

## ENVIRONMENTAL CHARACTERISTICS

Land is not a homogenous commodity. Each parcel is characterized by unique combinations of physical and natural elements, such as air, water, geology, topography, soil, flora, and fauna. When the design and construction of municipalities disregard the physical limitations and capabilities of the land to adequately accommodate specific land use types, the results are often environmentally, socially, and economically damaging.<sup>44</sup>

### Superficial Drainage and Flooding<sup>45</sup>

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 oftentimes 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

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<sup>44</sup>Refer to the General Development Plan Report, Chapter 4, Pages 56-82 inclusive, 1974, prepared by DuPage County Regional Planning Commission. (See Appendix II.)

<sup>45</sup>Itasca General Development Plan update, prepared by DuPage County Regional Planning Commission, September, 1986, revised March, 1987, pages 45 and 46. (See Appendix I.)

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, the Village nature preserve, and near 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 relatively low density residential area, Spring Brook Nature Preserve, and the south 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.

### **LOWER SALT CREEK WATERSHED**

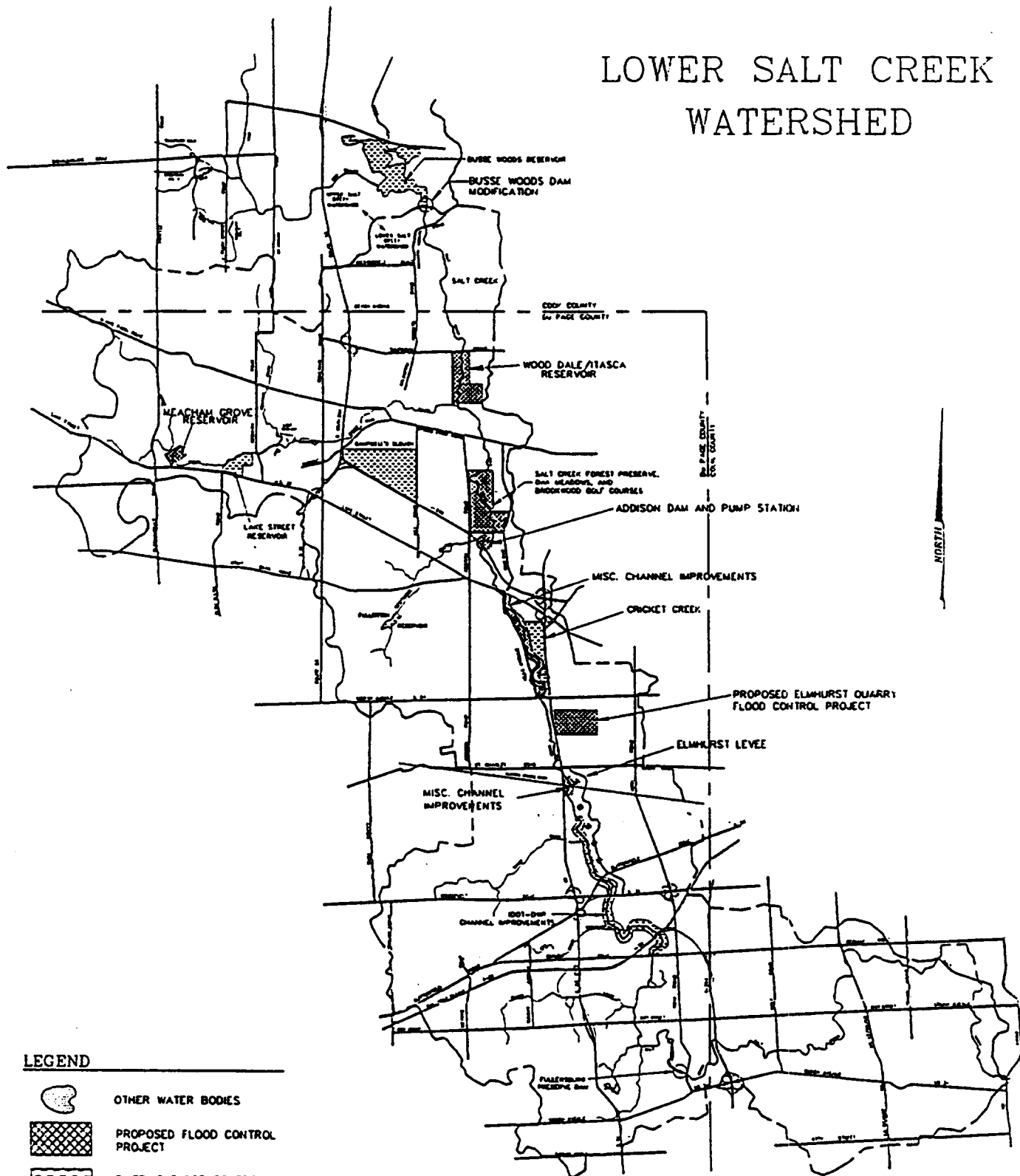
DuPage County's plans to build the Wood Dale/Itasca Reservoir in the Lower Salt Creek Watershed area is one of several improvements to relieve stormwater (flooding) problems along its course.

The County reservoir project, estimated at 53 million dollars is the key to the County's Salt Creek Watershed project, a massive plan to relieve flooding along communities traditionally hardest hit by flood-prone Salt Creek. The Wood Dale/Itasca Reservoir project is to be completed in 1997 and will provide relief for Wood Dale, Itasca, Addison, and other communities.

The project is generally located between Thorndale Avenue on the north, Spring Brook-Salt Creek on the south, Prospect Avenue on the west, and Mittel Avenue on the east.

The site will include 325 acre feet of gravity water storage and 1,450 acre feet of pumped water storage along the mainstream of Salt Creek near Wood Dale Phase I. The construction of 93 acre feet will be built by IDOT.

# LOWER SALT CREEK WATERSHED



**LEGEND**

- OTHER WATER BODIES
- PROPOSED FLOOD CONTROL PROJECT
- EXISTING FLOOD CONTROL PROJECT
- CREEK
- PUMP STATION
- WATERSHED BOUNDARY
- COUNTY LINE



 STORMWATER MANAGEMENT DIVISION ENVIRONMENTAL CONCERNS DEPARTMENT 421 NORTH COUNTY FARM ROAD WEAVER, IL 60187 (708)882-7130	PROJECT: SALT CREEK		
	PROJECT 7	SCALE:	DRAWN BY
	PROJECT ENGINEER:	DATE: 3/25/91	REVISION:
	COUNTY		

## AIRPORT NOISE CORRIDORS<sup>46</sup>

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 buildings are soundproofed to an interior noise level of 45 decibels.

All of the residential development in the Village, except for the area south of Spring Brook Nature Preserve and west of Washington School, is being subjected to potentially incompatible noise levels of 70 Ldn and higher. The remainder of the planning area, except for the southwest corner of Medinah County Club, is being exposed to potentially incompatible noise levels of from 65 to 70 Ldn.

These noise levels and the federal land use compatibility rating system linked with them should be of great concern to the Village officials and residents for the following reasons.

The City of Chicago has projected increased aviation activity at O'Hare International Airport in the next ten years and has designed airport expansion plans to accommodate

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<sup>46</sup>Itasca General Development Plan update, prepared by DuPage County Regional Planning Commission, September, 1986, revised March, 1987, pages 45 and 46. (See Appendix I.)

all this increased activity and more. Increased future aviation activity at O'Hare has been shown, according to Chicago's own data, to produce an increase in noise levels on communities around the airport. The total "noise footprint" will be larger in the future, and the noise levels experienced at any particular location will be higher, assuming a continuation of present aircraft operational policies.

Under present trends the aviation noise levels over Itasca will increase in the future. The 70 Ldn and higher noise levels will blanket even more of the Village in ten years than they do now.

The City of Chicago undertook a study of airport noise and land use compatibility around O'Hare Airport - FAR Part 150 Noise Compatibility Planning Study (revised June, 1989). This study is to project future noise levels around the airport, examine aircraft operational changes which can reduce noise levels and evaluate land use changes which can produce a better "match" between noise levels and land uses.

In late 1986, the City of Chicago began a Part 150 Noise Compatibility Planning Study for Chicago O'Hare International Airport. The City of Chicago is required to complete the study as part of the approval of the Final Environmental Impact Statement for O'Hare Master Plan. Part 150 is the abbreviated name for the Federal Aviation Regulation (FAR) Part 150 Noise Compatibility Planning process. The purpose of a Part 150 Noise Study is to develop a balanced and cost-effective program to minimize noise impacts in the communities surrounding the airport.

The Part 150 Noise Study is an important step in identifying methods to reduce the noise impacts as a result of aircraft operations at O'Hare International Airport. The development of Noise Exposure Maps represents the first major product of the study. The Noise Exposure Maps identify the existing and, in accordance with FAR Part 150, a forecast of noise conditions five years into the future. The Noise Exposure Map Report quantifies the noise conditions five years into the future.

The Noise Exposure Map Report quantifies the noise impacts in terms of the number of people and housing units adversely impacted by aircraft noise, as defined by FAR Part 150.

A second part of the study, The Noise Compatibility Program, focuses on two general methods of reducing the noise impacts: airport/aircraft operational actions and land use control actions.

Following are population and housing impacts, respectively, for the existing noise exposure for Itasca.

The Existing Population Impact Table following indicates a population for Itasca of 6,660. The source of this information is the 1980 census. The official population in 1980 was 7,129. The difference between what is indicated and actual count amounts to 469. This apparently involves areas not affected by LDN.

This would also apply to the housing unit counts.

The above noted Noise Exposure Maps have been updated (1994) including existing (1993) conditions and also forecast for five (5) years to 1998.

The existing Noise Exposure Contours (65 DNL) include the eastern section of the Village. This area also includes the Noise Sensitive Land Use areas.

The updated 5-year Forecast (1998) Noise Exposure Contour Map removes the (65 DNL) contour from the Village.

**NOISE IMPACTS - 1990 CENSUS DATA  
5-YEAR FORECAST NOISE EXPOSURE CONTOUR COMPARISON**

Community	1993 ORIGINAL FORECAST					1998 UPDATED FORECAST				
	Population (DNL)					Population (DNL)				
	65-70	70-75	75-80	80 +	TOTAL	65-70	70-75	75-80	80 +	TOTAL
Itasca	4,510	2,400	0	0	6,910	160		0	0	160

The above table lists population, housing and noise sensitive facility impacts affected by the original and 5-year forecast noise contours. In comparison to the existing noise, impacts are expected to continue to decrease.

**NOISE IMPACTS - 1990 CENSUS DATA  
1998 UPDATED FORECAST NOISE CONTOUR  
WITH NOISE COMPATIBILITY PLAN**

Community	Population (DNL)					Housing Units (DNL)				
	65-70	70-75	75-80	80 +	TOTAL	65-70	70-75	75-80	80 +	TOTAL
Itasca	160	0	0	0	160	60	0	0	0	60

The above table presents estimated population, housing units and noise sensitive facility impacts associated with implementation of the recommended noise abatement operational actions.

Compared with the above table, "1993 Original Forecast," there is depicted a noticeable reduction in the 65-70 (DNL) contour.

EXISTING POPULATION IMPACTS

<u>COMMUNITY</u>	<u>POPULATION</u>				<u>TOTAL</u>
	<u>65-70 LDN</u>	<u>70-75 LDN</u>	<u>75-80 LDN</u>	<u>80 LDN AND GREATER</u>	
ITASCA	2,700	3,800	160	0	6,660 <sup>47</sup>

SOURCE: 1980 Census Information  
Landrum & Brown, Consultants

EXISTING HOUSING AND NOISE SENSITIVE FACILITY IMPACTS

<u>COMMUNITY</u>	<u>HOUSING UNITS</u>				<u>TOTAL</u>
	<u>65-70 LDN</u>	<u>70-75 LDN</u>	<u>75-80 LDN</u>	<u>80 LDN AND GREATER</u>	
ITASCA	940	1,180	50	0	2,170

SOURCE: 1980 Census, Municipal Comprehensive Plans  
Revised 6/9/89

FUTURE (1993) POPULATION IMPACTS

<u>COMMUNITY</u>	<u>POPULATION</u>				<u>TOTAL</u>
	<u>65-70 LDN</u>	<u>70-75 LDN</u>	<u>75-80 LDN</u>	<u>80 LDN AND GREATER</u>	
ITASCA	3,990	2,170	0	0	6,160

NOTE: The FAA's Integrated Noise Model Version 3.9 was used to develop the noise exposure contours. Population based on the 1980 census.

FUTURE (1993) HOUSING AND NOISE SENSITIVE FACILITY IMPACTS

<u>COMMUNITY</u>	<u>HOUSING UNITS</u>				<u>TOTAL</u>
	<u>65-70 LDN</u>	<u>70-75 LDN</u>	<u>75-80 LDN</u>	<u>80 LDN AND GREATER</u>	
ITASCA	1,360	640	0	0	2,000

SOURCE: 1980 Census, Municipal Comprehensive Plans  
Aviation Consultant, Landrum & Brown -Revised 6/9/89

<sup>47</sup>See previous page.



The Noise Sensitive Facility Impacts affects schools, hospitals, nursing homes, libraries, historic sites and churches.







The population impacted is expected to decrease 17 percent over existing levels. The greatest reduction occurs in the 70-75 Ldn range, where 33 percent fewer people will be impacted. The 80 Ldn and greater impact areas are unchanged.

The Future (1993) Housing and Noise Facility Impacts above identify the number of noise sensitive facilities impacted as a result of the projected 1993 noise exposure.








Exhibit: 1

# Updated Existing (1993) Noise Exposure Contour

## Legend:

-  Study Area
-  County Line
-  Noise Sensitive Land Use
-  Noise Contour
-  Community
-  Airport

### NOISE SENSITIVE FACILITIES

-  Hospital
-  Nursing Home
-  Library
-  School
-  Church
-  Historic Site
-  Soundproofed School

Study Area: Refers to the general area which was affected by DNL65 and greater sound levels.



# Part 150 Noise Compatibility Study



## Chicago O'Hare International Airport

City of Chicago  
Richard M. Daley  
Mayor

## Department of Aviation

David R. Mosena  
Commissioner of Aviation



Aviation Consultants  
**Landrum & Brown**

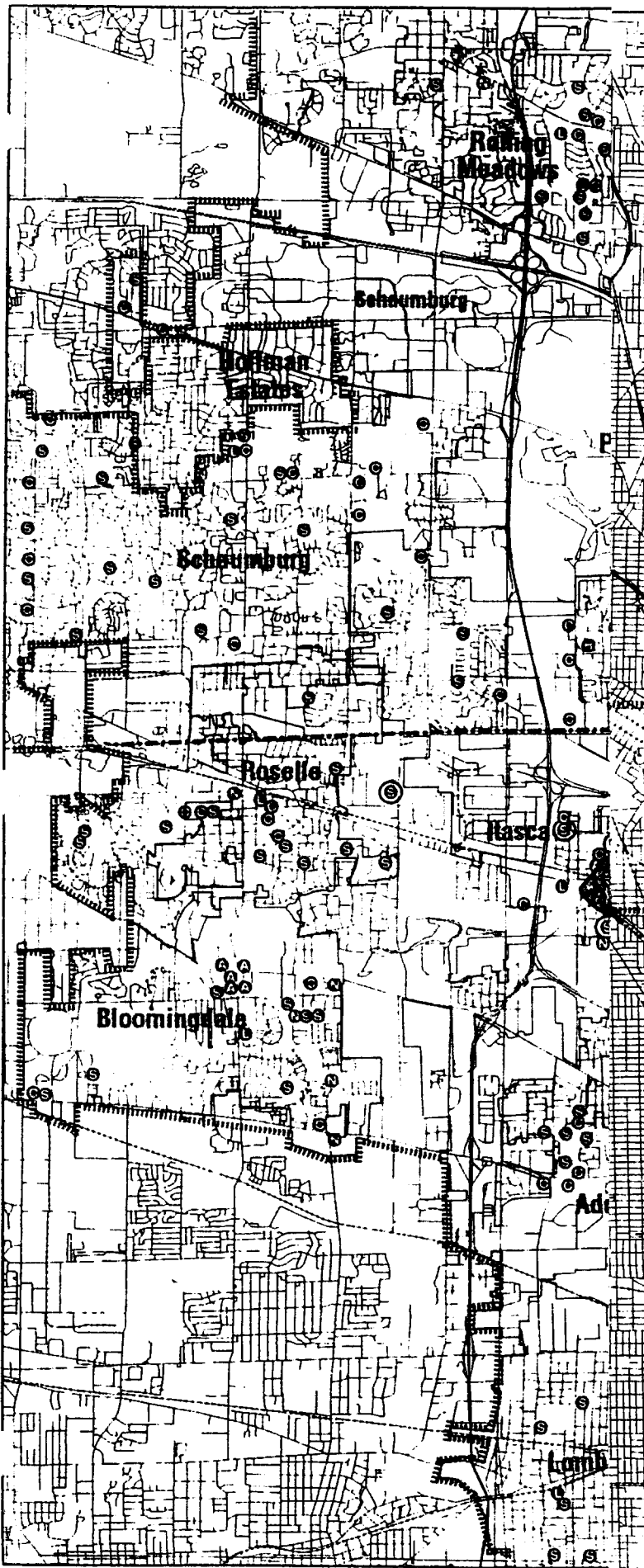















Exhibit: 3

# Updated 5-Year Forecast (1998) Noise Exposure Contour

## Legend:

-  Study Area
-  County Line
-  Noise Sensitive Land Use
-  Noise Contour
-  Community
-  Airport

## NOISE SENSITIVE FACILITIES

-  Hospital
-  Nursing Home
-  Library
-  School
-  Church
-  Historic Site
-  Soundproofed School

Study Area: Refers to the general area which was affected by DNL65 and greater sound levels.



# Part 150 Noise Compatibility Study



## Chicago O'Hare International Airport

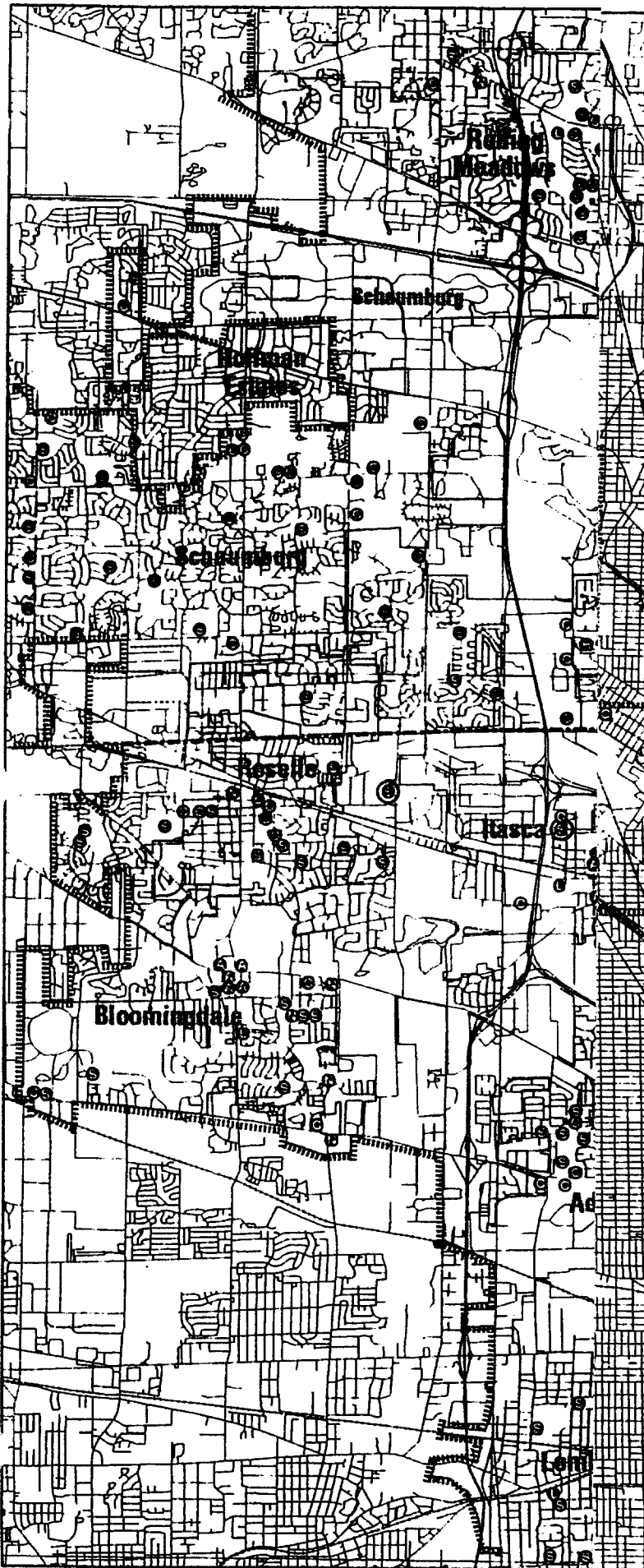
City of Chicago  
Richard M. Daley  
Mayor

## Department of Aviation

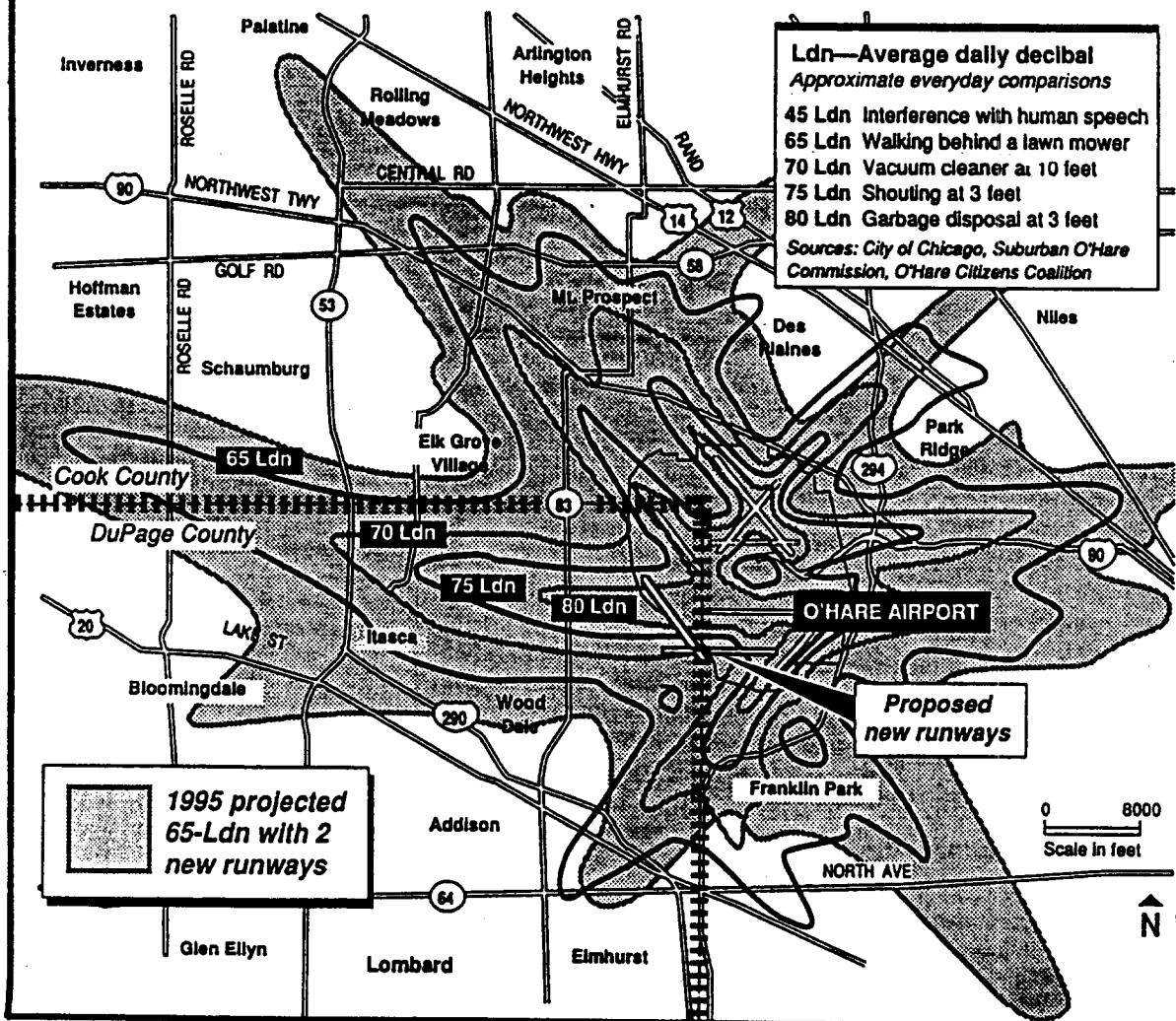
David R. Mosena  
Commissioner of Aviation



Aviation Consultants  
**Landrum & Brown**



# How far will O'Hare jet noise reach into DuPage?



SOURCE: Daily Herald  
 September 8, 1991

## SOILS<sup>48</sup>

In the General Development Plan Report Part One: 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.

In 1979 an updated soil survey by the Soil Conservation Service 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. (See Appendix I.)

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<sup>48</sup>Itasca General Development Plan Update, Revised March, 1987, DuPage County Regional Planning Commission. (See Appendix I.)

## **BUILDABLE AREAS**

In the General Development Plan Report Part One: Background Studies for Planning for Itasca undated, but apparently prepared by the DuPage County Planning Commission between 1974 and 1976.

On Plate 5, page 71, in the above report, it indicates the soil suitability for urban development in the Itasca planning area. This plate is a synthesis of soil suitability for urbanization and wetness hazard interpretations, indicating the combined degree of limitations placed on a site. As mentioned previously, the SCS also has soil interpretations for such uses of the land as streets, recreational uses, woodland and wildlife areas, and agriculture. Soils found to be unsuitable for urban development should be evaluated for their potential use as open space or agricultural areas. In this manner, urban development can be directed to areas that have the soil capability to support it; and areas unsuitable for general urban development can then be devoted to other needed open space and agricultural uses which do not violate the limitations which the soil types place on it.

A large percentage of the corporate area in 1974 was classified as having severe limitations for urbanization, such as the area north of proposed Elgin O'Hare Expressway, but today, this is the location of the Regional Office Center District and other areas which since have been developed or are in the process of being developed.

As to marsh and wetland areas, they are generally located between Bryn Mawr Avenue on the north, North Street on the south, Maple Avenue on the east, Oak Street extended on the west. Presently, there is a water area in this location surrounded by public and quasi-public open space.

On the General Development Plan adopted in October, 1977, this area is shown as commented on above and there will be no development in this area. Virtually all of the remaining 17 percent of the total developed area (agricultural/vacant) is buildable except in some smaller areas where there may be soil restraints.