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ARTICLE 1: INTRODUCTION

Since the creation of the Township Planning Commission in 1973, Township officials have recognized the need to exercise more influence over the destiny of the Township. Given this goal, local planning officials have since attempted to maintain the rural character and desirability of Ely Township as a place to live, work and play, and also to protect the unique environmental features of the Township from deterioration as a result of poor land use practice. However, from 1977 through 1993 with planning and zoning matters being administered from the County level, and with local financial resources somewhat limited or non-existent, community planning at the Township level became stymied and sometimes frustrating. With the demise of the Marquette County Zoning Ordinance in 1993, individual Townships were charged with the responsibility of adopting local Zoning Ordinances. Although this situation may have created a temporary burden for some Townships within the County, it appears to have been a blessing in disguise to others even though that may not have been apparent at the time. Since the Ely Township officials were already committed to planning the destiny for the Township, the Township Board, in 1992, mandated the task of developing a basic plan to function as a guide for the future development of the Township to the Planning Commission. The Ely Township Community Master Plan represents the culmination of that effort.

COMMUNITY PLANNING

Community planning is a dynamic process which involves the conscious selection of policy choices relating to land use, future growth and development within the community. The Community Master Plan, when adopted by the Planning Commission, is the only official Township document which sets forth policies to guide the future development of the community.

The authority to prepare a Master Plan is derived from the Township Planning Act PA 168 of 1959 as amended. Section 6 of the Act states:

The Planning Commission shall make and adopt a basic Plan as a guide for the development of unincorporated portions of the Township. As a basic for the Plan, the Planning Commission is hereby empowered to (1) make inquiries, investigations and surveys of all the resources of the Township and (2) assemble and analyze data and formulate plans for the proper conservation and uses of all resources, including a determination of the extent of probable future need for the most advantageous designation of lands having various use potentials and for services, facilities and utilities required to equip such lands.

In simple terms, the Master Plan functions as a measuring stick and springboard for the community. It assesses the current status of the community, identifies assets, problems, trends and outlines, in general, and the goals and policies of the Township.

PURPOSE

The purpose of the Plan created under the authority of the Township Planning Act is:

To promote public health, safety and general welfare; to encourage the use of resources in accordance with their character and adaptability; to avoid the overcrowding of land by buildings or people; to lessen congestion on public roads and streets; to facilitate provision for a system of transportation, sewage disposal, safe and adequate water supply, recreation and other public improvements and to consider the character of the Township and its suitability for particular uses judged in terms of such factors as the trend in land and population development.

The Plan inventories and assesses a wide range of characteristics which influence the Township. History, natural features, population and housing, economy, community facilities, services, utilities, transportation, land use and special concerns are reviewed and discussed in detail. An outline of general goals and policies emanating from these influences and characteristics are stated and intended to guide the community into the future.

PLAN USE

The Community Master Plan addresses many issues and can be utilized to its maximum potential in the following ways:

- The Master Plan is a statement of the Township's goals and policies and provides a single comprehensive view of the community's desired future.
- The Plan is intended to aid in daily decision making and to be a guide for the Township Planning Commission, the Township Board and other official bodies which may influence policy as well as to serve as a reference for administrators and developers.
- The goals and policies outlined in the Master Plan are intended to guide the Planning Commission and the Township Board in their deliberations regarding capital improvements, land subdivision, zoning and other matters relating to land use and development.
- The Master Plan for the Community is the statutory foundation for the Zoning Ordinance and upon which zoning decisions are decided. The Township rural Zoning Act PA 184 of 1943 as amended requires that the Zoning Ordinance be based upon a Plan designed to promote the health, safety and general welfare of the public. The Ely Township Community Master Plan fulfills this requirement.
- The Master Plan attempts to coordinate public improvements and private developments by locating them in areas identified in the Master Plan to assure the greatest benefit to the Township and its residents.
- Along with all of its accolades, the Master Plan is also an educational tool and provides the Township officials, businessmen, residents, property owners, developers, adjacent communities and all other interested parties a clear indication of the Township's direction for the future.

The Ely Township Community Master Plan is the only officially adopted document which outlines an agenda for the achievement of goals and policies. It is a long range statement of the general

goals and policies of the community directed towards unified and coordinated development of the Township. It provides the basis from which decisions regarding Zoning and Land Use are decided.

Since the Master Plan is not static, it can only be effective if it is kept current and updated periodically to keep pace with changes in the community. Just as the community is dynamic, planning must be dynamic as well. Periodic updating of the Plan at least every five (5) years is therefore necessary in order for it to function as a reliable decision making tool.

PLAN ORGANIZATION

The Ely Township Community Master Plan is divided into three major sections; PART I, PART II and necessary APPENDIX.

PART I introduces the plan and outlines its importance to the Community, then follows with a brief overview of the *BACKGROUND STUDIES*.

The *GOALS AND POLICIES* Article provides the framework for the *FUTURE LAND USE PLAN* which is described in the text and depicted on a colored map.

The *PLAN IMPLEMENTATION* Article provides insight into the use of a variety of necessary tools and techniques for implementing the Master Plan.

PART II *BACKGROUND STUDIES*, discusses in greater detail the *HISTORICAL ASPECTS*, *CURRENT RESOURCE INVENTORIES*, *SPECIAL CONCERNS* and *DEVELOPMENT LIMITATIONS*. It also defines the point where planning begins. Without a clear understanding of the past, it would appear extremely difficult to attempt to predict future trends with any certainty.

The **APPENDIX** contains supplementary material along with detailed information and supporting documentation for the conclusions drawn and the determinations reached in the development and creation of this Plan.

ARTICLE II: BACKGROUND STUDIES SUMMARY

The Background Studies phase of the Community Master Plan attempts to identify and classify a variety of community characteristics. The following summary is a brief overview of the significant findings relative to the Background Studies compiled by the Ely Township Planning Commission. The complete text of the Background Studies with supporting maps, charts, graphs, tables and documentation is included in Part II of this Plan.

HISTORY

Early development in Ely Township began in the mid 1800's and was located mainly around sites associated with iron ore mining. Farming was also a prominent activity within the Township during the late 1800's and through the 1940's with most farms raising dairy herds along with some sheep and cattle. Due to climatological constraints, crop production was limited to hay and potatoes. When the Township was legally established in 1871, the land area included over 2100 square miles. However, due to redistricting, today Ely Township includes only four regular townships and approximately 141 square miles of area, just a small part of the original designation.

NATURAL FEATURES

The Township consists of a wide variety of terrain and landscapes which include considerable rock outcrop areas. The northerly portion of the Township contains steep rocky bluffs alternating with hilly forests and wetlands. The southerly areas are fairly level with wetland-dotted forests. A few areas located in the two most southerly townships are predominantly wetlands. Forest vegetation in a variety of types covers most of the Township and approximately half of the soils display suitability for some type of development.

In addition to the wetlands, the Township contains over seventy lakes and ponds as well as many rivers and streams which are valued for their aesthetic, recreational and industrial use. The lakes and ponds cover about 3% of the surface area of the Township. The Greenwood Reservoir, created by the Cleveland Cliffs Iron Company in the early 1970's to provide water for mining operations at the Tilden Mine located in Tilden Township, contains over 1400 acres and is the largest water body in the Township. Floodplains surrounding many of the lakes and streams account for approximately 8950 acres or 10% of the total surface area. The Township also contains substantial areas of three of the major drainage basins located in the County including the Dead and Carp Rivers, which drain into Lake Superior and the Escanaba River which drains into Lake Michigan.

POPULATION AND HOUSING

Not long after its establishment in 1871, the Township boasted 1011 residents. Based on the 2010 Census, the Township had a total of 1952 residents. The median age of the population is approximately 37 years which makes Ely Township's population younger than all of its neighbors as well as a majority of the Townships in the County and slightly higher than the State. Ely Township is home to a large contingent of minors and a small contingent of senior citizens. Because of this current situation, the population composure reflects large families and households. Unlike most places in the State, Ely Township has more males than females. At the approximate rate of 13.8 people per square mile, Ely Township is more densely populated than all but one of its neighbors and somewhat less densely populated than the County, the Upper Peninsula, the State, and the Nation.

Based on the 2010 Census maps, the Township's residents are largely situated in ten different neighborhoods which vary in population size from 32 to 298 people per neighborhood. From the largest to the smallest, the neighborhoods include Greenwood, Twin Pines, Kielinen, the 41 Steak House area, Diorite, Clarksburg, Lawer, Gold Mine Lake, Perch Lake and Green Creek Locations. Ely Township has a higher percentage of people 18 years of age and younger than all of the neighboring Townships and also most Townships within the County and State. Therefore, plans and decisions should carefully consider future needs for schools, recreation and other services and facilities oriented toward the youth. Conversely, Ely Township has a small percentage of senior citizens by comparison.

Based upon the 2010 Census Data Summary of Housing for Ely Township, there were a total of 1125 Housing Units in existence in the Township, 67.6% occupied and 25.2% consisting of seasonal recreational or occasional use type units. Most of the current inventory of housing was built prior to 1980 with the greater percentage of the more recent housing being located in newer subdivisions platted during the 70's and 80's. Scattered development along US Highway 41 and major County roads account for the balance of the more recent housing units.

According to 2010 figures, the median value of owner occupied housing units within the Township was \$97,365 (it was \$67,000 in 2000). Three (3) building permits were issued for Ely Township in 2010 and four (4) in 2011, which represents approximately 3% of the total number issued with Marquette County within that two year period. The average construction cost per building permit issued in 2010 was \$158,000. Additional housing statistics are detailed in *Part II, Background Studies, Article VIII*.

ECONOMY

The Ely Township's available labor force (per 2010 Census figures) for ages 16 and above is 1589. Currently Ely Township has a 9.5% unemployment rate, which accounts for approximately 151 people unemployed. Available work is dependent upon outside industry and concentrated basically in mining activities, forest products, manufacturing and tourism. The Township has few employment opportunities, however, employment in the County as a whole is much more diverse. Unemployment rates for Ely Township have been consistent and just slightly higher than those of the County (8.9%).

Taxable property values in the Township are fairly low in comparison to other areas in the County. This appears to be a result of large amounts of State-owned property, Commercial Forest Reserves and Specific Ore Designated Lands located within the Township. Designated lands with special tax status accounts for approximately 54% of the total land area in the Township. Based upon 2011 tax base comparison figures, the Marquette County total State Equalized Valuation (SEV) was \$5,170,927,447 and the Ely Township SEV was \$133,665,000. While Ely Township has approximately 7.5% of the land area in the County, it accounts for only 2.8% of the total SEV of the County. This appears to reflect the considerable amount of land located in the Township with a special tax status designation.

COMMUNITY FACILITIES - SERVICES - UTILITIES

The Township Hall, a 3600 square foot multipurpose building, is centrally located in the Greenwood area along the north side of US Highway 41. The Township also owns and maintains nine recreational facilities located in various neighborhoods. A newsletter is published by Township officials to inform and update residents on the latest happenings in the Township. The newsletter is continually updated and is available at the Township office as well as provided to tax payers twice a year through their tax receipt returns.

Together, the Greenwood and Diorite population centers contain approximately 23% of the total number of Township residents. Both are served by public water supply systems. At the present time there are 130 residences serviced with a public water system in Greenwood while there are 68 in Diorite. There are no public sanitary sewer systems provided anywhere within the Township. Township residents have access to electrical power supplies provided by either the Upper Peninsula Power Company or WE Energies. Semco Energy provides natural gas service to 132 or approximately 18% of the occupied residences within the Township. Cable television service is provided to about 80% of the occupied residences by Charter Communications Company.

The Township's solid waste disposal needs are Township contracted items utilizing West Marquette County Sanitation Authority (WMCSA) transfer station facilities. Emergency medical and ambulance services are essentially provided by agencies outside the Township. However, the Ely Township first Responder Team organized in 1983, is still active in the Township. Health care services and cultural pursuits are available in the nearby cities of Ishpeming, Negaunee and Marquette. Fire protection is provided through a fire protection agreement with neighboring Ishpeming Township. The Michigan Department of Natural Resources Forest Management Division responds to brush and forest fires. Search and rescue emergencies are handled by the Marquette County Sheriff's Department Search and Rescue Team.

The National Mine, Ishpeming, Champion and Ely (NICE) Community School District (serving Ely, Tilden, Ishpeming, Champion, Spurr and Humboldt Townships), along with Northern Michigan University provide the educational base for Ely Township. The NICE Community School District facilities are currently made up of Westwood High School and Aspen Ridge School which are located in Ishpeming Township which is adjacent to Ely Township. Northern Michigan University (located in the City of Marquette) is the nearest institution of higher education.

TRANSPORTATION

The Township contains approximately 120 miles of public roadways, however only about 70 miles or 58% of these roads are maintained on a year round basis. US Highway 41, the Township's only state trunk line highway, accounts for about six miles of the total roadways within the Township, and six County primary roads account for approximately 25 miles of the total. County secondary and seasonal roads comprise 75% of the balance of approximately 90 miles of public roadways. Ely Township does not have an existing north/south primary county road axis connecting neighborhood population centers. Therefore, development located in the north central part of the Township along US Highway 41 is physically and socially segregated from similar neighborhood developments located in the South Central part of the Township along County Roads 581, CD and PD. The Planning Commission has addressed this concern in *Article III, Goals and Policies*, *Article IV, Future Land Use* and in *Part II, Background Studies, Article XI, Transportation*.

The Township has about eight miles of active railroad which is now utilized essentially for occasional freight traffic. In its early development, Ely Township had many active railroads including passenger service to innermost parts of the region. At the present time, air traffic to and from the area is primarily through Sawyer International Airport which is now the County airport location. There are also several private airfields including Johnson Field, a Federal Aviation Administration (FAA) certified airfield located in the southern half of the Township. Other types of public transportation are provided by MarqTran (Marquette County Transportation System), busses and several taxi companies.

EXISTING LAND USE

Over 60% of the existing land use within Ely Township consists of public land or recreational type uses and another large segment of land, approximately 25%, is utilized for Timber Production. Single Family residential Development accounts for approximately 6% of the total. Water Bodies 5% and the balance consists of Mineral Resource Lands 3%, Industrial-Extraction 2% and Quasi-

Public and Commercial Land uses account for less than 1% of the total. A pie graph showing the various percentages of the different types of existing land uses are included in *Part II, Background Studies, Article XII*.

Land use is influenced by a number of factors which typically include concerns for the natural resource base of the community, proximity to population centers, land ownership, transportation, road circulation systems, soils and topography. However, the action of State and Local Government in establishing policy to implement the decision making process has by far the most significant impact on the creation of the various land uses in an area.

SPECIAL CONCERNS

The ELF Antenna was part of the National Defense System Communications Network specifically designed to communicate with submerged submarines. This facility was shut down in September 2004.

There are also a number of sites within the Township which at one time or another were utilized for municipal, construction and industrial waste sites, landfills, junkyards, petroleum products storage and hazardous materials storage. These sites and their locational impacts are discussed in greater detail in *Part II, Background Studies, Article XIII* of the Plan.

Wellhead protection for public water supplies located within the Greenwood Water System has been completed by Township officials to assure a continuous safe and potable public water supply. Wellhead protection is described in greater detail in *Part II, Background Studies, Article XII*.

DEVELOPMENT LIMITATIONS

Approximately 50% of the total of Ely Township's 141 square miles of area exhibits some type of physical site constraints ranging from mild to very severe. Rock outcrops, severe topography, lakes, rivers, streams, floodplains, numerous wetlands and marginal soils, all contribute to development limitations. In addition, special concerns which include abandoned municipal and industrial waste sites and hazardous materials storage areas along with areas which may be suspect due to electromagnetic radiation potential also limit future development.

ARTICLE III: GOALS AND POLICIES

In the comprehensive planning effort, the Goals and Policies are designed to guide the decision making process in order to protect the public health, safety, general welfare and promote a better quality of life for the residents of the Community. The goals of a Community are general statements that define the direction and character of future development and reflect the desired objectives or the end product of government action. The policies are more specific statements setting forth the framework for action and the basis upon which more detailed development decisions are made. Intended to provide guidance and afford a basis for future decision making, the adoption of the Goals and Policies does not commit Ely township to any particular recommendation, but does commit the Township to take action that is consistent with the policy guidelines.

CITIZEN PARTICIPATION

Goal:

Develop programs that provide opportunity for all Ely Township residents to participate in Community Development and the continuing planning process.

Policies:

Post public notices at the Township Hall and other local establishments where residents congregate to advise them of upcoming meetings of the Township Board, Planning Commission, Special Committees and/or a designated authority.

Encourage public attendance at all meetings and seek citizen input on all policy planning matters by allowing ample time for public comment.

Publicize planning functions and proposals through local media channels to encourage public response and participation.

Continue to make available a periodic newsletter to all residents and taxpayers updating them on the status of current planning issues encouraging public response and input into the continuing planning process.

Develop a strategic plan to identify specific problems and opportunities and mobilize the community for action.

COMMUNITY FACILITIES AND SERVICES

Goal:

Provide adequate facilities and efficient services for the benefit of all Township residents wherever possible and economically feasible.

Policies:

Continue to provide safe and adequate office and community building facilities to conduct the business of local government and to satisfy the requirements of local residents in providing available space for community functions at a reasonable rate.

Establish fair and equitable rates for the continued maintenance and upgrading of the existing Ely Township public water supply systems based upon cost/benefit distribution.

Encourage the development of adequate facilities which provide a variety of opportunities in the areas of education, culture, recreation and social development for all age groups within the Township. By comparison, Ely township appears to have a higher percentage of younger people under the age of 18, than the neighboring Townships. Therefore, this trend should be addressed.

Maintain a balanced cost/benefit relationship in providing community facilities and services to Township residents.

Avoid duplication of essential services and facilities whenever possible to obtain maximum return on investment at a minimum cost to the residents and the environment.

Discourage development and/or expansion of community services in areas where the quality of existing potable water supplies appear to be in question.

Maintain and expand, as required, the utility systems which already provide services to existing development and where there would appear to be the greatest potential for future development.

ECONOMY**Goal:**

Encourage economic growth opportunities that are complimentary to existing conditions within the Township while maintaining the existing tax base and attempt to diversify the local economy to expand future employment opportunities.

Policies:

Attempt to provide diversified employment opportunities within the industrial, service, trade and professional sectors of the local economy by attracting new business to locate in accordance with the Future Land Use Plan for the Township.

Utilize the existing resource base in the most efficient manner without sacrificing the environmental considerations.

Encourage the development of a well planned industrial park to accommodate small scale industrial enterprises with immediate access to a County Primary Road providing accessibility to US Highway 41.

Encourage the development and inter-governmental participation with an Economic Development Corporation (EDC) to promote local commercial and industrial opportunities.

Provide adequate land areas for commercial and light industrial type activity and encourage expansion of existing facilities which would enhance the Township tax base.

Encourage the expansion and creation of the retail/wholesale and service industries within the Township to meet the current and proposed needs of the residents.

Monitor and review emerging economic trends within the Township and the region to identify areas of opportunity for potential economic growth.

Encourage the creation and implementation of a West Marquette County Coalition consisting of representatives from interested Townships in West Marquette County to promote a diversified and stable economy and to encourage the sound development of Western Marquette County.

EDUCATION

Goal:

Continue to support the NICE Community School District in offering high quality educational opportunities for all residents balanced between vocational and college preparation training.

Policies:

Encourage the NICE Community School District Board to coordinate future plans for improvements to existing facilities or for planning the location of new facilities with the Ely Township Community Master Plan and to communicate with Township officials prior to making major decisions which may affect the development of the Community.

Encourage maximum use of the existing educational physical plants whenever possible in order to fully utilize the facilities, conserve energy and avoid duplication.

Encourage a variety of educational opportunities and adult educational programs for Township residents utilizing local facilities whenever possible.

Encourage any new building construction to provide adequate space to hold meetings, accommodate recreational activities and otherwise meet assembly needs of the citizenry.

Encourage communication with the NICE Community School District officials to discuss and coordinate local development plans.

ENERGY

Goal:

To increase awareness and to encourage the use of energy conservation measures and techniques to conserve energy and to guide and direct development patterns which reflect efficient use of existing infrastructure and natural resources.

Policies:

Encourage conservation in the utilization of all types of energy systems through public awareness programs.

Encourage the adoption of efficient energy conservation measures in the utilization of all community buildings, services, facilities and vehicles.

Reduce consumption of energy by promoting increased efficiency and use of renewable resources.

Relate land use with energy in order to maximize benefits and minimize energy consumption.

Encourage development of new conservation methods and techniques to address recycling needs and minimize wasteful heat losses.

Integrate energy considerations into the community planning process.

ENVIRONMENT AND NATURAL RESOURCES

Goal:

To control and manage the natural resources of the Township and to protect the unique environmental features of the Township from the adverse impacts of improper or too intense land use practices.

Policies:

Consider the environmental impact and the effects on the quality of life of residents as important factors in deciding development proposals.

Encourage the proper management of prime forest lands and the protection of floodplains, aquifer recharge areas, lakes, streams, marshes, swamps, wetlands and other ecologically sensitive areas. Highest priority should be given to the preservation of wetlands in their natural state.

Encourage the utilization of the natural resource base in an efficient yet conservative manner for perpetuation of a quality environment.

Encourage reclamation and rehabilitation of land areas designated as Special Concerns which have

been misused due to poor land use practice.

Recognize the value and protect the quality of the air and water environment within the Township.

Encourage the preservation of lands and sites of historical value and/or architectural significance as discussed in the Historical Features Article.

Discourage land uses that would interfere with mineral and/or gravel extraction in areas containing significant deposits and encourage extraction of materials at existing sites using proper management techniques and reclamation plans.

Correlate future land uses with specific site capabilities including a review of access, terrain constraints, soils and the measurable impact on natural systems and the environment through the use of the Site Plan Review process.

Assure proper compliance with the requirements and the performance standards as designated in the Ely township Zoning Ordinance for all future development in the Township.

Encourage the preservation of areas supporting quality fish and aquatic life as well as wildlife habitats.

To accommodate both environmental and public health concerns and to protect the residents and the environment from exposure to toxic and/or hazardous materials, special attention should be directed toward solid waste management considerations and toward matters involving either temporary storage or permanent disposal of hazardous or toxic materials within the confines of the Township.

Encourage and require where possible the reclamation and restoration of resource depleted areas utilizing seeding, mulching, reforestation and/or other restoration methods.

Preserve the natural and unique wilderness setting of the Greenwood Reservoir utilizing Township Zoning Authority and assure continued public access to the area.

HOUSING

Goal:

To provide opportunity for all Township residents to reside in pleasant, peaceful, harmonious, safe and healthy housing offered under a variety of types and located in convenient proximity to activities and/or facilities and to promote blight free residences and neighborhoods.

Policies:

Encourage preservation of existing neighborhoods and rehabilitation of deteriorating areas and structure through community development and incentive programs.

Encourage new development in suitable and compatible areas of the Township as noted in the Future Land Use Plan utilizing sound development and zoning techniques.

Recognize the need and responsibility to provide for adequate and affordable housing within appropriate areas of the Township.

Provide for a variety of residential land use needs including single and multi-family units, seasonal dwellings and mobile homes.

Rehabilitate and preserve the existing housing inventory through private funding or through financial assistance programs offered by Federal, State and/or Local agencies.

Encourage the development of energy efficient housing and the retrofitting of existing structures to improve energy efficiency and to upgrade the existing housing inventory.

Encourage mobile home development to locate within mobile home parks while allowing a flexible choice in the development of individual parcels within the Township.

Discourage incompatible land use and land use activities not customarily associated with residential use.

The County of Marquette operates a housing rehabilitation program in which Township participation is encouraged.

LAND USE

Goal:

Preserve and maintain the unique rural residential character and desirability of Ely Township as a place to live, work and play. Establish a coordinated land use pattern within the Township which provides sufficient land area for future land uses and correlate future land use with site capability, serviceability and suitability.

Policies:

Encourage new development to locate within existing service areas to avoid “leap frog” development, discourage sprawl patterns and curtail future satellite development.

Encourage development in specific areas already serviced with the necessary infrastructure and facilities or which can be feasibly serviced in the near future.

Discourage or prohibit new development in remote isolated areas of the Township where public access, services and/or facilities would be difficult or impossible to feasibly provide.

Encourage the more intensive type land uses to locate along major arteries within the Township to avoid conflict with less intense uses in surrounding areas.

Discourage development in areas where the physical constraints of individual sites could adversely affect public health, safety, welfare and the environment.

Encourage proper management and preservation of environmentally fragile or sensitive areas, unique wilderness areas, prime forest lands and mineral resource areas and protect them from the intrusion of incompatible land uses through use of the township Zoning Authority.

Provide suitable public and quasi-public lands for well sites, wellhead protection, wastewater treatment facilities, sanitary landfills and protect these uses from the intrusion of incompatible land uses.

Discourage any new satellite type of residential development within the Township unless facilities and services can be provided both feasibly and economically.

Discourage year-round single family type development on large parcels of land located in isolated areas within the Township.

Encourage the transfer of mineral rights to future land owners to allow flexibility for future land use decisions.

Encourage future industrial type land uses to locate within an industrial park where service and facilities can be provided.

Develop a program to monitor existing logging operations and timberland activities within the township and establish communications with corporate and private CFA designated landowners to assure the general public continued access to such lands for recreational purposes.

Develop a township Coordinating Committee to consult with major landowners prior to the closure of any roads providing access to the remote areas within the township to prevent the land-locking of parcels.

Recognizing the necessity for the perpetuation of renewable resources, a Forest management Plan should be encouraged from corporate CFA designated landowners.

RECREATION

Goal:

Establish a community-wide system of local parks and recreation areas to provide for a variety of recreational opportunities to accommodate residents and tourists of all age groups (including the physically handicapped and the mentally impaired) utilizing whenever possible multiple-use sites and/or year-round facilities for both active and passive recreational pursuits which are easily accessible to all residents.

Policies:

Encourage continued public involvement and input into the recreational planning process.

Encourage the development of recreational facilities by utilizing Federal, State and/or Local financial assistance programs to acquire land and to install improvements as required.

Review potential park areas carefully to determine site constraints and capabilities (especially areas donated to the public within newly proposed developments).

Correlate carefully the physical constraints or advantages of a potential recreation site with the planned objectives of the proposed recreational facility.

Encourage a cooperative effort of Township officials with the NICE School District officials to develop and coordinate programs which will provide active recreational opportunities through the District's recreational resources to serve the needs of the residents.

Encourage the use of State lands located within the Township by providing access to remote areas for use by residents and the general public.

Develop multiple-use facilities offering year-round recreational opportunities and encourage the maximum efficient use and upgrading of existing facilities located within the Township before developing or building new facilities.

Seize opportunity to obtain public access sites on local lakes whenever possible.

Ensure proper maintenance and promote restoration and improvement of existing State and/or County recreational facilities located within the Township.

Maintain an updated recreational plan and a capital improvement program to implement the plan.

TOURISM**Goal:**

Participate in the Iron Ore Heritage area to establish a series of multi-use routes connecting our communities most populated areas while preserving and telling the story of Marquette County's rich mining heritage.

Policies:

To continue participation in the county wide multi-use trail system.

Continue participation in the Iron Ore Heritage Area.

Encourage the reuse of abandoned railroad grade for multi-use trail systems.

TRANSPORTATION

Goal:

Establish a balanced transportation system which services existing as well as proposed future land uses and provides for adequate circulation throughout the Township to meet the needs of the residents and the general public for coordinated movement of people, goods and services.

Policies:

Coordinate efforts with the Marquette County Road Commission to establish a major north/south road axis to physically connect the north and south portions of the township and to guide orderly development within the south central part of the Township.

Encourage coordination and participation with various Federal, State, County, Local and Private agencies regarding planning for transportation alternatives within the region and the township.

Promote active Township participation in state and County transportation planning to maximize mobility within the Township and to facilitate access to surrounding areas within the County.

Utilize the existing transportation network to guide proposed land use and development.

Maximize the capacity of major traffic arteries by limiting access points and through proper use of service drives and entrance ways.

Encourage proper design and adherence to performance standards for all new road circulation systems maximizing efficiency and minimizing the environmental and fiscal cost.

Establish a workable capital improvement program to assure continued maintenance and construction of new transportation systems to facilitate land development.

Encourage the continued maintenance and upgrading of the existing railroad within the Township to facilitate movement of goods and services and to afford maximum potential for the future development of the industrial base of the Community.

Coordinate infrastructure installation by scheduling capital improvement programs in proper sequence to eliminate unnecessary reconstruction or repaving of existing roads and highways.

Explore the possibility for expanding the MarqTran Public Transit System to improve services to residents within the Township.

Continue to participate in the US41/M28 Corridor Management Team.

ARTICLE IV: FUTURE LAND USE

Future land use planning for anticipated and potential land uses is essential to maintain a viable community. The *Future Land Use Map* is a graphic representation of the generalized location recommended for specific land uses within the Township and represents the culmination of the Planning Commission's Master Planning efforts. *The Background Studies* summarized in *Article II* and detailed in Part II of this document, and the *Goals and Policies, Article III*, developed by the Planning Commission are also reflected in the Future Land Use Plan which has been designed to recognize existing development patterns, acknowledge relevant demographic trends and take into account the Township's long-range *Goals and Policies* as outlined in *Article III*.

The categories of land use designated on the map are similar to the uses portrayed on the *Existing Land Use Map*. The extent and location of each Land Use category depicted on the *Future Land Use* can be compared to those on the *Existing Land Use* in *Article XII*.

The following land uses: water (2398 acres or 2.7% of the Township), public (28,345 acres or 31.4% of the Township) and quasi-public (562 acres or 0.6% of the Township) are not expected to change because they are considered static type land uses.

RESIDENTIAL

There are several changes in the configuration of the residential land use areas. These are based upon natural limitations, access needs, ease of providing services, availability of utilities and the Planning Commission's policy to discourage any new satellite development. Land areas to be used for residential purposes have been increased to accommodate future growth and will be encouraged to locate in the central area of the Township around the Greenwood, 41 Steakhouse, Twin Pines, Kielinen, Lawer and Green Creek neighborhoods. Residential areas located in the Diorite, Clarksburg, Gold Mine Lake and Perch Lake neighborhoods may realize limited growth, but will not be encouraged to expand because of development constraints, limited or no utilities and future services considerations. Residential land use areas have been revised to reflect areas actually being used residentially and areas that could efficiently be used for that particular land use. The Planning Commission's policy to establish a primary north-south road axis within Ely Township to connect the neighborhood population centers in the north and south central parts of the Township should eventually tie the community together, both physically and socially.

COMMERCIAL

Uses in the commercial category will be encouraged to locate and expand within the Township around existing commercial land uses located along the US 41 Corridor and along County Road 581 in the south central part of the Township. The future commercial land area is anticipated to increase only slightly to accommodate future growth. This small increase reflects only a small percentage of the total Township and it remains at about 0.3%.

STATE FOREST

State Forest Land is the prevalent land use and represents over 31% of the existing land use in the Township. The *Future Land Use Map IV-1* notes the location of the Escanaba River State Forest and it is anticipated that the boundaries will remain the same.

QUASI-PUBLIC

Future Quasi-Public Lands noted on the *Future Land Use Map IV-1* represent only a very small amount of the total land area and will remain at approximately 0.6%.

WATER

Since the mining industry does not appear to have major plans for expansion, it would appear that the surface water bodies will remain constant.

INDUSTRIAL

The greater majority of existing land uses in the Industrial category are classified as extractive, i.e., mining (ore, sand, gravel, etc.) with very little area actually being utilized for other industrial type uses. The Planning Commission has reduced the size or eliminated a number of extractive uses in the Township, therefore the *Future Land Use Map IV-1* will reflect an approximate 1% reduction. Future Industrial type land uses should be encouraged to develop within Industrial Parks to concentrate activities and to minimize the cost of providing necessary utilities and services.

RECREATIONAL

The existing Recreational Land Use base is expected to increase as more remote lands become accessible and because considerable Timber Production Lands held in CFA designations have been sold to private individuals and are being used for recreational type uses. Reduction in Timber Production Lands are also anticipated where Residential Land use patterns emerge into timber producing areas. State Forest and Recreational Lands presently represent over 60% of the total land area in Ely township.

RESOURCE WILDERNESS

Multi-Use Resource Lands represent slightly less than 3% of the total land area within the Township and Future Land Use in this category will remain essentially the same. Mining operations within the Township are limited and there do not appear to be any major plans for expanding mining operations in the near future.

RESOURCE PRODUCTION

Future Resource Production Lands are expected to decrease as more and more land is transferred into private ownership. A significant amount (10% + or -) of corporate owned designated lands have already been transferred during 1990 through 1995 as evidenced by recent revisions to the

Existing Land Use. Therefore, future land use for Resource Production purposes will show a slight decrease in total area to reflect current trends and anticipated future conditions. During the 1996 through 2002 period another 2.2% of Resource Production lands transferred to Residential Use.

ARTICLE V: PLAN IMPLEMENTATION

Implementation of the Ely Township Community Master Plan is the key to successful planning. It will require the ongoing efforts and cooperation between Township officials, Planning Commissioners, Board of Appeals members, Governmental Agencies and the concurrence of the Township residents to be successful. Even the most carefully conceived and masterfully designed plans and text details are useless without a preconceived plan for implementation. There are several basic tools that are typically utilized by a Community to accomplish this task. The most effective include the Zoning Ordinance, Land Division Regulations, Performance Standards and a Capital Improvement Program.

Zoning Ordinances are by far the most widely used of the implementation tools. To ensure that land is used appropriately and that future land uses are compatible, land is divided into Zoning Districts or Zones. Regulations outlining the permitted uses, minimum lot area requirements, size and setback for all proposed buildings and land developments are defined and required within each zoning district. The township Zoning Ordinance should reflect the policies of the Master Plan relative to the establishment of residential densities as well as conditional and special land uses permitted within the districts. The Zoning Text and Map should reasonably reflect existing conditions and also guide future development to conform with the policies outlined in the Master Plan. On January 1, 1994, the Ely Township Interim Zoning Ordinance took effect and has since been revised and updated in accordance with the Rural Township Zoning Act PA 184 1943, as amended. The permanent Zoning Ordinance took effect in January, 1997 in accordance with the schedule of the Township officials.

Subdivision Regulations are established by a Community to control the subdivision or platting of land. State and Local regulations establish an official procedure in accordance with PA 288 1967, as amended, more commonly referred to as “The Subdivision Control Act” for dividing a parcel which culminates with the recordation of an approved subdivision plat with the County Register of Deeds Office. Subdivision Regulations adopted by the Community are intended to control the subdivision of land and to also establish minimum design standards relative to road circulation systems and other potentially negative impacts of development that may be detrimental or disruptive to the Community character. The Ely township Subdivision Control Ordinance, Ordinance No 1-1985 that took effect on January 26, 1986, establishes the necessary minimum requirements for the subdivision of land in the General Law Township of Ely. A copy of the Subdivision Control Ordinance is provided in the Appendix.

Land Division Regulations are established by a Community to regulate partitioning or division of parcels or tracts of land. State and Local regulations establish an official procedure in accordance with PA 288 1967, as amended, formerly known as the Subdivision Control Act to prevent the creation of parcels of property which do not comply with applicable ordinances and said Act, to minimize potential boundary disputes, to maintain orderly development of the Community and otherwise provide for the health, safety and welfare of the residents and property owners of Ely Township by establishing reasonable standards for prior review and approval of land divisions within the Township. The Ely Township Land Division Ordinance No 1997-2 was adopted May 21, 1997, and amended May 21, 2003 and January 18, 2012. The Land Division Ordinance is provided in the Appendix.

Capital Improvements Program (CIP) is essentially priority listings for new or reconditioned facilities. These include buildings, roadways, bridges, treatment plants, water supply, sewerage systems, storm water facilities, solid waste disposal sites, etc., needed by a Community and typically staged or phased over a six year period indicating the estimated cost along with the proposed methods for financing the program. In 1995, the Ely Township Board approved criteria for road improvements developed by the Planning Commission along with a Ten Year Road Improvement Plan. Due to significant cost increases for road improvements and current revenue decreases, the Ten Year Road Plan will take approximately twenty-five years to complete. A copy of the Capital Improvement Plan for Road Improvements is included.

CAPITAL IMPROVEMENTS PROGRAM

The Ely Township Board approved the following criteria for road improvements as presented by the Planning Commission:

1. The condition of road gravel versus blacktop, with gravel having priority when feet per residential unit are equal (Four Seasonal Units equal one Residential Unit. Dividing footage by Residential Units equals feet of improvement per Residential Unit.) When blacktop is beyond repair, then priority should be equal.
2. The number of residents served by foot of improvement.
3. Traffic volume.
4. Gravel roads prepared, then blacktopped one year later.

TABLE V: ROAD IMPROVEMENT SCHEDULE

Year	Road	Distance
2013	County Road CH/CDA(Done)	.8 mile
2014	County Road CL/CU	.35 mile
2015	County Road CF	1.3 mile
2017	County Road CKH	.1 mile/Diorite Streets

Note: In 2013, Double Chip & Seal was applied to County Roads CH, CDA, CKL and West CNA (.1 mile)

ELY TOWNSHIP COMMUNITY MASTER PLAN AMENDMENT

US41/M28 CORRIDOR

Ely Township participated with seven other jurisdictions, Marquette County, the Michigan Department of Transportation (MDOT) and other interested parties on a project in 2003 and 2004 to jointly prepare the US41/M28 Corridor and Access Management Plan. That Plan sets forth an analysis of needed safety and capacity improvements along the US41/M28 corridor and identifies needed driveway closures, consolidations, and alternate access options. Those elements of the US41/M28 Corridor and Access Management Plan that apply within this jurisdiction are hereby adopted by reference as the guide for future corridor and access management improvements within this jurisdiction.

In order to implement the US41/M28 Corridor and Access Management Plan and the Memorandum of Understanding all the participating jurisdictions signed to be a part of the project leading to the creation of the US41/M28 Corridor and Access Management Plan, the Ely Township Zoning Ordinance shall be amended to reflect the uniform approach to access management advocated by the Plan and being adopted in each of the eight jurisdictions that helped create the Plan. Those zoning amendments are based on the Model Access Management Ordinance sanctioned and promoted by the Michigan Department of Transportation in the Access Management Guidebook published by MDOT in 2001 and updated in 2012.

In addition, implementation of the recommendations in the US41/M28 Corridor and Access Management Plan will be further facilitated by active participation by Ely Township in future joint site plan review meetings as they relate to a particular site plan pending in Ely Township or an adjoining one. These meetings will involve review of access management issues and corridor improvement issues related to a particular site plan. Such joint meetings will include representatives of Ely Township, MDOT, Marquette County, and other corridor communities as pertinent.

ELY TOWNSHIP PRIORITIZED LIST OF TWENTY ISSUES FOR THE ACCESS MANAGEMENT ADDITION TO THE ELY TOWNSHIP ORDINANCE

Performance Standards are sets of criteria or limits that attempt to establish allowable limits for nuisance elements which a particular land use, process or activity may not exceed. These types of standards may be incorporated into existing Zoning Ordinances and Land Division Regulations or they can be structured to stand independently under a performance type of Zoning Ordinance.

In addition, adoption of the following Ordinance may also be used to implement the Master Plan:

- Planned Unit Development Regulation
- Wetlands Protection
- Groundwater Protection
- Design Controls for Landscaping, Signs and Buffer Zones

➤ Engineering Design Standards for Drainage Systems and Parking Areas

To simplify the sometimes confusing procedures required in the planning process, the publication of a Development Guide (an Informational Handbook outlining Township Development Policies and Guidelines) is strongly recommended.

SUMMARY

The Ely Township Community Master Plan was designed to be flexible by being adaptable to changing circumstances without replacing the established Goals and Policies. The Plan will only be successful if it is continually utilized in the decision making process of the Township. The effective implementation of the Plan will also require long term cooperation and effort on the part of all Township officials, staff, developers, landowners and residents. An informed and involved citizenry is therefore essential to the success of this Plan.

ARTICLE VI: HISTORICAL SKETCH

GOVERNMENT LAND SURVEYS

The territory that is now Ely township was originally surveyed by Government Land Surveyors over a period of three years. William Burt surveyed the northern part of Ely Township in 1848. John Burt completed surveying the north central part of the Township that same year. In 1848, Harvey and Richard Mellen completed surveys in the south central part of the Township. Surveying of the southern part was completed by John Burt in 1850.

EARLY DEVELOPMENT

During the mid 1850s SP Ely and Herman B. Ely began to develop the iron ore industry in the area. Later they began construction of the first railroad to carry the ore from the western end of the County to the City of Marquette. These initial mining activities began opening the area to development.

On March 29, 1871, Ely township was officially created. It consisted of that portion of Marquette County located west of the Township's current eastern border. In 1873, some territory was added and subsequently it covered a total of more than 2100 square miles. The original Ely Township territory included land which was later to become eight other Townships in Marquette, Iron and Dickinson Counties. A detachment of some of the territory in 1891 pared the Township down to its present 141 square miles of land. The first Township Supervisor was Henry S. Colwell who was also the manager of the Greenwood Furnace. Stephen Walsh was the Township's first registered landholder.

INDUSTRIAL DEVELOPMENT

The major industry in the Township during its infancy depended essentially on mining related activities. However, in addition to the mines there were also harvestable forests, sawmills, charcoal kilns and blast furnaces. The forests and sawmills produced lumber for the homes and buildings, timbers for the underground mines and fuel for the charcoal kilns. At least twenty-seven (27) charcoal kilns were in operation at one time producing coke (soft coal) from the wood for use as fuel in the blast furnaces creating pig iron from the raw iron ore mined in the western end of the County. The pig iron was then transported by rail to Marquette and then onto ships for delivery to steel mills in various states.

GREENWOOD

In 1865, the Marquette and Ontonagon Railroad Company constructed a blast furnace which was located in Ely township about eight miles west of Negaunee now known as the Greenwood Location. A community soon developed around the furnace location consisting of approximately fifty frame houses, a sawmill and a company store. In 1868, the furnace and 8000 acres of surround timberlands were purchased by the Michigan Iron Company.

CLARKSBURG

In 1866, the Michigan Iron Company constructed the Michigan Furnace near an abandoned sawmill in the Community of Clarksburg which had been established in early 1862. In a short time the Community grew rapidly with local resources producing iron and lumber. Clarksburg proudly boasted of a post office, general store, a drugstore, a blacksmith shop, a depot, a Catholic church and nearly fifty single family homes.

Following the financial panic of 1874, the Michigan Iron Company went bankrupt and the furnaces were closed. By 1873, much of the forest land located immediately around the settlements of Greenwood and Clarksburg had already been cut over. However, despite the closing of the furnaces and depletion of much of the forest, Clarksburg remained fairly well populated because the sawmills were still producing marketable lumber.

DIORITE

Around 1902, the Town of Diorite began developing along the shore of Boston Lake near the American Mine. By 1909, Diorite had a general store and a town hall. In 1913, a new Township Hall was constructed and other communities in the township began as the road circulation system was expanded and existing roads were improved.

MINING

Iron ore was also extracted locally from several underground mines including the Boston, American, Dexter, Dey, Morris, Barnes and Hecker, Blueberry, Chase, Lloyd, and Greenwood Mines. In 1926, fifty-one men were killed when the Barnes and Hecker Mine caved. Gold was extracted from the Michigan Gold Mine intermittently between 1902 and 1938. The last mine to be operated in Ely Township was the Morris Mine which closed in the 1960s. Iron Ore extracted from local mines was shipped outside the Township before being processed.

SCHOOLS

The first schools in the Township appeared around 1881. By 1921, there were a total of six. In 1919, five students became the first to graduate from high school in the Township. By the end of the 1930s, the school in Diorite, which still exists and continued to function as an elementary school through 1997, was the only one which remained and is currently vacant.

RAILROADS

Early in the Township's existence the railroad was the main transportation mode and until 1935, passenger service was provided to Clarksburg, Greenwood and Lowmoor. Now freight trains pass through the Township on a daily basis.

FARMING

Farming was a prominent activity in the Township from the 1890s through the 1940s with most

farmers raising dairy herds along with some sheep and beef cattle. Due to climatologically constraints and short growing seasons, hay and potatoes were the more popular crops. There were also several threshing machines located within the Township. At the present time, only a few small farms remain active.

ARTICLE VII: NATURAL FEATURES AND RESOURCES

BACKGROUND

The natural physical features and the natural resources of the Community establish character and essentially dictate the emerging land use patterns and use activities of future development. These features represent one of the most significant and primary considerations in the development of the Ely Township Community Master Plan. Since their locations have been permanently fixed within the area, they are immovable and must be addressed by establishing sound land use proposals and effective regulations which become critical for guiding future development.

TOPOGRAPHY

Topography is the variation in elevation of the landscape. The generalized terrain within the Township varies from extremely steep and severe conditions located in the northwest portion of the Township to gentle and nearly level in the southerly reaches. Elevation in the Township vary more than 500 feet with the northern third of the Township affording the widest variety of terrain features, and the central and southern areas consisting mostly of level terrain with some gentle hills. The highest and lowest points are in opposite corners of the Township, almost as far from each other as geographically possible. The high point is located west of Brocky Lake in the NW $\frac{1}{4}$ of Section 7 T48N R28W and the low point is near Camp Eleven Creek in the SE $\frac{1}{4}$ of Section 25 T45N R28W. The high point is over 1800 feet above sea level and the low point is less than 1300 feet above sea level varying the landscape over 500 feet in elevation.

BEDROCK GEOLOGY

The bedrock of the Township is that of the Precambrian Era and is part of a vast formation known as the Canadian Shield. It is estimated by geologists to be somewhere between 600 million and 3 billion years old. Lower Precambrian formations can be found throughout the Township. Middle Precambrian formations, which can contain iron deposits, are found only in the northern half of the Township. Bedrock of this type is hard and crystalline in nature and is generally poor for groundwater retention especially in upland areas. Only where the bedrock is overlain by a significant amount of other material is there good potential for significant groundwater aquifers. The location of bedrock can be anywhere from the surface to 500 feet below the surface.

SURFICIAL GEOLOGY

Much of the bedrock in the Township is covered by material that was deposited by glaciers during the Wisconsin period, which is part of the fourth glacial stage, about 8000 years ago. Glacial till, as it is sometimes referenced to, ranges in thickness from the surface to 500 feet in depth. In some areas, especially in the northern half of the Township, the glaciers left minimal deposits over the bedrock. Many areas have deposits left by the melting ice and other areas have deposits left by receding glacial lakes. Around many of the slow moving waters within swamps, creeks and rivers, there are lowlands where the water has deposited organic sediment material which was carried in suspension to these areas. This more recent alluvium takes the form of mucky flats and peat bogs.

VEGETATION

The primary vegetative cover type in the Township consists of trees. However, the types of forest present in the early 1800s are virtually non-existent today. Logging activities and forest fires have changed forest types so that today a wide variety of deciduous (hardwood) and coniferous (evergreen) species thrive within the Township. Trees function as air purifiers, soil retainers, wind buffers, create wildlife habitats and provide various other benefits. Timber production also represents a significant part of the Township economy.

SOILS

Soil type depends on a variety of influences including parent material, water content, topography and vegetation. Except for highly organic soils, the composition of the parent material is very important. Parent material is the rock or loose material from which the soil gets its mineral content and many of its physical characteristics. Water content influences the chemical and physical makeup of soils, while topography influences soil thickness and water content. Vegetation influences the chemical and organic content of soils as well as soil stability.

Soils are a prime consideration in planning for future development as each soil type exhibits different characteristics regarding specific limitations for future land use and development. Careful application of technology can overcome many limitations. Indiscriminate use of technological solutions can result in drainage problems, increased erosion and septic system failure. Soil testing and engineering analysis should be carefully addressed before any land development takes place to help minimize negative impacts on the land.

The United States Department of Agriculture, Soil Conservation Service (SCS) developed a generalized soil map for all of Marquette County. This map showed general soil profiles and associations which were based on similarity of characteristics and contained soil suitability/limitation interpretations developed in tabular form.

In 1977, the SCS published the *Marquette-Humboldt Area Survey*, part of which covered approximately 6,560 acres (7%) of Ely Township along the US Highway 41 Corridor. Therefore, detailed soil information was only available for this portion of the Township. The SCS presently is in the process of compiling a detailed soil survey for the entire County for which a report was completed in September 1997. This Report now fills three volumes which include aerial photos which have references to the "Use Limitations and Descriptions" volumes.

Although detailed information can be useful for individual applications, it is somewhat limited. Field Survey Data is compiled by taking occasional samples, and only representative areas can be sampled. Then subsequent judgments must be made. Characteristics of the general soil associations can be determined from the information provided and should only be utilized for preliminary planning efforts. Soil tests on individual sites, prior to any development, are always advisable. This report can be viewed online at soildatamart.nrcs.usda.gov/Manuscripts/MI103/0/Marquette_MI.PDF.

SURFACE WATER

Surface water serves a variety of purposes as it is used for recreation, fishing, boating and swimming as well as being the source of supply for major industrial operations and a variety of activities within and outside of the Township. Surface water is also an aesthetically valuable resource as well. While Ely Township constitutes 7.5% of the total area of Marquette County, it contains approximately 5.0% of the total surface water in the County. About 2.7% of Ely Township is covered by surface water.

Although it is not as rich in surface water as the rest of the County, the Township has at least 70 lakes and ponds. Brocky, Perch, Little Perch, Charbeneau and Dewey Lakes are the largest, each being larger than 50 acres in size.

The Greenwood Reservoir, which covers approximately 1400 acres, is by far the largest body of water located within the Township. It was created when the Cleveland Cliffs Iron Company dammed the Middle Branch of the Escanaba River in order to provide a water reservoir for its mining operations conducted at the Tilden Mine in Tilden Township. The Escanaba, Carp and Black Rivers pass through the Township. Other existing streams and creeks include the Wild West, Green, Camp Eleven, Gold Mine, Barnhardt, Spring Pond, Brown, Larson, Flat Rock, West Branch, Rocky, Bell and Kipple.

WETLANDS

Wetlands serve as water filters that allow sediment and other particles to settle out. They function as water retention areas that help to prevent floods and as recharge areas for aquifers. Wetlands are home to a vast array of flora and fauna, and although they may not appear as such, the swamps, bogs and marshes interspersed throughout the Township are valuable resources and destruction of these areas should be avoided whenever possible. Michigan's Goemaere-Anderson Wetlands Protection Act, administered by the Department of Environmental Quality, is designed to protect this fragile resource by setting forth minimum standards and requirements to afford protection for this type of valuable resource.

DRAINAGE BASINS

A drainage basin is the area drained by a main watercourse and all its tributaries. The extent of a drainage basin is defined by watersheds or drainage divides. A watershed or drainage divide is a ridge or high ground area from which water that falls on opposite sides of the divide will flow into two separate drainage systems. Ely township covers parts of three separate drainage basins. A majority of the central part of the Township is located within the Escanaba River Drainage Basin, the northeastern corner is in the Dead River Drainage Basin and part of the east central area is in the Carp River Drainage Basin. The Dead and Carp Rivers drain into Lake Superior to the north and east. The Escanaba River eventually rains into Lake Michigan to the southeast.

FLOODPLAINS

Floodplains are areas that are inundated by water either seasonally or during periods of increased

precipitation, typically low-lying areas adjacent to lakes, rivers and wetlands. Ely Township has approximately 8950 acres of floodplains which represent about 10% of the surface area of the Township. The Federal Insurance Administration has specifically designated areas adjacent with the Barnhardt Creek, Boston Lake and its outlet, the Carp River, the Escanaba River and the Black River as flood hazard areas.

Scientific details regarding floodplain designation should be directed to the Federal Insurance Administration and the Department of Environmental Quality, Floodplain Engineer.

ARTICLE VIII: POPULATION AND HOUSING

INTRODUCTION

In any planning effort the study of the human population is one of the most important components. An understanding of population characteristics is useful for the planning and design of future facilities and services. The source for the majority of the data used in this Article was produced by the US Census Bureau obtained during the 2010 decennial census.

In 1880, nine years after the Township's official establishment, Ely Township was home to 1011 people. Since then the population has fluctuated considerably. In 2010, the US Census indicates a population of 1952. Therefore, this figure has been used to develop subsequent graphs and charts.

POPULATION CHARACTERISTICS

The age structure of a population is an important consideration when planning for future services and can also be a valuable indicator of how the future population will grow. *Table VIII-A* shows a graphical comparison between age structures of the residents of Ely Township from 2000 and 2010.

**TABLE VIII-A
ELY TOWNSHIP AGE STRUCTURES 2000 AND 2010**

Age Range	2000	2010
Under 5 Years	130	100
5-24 Years	602	493
25-44 Years	570	442
45-64 Years	551	653
65-84 Years	145	254
85 Years and Over	12	10

**TABLE VIII-B
POPULATION COMPARISON ELY TOWNSHIP/MARQUETTE
COUNTY/MICHIGAN
2010**

Age Range	Ely Township	Marquette County	Michigan
Under 18	465 (23.8%)	12530 (18.6%)	2,344,068 (23.7%)
18-19	53 (2.7%)	2866 (4.2%)	304,817 (3%)
20-24	75 (3.8%)	7026 (10.4%)	669,072 (6.7%)
25-34	188 (9.6%)	8117 (12%)	1,164,149 (11.7%)
35-49	405 (20.7%)	11928 (17.8%)	2,022,555 (20.4%)
50-64	502 (25.7%)	14783 (22%)	2,017,449 (20.4%)
65 & Over	264 (13.5%)	9827 (14.6%)	1,361,530 (13.8%)

**TABLE VIII-C
COMPARATIVE ANALYSIS
MALE VS FEMALE: TOWNSHIP, COUNTY & STATE**

	Ely Township	Marquette County	Michigan
Male	1027 (52.6%)	33,894 (50.5%)	4,848,114 (49%)
Female	925 (47.3%)	33,183 (49.4%)	5,035,526 (50.9%)

The racial composition of Ely Township residents is:

White	1913
African American	2
Asian	2
American Indian/Alaska Native	23
Hispanic	12

The average household size in Ely Township is 2.77, with the average family size of 3.16. 73% of Ely Township residents have lived in the same house five years ago. Out of people who lived in different houses, 72% lived in this County. Out of people who lived in different counties, 55% of that number lived in Michigan.

POPULATION DISTRIBUTION AND DENSITY

Historically, the Ely Township population has congregated close to industrial activities relating to old mining, blast furnace and sawmill operations essentially located in what are now the Greenwood, Diorite and Clarksburg areas. Since the 2000 Census, a large contingency of the population is now located in the Southern part of the Township.

The population densities indicate the area is overwhelmingly rural. Marquette County is still the largest and most populous County in Michigan's Upper Peninsula.

POPULATION TRENDS

In order to plan for future facility needs and service provisions, it is useful to have population projections and current trends in the population. Projection of the population is a difficult endeavor because the variables that affect it are often hard to predict. The primary variables inherent in population projections are deaths, births and migration. Death rates are generally stable, whereas birth rates depend on several factors, the more significant being proportion of females of child bearing age and marriage statistics. Net migration rates are also difficult to predict, especially for small communities, as they depend on economic opportunities, climate preference and living condition upgrades.

An examination of previous population totals and population trends is perhaps the most useful way to initially approach projection of the population. The analysis is quite useful in determining the direction and the extent of local capital improvements and related expenditures.

From the early 1900's until the late 1970's, Ely Township experienced population growth as a result of mining activities. With a downturn in the economy affecting the steel industry, population in the 1980's showed a slight decrease. This trend has continued for the past thirty years in general, fluctuating only slightly.

**TABLE VIII-D
POPULATION TRENDS 1950-2010**

	1950	1960	1970	1980	1990	2000	2010
Ely Township	674	884	1120	1955	1942	2010	1952
Marquette County	47,654	56,154	64,686	74,101	70,887	64,634	67,077

Due to ongoing re-use efforts and the relocation of the Marquette County Airport to KI Sawyer AFB, the population of Marquette County appears to have stabilized.

HOUSING

Based upon the 2010 Census Data Summary of Housing for Ely Township, there was a total of 1125 housing units, an increase of 20 housing units since the 2000 Census. Of the total of 1125 housing units, 67.6% (761) were occupied and 32.3% (364) were vacant. 63.5% of the housing units were owner occupied, 4% were renter occupied and the remainder vacant or for seasonal use. Most of the Township's housing stock was built prior to 1980 with the greater percentage of new construction being located within subdivisions and scattered along US Highway 41 and major County roads. Additional information can be found in *Article II: Background Studies Summary*.

ARTICLE IX: ECONOMY

The economy has a significant influence on the future growth of a community. The quality of the housing, recreation, community facilities and services provided is dependent upon good jobs, trade and commerce. An understanding of the components of the economy and their trends is necessary for the planning effort to be effective.

EMPLOYMENT AND INDUSTRY

There are two fundamental types of employment: Basic Industry and Non-Basic Industry. Basic Industry includes activities that bring outside money into a community through the exportation of goods and services (ie: forest products, mining, manufacturing, tourism). Non-Basic Industries are those that serve needs within a community (ie: local stores, restaurants, insurance agencies, schools, hospitals).

Unlike several decades ago, Ely Township now has very little Basic Industry employment and minimal Non-Basic Industry employment. The Township's labor force is employed largely outside of the Township. Therefore, Ely Township may be considered predominantly a bedroom community. The economy of Ely Township, like many of the neighboring Townships, is very dependent upon outside economic activities.

Natural resources are also an essential element of the area's economic stability. Mining, forest products and tourism are three of the largest Basic Industries in Marquette County. Other Basic Industries include education, health care and government support.

Iron Mining

Although it did not expand to major status until the 20th Century, iron mining on the Marquette Range in Marquette County is historically one of the oldest extractive industries that goes back at least 150 years. While there were five major companies - Cleveland-Cliffs (CCI), Inland Steel, USX, J&L Steel, and Hanna Mining Company owning mineral lands in the County, only one, CCI (presently Cliffs Natural Resources), is presently engaged in active mining operations. Underground mining ceased in the late 1970s and currently all of the active mining activities are surface operations.

Locally iron ore is found in two forms, hematite and magnetite. Both minerals, prior to shipment, require purification and palletizing to facilitate steel making and to maximize shipping volumes. Processing involves a relatively high expenditure of energy in the form of electricity, coal, oil and natural gas to produce power and heat. It also requires a tremendous amount of water for processing purposes, and of course, land for mining, processing, storage and tailings disposal. The product, palletized ore, is then shipped via railroad to either Marquette or Escanaba and loaded onto lake ore carriers for delivery to various steel mills located along the Great Lakes.

Cliffs Natural Resources is an international mining and natural resources company, being the largest producer of iron ore pellets in North America. Cliffs two mining operations in Marquette

County are currently the only active iron ore mines in the State. The Tilden Mine, located south of Ishpeming, has been in operation since 1974. Over the past five years, the Tilden Mine has produced between 5.6 million and 7.9 million tons of iron ore pellets annually. The Tilden Mine produces both hematite and magnetite iron ore pellets while the Empire Mine excavates and processes only magnetite ore.

In 2003, the Tilden and Empire Mines were combined to operate under one management structure to improve efficiency and reduce costs. This alliance, called Cliffs Michigan Mining Company, utilizes the mining sections of both mines and processing plants but has a combined management, which has reduced manpower through job consolidation and attrition.

The future of the mining industry is affected by a number of factors, including national demand for steel and steel products, international competition, federal government trade policies, labor productivity, availability and price of electric power and other energy sources, environmental constraints and financial considerations, as well as local land use planning attitudes. Historically, iron ore production on the Marquette Range has fluctuated and probably will continue to do so in the future. Nevertheless, iron mining will in all probability remain the County's major resource industry for the foreseeable future.

Other Mining

The Eagle Mine Project is a proposed nickel and copper mine by Kennecott Minerals Corporation, a subsidiary of Rio Tinto. Nickel and copper are the principal metals to be mined, but cobalt, platinum, palladium and gold would also be recovered as by-products.

Although the discovery hole at Eagle was drilled in 2002, the history takes place over many decades. Around 1960, exploration in the Upper Peninsula was focused heavily on copper occurrences in and around Marquette. As with most exploration programs, priorities changed over time and attention was shifted to giant copper deposits in the southwestern United States.

In 1977, the state of Michigan conducted an extensive geological and geophysical investigation of the area surrounding Eagle. The report described rock types commonly associated with nickel mineralization around the world. Rio Tinto returned to Michigan in the late 1980's looking for zinc deposits. Low grade zinc occurrences were located; however, sightings of nickel and copper sulphides set Rio Tinto on a path to discover what we now call the Eagle deposit.

Rio Tinto obtained state mineral leases in the early 1990's which marked the beginning of the exploration program on the Yellow Dog Plains. It was not until 2002 when the discovery hole was drilled at Eagle.

Construction and excavation started in 2010, with production scheduled to begin in 2013. The surface plant for the mine will cover less than 100 acres, and ore processing will be done off site at the Humboldt Mill. The mine will be backfilled as mining progresses. Mining the underground ore body is projected to continue until 2023.

The Marquette County Iron Range also contains many other non-ferrous materials that are

mineable but few can be mined economically. Diamonds, uranium, carbon, gold and silver are some of the minerals that are currently not economically feasible to extract. The Callahan Mining Corporation did mine gold and silver at the Ropes Mine in Ishpeming Township between 1985 and 1989. Sand, gravel and some stone, are the other resource materials currently being mined in the County.

Education

Northern Michigan University located in the city of Marquette, is a facility that serves the post secondary educational needs of students from all over the State as well as many parts of the Nation. It has approximately 9400 students and 940 employees.

Health Care

Marquette General Hospital serves the entire Upper Peninsula. Over the past several years, the hospital has continually expanded its facilities and services. It is now the largest and most diverse facility of this type in the region and employs over 2900 individuals in the Upper Peninsula. FA Bell Memorial Hospital located in the city of Ishpeming, is also a full service facility and employs 335 individuals. The hospitals provide a combined total of 421 beds. Six other extended health care facilities in the County provide over 500 beds and employ well over several thousand people.

Forest Products

The forests in Marquette County could be considered its greatest natural resource. They are naturally renewable and if managed wisely, could exist indefinitely without being depleted. The County contains over one million acres of forest lands. A vast majority of Ely Township is forested and about 22,100 acres are used for timber production. Approximately 18,000 acres or 81% of these lands are managed as Commercial Forests under the Michigan Commercial Forest Act PA 94 of 1925, as amended, and CFA lands are afforded special tax privileges. Most of the harvested timber in the County is exported to paper mills, lumber mills, furniture factories and other wood products industries throughout the region as well as the County. According to the Michigan Employment Security Commission, the forest products industry employs approximately 375 in the County.

Michigan Department of Corrections

Established in 1889, the Marquette Maximum Security Penitentiary, located in the city of Marquette, has two divisions which house approximately 1148 inmates. The prison employs 425 workers.

Government Support

The local government support provides employment for approximately 283 employees.

Tourism

The tourism industry caters specifically to the traveling public. The provision of goods and services such as lodging and dining to tourists is a significant economic activity in the area. It is especially important during the warmer months. The impact of winter tourism and the attraction of snowmobiling and skiing has been a significant boost to the industry in recent years. Township participation in the Iron Ore Heritage Area with a county-wide multi-use trail system utilizing abandoned railroad grades will also help the tourism industry.

Popular trail systems include:

- Iron Ore Heritage Trail
- North Country National Scenic Trail
- Noquemanon Trail Network
- South Marquette Trails Network

Manufacturing

Some of the products manufactured in Marquette County are sold outside of the County and include such items as furniture, flooring and heavy equipment. The remainder of Marquette County's employment revolves around the needs of local citizens and businesses. The Non-Basic Industry ranges from groceries to health care to clothing.

In order to get a clear picture of the Township's economy, it is necessary to compare it to that of the County and State as well. The labor force statistics shown in *Table IX-A* are a general indication of the economic health of the State, County and Township in 2010.

**TABLE IX-A
EMPLOYMENT STATUS - STATE, COUNTY, TOWNSHIP - 2010**

	Michigan	Marquette County	Ely Township
Population 16 years and older	7,836,314	44,473	1,589
In Labor Force	4,944,003	34,073	985

Source: US Census

In 2010, the percentage of persons within Ely Township age 16 and older who were in the labor force was 62.1%. Marquette County's labor force participation rate was 61.3%, while at the State level it was 63.1%.

Ely Township had a 9.5% unemployment rate in 2010 while Marquette County saw an unemployment rate of 8.4% which is lower than the rate for the Upper Peninsula, the State of Michigan, and the United States as a whole.

INCOME

An examination of local income information to state and national averages is useful in determining how much wealth is available locally to purchase goods and services. Income figures also reflect the wages and salaries paid to local workers.

Median incomes in the Upper Peninsula are significantly lower than statewide averages. While this can be offset somewhat by lower housing costs, the ability of local households to afford housing is impacted by these lower incomes.

TABLE IX-B compares income levels between Ely township, Marquette County and the State of Michigan.

**TABLE IX-B
INCOME LEVELS - ELY TOWNSHIP, MARQUETTE COUNTY, STATE OF
MICHIGAN - 2010**

	ELY TOWNSHIP	MARQUETTE COUNTY	STATE OF MICHIGAN
Median Household Income	\$52,216	\$45,130	\$48,432
Median Family Income	\$63,796	\$61,798	\$60,341

Median Household Income uses income from all households including families. The median income figure is the middle value of the incomes reported. *Family Income* includes those of married-couple families and other households made up of persons related by blood, marriage or adoption. The median income figure is the middle value of the incomes reported. This category does not include persons living alone or unrelated persons sharing living quarters or other non-family households.

PROPERTY TAX BASE

Property tax revenues are the primary means of support for local governments, and the revenues provided by the tax dollars support a large majority of the government functions and services.

**TABLE IX-C
ASSESSED AND TRUE PROPERTY VALUATION - 2011**

	Ely Township	Marquette County
Assessed Real Property	\$66,029,300	\$2,559,574,572
True Value Real Property	\$133,665,000	\$5,170,927,447
Assessed Personal Property	\$2,117,700	\$138,897,831
True Value Personal Property	\$4,235,400	\$277,795,662

State Equalized Value (SEV) is a measure of property values upon which taxes are levied. Ely Township has 7.5% of the land area but only about 2.5% of the total SEV in the County. This may reflect vast amount of land in the Township that has special tax status. Public land which is not taxed comprises 31.4% of the Township. Commercial Forest, which is not directly taxed, covers 19.7% of the Township. Specific Ore Designated Land is taxed indirectly at a higher rate and accounts for 2.8% of the Township's total land area. The *Land with Special Tax Status* Map located in the Appendix identifies the location of lands with special tax status within Ely Township.

ARTICLE X: COMMUNITY FACILITIES AND SERVICES

The facilities and services provided in the Township as well as others available to Township residents are important elements to review in the development of the Community Master Plan. Effective planning can help improve their quality and also provide them more efficiently and equitably.

RECREATION

Fulfillment of the recreational needs of a Community enhances the quality of life. Therefore, in order to address recreational needs in the Township, the Township Board created the Recreation Committee in 1972. The Township Planning Commission now serves as the Recreation Committee. The Planning Commission has been designated to advise the Township Board on recreation issues as necessary.

A new Recreation Plan was recently developed by the Planning Commission with help from the Central Upper Peninsula Planning Development Commission (CUPPAD) and adopted by the Township Board in December, 1995. The Plan has been updated regularly, most recently in 2012.

The Ely Township Recreation Plan is designed to accomplish two main objectives. The first was to plan for long-range recreational development, and second, to plan the short-range program for facility improvement over a five-year period. The plan contains more specific goals and policies directly related to existing and proposed facilities and projects. In addition, an up-to-date Recreation Plan less than five years old enables the Township to be eligible to receive recreation grants from the State.

TABLE X-A describes and locate the Recreation Facilities available within the Township.

**TABLE X-A
ELY TOWNSHIP RECREATION FACILITIES***

NAME	DESCRIPTION/ACTIVITIES	LOCATION
Community Building	Multipurpose meeting room, basketball court, play lot, 1.25 acres	CR 496, West of US 41, Greenwood
South Ely Park	Horseshoe pits, play lot	CR CD, West of CR 581
Clarksburg Park	Softball/baseball field, play lot, 4 acres	CR CKL, East of CR 496, Clarksburg
Gold Mine Lake Park	Swimming, fishing, play lot, picnic area, 6.7 acres	CR CL, 1.75 miles North of CR 496
Diorite Park	Basketball court, pavilion, picnic area, play lot, boat launching, 1.5 acres	CR CKK, Diorite, adjacent to school
Greenwood Reservoir Public Access	Boat launching, fishing	CR 478, 4 miles South of US 41
AMVETS Recreation Area	Private facility open to public groups, camping, day-use	CR CT, on Ross Lake, West of CR 581 via CR CCE
Keilinen Pocket Park	Play lot	CR CRA, East of CR 581
Twin Pines Pocket Park	Play lot	Partridge Lane, East of CR 581 via CR CPA and Twin Pines Drive
Lower Subdivision Pocket Park	Play lot	CR CA, West of CR 581 via CR PD
County Road CN Pocket Park	Play lot	CR CN, South of US 41
Wawonowin Golf & Country Club	18 hole Golf Course and Country Club; open to the public	1 mile South of US 41 on CR 478

* For additional Recreational Facility details, see Ely Township Recreation Plan in the Appendix of this Plan.

COMMUNITY BUILDING

The present Township Hall is located on County Road 496 in Greenwood. It was built in 1975 to replace the old Township Hall in Diorite which was destroyed by fire. The Greenwood Location was chosen because of its central location within the Township and its visibility and access to US Highway 41. Following an 1985 addition, the building now has 3600 square feet of usable space. It contains the Township offices, kitchen facilities and a large all-purpose room. The kitchen facilities and all-purpose room are available for rental to all Township residents as well as a disaster relief location when needed by the Red Cross.

LIBRARIES

There are no libraries located within Ely Township but there are several in the County that are open to Township residents. The Carnegie Library on Main Street in Ishpeming, the Negaunee City Library located at the City Hall in Negaunee, and the Peter White Library located on Front Street in Marquette are good general purpose libraries. The newly built Marquette County Historical Society's John M Longyear Research Library in Marquette provides excellent genealogical and local history research services. In addition, the Lydia M. Olsen Library at Northern Michigan University in Marquette as well as several of the local schools provide excellent library services.

SENIOR CITIZEN SERVICES

A wide variety of recreational, educational, and health services are provided at the Ishpeming Senior Citizens Center located on Division Street in the city of Ishpeming. Recreational opportunities include crafts, exercise, trips, classes and games. Educational and health services include health screenings, meals, legal and tax assistance, lectures, and several other programs. Transportation services are provided to senior residents by the Ishpeming Senior Citizens Center and MarqTran (Marquette County Transportation System).

Marquette County provides funding to the Senior Citizens Center for Chore Services. The Greater Ishpeming Community on Aging (located in the Ishpeming Senior Citizens building) provides the scheduling.

EMERGENCY SERVICES

Emergency dispatching in the County via the 911 System is handled by the Central Dispatch Operator located at the Michigan State Police Post in Negaunee Township. The dispatcher knows exactly where the call is being placed from and the closest available personnel typically respond to any emergency situation.

MEDICAL EMERGENCIES

Initial response to medical emergencies in Ely Township is provided by trained volunteers. The First Responder program was established in 1983 and initially had nine volunteers that resided in Ely Township. Currently, the program staffs twelve volunteers.

Ambulance service is provided through Bell Memorial Hospital which has three ambulances on call at all times. At least one attendant and one paramedic respond with a fully equipped ambulance.

POLICE EMERGENCIES

Police emergencies are handled by either the Marquette County Sheriff's Department or the Michigan State Police from the Negaunee Post. The Township does not have its' own police department.

FIRE EMERGENCIES

Ely Township has established a fire protection agreement with their neighbor, the Ishpeming Township Fire Department. Preference is given first to fire emergencies in Ishpeming Township. The disposition of fire department resources is solely under the Ishpeming Township Fire Chief's discretion. In the case of brush or forest fires, the Department of Natural Resources Forest Management Division responds. The DNR has equipment designed to combat brush and forest fires, some of which is housed just east of Ely Township on US Highway 41. The DNR crews are often assisted by volunteers and other emergency personnel.

SEARCH AND RESCUE EMERGENCIES

Incidents, such as an individual becoming lost, directly lend themselves to search and rescue operations. In other situations medical, police or fire personnel may find that they need additional help especially in remote locations, rough terrain or drowning situations.

When emergencies occur, the resources of several groups may be utilized. In most situations the Marquette County Sheriff's Department Search and Rescue Squad is called into action. Other entities that may become involved are the Department of Natural Resources, the Civil Air Patrol, the National Guard and the US Coast Guard. Volunteer groups can also be useful if they are effectively organized.

DISASTER PREPAREDNESS

Plans are currently underway to more effectively deal with disasters such as floods, tornadoes, release of toxic chemicals and other emergency situations which could potentially overtax the resources and capabilities of any one community. Michigan's Emergency Management Act PA 390 of 1976, as amended, is designed to provide for planning, mitigation, response and recovery from natural and human-made disasters within the State. Effective organization in emergency situations is a major goal and local governments are encouraged to appoint a coordinator to work with the County and other governments in order to be ready for emergencies and to discourage situations which could cause or exacerbate emergencies.

COUNTY HEALTH DEPARTMENT

The Marquette County Health Department, organized in 1966, is a branch of the County

government responsible to the County Board of Commissioners. The Board of Health is appointed by the County Commission to establish policies, set priorities, oversee activities and ensure that the public health needs of the Community are adequately addressed. The Health Department's mission is to prevent disease and to protect, promote and improve the health and quality of life for all Marquette County residents.

The Health Department, located on US41 in Negaunee Township, offers a variety of health education and promotional programs, field services for communicable disease control and clinic services including family planning and immunizations. The Environmental Health programs are the most applicable to community planning and have published regulations for food service sanitation, water supplies, sewage disposal, waste disposal, swimming pools and beaches, mobile home parks and campgrounds, pest control and soil erosion. The Department is also involved with other issues related to environmental health planning.

HOSPITALS AND EXTENDED CARE FACILITIES

Marquette County has two hospitals. The newly built, 25 bed, Francis A. Bell Memorial Hospital, located on Lakeshore Drive in Ishpeming, is a full service facility and within five miles of Ely Township. Bell Hospital has over 90 physicians on its active and consulting medical staff, with additional offices in several locations. The 130,000 square foot building is divided into two sections. The clinic features an eye care center, an in-house pharmacy and a gym, among other services, while the hospital is designed with small waiting rooms for each department and individual patient rooms. In 2009, Bell Hospital opened the Cliffs Health Center. The new clinic provides access to physicians dedicated exclusively to Cliff Natural Resources employees and their families covered by Cliffs benefit plans. The Center provides risk appraisals, wellness programs, disease management, as well as an on-site laboratory, pharmacy and fitness center.

Bell Hospital offers a full range of services including: x-ray, mammography, ultrasound, laboratory, respiratory therapy, nuclear medicine, surgical units, coronary care, and obstetrics with private birthing suites. Bell also offers rehabilitation services, including physical occupational therapy and speech therapy, as well as sports medicine services.

Bell Behavioral Services, a department of Bell Hospital, also provides adult, child, and adolescent therapy services plus substance abuse counseling and psychological assessment.

Marquette General Hospital, located on College Avenue in Marquette, is a much larger facility and offers many specialized services. The 352-bed specialty care hospital provides care in 54 specialties and 24-hour emergency services. Marquette General houses the Upper Michigan Heart Institute, the Centers for Neuroscience, rehabilitation and cancer treatment, and behavioral health services. The Family Practice Residency Program serves as a teaching facility affiliated with Michigan State University. The medical staff of more than 200 doctors works with approximately 2,700 employees providing care to 11,000 inpatients and 350,000 outpatients per year.

In January 2010, Bell Hospital and Marquette General Hospital announced the formation of a cooperative partnership, Superior Health Partners. The partnership will use the combined resources of the two institutions to recruit physicians to fill the need for health care providers in

the Upper Peninsula and to encourage patients to seek care locally. In March 2012, the Marquette General Health System Board of Trustees announced it had signed a memorandum of understanding to join Duke LifePoint Healthcare, a joint venture of Duke University Health System and LifePoint Hospitals. Duke LifePoint's acquisition proposal includes significant financial commitments to enhance quality care and patient safety and expand service lines to better serve patients throughout the Upper Peninsula.

There are several extended care facilities in the County for those who cannot be cared for at home but do not need hospitalization. The State operated DJ Jacobetti Veterans Facility is located on Fisher Street in Marquette and the County operated Frank S. Valenti Medical Care Facility is located on Saginaw Street in Ishpeming. The Mather Nursing Home (Ishpeming Township), the Norlite Nursing Center (Marquette), the Eastwood Nursing Home (Negaunee) and the Woodland Assisted Living Center (Negaunee) are all privately owned.

SOLID WASTE DISPOSAL AND RECYCLING

The disposal of solid waste is becoming a nationwide problem due to overabundance of garbage. The Marquette County Landfill in Sands Township is different than most others since it has considerable capacity. This facility was opened in the Fall of 1989, but because of a new construction permit using innovative design, its useful life is projected to be approximately 50 years.

Due to increasingly restrictive State legislation, small local landfills have been closed. Because of the inconvenience of longer hauling distances and a small fee charged to offset disposal costs, some trash, especially large items, are being dumped in remote locations. Household hazardous waste is being improperly disposed of. Products containing chemicals or heavy metals are potentially hazardous to the environment and the public health and should be brought to the hazardous waste collection site which is operated several times a year at the West Marquette County Transfer Station. Reduction of waste output, proper waste disposal, and recycling are important economically as well as environmentally. The cost to Ely Township for disposal of waste for the fiscal 2011-2012 year was approximately \$115,000. Waste volume reduction and recycling can significantly reduce the cost to the taxpayers.

Recyclable materials are presently being collected by a private hauler on a biweekly schedule, once a week. Residents may also dispose of wastes and recyclable material at designated sites in the County, including the West Marquette County Transfer Station located in Ishpeming Township on US41. Recycling and disposal information may be obtained from the Ely Township offices. Participation is the key to successful disposal and recycle programs.

PUBLIC WATER SUPPLY SYSTEMS

The majority of Ely township is not serviced with a public water supply system and must utilize private on-site wells as the main potable water supply source. Public water systems are usually established when there are scarce on-site groundwater supplies for individual wells or when groundwater quality is poor. Poor water quality can be naturally caused by mineral or heavy metal deposits. Poor water quality may also be a public health problem caused by a combination of high

density on-site sewage disposal facilities and natural physical site limitations by industrial pollution or by a number of other man-made influences. After a water supply system is established in a community, it is often expanded to meet the community's growth thereby avoiding future water quality problems.

In recent years, water quality requirements for the water provided through public supply systems have become more stringent and testing to assure quality often becomes very costly. Currently there are two water systems in the Township.

The Diorite System was built in the 1930s and updated in 1962 and 1978. The well field is located north of County Road CKK near the northern limits of Diorite.

The Greenwood System was originally a small private system built in 1936. The Township later took it over and has expanded and improved it a number of times. It now has three wells located east of County Road CZ on the south side of the Greenwood Location. In 1975, a storage tank was added and new line installation started. In 1996, a new well was added and new line installation was completed which replaced all obsolete lines.

**TABLE X-B
DIORITE-GREENWOOD WATER SYSTEM COMPARISON**

	YEAR	NUMBER OF CUSTOMERS	AVERAGE CONSUMPTION (GPD)	AVERAGE PER CUSTOMER CONSUMPTION (GPD)	STORAGE CAPACITY
Diorite	1980	68	9,230	136	30,000 Gallons
	1990	61	12,000	197	
	2000	67	13,700	204	
Greenwood	1980	112	14,270	127	50,000 Gallons
	1990	*134	24,000	179	
	2000	130	23,146	178	

* Counts mobile homes in the mobile home parks as individual customers

EXPANSION - PUBLIC WATER SUPPLY SYSTEMS

The potential for expanding the service areas of the existing systems to additional customers is limited. The nature of the development patterns in the Township along with the inherent physical limitations makes expansion difficult and costly. Expansion of the Diorite System may be limited by its groundwater supply volume and further expansion may not be cost effective because the areas to which the System could be expanded do not have many potential customers. The existing System is adequately functioning and not experiencing any water supply problems. However, the water is moderately aggressive. A corrosion control system was added in 1997 which has solved the aggressive water problem.

Prospects for expanding the Greenwood Water Supply System are also limited. The neighborhood

around the 41 Steakhouse and County Road CN has a significant number of potential customers but it is over one-half mile away, nearly 100 feet higher than a majority of the Greenwood System, and would probably be better served by a new system. The Gold Mine Lake neighborhood has several potential customers but also is over two miles away. Neither neighborhood is currently experiencing any serious water problems.

NEW PUBLIC WATER SUPPLY SYSTEMS

The potential for any new public water supply system is limited. At the present time no problems are forcing the establishment of any new systems in the Township, and since the costs of developing a new system are high, such an expense should be planned for well in advance. The first consideration is the location of an adequate water source since increasingly strict regulations limit the options.

The neighborhood along County Road 581 in the east-central portion of the Township may eventually need a water system because of its growing population. There may also be a possibility for a joint project with Tilden Township in this area. There is also potential for a new system in the 41 Steakhouse area which would serve several existing residential and commercial customers as well as provide for future facilities. Boston Lake in the Diorite area appears to have water quality problems and the Diorite neighborhood is located in an area with a high water table as much of the area was formerly wetlands. Therefore, expansion of the Diorite Water Supply System would appear to be somewhat questionable. Establishment of a water distribution system can be an effective tool in planning for a community's future. If a system is established in an area determined to be desirable for development, it will encourage additional development to occur in areas where it would be the most feasible.

WASTEWATER SYSTEMS

There are no public wastewater disposal systems in the Township at present. Sanitary sewer systems are usually established when the densities of on-site sewage disposal systems and natural physical factors combine to threaten water quality in areas already provided with public water. The high costs of a public collection and wastewater treatment system for example, would be prohibitive for an area as small as the Diorite Location.

ELECTRIC POWER DISTRIBUTION

Electric power is available to approximately 45% of the Township and is provided by the Upper peninsula Power Company (UPPCO) and the WE Energy Company. The UPPCO service area is significantly larger than WE Energy. Electricity is typically not available in areas where dwellings are sparse. Three-phase power availability is limited. UPPCO provides service along US41 from the Ishpeming Township line to the Evergreen Drive-in Theater area, along County Road 496 from US41 to County Road 478, along County Road 478 to the Greenwood Reservoir, along County Road CJ and the Blueberry Mine Road from US41 to the mine site, along County Road 581 from the Tilden Township line to the radio tower, along County Road CF from the Humboldt Township line to the WLUC-TV tower, and along County Road CFA from County Road CF to the WNMMU-TV tower.

WE Energies provides three-phase service along US41 from the Humboldt Township line to County Road 496, and along County Road 496 from US41 to the Diorite School. There is a total of approximately 15 miles of three-phase power lines within the Township.

NATURAL GAS

The Semco Energy Company has mains located within a limited area of Ely Township. A gas main extends westward along US41 from the Ishpeming area to County Road CN, then branches along County Road 496 in Greenwood and along County Roads CN and CAN near the 41 Steakhouse. Natural gas service is provided to several commercial establishments within the Township, and 132 or about 18% of the total of 716 occupied housing units located within the Township are also served with natural gas. Gas service can be extended to customers located where mains presently exist in accordance with the Extension Policy approved by the Michigan Public Service Commission.

CABLE TELEVISION

Cable television is available to many Township residents. Charter Communications provides this service to Greenwood, Diorite, Clarksburg, neighborhoods along County Road 581 and many homes in between. Of the 700 residences in the service area, about 620 are cable customers.

NEWSLETTER

A periodic newsletter is published by Ely Township and is a valuable source of information about current events, meetings, facilities and services along with permit and zoning information. Available to all residents, property owners and the general public during office hours as well as mailed to each taxpayer twice a year.

EDUCATIONAL FACILITIES

NICE Community School District

Ely Township is served by the NICE (National Mine, Ishpeming Township, Champion, Ely Township) Community Schools District. All NICE School District instructional facilities are located within Ishpeming Township and include the Westwood High School and the Aspen Ridge Elementary and Middle School. The District is representative of four districts that consolidated in the late 1960s and early 1970s. Today, the NICE Community School District spans more than 680 square miles. At the high school level, the NICE District is in consortium with the Ishpeming and Negaunee School Districts to provide an alternative high school program via the Ishpeming, Negaunee and NICE Community Education Program. The District reported 1,175 students for the 2010-2011 school year.

Aspen Ridge Elementary and Middle School houses educational grades beginning with Early On through eighth grade and is located adjacent to the Westwood High School.

Northern Michigan University

Ely Township residents have the advantage of having a State University located within 30 miles of their Township. Northern Michigan University, located in the city of Marquette, offers more than 180 programs in 32 different departments with credentialing that ranges from Certificates and Associate Degrees to Bachelors and Master Degrees. The physical campus includes 56 buildings on a campus of 336 acres. A 300-plus member faculty teaches the enrollment of approximately 9,400 students (2012).

ARTICLE XI: TRANSPORTATION

Since the 1930s, the automobile has been the primary means of transportation in Ely Township, the central portion of which is located approximately four miles from the city of Ishpeming, six miles from the city of Negaunee and fifteen miles from the city of Marquette. The surrounding cities are most frequently the destinations of Township residents. The cities of Iron Mountain, Escanaba, L'Anse and Munising are within two hours driving time. The Mackinac Bridge, which is the main link to Lower Michigan, is approximately a three and one-half hour drive from Ely Township. The closest large city is Green Bay, Wisconsin, which is a three hour drive from Ely Township. The cities of Detroit, Milwaukee, Chicago and Minneapolis are all within one days drive.

ROAD SYSTEM

US Highway 41 has the highest volume of traffic passing daily through the Township. Approximately six miles of this busy State Trunkline cross the north-central portion of the Township. US41 is not only the Township and County's major east-west artery, but also the major east-west State artery.

There are five County primary roads in the Township totaling 24.52 miles. Under provisions of the Michigan Highway Law Section 2 of Act 51 PA 1951, County primary roads are developed to connect principal traffic generating centers, provide collector/distributor routes, and to supplement the State Trunkline System. County Road 581 connects the Township's southern population centers with the Ishpeming area. County Road 496 runs westerly from the Greenwood area to Diorite and then southwesterly to Clarksburg. County Road 482 connects County Road 581 in Tilden Township to County Road 478 northeast of the Greenwood Reservoir. County Road 478 connects the Greenwood area to County Road 601 in the Black River area of Humboldt Township. County Road 583 connects with US41 and the North Lake area and ends at the Morris Mine just inside the Township boundary.

TABLE XI-A
PRIMARY COUNTY ROADS IN ELY TOWNSHIP
TRANSPORTATION: MAP XI-1

COUNTY ROAD	MILEAGE
478	8.30
482	1.50
496	7.50
581	7.10
583	.12
TOTAL	24.52 Miles

All other roads, excluding those that are privately owned, are considered part of the County local road system. Local roads serve residential and recreational areas and connect County primary roads. There are 88.88 miles of local County roads in the Township. There are 48.67 miles of County local roads in Ely Township that are maintained seasonally by the Marquette County Road Commission. By law, Seasonal Roads are not required to be open for public travel from November 1 through April 30 of any year. Seasonal Roads are not highly-used interconnection routes and do not serve residential areas.

In Ely Township, the local County roads are identified by a letter code system beginning with the letter “C” because Ely is alphabetically the third Township in the County. Since many people have difficulty relating road location to letters, roads are known locally by names such as “Blueberry Mine”, “Mail Route” and “Perch Lake”. Although the letter system is useful for the County Road Commission and some State officials, it can be confusing to others.

Ely Township does not have a major north-south County primary road to connect the Greenwood-41Steakhouse neighborhood population centers located along US41 in the central part of the Township, with the four neighborhood population centers (Twin Pines Estates, Kielinen’s Subdivision, Green Creek and Lawer Subdivision) located approximately two miles south. Therefore, one of the Planning Commission’s long range plans, developed in accordance with the transportation goal of providing adequate circulation throughout the Township, is to adopt a policy to coordinate efforts with the Marquette County Road Commission to establish a major north-south road axis to physically and socially connect the aforementioned neighborhood population centers and to guide orderly development with the south central part of the Township where the majority of future development is expected to occur.

A US41/M28 Corridor Management Team has been studying traffic patterns and highway access along US41 and M28 in Chocolay Township to Highway M95 in Humboldt Township. The Michigan Department of Transportation, Marquette County Road Commission and the Cities and Townships along US 41 are involved. The mission is to improve communication and coordination of planning and development efforts within the US41/M28 Corridor in order to provide a safe, efficient, attractive corridor that preserves this important public investment for the benefit of the entire Marquette County Community.

RAILROADS

The railroad once played an important role in the development of Ely Township and rail lines were originally established for hauling iron ore from area mines and blast furnaces. The trains also hauled lumber, equipment and goods. Up until 1935, the railroads served as public transportation. Now only freight trains pass through the Township on a limited schedule. There are numerous abandoned railroad grades in the Township. The Township has approximately eight miles of active track, used exclusively by the Wisconsin Central Railroad.

AIR TRANSPORTATION

The Township is primarily served by Sawyer International Airport which is located approximately 26 miles southeast of Ely Township on County Road 460 in Sands Township. It is one of six

airports in the Upper Peninsula and the only UP airport that has an operating air traffic control tower. Services provided include scheduled passenger and air freight as well as charter service. Township residents sometimes opt to drive to other airports in nearby larger cities to take advantage of lower air fares. There are also two privately owned airfields in the Township. They are both located along County Road 581. Only one of these airfields is FAA certified.

DEEPWATER PORTS

The nearest deepwater port is located in Marquette Harbor in the city of Marquette where iron ore pellets are shipped out of the Upper Harbor. Coal, which is used to generate most of the electricity for the region, is off-loaded in both the Upper and Lower Harbors. Both harbors are utilized by fishing boats, tour boats and private pleasure boats. Each has a separate marina. Use of the harbor is limited by winter ice on Lake Superior and the Soo Locks which link shipping to the Lower Great Lakes.

PUBLIC TRANSPORTATION

Bus service is provided by MarqTran (Marquette County Transportation System) and is State and County subsidized. All busses are specifically equipped to accommodate handicapped riders. Door to door service is provided by MarqTran on a demand-response basis provided that reservations are made 24 hours in advance. Private taxi companies also provide door to door service as well.

ARTICLE XII: EXISTING LAND USE

EXISTING LAND USE

Land use patterns are the physical spatial expressions of human activity. To plan for a community's future needs, the manner in which the land is presently used must be understood. Proper land use planning can lead to a safe, stable community with efficient service provision, resource conservation and environmental protection.

In order to guide decisions about future land use in the Township, a generalized map of existing land use patterns has been prepared. The existing land uses are described below and displayed on the *Existing Land Use* map located in the Appendix. *Graph XII-A*, a pie graph, showing existing land use as a percent of the total Township area has also been prepared.

Residential

Residential type uses presently occupy approximately 5000 acres and comprise about 5.7% of the Township land area. The figure may be slightly high due to large tracts of land being utilized for residential purposes. The majority of residential uses are concentrated in the neighborhoods of Diorite, Greenwood, Clarksburg, Gold Mine Lake, the 41 Steakhouse area, Lower Subdivision, Green Creek, Twin Pines, Kielinen Subdivision and Perch Lake. Nearly all of the residential land use is concentrated in the north central part of the Township along US41 and in the south central part of the Township along County Roads 581, CD and PD. Additional scattered residential land use is located along most of the County primary and secondary roads.

Commercial

Commercial land use occupies less than 1% (0.3%) or approximately 270 acres of the Township and is essentially along or near US41 in the Greenwood and Clarksburg locations. Scattered commercial land uses are also sparsely located in the south central part of the Township along County Road 581.

State Forest

The prevalent existing land use in the Township is essentially State Forest lands, which comprise over 31% (28,435 acres) of the total area of the Township. The vast majority of the State Forest lands are located in the Southern half of the Township. Almost all of the public land is State land located within the Escanaba River State Forest and is managed by the Department of Natural Resources. The State Forest lands utilized essentially for timber, are open to the public for a variety of recreational uses.

Quasi-Public

There are approximately 400 acres of quasi-public land uses comprising less than 1% (0.4%) of the Total Township land area. Typical quasi-public lands include the Wawonowin Country Club as well as property owned by Marquette County and Ely Township.

Water

Water bodies cover 2.7% (2400 acres) of Ely Township. The Greenwood Reservoir (1400 acres) is the largest and most accessible to the public. Other lakes include Boston, Lowmoor, Little Perch, Big Perch, Gold Mine, Deer, Carbeneau, Duck, Johnson, Brocky, Island, Tanglefoot, Sagola (2), Gingrass, Round, Dewey, Ross, Penglase, Frenchy and Heart Lakes. Rivers, streams, floodplains and wetlands are interspersed throughout the Township as well.

Industrial/Extraction

This land use presently occupies approximately 1945 (2.2%) of the Township land area. The majority of the lands in this designation are presently being used for the extraction of sand and gravel.

Recreational

Recreational land use is another major land use within the Township comprising over 29% (26,500 acres) of the total land area within the Township. Recreational Lands are privately owned by individual property owners as well as a few corporations. A large portion of Recreational Lands are owned by private clubs (Michigan Northwoods Club, Camp Conibear, Camp Hope, Island Lake Club, AmVets, Wawonowin Golf and Country Club, etc.). Many parcels are occupied by seasonal, recreational or occasional type housing units.

Multi-Use Resource

Multi-Use Resource Land occupies approximately 2565 acres (2.8%) of the total Township land. Most of the Multi-Use Resource Land surrounds the Greenwood Reservoir and essentially provides for industrial activities such as forestry and mining as well as for low density recreational activities associated with forest land. Additional Multi-Use Resource Lands are located near Gold Mine Lake where explorations for gold by the Callahan Mining Corporation have been conducted. There are also several small areas of Multi-Use Resource Land located near US41 between Greenwood and the 41 Steakhouse.

Timber Production

Along with State Forest Land and Recreational Land use, a significant amount of the Township land area (24.5% or 22,100 acres) is being used for Timber Production. This figure does not include State Forest or Private Recreational land used for Timber Production. Lands enrolled under the Commercial Forest Act (CFA) account for over 80% of the total of Timber Production land. Properties managed as CFA lands are afforded special tax privileges and they are required to be open to the public for recreational purposes.

INFLUENCES

Land use patterns constantly change and change is determined by many factors. Some areas are unsuitable or undesirable for development because of their restrictive natural features. Cultural factors play a role in restricting or promoting development in certain areas as well. Several natural and cultural influences require additional discussion.

Slope/Terrain

The Township's terrain varies from extremely steep and severe to nearly level and gentle. Varying terrain can be aesthetically desirable in residential and some commercial areas. Development on steep slopes (ie: 10%+) can significantly increase construction costs and increase the risk of soil erosion as well.

Woodlands

A vast majority of the Township is wooded as the existing land use patterns exhibit. The woodlands contain a variety of tree species as well as many types of wildlife. To the community, they are aesthetically and economically important. These areas are also desirable locations especially for residential and recreational development. The harvesting of forest products is economically important to the community and also provides numerous employment opportunities.

Wetlands

The Township has many wetland areas located especially in the south half of the Township. This resource is valuable and should be protected from avoidable development. Wetlands have inherent physical limitations to development, and in order for most types of development to take place, significant draining and/or filling must be accomplished. This can be costly and is contrary to proper natural resource management practice. Permits from the Department of Environmental Quality are also required for development in wetland areas.

Lakes, Ponds and Streams

The Township's water bodies serve a variety of purposes and are valuable water supplies, habitats for wildlife and provide recreational opportunities for the public. Development can be costly in these areas because they are much more fragile than others and high-density development in these areas can be detrimental to water quality as well.

Despite potential problems, waterfront lands are popular for development and lakefront and riverfront living is very desirable. Development in shoreland areas should be limited and special performance standards required in order to maintain the quality of the existing water bodies and the adjacent land.

Floodplains

Since floodplains are adjacent to lakes, rivers and wetlands, they are often misused for developmental purposes simply because waterfront locations are very desirable. The high water levels experienced during high rates of surface runoff into these areas can make development extremely costly and can cause serious problems downstream.

The Township has many acres of floodplain areas. About 8950 acres, approximately 10% of the total Township area, around the Barnhardt Creek, Boston Lake (and its outlet the Carp River), the Escanaba River and the Black River have been designated as flood hazard areas by the Federal

Insurance Administration. The existing maps are insufficient to determine the exact extent of these floodplains. Therefore, more onsite determination may be necessary for insurance and planning purposes.

Transportation

The transportation system strongly influences land use patterns. Early in the township's history, developments were essentially centered around mine and industrial facilities. As railroads were built to serve these centers, other developments appeared along them. As better roads were built and automobile ownership increased, more development occurred along the roadways. With improvements to the road system, residential development and more roads were built to service residences. This type of development usually encourages sprawl patterns and strip development which creates serious servicing problems.

Land Ownership

Land ownership has a significant influence on land use patterns and can be a major determinant of availability for land use change. About 31.4% of the Township land area is State Owned Forest Land. This land is used for a variety of purposes including timber production, recreation, extraction (sand and gravel) and environmental protection. In general, the existing land use on these properties does not change much because publicly owned land is not often sold and thus does not become available for other development. The majority of State Forest Lands are located in the south half of Ely Township.

Corporations own approximately 29.4% of the Township land area which is utilized primarily for timber production, sand and gravel extraction and mineral resource reserve. This land does not often become available for other development because much of it is distant from year-round transportation routes and is rarely sold in small enough quantities for most private landholders to afford. The majority of corporately owned lands is located in the north half of Ely Township.

Private ownership accounts for most of the remaining 39.2% of the Township land area. Private properties have a variety of uses that range from timber production to commercial-type land uses. These properties are most often available for development and most likely prone to land use changes. Private ownership represents the largest percentage of land ownership in Ely Township and privately owned parcels of land are scattered throughout the 141 square miles of the Township.

Government

Government actions that promote the public health, safety and welfare also have an influence on land use patterns. All levels of government have programs and/or regulations to these ends. The Federal housing grants, State Highway programs, County Health Department regulations and local Zoning Ordinances are just a few examples of government actions that influence land use and development. The most significant impact on emerging land use patterns are the goals and policies adopted by Local government.

ARTICLE XIII: SPECIAL CONCERNS

There are some issues that have not been completely addressed in other Articles that need to be carefully examined in order to safeguard the health, safety and welfare of Township residents. Because there is potential for significant impacts on residents and the environment, it is important to address them in the Community Master Plan.

ELF COMMUNICATIONS SYSTEM ANTENNA

As part of the National Defense System, the US Navy in the mid-1980s constructed a geographically large, extremely low frequency (ELF) overhead antenna system to transmit messages to submerged submarines worldwide. Approximately 19 miles (34%) of the ELF overhead antenna was situated in the southern half of Ely Township. This system was completely shut down in September of 2004.

CONTAMINATED SITES

Sites upon which municipal, construction, or hazardous waste have been stored or disposed are potentially contaminated. Such waste contaminates soil and water and, depending on the physical characteristics of the site, the contamination can be limited to the immediate site or can spread over a larger area. There are several waste sites in and around the Township and current information about confirmed sites is sketchy and even less is known about others. Accurate determination of the size, location and contents of these sites is necessary to judge whether there are potential hazards to existing or future residents of these areas.

Many of these sites are landfills with industrial waste that has been primarily associated with mining operations. Innumerable types of materials have been deposited in these dump sites.

There are at least six sites with municipal waste within Ely Township. Three or more of these sites contain construction debris as well. Three landfill sites contain waste of unknown origin. Therefore, an investigation of waste origin could be beneficial. Most area landfills are no longer utilized for waste disposal.

Materials associated with the manufacture of explosives are stored at the Viking Explosive and Supply Company located at the Old Blueberry Mine site. Batteries, oil and gasoline are likely to be located at the former Pelli's Pre-owned Classics Junkyard in Clarksburg (now known as Harsila & Sons Auto Salvage West). There are also a handful of gas stations, garages and some private residences which may utilize underground storage tanks for petroleum products. All of the landfills, as well as the potential sites noted, should be a consideration when land use decisions are being made.

SPECIAL/UNIQUE ENVIRONMENT INVENTORY

In 1991 the Marquette County Resource Management and Development Department completed the development of a special/unique environment inventory and a land information system to map them. The categories of inventoried features include cultural/historic, recreation/scenic, natural

features/wildlife, special concerns and underwater features. The inventory can be accessed by anyone desiring such information at Marquette County's website located at www.co.marquette.mi.us. The information may be of special concern depending on the decisions or actions which it may effect and it could be an important consideration in the decision making process. This is the most recent study of this sort in the County.

WELLHEAD PROTECTION FOR PUBLIC WATER SUPPLIES

Wellhead protection is a planning and management approach for preventing contamination of public water supply wells. The objective of wellhead protection is to protect the area surrounding public water supply wells by controlling potential sources of contamination within a designated zone, namely, the Wellhead Protection Area.

ELEMENTS OF A WELLHEAD PROTECTION PROGRAM

- Description of roles and duties of State and Local governments and public water suppliers with respect to the development and implementation of wellhead protection programs
- Delineation of Wellhead Protection Areas (WHPA)
- Identification of contaminant sources within WHPA
- Management approaches for dealing with potential sources of contamination in WHPA
- Contingency plans for each public water system indicating the source of alternate water supplies
- Proper siting of new wells
- Public participation

WELLHEAD PROTECTION AREA (WHPA)

The WHPA is the surface and subsurface area surrounding a public water supply well through which contaminants, if spilled or deposited, will most likely pass and eventually reach the well or well field. This area is also known as the zone of contribution (ZOC).

THE ZONE OF INFLUENCE

The zone of influence (ZOI) is the area surrounding a pumping well within which the water table or potentiometer surfaces have been lowered due to pumping. This is also known as the core of depression.

THE ZONE OF TRANSPORT

The zone of transport (ZOT) is the area surrounding a pumping well through which a contaminant may travel and reach the well within a specific amount of time. Generally, the greater the amount of time, the larger the zone of transport.

INFORMATION SOURCES FOR WELLHEAD PROTECTION

For additional information regarding wellhead protection, refer to the following services:

- ❑ “Wellhead Protection Planning Guide for Michigan Communities” published by Michigan State University Groundwater Education in Michigan (GEM) Program, Institute of Water Research, October 1994
- ❑ Water Division of the Department of Environmental Quality (www.Michigan.gov/deq)

Also see the supplemental maps for Wellhead Protection located in the Appendix.

ARTICLE XIV: DEVELOPMENT LIMITATIONS

BACKGROUND

Planning for future land use to accommodate expected and potential growth is essential to maintain and guide a viable community. The *Background Studies Summary*, outlined in *Article II*, and discussed in detail in subsequent Articles in this document, along with the *Goals and Policies, Article III*, should be utilized by Township Officials as a continual reference when reviewing the merits of various land use proposals or when required to evaluate land use alternatives.

DEVELOPMENT LIMITATIONS

Very seldom, if ever, is a community blessed with natural physical features which would be conducive to all types of development in all areas. Ely Township is no exception. Considerable land areas within the Township are quite limited for development due to physical site constraints ranging from mild to very severe. Approximately 50% of the area of Ely Township exhibits some type of development constraint due to severe topography: rock outcrops, lakes, rivers, streams, flood plains, wetlands, marginal soils and the like.

In addition to the natural physical constraints, there are several areas, as designated on the *Special Concerns Map* located in the Appendix, which could be potentially hazardous to certain types of development and land uses. The *Special Concerns Map* locates Municipal, Construction and Industrial waste sites which were documented by the Marquette County Resource Management and Development Department. A hazardous material site, Viking Explosive and Supply, as well as Pelli's Pre-owned Classics Junkyard (now known as Harsila & Sons), located in Clarksburg, are also shown on the map.

The *Development Limitations Map* (see Appendix) is quite generalized and depicts both natural and manmade limitations to development. The restrictions or constraints to development have been mapped collectively to produce a *Basic Decision Map* (Appendix) which can be utilized as an effective tool in determining the location for future land uses and for evaluating proposed development. This map is not intended to replace a complete and thorough onsite analysis of a parcel prior to any serious consideration for its development potential. Since physical constraints may vary radically over very limited areas, caution should be exercised and opinions only, not decisions, should be based upon generalized information and data as presented in the maps.