

## SECTION II – EXISTING CONDITIONS

### A. Existing Land Use

The existing land use of the Township was surveyed by car and study of the 1998 Antrim County Land Use Atlas provided by the Antrim County Planning Department.

A report provided by the Northwest Michigan Council of Governments from a current use inventory completed using 1998 photography was also reviewed.

As can be expected, the predominate land use in the Township is forest. Sixty-seven percent of the Township is covered in vegetation. Of this, fully thirteen percent is also classified as wetland, primarily narrow lowlands along streams and at the base of hills and ridges. Agriculture uses account for approximately five percent of the land use, and is located in the central and northern portions of the Township.

Residential uses make up eleven percent of the land use although it is scattered generally throughout the township, the most concentration is in the Village of Bellaire and at the local golf and ski resorts.

The balance of the land use, made up of utilities such as the Antrim County Airport, Bellaire Wastewater Treatment Facility and commercial and industrial uses is about two percent.

A table of existing uses is as follows:

Land Cover Type	Percent Coverage
Forest	60%
Wetlands	13%
Water	3%
Agriculture	5%
Grass and Shrub	7%
Residential (including resorts)	11%
Other (including utilities and industrial)	1%

See map of existing land use accompanying this text.

### B. Kearney Township Natural Features:

The Township enjoys the unique natural feature of the Chain of Lakes, having as part of its western boundary, Lake Bellaire and Intermediate Lake.

A large valley runs east and west through the south central part of the Township, with drainage areas branching out from the valley and creating extremely broken terrain. The valley is made up of vast areas of wetlands and contains the Cedar River.

Most of the Township is forested, with the east portion containing parts of the Mackinaw State Forest. There are some Christmas tree plantations in this area also.

There is some cropland and livestock farming on the Township in the central and eastern portions.

## 1. Soils

The Township is made up of four basic soil associations as follows:

Emmet-Montcalm- This soil group consists of well drained gently sloping to very steeply sloping loamy sands and sands. These soils occur mostly on knolls, ridges and hills.

These soils offer few limitations to development where the slopes are gently except for some problems with frost heave for road and highways.

Where there are slopes involved, moderate to severe problems develop. These involve cave-in of excavations, some wetness in digging basements, and side hill seepage from septic tank tile fields.

Tawas-Ensley-Roscommon- These are very poorly drained soils consisting of mucks, loamy and sandy soil consisting of shallow depressions in level plains.

These soils are essentially unsuitable for on-site septic systems due to the humus content of the soil and high water table.

There are also frost heave problems and cave-in problems for excavations.

These soils are quite often subject to seasonal flooding.

Kalkaska-Montcalm- This soil association consists of well drained sands on level to very steep hills, ridges and knolls.

Due to the sandy content of these soils, cave-ins of excavations are a problem, but septic systems operate successfully on these soils except for the steep slope areas.

Kalkaska-East Lake-Karlin- Somewhat excessively drained level to very steep, sandy soils of plains.

## 2. Natural Gas Wells

Natural gas lies beneath most of Kearney Township trapped in what is known as Antrim Shale, which is about 2,000 feet below the surface. Several exploratory wells were drilled on the northeastern portion of the Township in the early 1990's. Due to low production, they were connected together of "unitized" forming units. Unit sizes vary from 2,000 acres to over 4,000 acres. All people owning their mineral rights share in the revenues from each unit if they sign a "Unitization Agreement". Their revenue is based on the percentage of surface acres they own in the unit. Many miles of pipe are underground in each unit.

The gas was first pumped out with jack stands, but in each unit these have been replaced by compression stations. The compression stations are more environmentally friendly. Now, almost all of Kearney Township is in one "unit" or another. Kearney Township, as a governmental entity, has no control over any gas or oil exploration and is under the complete jurisdiction of "Supervisor of Wells" provided in Act No. 61 of Public Acts of 1939.

## 3. Water Quality Assessment of Lake Bellaire, Intermediate Lake and the Cedar River

Assessing the water quality of Kearney Township's major waters requires the collaboration between several monitoring agencies. The data used in this analysis is from 2004 observations made by Three Lakes Association, the Tip of the Mitt Watershed Council, the Michigan Department of Environmental Quality, and the Friends of the Cedar River.

Cedar River: The Cedar River remains on the northwest Michigan's Class A trout stream. The water is cold, clear and richly oxygenated. High quality macro invertebrates found on the bottom of the river serves as the main food source from brook, brown and rainbow trout populations. The major concern for the Cedar River water quality is the detection of TCE (trichloroethylene) from the Mancelona plume that is traveling at approximately 350 feet per year. While TCE concentrates entering the river are well below the EPA limits for surface waters, Three Lakes Association, in cooperation with the Bellaire Public Schools, will be monitoring macro invertebrate populations above and below the point of TCE entry the spring of 2005. Three Lakes Association is also active in the efforts to remove the toxic plume.

Intermediate Lake: Generally, Intermediate Lake quality is very good. The spring of 2004 analysis demonstrated richly oxygenated water down to 23 feet and low to moderate levels of nutrients like phosphorus. This lake continues to be very productive with reports of good catches of bass, walleye and panfish. The TCE spill at the former Texas Instruments Plant does not seem to have affected fishing. The last monitoring of that spill was done by the DEQ in 1998.

Lake Bellaire: Generally, Lake Bellaire quality is very good. The spring of 2004 analysis demonstrated richly oxygenated water down to 28 feet and low levels of nutrients like phosphorus. However, summer of 2004 observations showed a dramatic oxygen decline in the deep basin (100 feet). The low oxygen levels at the bottom exclude fish like lake trout. This low oxygen condition has occurred before and will promote the release of phosphorus from the bottom sediments. This, in turn, will promote algae growth. The causes of the low oxygen levels are not well understood but will be studied when the Three Lakes and the Great Lakes Environmental Center build the nutrient-based productive model for the lake. Water clarity continues to improve in Lake Bellaire due to the increase in the zebra mussel population. People using the lake are reporting more cut hands and feet as the zebra mussels increase. There is no viable solution to the zebra mussel problem other than to scrape them off from surfaces. Walleye fishing continues to be a problem with few fish being caught in the summer of 2004. Three Lakes Association conducted a shoreline algae survey of the lake the summer of 2004 and found no significant algal sites in Kearney Townships waters. The rest of the lake had 15 algal sites indicating possible failing septic systems in Custer and Forest Home Township waters.

### C. Invasive Species

Zebra mussels are found in both Intermediate Lake and Lake Bellaire. Phragmites have also become an issue around lakes, streams and wetlands. Local organizations and homeowners have been working on eradicating the rapid growing grass around the lakes. The Emerald Ash Borer was found in 2009/2010 in the township and devastated the ash trees. Many ash trees were cut down to minimize the spread with little success.

## D. Man-made Features

Due to the terrain, the transportation system is most complete on the western edge of the Township where M-88 runs along the eastern side of Lake Bellaire and through the Village of Bellaire and on to Central Lake. County Road 620 enters the Township from M-66 and runs through the Village of Bellaire and then west to Torch Lake.

The portion of the Village of Bellaire east of the Intermediate River lies within the Township.

## E. Community Facilities

Bellaire is the County Seat for Antrim County and in addition to governmental offices, the Courts and the Jail, the County operates Meadow Brook, and Meadow View Apartments just south of the Village along M-88. The Animal Control Building, the Ambulance Authority and the County Transportation Authority are also located in that area. The local Fire Department is also located in the township.

There are several golf and ski resorts in the Township. Extensive seasonal and permanent housing has been developed along Lake Bellaire and Intermediate Lake. A year-round hiking trail covering several miles along the Cedar River has also been established from Craven Park to Burrel Road.

The Antrim County Airport is located in the Township just north of the Village of Bellaire with access from County Road 620.

In the spring of 2011, Kearney Township built a new Township Hall located on Aero Park Drive. The new facility houses the township offices and a large hall that is rented out for functions.

In Spring 2015, Bellaire Family Health Center relocated to their new building located on M-88. The new facility has the ability to house 6 providers, along with a full drive thru pharmacy and laboratory. They also offer Mammogram and X-ray services.

## F. Population Trends

Both Antrim County and the Township have experienced steady growth since 1970. Between 1970 and 1980 the County showed an increase of 28.4% while the Township grew by 25%. Township growth has slowed somewhat in comparison to overall County growth. See 2010 census information in appendix at back of plan.

## F. Economic Characteristics

Public employment is the single most important factor in the Township. Residents are employed in County, Township and Village government as well as with Bellaire Schools and the Medical Care Facility.

The resort industry as well as numerous small businesses in and around the Village of Bellaire also provides jobs. Light manufacturing provided employment within the Township. Many residents are also employed in construction. Agricultural and Forestry activities also account for some employment in the Township

## G. The Regional Setting

Kearney Township is located in the central part of Antrim County. The County lies along the east shore of Grand Traverse Bay and contains several major lakes. The most notable of which are Torch Lake and an “upper and lower” Chain of Lakes which is well known throughout the Midwest for its scenic beauty. Torch Lake is noted as the third most beautiful lake in the world by National Geographic Magazine.

Both U.S. 31 and U.S. 131 cross the County in a north-south directions; U.S 31 along the Lake Michigan coast and U.S. 131 further inland. The Township lies between the two highways and has the Chain of Lakes as its western boundary. Ski and golf course complexes are located within the Township and are accessed primarily from U.S. 131 via M-88.

Therefore, the western, central and southern portions of the Township experience residential and resort development pressures, while the balance of the Township is made of rugged hills and wetland valley with low density residential living, farms and forestry uses.

## **SECTION III- GOALS AND OBJECTIVES**

### A. Planning Goals

The Kearney Township Planning Commission has selected the following goals as the basis of the Master Land Use Plan:

1. Protect the surface and ground water quality of the Township as the main ingredient of the quality of life.