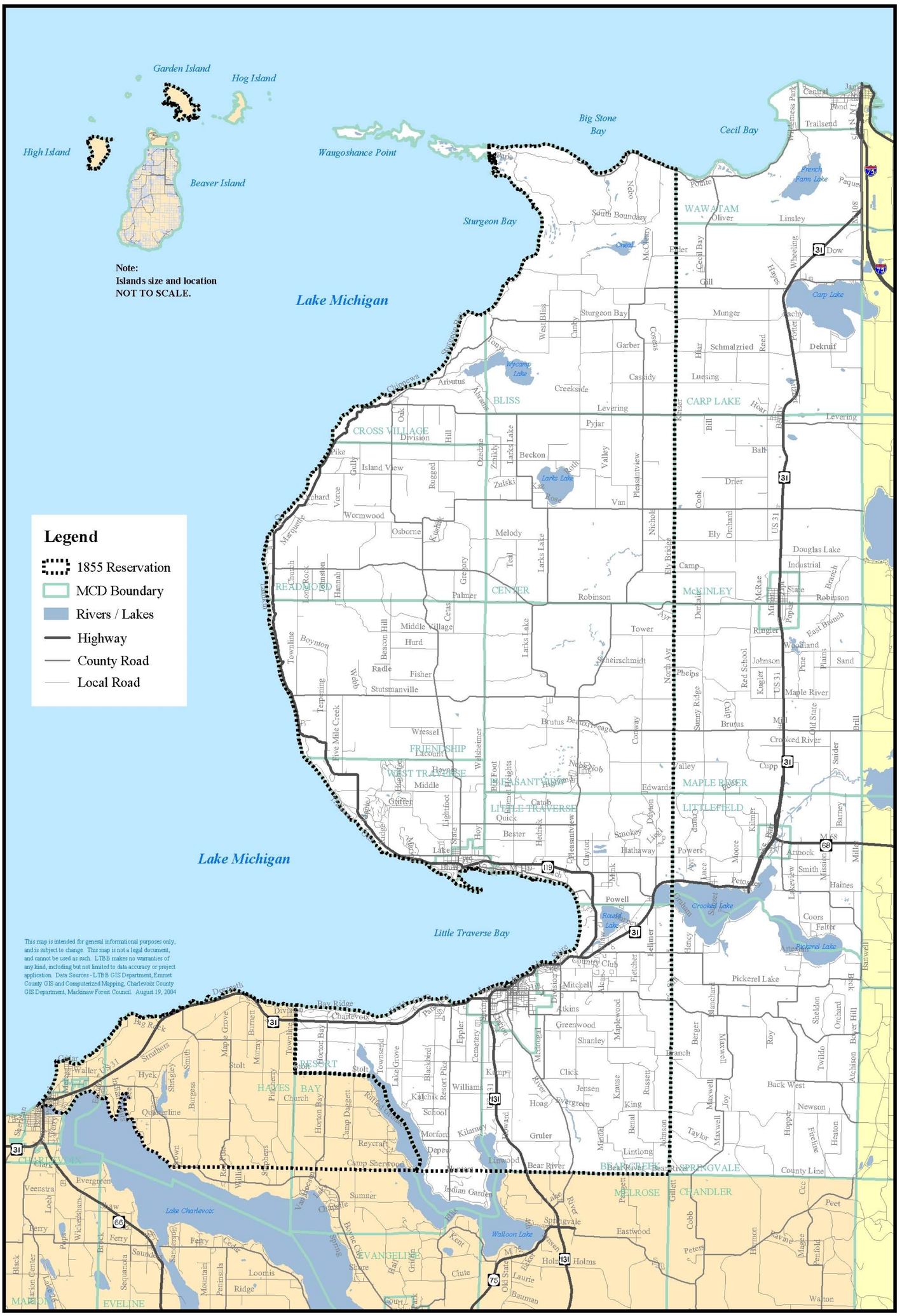
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Map 29

Zoning

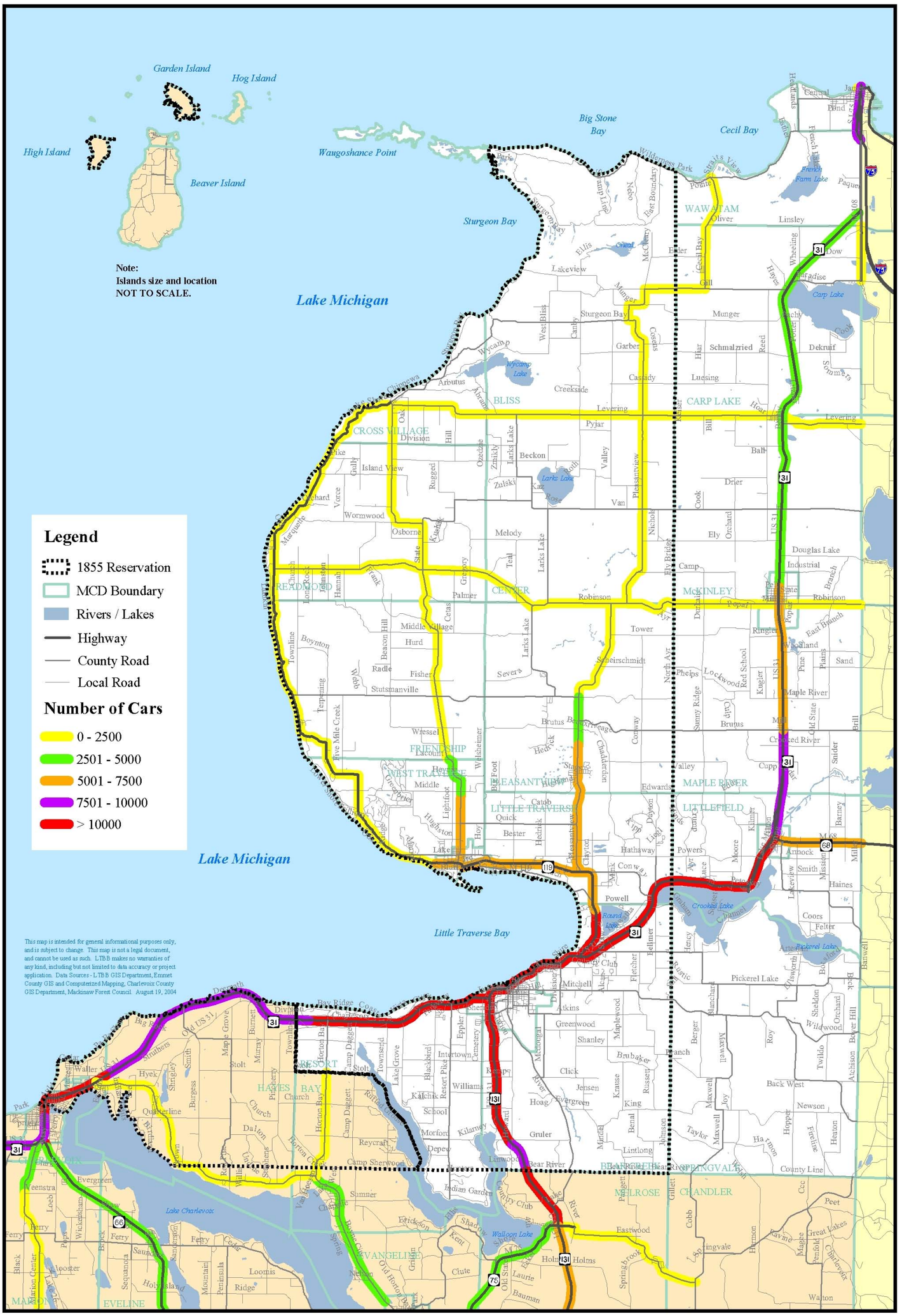
Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Transportation Infrastructure

Map 30

Little Traverse Bay Bands of Odawa Indians Master Land Use Plan



Average Daily Traffic Volumes - 2004

Map 31

Little Traverse Bay Bands of Odawa Indians Master Land Use Plan

Appendix D

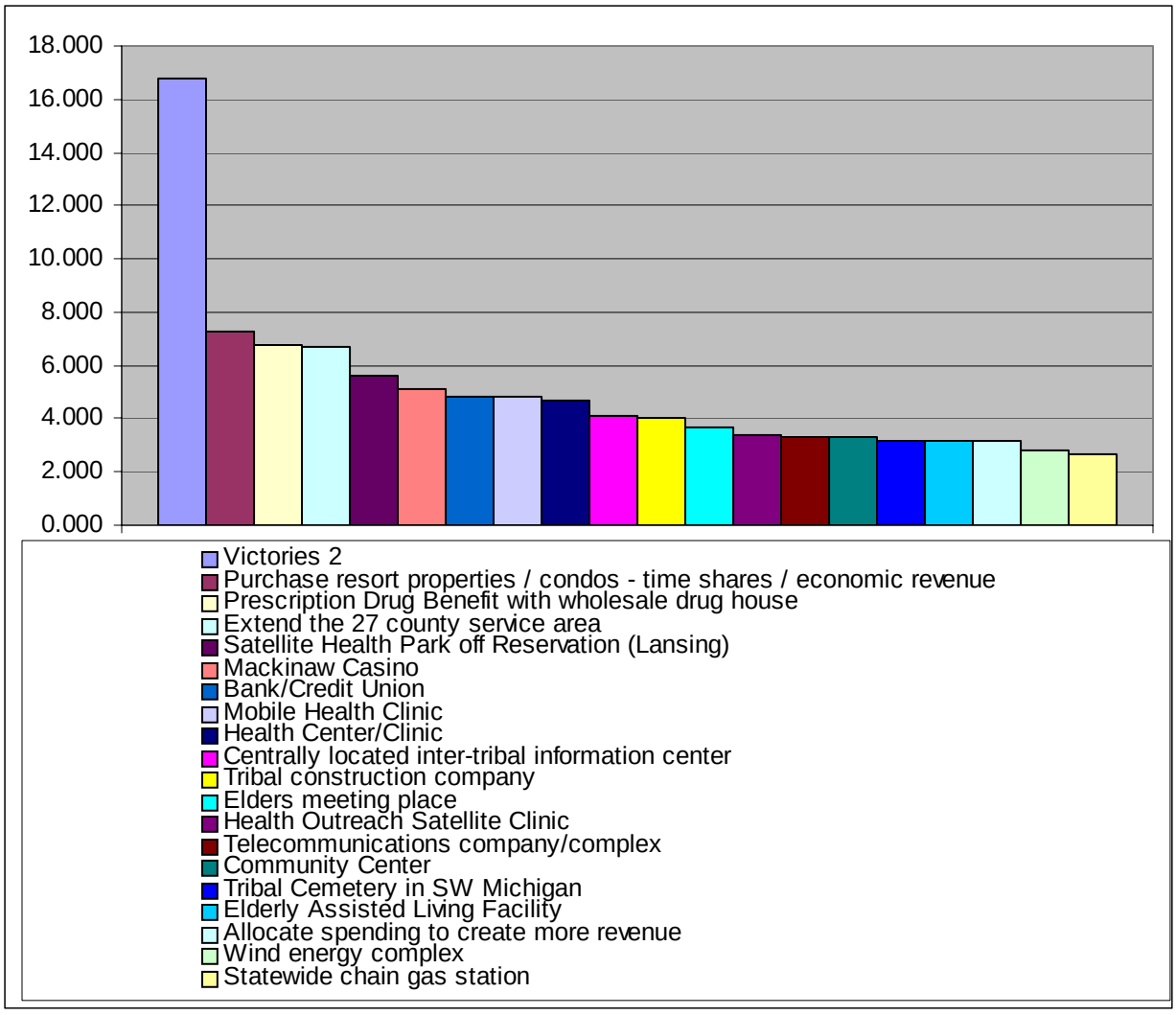
Survey Data and Public Input Results

16.744	Victories 2
7.301	Purchase resort properties / condos - time shares / economic revenue
6.778	Prescription Drug Benefit with wholesale drug house
6.728	Extend the 27 county service area
5.583	Satellite Health Park off Reservation (Lansing)
5.125	Mackinaw Casino
4.847	Bank/Credit Union
4.825	Mobile Health Clinic
4.647	Health Center/Clinic
4.111	Centrally located inter-tribal information center
4.050	Tribal construction company
3.663	Elders meeting place
3.408	Health Outreach Satellite Clinic
3.333	Telecommunications company/complex
3.333	Community Center
3.200	Tribal Cemetery in SW Michigan
3.194	Elderly Assisted Living Facility
3.167	Allocate spending to create more revenue
2.800	Wind energy complex
2.667	Statewide chain gas station
2.443	Athletic assistance programs - youth
2.403	Satellite education park for cultural preservation
2.393	Assisted living for elderly / reimbursement program
2.392	Purchase additional recreational access property in Cross Village
2.350	Community food warehouse
2.286	Purchase property for habitat protection of culturally significant species (sweet grass, birch trees, black ash, eagles, etc.)
2.250	Treatment Center
2.250	Elderly living assisted facility in Grand Rapids
2.211	Statewide transportation assistance
2.200	Satellite Dental/Vision/Health Office in U.P.
2.100	Access to SW Michigan lakes and hunting opportunities
2.100	Single housing units for Tribal members in 1855
2.000	C-store Fish Market
2.000	Intensive Outpatient Treatment
2.000	Mental Health Services Center
2.000	Halfway House
1.825	Cultural gathering areas in SW Michigan
1.744	Cell Tower
1.621	Purchase Le Grande Buffalo Ranch, 3,000 acres in Cheboygan County

1.510	Education Center
1.500	Safe house
1.454	Substance abuse treatment center
1.452	Cultural gathering areas (black ash, sweet grass, birch bark, medicines, etc)
1.403	Tribal School(Alternate Ed. Or Middle School)
1.379	Archives and Record Museum
1.333	Local fitness centers
1.333	Tribal campground- 400 acres or more
1.333	C-store Car wash/Quick Lube
1.292	Early Childhood Development/Headstart Center
1.250	Health Department Building
1.250	Land conservation
1.225	Purchase golf course opportunities - golf packages
1.167	Outreach Gov. Offices in U.P
1.125	Banquet halls
1.125	Purchase property around Wycamp area to be managed for blueberry harvest.
1.111	Added area to store membership records, additional staff space, microfiche
1.111	Transitional Housing
1.086	Administration Building Expansion
1.058	Purchase and preserve wetlands.
1.010	Purchase land throughout the Ceded Territory to provide access to more Tribal members.
1.000	Recreational beach
1.000	Bowling Alley
1.000	Tribal Court Facilities, offices and parking
1.000	Human services center
1.000	Property for Hatchery- 40 acres
1.000	Natural Resources Fish Hatchery
1.000	Substance Abuse Building
1.000	Purchase land on Lakes and Streams within the reservation (to ensure access).
1.000	Community Gardens
1.000	Purchase property for tribal sugar bushes (maple syrup)
1.000	Reverse Mortages - Lifetime Lease
0.933	Purchase lands for the protection of aquifers
0.910	Tribal Cemetery
0.869	Mortgage assistance for home purchase, statewide
0.750	Purchase land for natural resource related use for each of the Tribe’s Bands with the Bands geographic area.
0.722	Purchase land on Lakes and streams within the Reservation-250 acres
0.711	RV Park
0.711	Expand tax agreement area to consider U.P
0.700	Purchase lands for agriculture preservation
0.656	St. Martins Island Improvements
0.633	Low-income housing

0.625	Tribal center for community meetings
0.617	Housing development
0.583	Lifetime lease
0.500	Radio Station
0.500	Cooperative approach to pres. Wetlands (conservation groups)-L
0.450	Properties contiguous or within one mile of already purchased property.
0.400	Gourmet Organic Foods
0.393	Purchase some property for access, gathering, recreation or cultural on some of the islands within or near the Reservation (Beaver, Garden, High)-200
0.268	Industrial Park
0.267	Purchase property to provide hunting, fishing, gathering, trapping opportunities.
0.267	Purchase development rights.
0.250	Expand method of informing membership
0.250	Wetland Conservation
0.236	Tribal greenhouse
0.200	Purchase property for timber production-500acres
0.200	Purchase abandoned Robinson road prison camp
0.143	Nature Park
0.143	High Speed Cruise Line
0.125	Archives and Record Building
0.111	Purchase Easements
0.100	Indoor-outdoor nature walk
0.100	Trap Net Operations
0.100	Sweat lodge
0.000	Gym, pool, weight room, rec room
0.000	Playgrounds
0.000	Outdoor skating rink
0.000	Recreation, hiking, camping, snow shoeing, cross country skiing, etc.
0.000	Tribal Parks
0.000	Tribal Shooting range
0.000	Fitness/Recreation Center
0.000	Water Park
0.000	Winter sports revenues - ski packages
0.000	Areas for scientific research, long term studies-100 acres
0.000	Waterfront Conservation
0.000	Waawaashkesh Recreation Area Improvements
0.000	Healing Lodge
0.000	Pharmacy for Tribal membership
0.000	Low income housing in Grand Rapids

Rank	Score	Priority
1	16.744	Victories 2
2	7.301	Purchase resort properties / condos - time shares / economic revenue
3	6.778	Prescription Drug Benefit with wholesale drug house
4	6.728	Extend the 27 county service area
5	5.583	Satellite Health Park off Reservation (Lansing)
6	5.125	Mackinaw Casino
7	4.847	Bank/Credit Union
8	4.825	Mobile Health Clinic
9	4.647	Health Center/Clinic
10	4.111	Centrally located inter-tribal information center
11	4.050	Tribal construction company
12	3.663	Elders meeting place
13	3.408	Health Outreach Satellite Clinic
14	3.333	Telecommunications company/complex
15	3.333	Community Center
16	3.200	Tribal Cemetery in SW Michigan
17	3.194	Elderly Assisted Living Facility
18	3.167	Allocate spending to create more revenue
19	2.800	Wind energy complex
20	2.667	Statewide chain gas station


18.000
16.000
14.000
12.000
10.000
8.000
6.000
4.000
2.000
0.000
Victories 2
Purchase resort properties / condos - time shares / economic revenue
Prescription Drug Benefit with wholesale drug house
Extend the 27 county service area
Satellite Health Park off Reservation (Lansing)
Mackinaw Casino
Bank/Credit Union
Mobile Health Clinic
Health Center/Clinic
Centrally located inter-tribal information center
Tribal construction company
Elders meeting place
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Tribal Cemetery in SW Michigan
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Allocate spending to create more revenue
Wind energy complex
Statewide chain gas station