

## ENVIRONMENTAL CHARACTERISTICS

The review of the available environmental characteristics information and recent data from the U.S. Department of Agriculture and the Federal Emergency Management Agency will be evaluated and used to address flood plain areas and soil data pertaining to the undeveloped areas within the planning area of Itasca. Also reviewed is recent information pertaining to the noise exposure areas generated by aviation activity at O'Hare International Airport.

The natural and environmental resources inventory (Chapter 4) included in the 1977 General Development Plan Report "Part One: Background Studies for Planning" covers an indepth study of the subject matter.

The purpose of the natural and environmental resources inventory as included in the above report was to provide the basic information necessary to understand and evaluate the natural and, in some instances, man-made features of the environment in the Itasca planning area in terms of the opportunities and constraints they place on urban development.

The natural and environmental inventory deals primarily with natural features of the earth such as soil, water and air.

In the above report nine major environmental aspects of the planning area were inventoried: meteorology, geology, physiography, hydrology, vegetation, wildlife, noise levels, soils and aesthetics.

Reference to Chapter 4 of this report is encouraged because the basic data are invaluable in the formation of the comprehensive plan or a comprehensive amendment to a plan.

### Surficial Drainage and Flooding

Like most natural features, drainage systems evolve through time, constantly seeking greater efficiency. As a result, the natural drainage systems which exist today represent the highest degree of stability attainable thus far. However, under conditions of heavy rain storms or spring thaws, or a combination of the two, stream channels are often-times insufficient to carry all of the runoff that is generated. Of necessity, some water overflows the banks of the channel and spreads across the adjacent land, known as flood plain. The natural function of the flood plain is to store and transport water downstream that cannot be contained within the stream channel.

Throughout the Itasca planning area, the streams, marshes, bogs and flood plains have been interfered with in numerous areas, contributing to severe flooding which have occurred in the past. In addition, the continued urbanization in the planning area has also contributed to increased stormwater runoff into the creeks and streams increasing the volume of water the drainage systems must carry and the size of the flood prone area.

The entire Itasca planning area is drained by Salt Creek and its tributaries, Spring Brook, Meacham Creek, and the Devon Avenue tributary which flows through Hamilton Lakes.

The Salt Creek flood plain is located along the entire eastern border of the planning area, from Devon Avenue all the way south to the Milwaukee Road railroad tracks north of Irving Park Road. The west side of the flood plain in this stretch lies in Itasca; the east side in Wood Dale. South of the railroad tracks the entire flood plain is in Wood Dale.

In Itasca the Salt Creek flood plain occupies land that is, for the most part, undeveloped (owned by Commonwealth Edison) or open space (Salt Creek Country Club). There is some industrial development, however, that is affected, particularly along Industrial Drive east of Prospect Avenue. Future development along Salt Creek should be carefully planned and engineered to avoid any significant increase in the height or velocity of the flood waters on downstream properties. A flood retention reservoir upstream in Cook County will provide relief from flooding for much of this land in Itasca.

Spring Brook flows from west to east through the Itasca planning area--from Medinah Road all the way to Salt Creek. On its way it passes through three golf courses, and the Village nature preserve and within half a block of the Village Hall at Irving Park Road and Walnut Street. West of I-290 the flood plain is located within Medinah and Nordic Hills Country Clubs and property owned by the Itasca Park District which will be kept as open space. From there to the Village Hall it passes through a relatively low density residential area, Spring Brook Nature Preserve, and the rear end of commercial lots fronting on Irving Park Road. Beyond the Village Hall Spring Brook and its flood plain cross under the railroad tracks onto Itasca Country Club, involving some residential development in the process. From there the stream flows east across Prospect Avenue to Salt Creek on vacant land owned by Commonwealth Edison. Here the flood plain lies on the vacant land and on industrial land along Industrial Drive.

Any additional flood retention capability upstream on Spring Brook would serve to alleviate flooding throughout Itasca in both residential and industrial areas and therefore would be most desirable.

Meacham Creek runs south through the far west side of the planning area. It flows southeast past Medinah Road into unincorporated Medinah and then south across Irving Park Road into Medinah Country Club where it joins Spring Brook at Lake Kadajah. Additional storm water storage capability north of unincorporated Medinah would alleviate flooding problems experienced in this low density residential area.

The Devon Avenue tributary has been incorporated into an elaborate storm water retention/water recycling system in the Hamilton Lakes regional office center development. This should serve to alleviate flooding downstream, as well as to help replenish the groundwater supply in northeastern Itasca.

## Soils

In the Background Studies report soil interpretations were provided by the U.S. Department of Agriculture Soil Conservation Service (SCS). Factors considered in the evaluation of soils for urbanization were: wetness, flood hazard, slope, depth to bedrock, depth of water table, shrink-swell potential, shear strength, compressibility, and susceptibility to erosion and frost heave. The evaluation places each specific soil type in one of four categories, describing their limitations to urban development. These categories were: slight, moderate, severe and very severe. At least 90 percent of the vacant, undeveloped and low intensity lands in the Itasca planning area was designated as having severe or very severe limitations for development.

Since this previous report was prepared, the SCS has issued in 1979 an updated soil survey which includes the Itasca planning area. This report is titled: "Soil Survey of DuPage and Part of Cook Counties, Illinois." In an effort to differentiate between areas which have normal limitations for development, such as are found everywhere in DuPage County, and areas which have limitations to such a degree that normal development might be precluded, the soils in the Itasca planning area were reevaluated in the following manner.

Three soil characteristics were examined: flooding, both frequency and duration, depth to water table and duration, and potential frost action. The SCS rates the frequency of flooding as none, occasional, common and frequent. The duration of flooding is described as none, brief and long. A soil type which experiences flooding frequently and for long periods of time has more problems to overcome for development than one which floods only occasionally and then only briefly or one which floods not at all.

Depth to water table is described as "zero to two feet, one to two feet, three to six feet, greater than six feet," etc. Length of time is described as February to June, November to May, etc. Soils in which the depth to water table is least and which condition may occur for the longest period of time have more problems to overcome than others where the depth to water table is always greater than six feet.

Potential frost action is described as "high, moderate or low". Soils which are subject to high frost action present more problems for urban development than soils with low frost action.

The following soil types have frequent flooding for long periods of time, have a water table at the surface of the ground or within one foot of the surface for six months of the year or longer, and have high potential frost action:

Muskego/Houghton mucks	(903)
Muskego/Peotone soils, ponded	(904)
Peotone silty clay loam, wet	(1330)
Faxon silty clay loam, wet	(1516)
Muskego/Houghton mucks, wet	(1903)

The following soil types are similar to the above group except that they either flood only occasionally for long periods of time or they flood frequently for brief periods of time:

Gilford fine sandy loam	(201)
Peotone silty clay loam	(330)

The following soil types flood frequently for brief periods of time or occasionally for long periods of time, have water tables within two feet of the surface but for only four or five months of the year and have moderate or high potential frost action:

Sawmill silty clay loam	(107)
Bryce silty clay	(235)
Romeo silt loam	(316)
Urban land-Frankfort-Bryce complex	(925B)
Sawmill silty clay loam, wet	(1107)
Urban land-Sawmill complex	(2107)

Finally, the following soils flood occasionally for brief periods of time, have water tables within two feet or less of the ground surface for three to five months a year and have high potential frost action:

Harpster silty clay loam	(67)
Milford silty clay loam	(69)
Selma loam	(12J)
Drummer silty clay loam	(152)
Thorp silt loam	(206)
Ashkum silty clay loam	(232)
Will silty clay loam	(329)
Urban land-Markham-Ashkum complex	(923B)
Urban land-Milford-Martinton complex	(924)
Urban land-Drummer-Barrington complex	(926B)
Urban land-Hoopeston-Selma complex	

Four out of the five soils in the first group are present in the Itasca planning area. These are: 903, 904, 1330 and 1903. Usually these soils are found in isolated spots of less than ten acres. Two areas which are larger than this are found in Campbell's Slough Forest Preserve and in Meacham Creek Park. In forest preserve are found large areas of 1330-Peotone silty clay loam, wet, 903-Muskego/Houghton muck, and 904-Muskego/Peotone soils, ponded. In the area adjacent to Meacham Creek Park is a large area of 1903-Muskego/Houghton mucks, wet. Smaller, isolated areas of these soils include the stormwater detention area at the northeast corner of Rohlwing Road/Thorndale Avenue in the industrial park and the stormwater detention area south of Bryn Mawr Avenue at Maple Avenue. All of these solutions - incorporation in forest preserve, local open space, and stormwater detention basins - are appropriate land use decisions for these types of soils.

In the second soil grouping, Itasca has smaller pockets of the Peotone silty clay loam soils (330). One of these is located on the south side of Thorndale Avenue in the unincorporated area just north of the Arlingdale subdivision. The same solutions are appropriate for this group as for

the first group of soils - incorporated into open space areas and storm water detention basins.

In the third soil group, Itasca has extensive areas of the 107 and 2107 types-Sawmill and Urban land-Sawmill Soils. These are flood plain soils, located along Salt Creek, Spring Brook, and Meacham Creek.

In the last group there are large areas of 152 and 232-Drummer and Ashkum silty clay loams. These can also be flood plain soils, such as along Meacham Creek north of Irving Park Road and along the Devon Avenue tributary in Hamilton Lakes. They are also located in natural drainage swales throughout the planning area. The developed residential areas of Itasca and the Itasca Ranchettes are identified as the 923B soil type - Urban land, Markham/Ashkum complex. Good drainage-storm sewers, ditches, swales and the like-is very important in these areas, particularly the Ashkum soils.

#### Airport Noise Corridors

Since the "Background Studies" report was issued in 1977, new information has been made available by the City of Chicago regarding the noise impacts made on areas surrounding O'Hare International Airport by the operation of jet aircraft.

The noise measure used to describe the noise impacts is called the "day-night average sound level" or Ldn. It is a measure of the average 24-hour sound energy which occurs at any one spot over a period of a year.

Using this measure the City of Chicago, as part of its airport master plan process, developed a series of maps showing the "footprint" of the Ldn measure around the airport under various conditions. One of these maps, prepared for Chicago by a consultant, is called "1985 'With-Project' O'Hare Noise Contours". It was prepared in 1984, projecting what the noise impacts would be from the airport in 1985. The map shows contour lines for four different noise levels - 65 Ldn, 70 Ldn, 75 Ldn and 80 Ldn. The higher the number, the higher the noise levels in decibels.

The federal government has established a system which compares different noise levels with various types of land uses. This system rates the compatibility of land use types with the different noise levels. Below 65 Ldn all land use types are considered normally compatible with the noise levels. Over 65 Ldn, various uses become incompatible with higher noise levels. Over 75 Ldn, according to the rating system, there should be no residential uses. Or, to put it another way, where there is residential development there should be no noise levels due to airport operations of 75 Ldn or higher. There should be noise levels of 65 to 75 Ldn only if all the residential structures are soundproofed to an interior noise level of 45 decibels.

According to the 1985 O'Hare Noise Contour map, everything in the Itasca planning area, except for the far southwestern corner of Medinah Country Club is within the 65 Ldn contour line. The 70 Ldn contour line follows