

## CHAPTER 6

### Significant Land Use Issues

This chapter presents and discusses significant land use issues identified by the Elmira Township Planning Commission. The issues include current and potential projects which may significantly influence future development, and which have considerable impact on the Township.

#### **Aquifer Vulnerability**

##### Background:

*Otsego County is provided from a single groundwater aquifer, sometimes referred to as The Great Sand Dome. The Great Sand Dome is a large deposit of sand and gravel that was left behind when the glaciers melted. This sand deposit starts at the surface and extends all the way down to bedrock, typically 700' to 1500' below the surface. Surface water sources for drinking water are very limited and have not developed due to the availability of good quality groundwater. There are no significant deposits of clay or other less pervious material to restrict the movement of water either vertically or horizontally. Without an impervious layer of soil, between the aquifer and the ground surface, the aquifer is vulnerable to contamination from virtually any liquid or soluble material that is released on the ground. Potential sources include industrial spills, tanker spills, fertilizers, pesticides, or just about anything someone pours down a drain that leads to a septic tank. For the most part, typical septic tank effluent is not the primary concern. While these systems do discharge nitrates and chloroform into the aquifer, the volume of discharge and their dispersed locations tend to minimize their net effect on the quality of the groundwater. Additionally without impervious formations to restrict horizontal movement, contamination plumes can spread and travel great distances if not detected and addressed.<sup>1</sup>*

##### Policy Considerations/Recommendations:

*Past experiences in and around Otsego County have shown that contamination plumes can spread over long distances while remaining undetected for years. During this time it is possible for drinking water wells to be seriously impacted. Unless well water is sampled and tested, it is only the most gross contamination that will be detected. For many contaminants, concentrations must be far in excess of the safe drinking water standards before they can be detected by taste or color. Public water supplies are regularly tested, individual wells are not.<sup>2</sup>*

Due to the highly porous soils, it is recommended that wells be tested for nitrates prior to property transfer. Such testing is available through the local health department (for a fee).

#### **Village of Elmira**

##### Background:

The unincorporated Village of Elmira is geographically located in two townships and two counties, in Elmira Township within Otsego County and in Warner Township in Antrim County. The location in multiple local political jurisdictions poses some interesting challenges. The matter is further complicated by the fact that Warner Township does not have a Zoning Ordinance in effect, nor does Antrim County have county level zoning.

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<sup>1</sup> A White Paper: The Drinking Water Aquifer in Otsego County

<sup>2</sup> A White Paper: The Drinking Water Aquifer in Otsego County

Policy Considerations/Recommendations:

Efforts to establish a Downtown Development Authority cover the unincorporated Village are being explored.

## **Wind Turbine Generators**

Background:

Wind Turbine Generators are a type of development which has been gaining interest in Northern Michigan. The premier locations for capturing the most wind are typically exposed areas, on higher elevations and generally visible for long distances.

In considering where Wind Turbine Generators should be allowed, there are a multitude of factors to consider. The white papers prepared by Otsego County identify the following topics for consideration.

- Audible Noise
- Low Frequency & infra Noise
- Avian Impacts (Bird Kill)
- Visual Esthetics
- Ice Throw
- Structural Integrity (Blade Throw & Tower Collapse)
- Safety (Attractive Nuisance and Emergency Coordination)
- Wind Rights
- Re-Powering (Equipment Replacement and Upgrades)
- Ultimate Disposal
- Shadow Flicker
- Lighting
- Radio/TV Interference & Antenna Co-location
- Signage & Painting
- Power Grid Consideration and Stray Voltage
- Independent Verification of Data Presented By Applicants

Policy Considerations/Recommendations:

Since Elmira Township is covered under the Otsego County Zoning Ordinance, the Township should work closely with the County to ensure local concerns such as safety, abandonment, noise levels and shadow flicker are adequately addressed as the County prepares regulations.

## **Oil and Gas Developments**

Background:

Due to the underlying bedrock shale (see Chapter 3, Natural Resources), the Township has extensive oil and gas reserves. A number of existing wells are located in Elmira Township as shown on the Existing Land Use Maps in Chapter 4.

Policy Considerations/Recommendations:

There is some concern about properties with gas wells where ownership is transferred and being sure the Township knows who is the responsible party to contact in case of an emergency or when the well is removed. While bonds were posted with the State of Michigan to cover removal and clean-up costs, it is uncertain whether the bonds posted on the older wells will be adequate to cover the costs at the time of removal.

## **Sand and Gravel Extraction**

### Background:

Due to the glacial geology found in Elmira Township, see Figure 3-2, deposits of sand and gravel are common within the Township. State law generally allows for the excavation of such resources where found (with the provision to allow for some local regulations). Consequently the Township cannot prohibit sand and gravel excavation but can impose reasonable conditions to protect the neighboring properties and the infrastructure.

### Policy Considerations/Recommendations:

In order to limit the soil erosion and visual impacts, extraction operations should be allowed only as phased operations when the site for extraction is greater than 40 acres. Extraction operations on larger parcels should be limited to 40 acres at any given time and require on area to be reclaimed prior to expanding into another area.

In order to limit negative impacts, conditions to be considered should include Hours of Operation, Screening, Noise & Dust, Groundwater Impacts, and Road Impacts.