

the glacier. Along Lake Michigan, the geological composition is primarily lacustrine (lake related) sand and gravel. In Cross Village Township, lacustrine sand and gravel occurs typically as former beach and nearshore deposits of the glacial Great Lakes. The abandoned shorelines of glacial Lake Michigan are still visible in Cross Village Township as the terraces.

Soils and Topography

The soils of Cross Village Township are varied not unlike most of Emmet County. The Township's seven mile shoreline is characterized by sandy beaches, broader in the south half and narrower to the north. Steep slopes rise up from the beaches with prominent high ridges or escarpments which offer panoramic views over the broad expanse of Lake Michigan. State designated critical dunes are found along the northern half of the shoreline and extend landward for a significant distance in a rolling hilly landform. The Township also contains poorly drained soils, along Wycamp Creek and Wycamp Lake, with the central areas being nearly level and well drained. Figure 3-2 shows a combination of topography and hydric (wetland) soils for the township. Areas identified with slopes greater than 18% are identified on this map.

Septic Limitations

Figure 3-3 identifies areas with soil limitations for septic systems. The limitations identified are either related to slope, hydric soils or both. These limitations do not preclude the development of specific sites. The developer should realize, however, that construction on some soils may be more costly in time and money. A more detailed analysis of the soils by the District Health Department will determine suitability for siting a septic system. Health Department approval is required by State law.

Water Resources

One of the most valuable natural resources of Cross Village Township is water. Both groundwater and surface water are vital resources within Cross Village Township. Because there is no central water distribution system, residents must rely upon individual wells for drinking water. The vulnerability of drinking water aquifers to surface contamination is high in the Township due to the highly permeable soils. Surface waters in lakes and creeks of the Township are an important resource for scenic, recreational and groundwater recharge amenities. It is therefore important that water resources be protected and managed in a manner that would ensure their quality.

Water is an integral feature of any recreation economy. Cross Village Township has some seven (7) miles of Lake Michigan frontage, roughly 11% of the county's total. While Lake Michigan is the most dominant water resource, Wycamp Lake is a significant in-land water body that extends eastward into Bliss Township. Whether for wildlife management purpose or for outdoor recreation activities, the Township's water resources are vital recreational resources. The table 3-2 which follows inventories the significant water resources of Cross Village Township.

