

## NATURAL AND ENVIRONMENTAL RESOURCES INVENTORY

The natural and environmental resources inventory is intended to provide the basic information necessary to understand and evaluate the natural, and in some instances, man-made features<sup>9</sup> of the environment in the Itasca planning area in terms of the opportunities and constraints it places on urban development. The opportunities provided by the natural environment result from the natural process and cycles which are necessary to man's survival.<sup>10</sup> Constraints, on the other hand, result from the vulnerability of the natural environment in regard to certain types of urban development. In this regard, the natural and environmental resources inventory is an important element of the comprehensive plan for the Itasca planning area as it attempts to aid in maximizing the opportunities while minimizing the potential problems which could result from the constraints.

For this reason, this chapter will inventory the natural and environmental resources found in the Itasca planning area, and will describe the constraints and opportunities associated with each and will identify those areas where such resources are located. From this, the inventory information can be synthesized into urban suitability classes which determine the suitability of different types of land uses for each portion of the planning area from an environmental point of view. Finally, this chapter will discuss the opportunities which the use of this information makes possible.

### Environmental And Natural Resources In The Itasca Planning Area

An established policy of the comprehensive plan for the Village of Itasca is that urban development should be limited to a level that does not exceed the capabilities and requirements of a healthy, natural environment, with the conservation of the Village's natural resources as the principal determinant of the nature and extent of urban development. To provide the information necessary to implement this policy, this section inventories the natural and environmental resources of the Itasca planning area. Nine major environmental aspects of the planning area are inventoried: meteorology, geology, physiography, hydrology, vegetation, wildlife, noise levels, soils, and aesthetics.

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<sup>9</sup> The natural and environmental inventory deals primarily with natural features of the earth such as soil, water and air. However, there are also certain man-made features of the environment such as noise levels and aesthetics which place constraints on urban development.

<sup>10</sup> The natural environment is composed of various elements such as rocks, soil, water, trees and plants, climate, and living organisms. These elements form, in various combinations, systems which in turn carry out natural processes in cycles. Examples of these cycles are the hydrologic cycle which is the movement of water through the environment in its various forms; chemical cycles which are composed of carbon, nitrogen, and oxygen paths through the environment; and nutrient cycles which are food chains in the environment. Natural processes that are so carried out have significant benefits for man.

## Meteorological Factors

Meteorology is concerned with the atmosphere and its phenomena, particularly with weather. Climatic conditions such as temperature patterns, precipitation rates, solar intensities, prevailing wind directions and speeds, and identification of areas with severe weather turbulence are important factors in regional growth and development characteristics, and are also important in local site plan considerations. While the Itasca planning area is a geographical area too small to base large-scale planning and land use decisions on climatic differences, such information can be used on an individual site design basis. The proper setting of a home or other structure in regard to the prevailing wind direction, orientation of the sun and other climatic factors can reduce energy consumption. Additionally, wind speed and direction, rainfall, and atmospheric conditions also affect air quality and the movement of air pollutants.

Wind direction and velocity are two of the most important climatic elements in planning because of their direct influence upon human comfort and dispersal of air pollutants. The most ideal ventilation system would be to rely upon local winds that draw relatively clean and cooler air from the countryside into urban centers. Fortunately, the prevailing winds from the west and southwest in Du Page County perform this function, greatly dispersing the air pollutants in the atmosphere. However, the ultimate solution for the protection of air resources is to arrest the emittance of pollutants into the atmosphere at their source.

In regard to Itasca, the most notable sources of air pollution are motor vehicle and aircraft emissions and construction activities. While source control of these air pollution sources is beyond the scope of this comprehensive planning program for Itasca, there are certain planning actions which can help to significantly reduce the amount and/or effect of such pollutants.

## Geological Features

Geology is the science that deals with the history of the earth. The geologic history of Du Page County and the Itasca planning area is of great significance in helping to understand the natural environment of the area. This is so because it is an area's geologic history which is the major determinant of patterns of occurrence of mineral deposits, various soil types, vegetation, lakes and streams, underground reservoirs and recharge areas, and surface topography. These geologic conditions, in turn, have significant implications for urban development and land use, and must be taken into consideration in the comprehensive planning program.

Mineral Resources. Mineral resources in Du Page County are limited primarily to sand and gravel, with some dolomite limestone bedrock deposits. These resources are primarily used for construction purposes. Such mineral resource deposits must be identified in order to prevent development upon them until it has been determined whether or not they are suitable for mining. In the Itasca planning area, mineral resource deposits are not common. There are only limited sand and gravel deposits which are not large enough to mine. As a result, mineral resources present no constraints to development in Itasca.

Geologic Environments With Limited Bearing Capacity For Urban Development. A major factor which must be considered in determining the suitability of urban