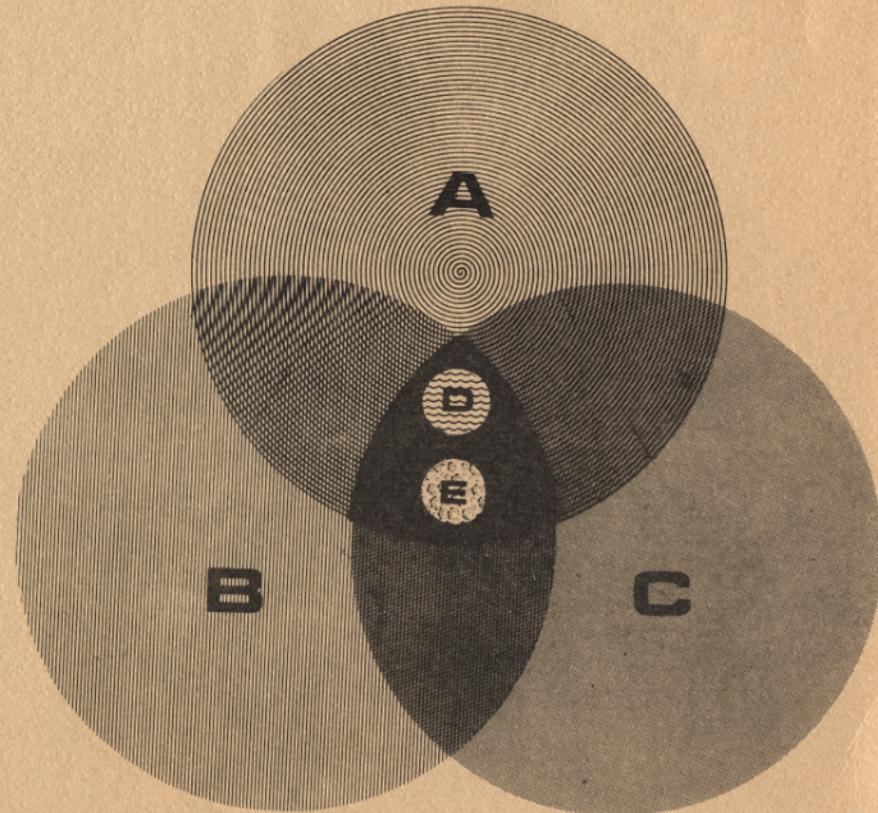


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NORTHEASTERN ILLINOIS PLANNING COMMISSION

PRELIMINARY

**population and employment
forecasts**
policies and summary of findings



an element of the comprehensive general plan

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**population and employment
forecasts**
policies and summary of findings

an element of the comprehensive general plan

The preparation of this report has been financed in part through grants from the Ill. Department of Transportation; Urban Mass Transportation Administration under the Urban Mass Transportation Act of 1964, as amended; and the Department of Housing and Urban Development, under provisions of Section 701 of the Housing Act of 1954, as amended.

To Mayors, Presidents and Citizens
of Northeastern Illinois Communities:

Nine and a quarter million people are forecasted to live in northeastern Illinois in the year 2000. This is an increase of 2 1/4 million people from the 1970 census count of 6,979,000.

Growth will be slower than was thought five years ago. In 1968, the Northeastern Illinois Planning Commission (NIPC) forecasted 10.2 million people would live in 1995 in the counties of Cook, DuPage, Kane, Lake, McHenry and Will. Since then, fertility rates have declined dramatically in the region as throughout America. Migration has not increased the region's population significantly since the 1950s. The new forecast anticipates one million fewer people than the forecast of five years ago. But even the new forecast represents a challenge of growth.

Where will two million additional people live? Where will they work? What provisions must be made for them from public and private funds--for highways, mass transit, sewers, parks, schools, hospitals, drinking water, electricity, city gas, telephones? Overbuilding or underbuilding for these needs would waste scarce tax money. Land for public needs should be bought before development pressures raise prices. All agencies of government must agree

to use the same assumptions about future growth, and where in the region it will occur.

Of the region's total land area, 65 percent is still vacant or used for agriculture. Traditionally, population has tended to cluster near existing public services. Even today, most of the population lives within six minutes drive or bus ride from the nearest commuter rail or rapid transit depot. This organized distribution of population has been one of the region's important assets, since it maximizes access to jobs, shopping, educational opportunities, and cultural events.

An unchecked trend toward more dispersion of residences, and more highways, would surely lead to population densities too low to support public transportation, however subsidized. Today, 66 percent of the labor force drives to work. Travel time has been increasing for automobile commuters. Population dispersion would make this problem worse, at a time of national gasoline shortages. Dispersed growth would also cost more tax dollars for sewers, schools, and every kind of public service.

The longer travel distances, and larger land

areas used, would add to air and water pollution. The centers of cities and established suburbs would deteriorate, as retail trade moves to new shopping centers.

Not all the land in the region is suitable for real estate development, aside from the problem of population dispersion:

-- Ten percent of the land is subject to flooding from nearby streams. The vacant flood plains of the region constitute its natural flood reservoirs. If developed, these reservoirs must be replaced by multi-million-dollar artificial reservoirs.

-- Some peat soils are too unstable to support building foundations.

-- The region has less public recreational land per person than any other of America's ten largest metropolitan regions. Park and forest preserve acreage must be more than doubled by the year 2000 to serve existing and forecasted needs.

-- More than half a million people live in homes seriously affected by noise of aircraft using O'Hare airport. New homes should not

be built in the noise zones of airports, railroads, or highways.

Based on these and other considerations, NIPC has made a preliminary distribution by county and township of the regional population forecasts. These figures are shown in the enclosed tables, compared with existing populations. The preliminary distribution reflects both demographic and economic trends, and regional planning policies.

Now local preferences are being sought. A dozen of the most ambitious suburbs are eager to absorb the entire two million increase. Some other suburbs would prefer little or no growth. Local community lifestyles are at stake-- population density makes the difference between neighborhood congestion, or peace and quiet; between a neighborhood variety of shops and employment, or a purely residential character.

Manufacturing and service jobs as well as population have moved to the suburbs. But new suburban housing has provided only for upper income and middle income households, not for the low and moderate income people who work at the new suburban jobs. More than three fourths of all housing which low and

moderate income households can afford is in Chicago, but only about half the region's jobs are in Chicago. A quarter of a million Chicago residents commute daily to suburban jobs, often at the cost of money and time which they can least afford. Extension of public transportation services could partly solve this problem; but construction of low-priced housing near suburban jobs is also necessary. The NIPC population forecasts reflect tendencies of lower income groups to seek out available housing close to their jobs, and the tendency of higher income groups to seek homes near environmental amenities, such as open space, rather than convenience to employment.

The racial components of the entire region are changing. In 1970, the region was 81 percent white and 19 percent other races. In the year 2000, the region will be 72 percent white and 28 percent other races. The distribution of population by race is a question which must be faced. Unchecked trends would reduce the white population of Chicago from the current 66 percent to 30 percent, with 70 percent other races by the year 2000. If, however, the assumption is made that the races will achieve socio-economic equality

by the year 2000, then Chicago would remain 44 percent white, with 56 percent other races. Other races would constitute no more than 18 percent of the population of any outlying county. The suburban average would be 13 percent other races.

Economic growth and population growth influence each other. Northeastern Illinois traditionally has been a center of economic opportunity. The region's industrial diversity has made it nearly recession-proof. But northeastern Illinois, like all older centers in America, is at a disadvantage for economic growth compared to newer centers in the South and Southwest. NIPC economic forecasts make the optimistic assumption that this disadvantage will disappear as all large metropolitan regions diversify economically, and therefore become more like each other. Full employment of the region's growing population would be possible if this occurs.

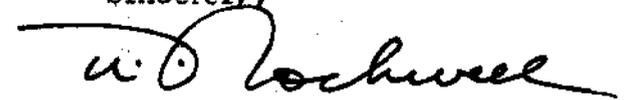
All of these factors, and more, must be considered in forecasting local population. Developers' hopes for profit must not convince suburban leaders that the supply of white, middle class people is unlimited. Any feasible forecast, however, if widely accepted by governments

and businesses, will tend to be self-fulfilling. The difference between a cornfield which could be subdivided at a profit, and one which could not, in the 1950s was the availability of tax-paid highways. Now, the difference is the availability of tax-paid sewage treatment plants.

The region's people, and their political leaders, will decide how future population will be distributed: either inadvertently, by inaction; or deliberately, by participation in the regional planning process.

The review of these forecasts constitute a review of the Commission's planning policies. Comments received during this phase of public discussion will be used to re-evaluate the 1968 Comprehensive General Plan for the Northeastern Illinois Counties Area.

Sincerely,



Matthew L. Rockwell
Executive Director

Preliminary Population Forecasts by County

County	1960	1970	1973	1980	1990	2000
City of Chicago	3,550,404	3,366,957	N.A.*	3,228,000	3,215,000	3,150,000
Suburban Cook Co.	1,579,321	2,125,412	2,256,541	2,490,000	2,716,000	2,992,000
DuPage County	313,459	491,882	543,585	619,000	783,000	932,000
Kane County	208,246	251,005	266,292	315,300	417,000	489,000
Lake County	293,656	382,638	389,534	499,900	655,000	749,000
McHenry County	84,210	111,555	121,050	156,000	205,100	276,000
Will County	191,617	249,498	274,011	353,000	466,900	570,000
Suburban Total	2,670,509	3,611,990	3,851,013	4,433,200	5,243,000	6,014,000
Northeastern Illinois Total	6,220,913	6,978,947	N.A.*	7,561,000	8,458,000	9,164,000

*N.A. - Not Available

Preliminary Population Forecasts by Township

		Actual			Forecast		
		1960	1970	1973	1980	1990	2000

FORECAST RESULTS -- COOK COUNTY							

BARRINGTON	TWP	5431.	7507.	7997.	12000.	21000.	35000.
BERWYN	TWP	54224.	52502.	51949.	50000.	49000.	51000.
BLOOM	TWP	70530.	94757.	101156.	112000.	116000.	127000.
BREMEN	TWP	55392.	93906.	104917.	126000.	155000.	160000.
CALUMET	TWP	19299.	23514.	23730.	25000.	27000.	28000.
CICERO	TWP	69130.	67059.	66259.	65000.	63000.	64000.
ELK GROVE	TWP	27976.	77169.	94221.	95000.	103000.	117000.
EVANSTON	TWP	79293.	90113.	79593.	79000.	76000.	79000.
HANDOVER	TWP	11357.	34150.	42909.	61000.	97000.	117000.
LEMONT	TWP	6732.	9314.	9621.	12000.	15000.	25000.
LEYDEN	TWP	31914.	99772.	101041.	104000.	102000.	99000.
LYONS	TWP	92214.	102076.	104091.	120000.	143000.	154000.
MAINE	TWP	95476.	140194.	144453.	150000.	152000.	160000.
NEW TRIER	TWP	59536.	65365.	64877.	63000.	62000.	61000.
NILES	TWP	95961.	110992.	110757.	110000.	107000.	106000.
NORTHFIELD	TWP	43543.	65557.	69293.	77000.	84000.	95000.
NORWOOD PK.	TWP	30633.	30947.	30636.	30000.	29000.	29000.
DAK PARK	TWP	61093.	62511.	61946.	60000.	58000.	64000.
ORLAND	TWP	7444.	15029.	23936.	36000.	59000.	100000.
PALATINE	TWP	31456.	54963.	57029.	81000.	102000.	105000.
PAOLS	TWP	17729.	33100.	39395.	50000.	50000.	50000.
PROVISO	TWP	150275.	172775.	171104.	173000.	170000.	192000.
RICH	TWP	35259.	44901.	51154.	64000.	36000.	90000.
RIVER FOREST	TWP	12695.	13402.	13230.	13000.	14000.	13000.
RIVERSIDE	TWP	17975.	19475.	19901.	19000.	19000.	20000.
SCHAUMBURG	TWP	10587.	50541.	69996.	96000.	110000.	140000.
STICKNEY	TWP	31404.	41752.	42106.	45000.	50000.	67000.
THORNTON	TWP	139444.	199014.	202249.	232000.	242000.	297000.
WHEELING	TWP	59910.	119219.	133310.	145000.	153000.	160000.
WORTH	TWP	107761.	155934.	165790.	195000.	202000.	203000.

FORECAST RESULTS -- DUPAGE COUNTY							

ADDISON	TWP	41909.	72290.	76122.	89000.	110000.	120000.
BLOOMINGDALE	TWP	14924.	36654.	47666.	62000.	81000.	104000.
DOWNERS GRV.	TWP	66664.	94637.	103914.	114000.	140000.	160000.
LISLE	TWP	20982.	47793.	56496.	65000.	85000.	93000.
MILTON	TWP	51361.	75972.	95777.	93000.	117000.	137000.
NAPERVILLE	TWP	9218.	13029.	14702.	24000.	44000.	90000.
MAYNE	TWP	3077.	5492.	8092.	11000.	21000.	30000.
WINFIELD	TWP	16437.	23001.	26130.	31000.	47000.	61000.
YORK	TWP	89939.	122065.	124696.	130000.	139000.	147000.

FORECAST RESULTS -- KANE COUNTY							

AURORA	TWP	91433.	95176.	99143.	110700.	131700.	149500.
ATAVIA	TWP	10574.	13313.	14974.	17000.	22000.	24000.
BIG ROCK	TWP	1033.	1349.	1474.	1300.	2200.	2400.
BLACKBERRY	TWP	1935.	2450.	2635.	3700.	12400.	19500.
BURLINGTON	TWP	1038.	1233.	1299.	1500.	1900.	2100.
CAMPTON	TWP	1379.	2152.	2503.	3500.	7200.	10000.
DUNDEE	TWP	24633.	34575.	37212.	44000.	58000.	66000.
ELGIN	TWP	52640.	53972.	59915.	74000.	97000.	117000.
GENEVA	TWP	9575.	10797.	11470.	16000.	23000.	27000.
HAMPSHIRE	TWP	2151.	2517.	2695.	2900.	3400.	3700.
KANEVILLE	TWP	993.	970.	943.	1000.	1500.	1700.
PLATO	TWP	1195.	1307.	1416.	1800.	2600.	3000.
FUTLAND	TWP	1077.	1264.	1346.	1300.	2600.	3300.
ST. CHARLES	TWP	15392.	20352.	24115.	29000.	40000.	45500.
SUGAR GROVE	TWP	1627.	2974.	3315.	4300.	9000.	12500.
VIRGIL	TWP	1647.	1709.	1746.	2100.	2500.	2800.

Preliminary Population Forecasts by Township

		Actual			Forecast		
		1960	1970	1973	1980	1990	2000

FORECAST RESULTS -- LAKE COUNTY							

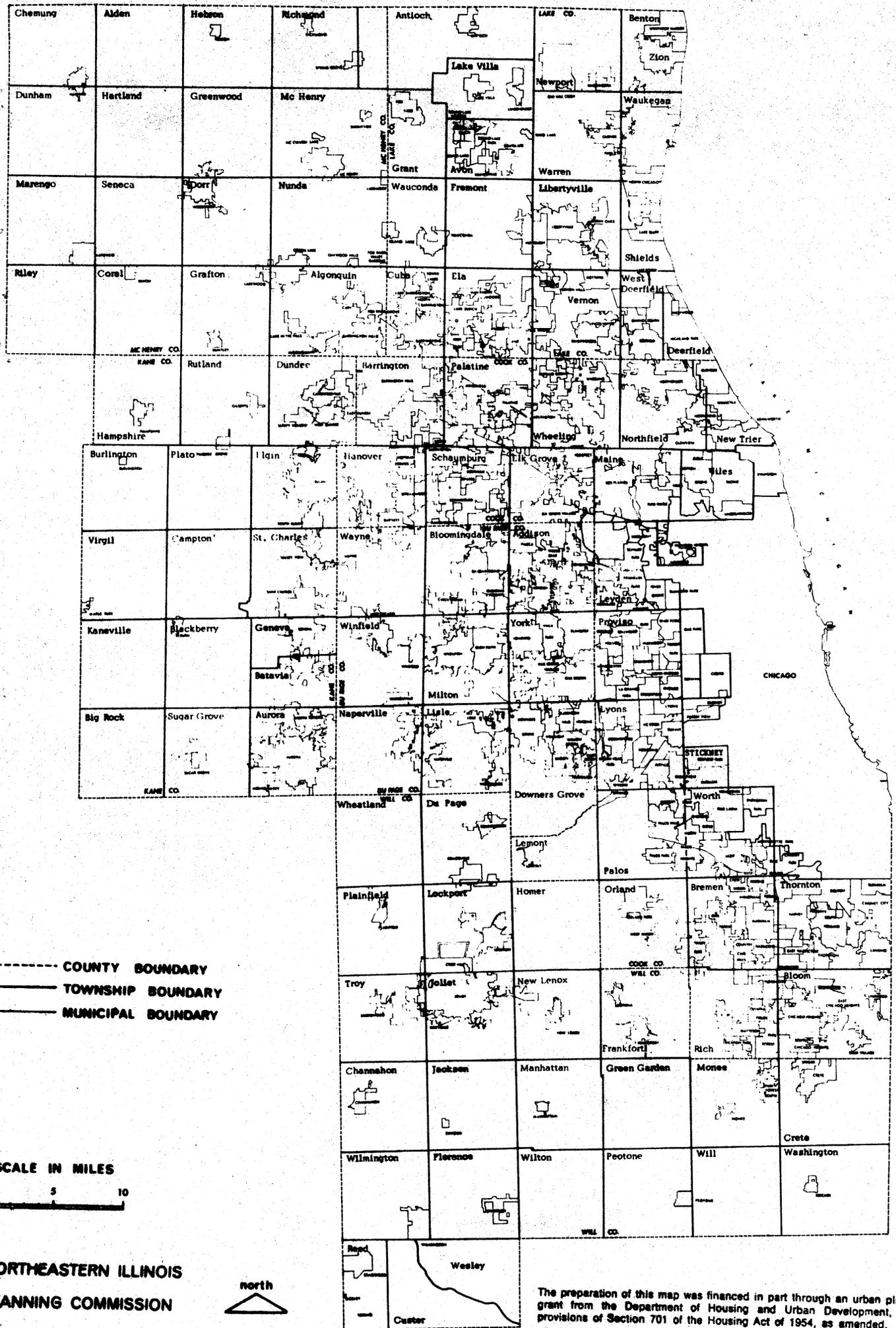
ANTIUCH	TWP	3913.	11539.	13019.	16200.	20000.	23500.
AVON	TWP	16555.	19953.	22853.	32000.	54500.	72000.
BENTON/ZION	TWP	22471.	30956.	31957.	40000.	52000.	62500.
CUBA	TWP	5022.	9097.	9543.	14000.	19000.	22500.
DEERFIELD	TWP	32910.	37190.	35080.	41000.	46000.	49500.
ELA	TWP	9325.	12209.	14314.	21000.	32000.	40000.
FREMONT	TWP	3303.	12196.	12719.	15800.	20000.	22000.
GRANT	TWP	9091.	11007.	11366.	14500.	19000.	19000.
LAKE VILLA	TWP	3122.	11593.	12795.	16500.	22500.	27500.
LIBERTYVILLE	TWP	19491.	25577.	27944.	40000.	57000.	69000.
NEWPORT	TWP	2119.	2650.	2750.	3700.	5000.	5000.
SHIELDS	TWP	41307.	55093.	44956.	60000.	65000.	69000.
VERNON	TWP	6627.	12935.	14769.	22400.	30500.	37000.
WARREN	TWP	9699.	16291.	17250.	25300.	29500.	30500.
WAUCONDA	TWP	6950.	10494.	11512.	14000.	16000.	17000.
WAUKEGAN	TWP	69865.	75690.	79175.	91000.	119000.	124000.
W-DEERFIELD	TWP	17097.	27269.	27333.	32400.	50000.	59000.

FORECAST RESULTS -- MCHENRY COUNTY							

ALDEN	TWP	955.	929.	998.	1500.	2000.	2700.
ALGONQUIN	TWP	20759.	31949.	35210.	47000.	61000.	92500.
BURTON	TWP	903.	1072.	1171.	1500.	2000.	2500.
CHEMUNG	TWP	5431.	6014.	6163.	7000.	9700.	10000.
CORAL	TWP	1429.	1576.	1712.	2100.	2600.	3100.
DORR	TWP	9652.	10765.	10936.	12700.	19000.	31500.
DUNHAM	TWP	1311.	1536.	1644.	2000.	3000.	3900.
GRAFTON	TWP	4022.	5018.	5262.	6000.	9500.	11500.
GREENWOOD	TWP	3067.	4777.	5514.	6700.	7900.	9900.
HARTLAND	TWP	957.	1093.	1174.	1700.	2300.	2900.
HEBRON	TWP	1453.	1515.	1576.	2000.	2700.	3400.
MARENGO	TWP	4170.	4926.	5029.	5500.	6400.	7300.
MCHENRY	TWP	17105.	22999.	25553.	32000.	42000.	56500.
NUNDA	TWP	9605.	12973.	14206.	22100.	29000.	39500.
RICHMOND	TWP	1979.	2316.	2417.	2900.	3500.	4100.
RILEY	TWP	919.	1030.	1129.	1300.	1900.	2300.
SENECA	TWP	795.	1199.	1357.	2000.	2900.	3600.

FORECAST RESULTS -- WILL COUNTY							

CHANNAHAN	TWP	2125.	2712.	3329.	3700.	4800.	5800.
CRETE	TWP	11737.	15270.	16599.	23000.	31500.	39000.
CUSTER	TWP	651.	949.	999.	1900.	2500.	3400.
DUPAGE	TWP	4725.	20037.	33096.	49000.	62500.	73000.
FLORENCE	TWP	629.	671.	694.	1000.	2000.	3000.
FRANKFORT	TWP	5784.	9633.	10190.	16000.	27000.	35000.
GREEN GARDEN	TWP	679.	791.	875.	1300.	2300.	3900.
HOMER	TWP	4079.	6696.	7493.	12000.	22000.	33900.
JACKSON	TWP	1461.	1755.	1979.	2200.	2700.	3200.
JOLIET	TWP	94116.	96001.	95291.	105000.	112000.	117500.
LOCKPORT	TWP	26992.	33354.	33964.	40000.	49000.	55900.
MANHATTAN	TWP	1923.	2374.	2511.	3000.	3900.	4500.
MONSIEUR	TWP	5131.	7240.	9619.	19000.	31000.	41900.
NEW LENOX	TWP	6232.	10049.	11705.	16000.	29000.	40500.
PEOTONE	TWP	2392.	2914.	3110.	3700.	4500.	5200.
PLAINFIELD	TWP	6655.	11029.	12612.	17000.	24000.	29300.
REED	TWP	2192.	2646.	2964.	3500.	4000.	4700.
TROY	TWP	2679.	9995.	12232.	17500.	26000.	36500.
WASHINGTON	TWP	2347.	2940.	3122.	3500.	3900.	4200.
WESLEY	TWP	1741.	2331.	2412.	3000.	3900.	4500.
WHEATLAND	TWP	1023.	1794.	2632.	4000.	7000.	10400.
WILL	TWP	774.	750.	771.	1000.	1500.	1900.
WILMINGTON	TWP	5132.	5296.	5375.	6900.	9000.	10500.
WILTON	TWP	630.	709.	729.	1000.	2200.	3300.



NORTHEASTERN ILLINOIS
 PLANNING COMMISSION

The preparation of this map was financed in part through an urban planning grant from the Department of Housing and Urban Development, under provisions of Section 701 of the Housing Act of 1954, as amended.

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I. INTRODUCTION

Population, employment and land use forecasts are an important element of the Comprehensive General Plan for the Development of the Northeastern Illinois Counties Area. The forecasts are used in planning urban facilities and service systems; the facilities and services in turn attract population and economic activity by their availability. Thus, the forecasts exist as powerful tools which can favorably influence the quality and quantity of urban development in the region.

In the past the effectiveness of forecasting has been diminished as specialized planning agencies have prepared their own forecasts. These forecasts often conflict with each other and prohibit the achievement of any single forecast. Furthermore, the differing forecasts are a major cause of uncoordinated planning for public investment. Uncoordinated planning results in over- or under-construction of facilities and consequent waste of scarce public funds.

In order to provide a comprehensive basis for coordinating planning activities in northeastern Illinois, the Northeastern Illinois Planning Commission has developed preliminary population and employment forecasts for the townships and counties in the region for the years 1980, 1990 and 2000. Eventually these forecasts will be extended to the years 2010 and 2020. Once finalized, these forecasts will be used as one basis for evaluation of projects submitted for the Commission's review in accordance with the requirements of the A-95 process. The forecasts will also be used in the preparation of the regional and subregional plans.

The forecasts presented here result from the interaction of two sets of factors. The first is a set of goal and policy assumptions reflecting the goals and policies incorporated in the Commission's Comprehensive General Plan and adopted functional plans. The second is a set of regional forecasts of population and employment adopted in August 1973 by the Planning Committee of the Commission after considerable public discussion and technical review.

The regional population forecasts reflect the most probable future for the region. In contrast, the distribution of future employment and population by county and township is influenced by the goal assumptions of the Comprehensive General Plan, rather than being a statement of the most likely distribution. The county and township forecasts can be viewed as quantifications of the planning goals and policies of the Commission, as constrained by the economic potential of the region and influenced by market forces.

II. SUMMARY OF FORECASTS

1.0 Summary of Regional Forecasts

Regional forecasts are those developed for the eight county Chicago-Northwestern Indiana Standard Consolidated Area¹ (Chicago SCA) by the Interstate Planning Committee of the Northeastern Illinois Planning Commission (NIPC) and the Northwestern Indiana Regional Planning Commission. Those forecasts were developed during the period November 1972 to August 1973. The agencies' staffs, with the assistance of a Forecast Technical Advisory Committee (Forecast TAC), prepared eight alternative population and eleven alternative employment forecasts. These alternative forecasts were evaluated by the Forecast TAC and presented for public scrutiny and review. On the basis of these evaluation and reviews the Planning Committee of NIPC adopted one set of forecasts for the Chicago SCA. The Planning Committee instructed the staff to proceed with the preparation of county and township forecasts for northeastern Illinois on the basis of these regional forecasts.

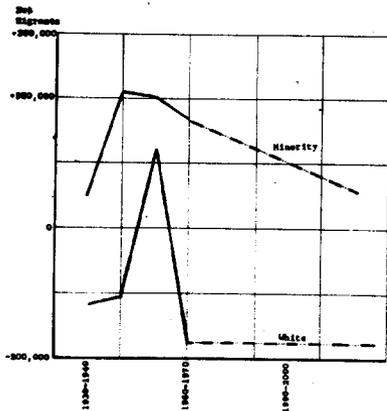
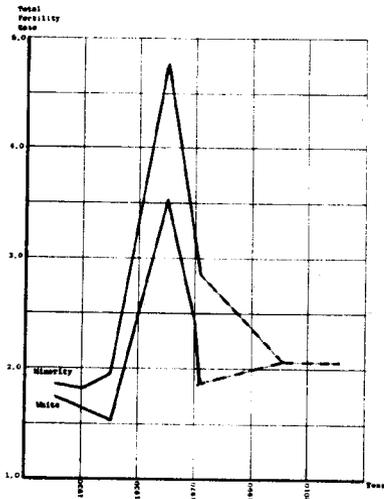
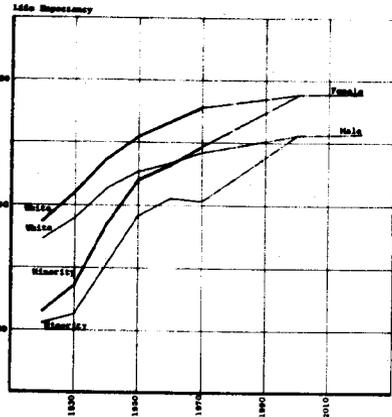
The adopted regional forecasts are summarized as follows:

1. The adopted forecast implies a Chicago SCA population of approximately 10 and 11.4 million persons by the years 2000 and 2020, respectively.
2. The adopted population forecast agrees closely with the TAC estimate of the most probable future conditions. These forecasts are higher than those submitted by the TAC as reflective of the most desirable future. Individual members of the TAC and the staffs felt that the assumptions of the higher forecasts are more realistic, and would provide a margin of error for the design of public facilities which will be dependent on the forecast.

SCA FORECAST

Year	Population
1960	6,794,000
1970	7,612,000
1980	8,350,000
1990	9,245,000
2000	9,997,000
2010	10,693,000
2020	11,392,000

¹Includes the Illinois counties of Cook, DuPage, Kane, Lake, McHenry and Will, and the Indiana counties of Lake and Porter.



3. The adopted forecast assumes that the life expectancies of all races will converge to the higher of the two levels projected by the U.S. Office of the Actuary for the year 2000. Life expectancies are assumed to hold constant after the year 2000.
4. The adopted forecast assumes a convergence of the fertility rates of all races by the year 2000 at the replacement level of 2.1 children per woman. This assumption implies that the white population will increase gradually from its 1972 estimated level of 1.87, whereas other races will continue their decline from the 1972 level of 2.79.
5. The adopted forecast assumes that the number of white out-migrants from the region will remain constant at the 1960-1970 level. This assumption implies that the out-migration rates of the white population will decline from the 1960-1970 level as the population base continues to increase. The adopted forecast assumes that the number of minority race migrants will decline by 20 percent per decade for the entire forecast period.
6. The adopted employment forecast implies a forecast of approximately 4,600,000 jobs by the year 2000 for the Chicago SCA.
7. The adopted employment forecast is slightly higher than the one selected by the majority of the TAC members. The adopted employment forecast assumes "general convergence", i.e., the differences between the regional and national rates of change of each industry will diminish and completely disappear by the year 2020. The TAC preferred the alternative which assumes that differences between the regional and national rates for each industry will remain constant at the 1960-1970 rate. However, this alternative implies more out-migration than reflected in their choice for a population alternative. The TAC recognized this conflict in making its recommendations.

2.0 Summary of County Forecasts

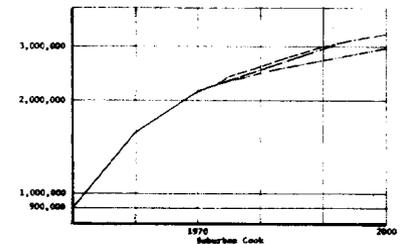
Two sets of population and one set of employment forecasts were made for the counties. The first set of population forecasts was derived using a demographic method; this is the same method used in generating the regional forecasts. This method assumes that certain levels of mortality, fertility, and net migration will occur in the future. Each of the three components operates on the current age-sex-race structure to produce a population of a given size and composition in the future.

The mortality assumptions for all the counties are the same as those adopted for the regional forecasts. The relationship in 1970 between age-specific birth rates in each county and age-specific birth rates adopted for the Chicago SCA is assumed to remain constant until 2000. The birth rates for each county will follow the trend assumed for the region, but differences among counties will remain. The birth rates for minority races are assumed to converge with those for whites within counties.

The total number of migrants is determined by the migration assumptions made for the SCA, the City of Chicago, and Lake and Porter Counties in Indiana. A decline in net migration to suburban northeastern Illinois from a level of 548,000 in 1960-1970 to 242,000 in 1990-2000 results from assuming increased out-migration for the region as a whole. Cook County would receive a declining share of the migrants; DuPage would increase its share, as would the four outer counties.

The second set of population and the only set of employment forecasts is derived through the use of the activity allocation model named "CASSANDRA" (Comprehensive Allocator of Services, Systems and Regional Activities). The CASSANDRA method yields household (by income groups) and employment (by major category) forecasts for each township. These township forecasts are influenced by planning principles and constrained by the regional forecasts and land availability. County forecasts are derived by summing township forecasts. The description of the CASSANDRA method is presented in Section IV.

Old NIPC Forecast ————
Demographic Alt. ————
CASSANDRA Alt. ————



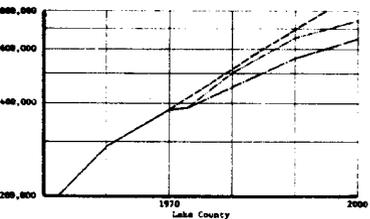
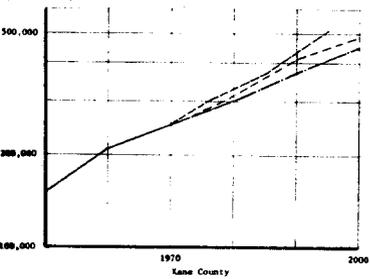
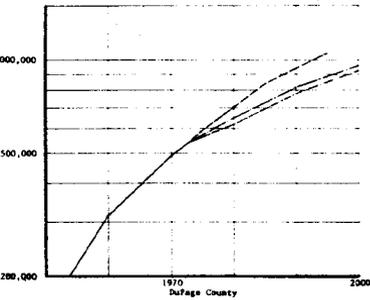
2.1 Forecasts of Total Population

Table 1 presents the two sets of population forecasts for the suburban counties and the City of Chicago. The CASSANDRA forecasts for the City of Chicago were constrained by the total population derived by the demographic method. Initially, several alternative City population forecasts were prepared and evaluated by the staffs of NIPC and the Department of Development and Planning of the City of Chicago (DDP). As a result, two sets of forecasts have emerged as representing reasonable population forecasts for the City. The forecast presented in the main columns of Table 1 is the same one considered by the NIPC staff to be the more consistent with the suburban forecasts. The second alternative forecast for the City is presented in parentheses. Resolution of the differences between the two forecasts for the City of Chicago as well as the alternative forecasts for the suburban counties will await the completion of the public review phase.

Table 1: Alternative Population Forecasts for Suburban Counties and the City of Chicago (All Figures are in 000s)

	1960	1970	1980		1990		2000	
			Demographic Alternative	CASSANDRA Alternative	Demographic Alternative	CASSANDRA Alternative	Demographic Alternative	CASSANDRA Alternative
City of Chicago	3,550	3,367	3,228 (3,297)*	3,228	3,215 (3,302)*	3,215	3,150 (3,246)*	3,150
Suburban Cook Co.	1,579	2,125	2,549	2,490	2,944	2,716	3,272	2,998
DuPage County	313	492	651	619	817	783	977	932
Kane County	208	251	305	315	376	417	457	489
Lake County	294	383	462	500	558	655	655	749
McHenry County	84	112	136	156	168	205	201	276
Will County	192	249	309	353	381	467	452	570
Total	6,221	6,979	7,640	7,661	8,459	8,458	9,164	9,164

*Forecast in parentheses represents an alternative forecast for the City of Chicago



The two alternative forecasts can be viewed as a forecast range for each suburban county. The marginal graphs show the past trends and future forecasts for both alternatives. For comparison purposes, the current NIPC forecasts contained in Planning Paper No. 10 are also presented.

2.2 Racial Composition of the Forecasted Population

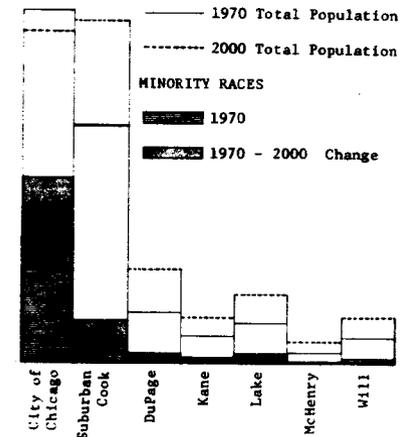
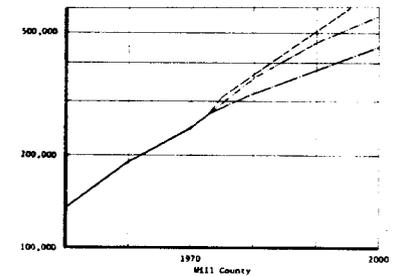
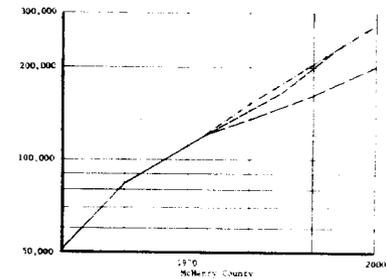
The demographic method requires that separate assumptions be made for each race. In making these assumptions, the staff was guided by the Commission's goals as described in section III of this paper. Specific assumptions made regarding the future distribution of whites and minority races are:

1. The City of Chicago will not continue to be the only major residence for members of minority races. Allowing current trends to continue would result in a city population that is 70 percent minority races by 2000.
2. The current forces resulting in high concentration of minorities in the City of Chicago will not disappear overnight. The recommended forecast for the City of Chicago assumes that during the decade 1990-2000 the rates of out-migration from the City of Chicago will be the same for white and other races.

The result of these assumptions is that minority races will constitute 56 percent of the city's population and 13 percent of the suburban population. Table 2 shows the past and forecasted population of minority races as a percentage of total population for each area.

Table 2: Minority Races as Percent of Total Population

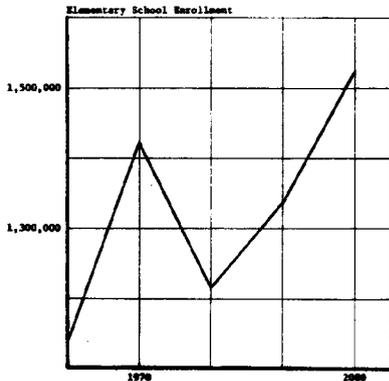
	1950	1960	1970	1980	1990	2000
City of Chicago	14.1%	23.6%	34.4%	45.3%	52.6%	56.4%
Suburban Cook Co.	3.3	3.2	4.3	6.4	9.1	12.0
DuPage County	0.4	0.4	0.8	2.0	5.6	12.2
Kane County	1.8	2.4	4.0	6.7	11.0	17.0
Lake County	3.5	4.3	5.9	8.0	11.2	15.6
McHenry County	0.1	0.1	0.3	0.9	3.7	9.0
Will County	4.4	6.3	7.2	9.5	13.1	18.3
Total SMSA	10.7%	14.8%	18.7%	22.6%	25.6%	28.1%



2.3 School Age Population

Changes in the age composition derived from the demographic model are similar in all counties. The school age population fluctuates in size, as shown in Table 3. The low fertility rates of the late 1960s and early 1970s result in the decline in the elementary school age population between 1970 and 1980 and the decline in the population aged 15-19 (high school age) a decade later. In spite of the low fertility rates assumed in the projections, subsequent increases can be expected as the "baby-boom" cohorts enter the childbearing ages.

Table 3: Projected School Age Population, City of Chicago and Counties 1960-2000
(All Figures are in 000s)



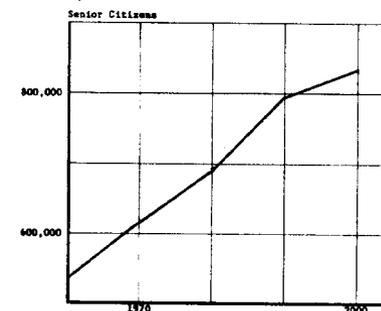
County	1960	1970	1980	1990	2000
	<u>Aged 5-14 -- Elementary</u>				
City of Chicago	584	624	492	530	504
Suburban Cook Co.	323	457	404	438	532
DuPage County	71	117	113	125	172
Kane County	40	54	53	64	83
Lake County	59	83	74	87	114
McHenry County	18	25	23	27	37
Will County	<u>38</u>	<u>57</u>	<u>55</u>	<u>62</u>	<u>80</u>
Total	1,133	1,417	1,214	1,333	1,522
	<u>Aged 15-19 -- Secondary</u>				
City of Chicago	223	280	259	213	244
Suburban Cook Co.	100	187	259	203	247
DuPage County	21	45	74	59	74
Kane County	14	23	31	30	39
Lake County	29	47	62	54	66
McHenry County	6	10	15	12	16
Will County	<u>13</u>	<u>22</u>	<u>34</u>	<u>30</u>	<u>37</u>
Total	406	614	734	601	723
Total School Age Population	1,539	2,031	1,948	1,934	2,245

2.4 Population Aged 65 and Over

The population over age 65, shown in Table 4 will constitute an increasing share of the total population in most counties. The age group will increase in size every decade in every area, with the exception of the City of Chicago. The increase will be smallest in the decade 1990-2000 when small cohorts born during the Depression years become 65 and over.

Table 4: Projected Population Aged 65 and Over, City of Chicago and Counties 1960-2000
(All Figures Are In 000s)

	1960	1970	1980	1990	2000
City of Chicago	347	355	350	353	320
Suburban Cook County	109	159	210	275	311
DuPage County	18	28	39	59	79
Kane County	20	22	25	29	30
Lake County	19	24	30	39	48
McHenry County	8	10	12	13	13
Will County	15	18	22	27	32
Total	536	616	688	795	833



2.5 Households

During the period 1970-2000 the number of households in northeastern Illinois will grow by approximately 935,000. This represents a growth in the number of households of 43 percent, whereas the population growth for the same period is approximately 31 percent. The difference between the two rates is a result of the reduction of the average household size.

As population and households are derivatives of each other, two alternative sets of household forecasts have been prepared. Table 5 presents the results of the two forecasts for the suburban counties and the City of Chicago.

Table 5: Alternative Household Forecasts for Suburban Counties and the City of Chicago (All Figures are in 000s)

			1980		1990		2000	
	1960	1970	Demographic		Demographic		Demographic	
			Alternative	CASSANDRA	Alternative	CASSANDRA	Alternative	CASSANDRA
City of Chicago	1,157	1,138	1,112 (1,110)*	1,111	1,132 (1,128)*	1,128	1,143 (1,149)*	1,145
Suburban Cook Co.	443	628	799	774	965	912	1,106	999
DuPage County	84	136	193	184	259	252	321	308
Kane County	59	75	95	98	120	127	148	159
Lake County	77	103	133	144	170	192	207	238
McHenry County	24	33	42	48	53	62	65	90
Will County	54	71	92	105	120	144	148	183
Total	1,898	2,184	2,466	2,464	2,819	2,817	3,122	3,122

*Figures in parentheses represent an alternative household forecast for the City of Chicago which is comparable to the population alternative presented in Table 1.

2.6 Income Composition of Families

The CASSANDRA method requires different assumptions be made for each income group. Those assumptions are described in Section IV of this paper. The results of these assumptions are reflected in Table 6, which shows the percent distribution of families by income for each of the suburban counties and the City of Chicago. Note that the sums of the percentages for all income groups within each area is 100 percent.

Table 6: Percent Distribution of Families by Income for Suburban Counties and the City of Chicago

	<u>Low Income</u>					<u>Moderate Income</u>					<u>Middle Income</u>					<u>High Income</u>					<u>Total</u> (All Years)
	60	70	80	90	2000	60	70	80	90	2000	60	70	80	90	2000	60	70	80	90	2000	
City of Chicago	25	28	27	25	25	18	19	19	19	19	30	30	29	30	31	27	23	25	26	25	100
Suburban Cook Co.	11	12	16	18	18	13	13	15	15	15	33	33	32	31	31	43	42	37	36	36	100
DuPage County	11	9	13	16	17	12	12	13	14	15	34	33	33	32	32	43	46	41	38	36	100
Kane County	19	16	17	18	19	19	18	17	17	17	35	37	35	33	32	27	29	31	32	32	100
Lake County	17	16	16	16	17	16	15	15	15	15	32	31	32	32	31	35	38	37	37	37	100
McHenry County	23	19	16	16	16	17	16	15	15	15	33	35	35	34	32	27	30	34	35	37	100
Will County	22	16	14	14	15	20	19	17	15	15	34	37	36	36	33	24	28	33	35	37	100
Northeastern Illinois	20	20	20	20	20	17	17	17	17	17	31	31	31	31	31	32	32	32	32	32	100

The above table shows that low income families as percent of all families in Chicago will decline, while this percentage in suburban Cook, DuPage and Kane counties will increase. High income families in Chicago as a percent of all families will increase from the 1970 level to a level in 1990 which is almost the same as the 1960 level. This percentage for high income families in suburban Cook and DuPage counties will decrease. All the above observations require the reversal of trends of the 1960s. Failure to reverse these trends will result in the out-migration from the City of Chicago during the period 1970-2000 of more than two-thirds of the 1970 high income families.

2.7 Employment Forecasts

Employment forecasts have been generated by CASSANDRA for six categories: manufacturing; transportation, communications and utilities (TCU); trade; finance, insurance, real estate and miscellaneous services (FIRE); government and institutional; and other employment (i.e., agriculture, construction, mining, self employed and domestic workers). These township forecasts have been added up to the county level. The forecasts for manufacturing, trade and total employment by county and the City of Chicago are summarized in Table 7.

In general, the employment results show the inertia of the past decade continuing through 1980. The City of Chicago displays declines in manufacturing and TCU and only slight gains in the other categories in the 70s. The City's share of total regional employment falls from 58 in 1970 to 53 percent in 1980. This decline in the regional share continues through the year 2000 but at a slower rate. This result is consistent with the assumption that the aging capital structure is gradually renewed. Manufacturing, for example, shows absolute gains in the 80s and 90s.

Suburban Cook and the five outer counties gain in all categories over the entire forecast period. The most striking result is that suburban Cook maintains a constant, rather than increasing share of total regional employment in the 1990-2000 period. This would seem to indicate both a lack of available land and a maturing capital structure in those townships bordering the City of Chicago. DuPage and Lake counties' share of regional employment gains rapidly throughout the forecast period with total employment more than doubling. Kane, McHenry and Will register slight to moderate gains.

Comparison of the population and employment results show that population is decentralizing faster than jobs. The City of Chicago and DuPage become more of a place to work. McHenry, Kane and Will become more of a place to live. Suburban Cook and Lake stay much the same as today. None of those changes appear to be drastic; as in the past, the City is the only area displaying an employment/population ratio greater than the regional average.

Table 7: Employment Forecasts - Manufacturing, Trade and Total Employment

	Manufacturing				Trade			
	1970	1980	1990	2000	1970	1980	1990	2000
City of Chicago	499,000	478,000	491,000	504,300	366,200	368,700	375,000	385,000
Suburban Cook Co.	300,500	327,900	339,300	366,100	197,300	229,100	247,400	261,100
DuPage County	28,500	33,400	36,500	41,800	40,400	55,200	62,700	81,500
Kane County	37,000	39,800	40,200	45,000	19,200	25,300	27,600	30,300
Lake County	39,300	43,700	45,100	48,700	21,200	32,800	36,500	42,000
McHenry County	15,600	17,600	18,600	20,100	5,600	7,100	8,500	9,700
Will County	28,100	30,000	30,500	33,200	13,500	19,800	21,900	23,800
Total	948,100	970,400	1,001,100	1,059,200	663,400	737,900	779,500	833,400

	Total Employment				Percent Share of Regional Employment			
	1970	1980	1990	2000	1970	1980	1990	2000
City of Chicago	1,857,300	1,905,900	1,980,100	2,056,100	58.3	52.8	50.7	48.2
Suburban Cook Co.	840,100	1,034,000	1,135,400	1,239,100	26.4	28.6	29.1	29.1
DuPage County	145,300	211,400	261,500	341,000	4.6	5.9	6.7	8.0
Kane County	103,200	129,400	144,000	163,700	3.2	3.6	3.7	3.8
Lake County	118,800	167,700	197,000	245,600	3.7	4.6	5.0	5.8
McHenry County	36,400	49,200	57,900	67,500	1.1	1.4	1.5	1.6
Will County	82,500	111,700	129,100	149,700	2.6	3.1	3.3	3.5
Total	3,183,700	3,609,300	3,905,000	4,262,600	100.0	100.0	100.0	100.0

3.0 Summary of Township Forecasts

The following table presents the preliminary population forecasts for each township in northeastern Illinois. Note that the township forecasts are derived using the CASSANDRA method only. Comments from public officials, planners and the public at large regarding the figures are being solicited. After comments have been received the township forecasts will be revised to incorporate the comments received and adjusted to reflect the resolution of the two sets of county forecasts. Following the revisions the forecasts will be submitted to the Commission for adoption.

In addition to the population forecasts, there are household forecasts by income, employment forecasts by major industrial classification and land use forecasts, all of which are available on computer printouts and coding sheets, and which may be examined in the Commission's offices.

Table 8: Preliminary Population Forecasts by Township

		Actual			Forecast		
		1960	1970	1973	1980	1990	2000

FORECAST RESULTS -- COOK COUNTY							

BARRINGTON TWP		5481.	7607.	7997.	12000.	21000.	35000.
PERMYN TWP		54224.	52502.	51949.	50000.	49000.	51000.
BLOOM TWP		70530.	94757.	101156.	112000.	116000.	127000.
BREMEN TWP		55392.	93906.	104917.	126000.	155000.	160000.
CALUMET TWP		19299.	23614.	23730.	25000.	27000.	28000.
CICERO TWP		69130.	67058.	66258.	65000.	63000.	64000.
ELK GROVE TWP		27976.	77169.	84221.	96000.	103000.	117000.
EVANSTON TWP		79283.	80113.	79593.	78000.	76000.	79000.
HANOVER TWP		11367.	34150.	42903.	61000.	87000.	117000.
LEMONT TWP		6732.	8314.	8621.	12000.	15000.	25000.
LEYDEN TWP		91814.	99772.	101041.	104000.	102000.	99000.
LYONS TWP		82214.	102076.	104091.	120000.	143000.	154000.
MAINE TWP		95476.	140194.	144453.	150000.	152000.	160000.
NEW TRIER TWP		59536.	65365.	64877.	63000.	62000.	61000.
NILES TWP		95961.	110892.	110757.	110000.	107000.	106000.
NORTHFIELD TWP		43543.	65557.	69293.	77000.	94000.	95000.
NORWOOD PK. TWP		30633.	30947.	30536.	30000.	29000.	29000.
DAK PARK TWP		61093.	62511.	61946.	60000.	58000.	64000.
ORLAND TWP		7444.	15028.	23936.	36000.	59000.	100000.
PALATINE TWP		31456.	54963.	67028.	91000.	102000.	105000.
FALDS TWP		17728.	33100.	39395.	50000.	60000.	60000.
PROVISO TWP		160275.	172775.	171104.	173000.	170000.	182000.
RICH TWP		35259.	44901.	51154.	64000.	96000.	90000.
RIVER FOREST TWP		12695.	13402.	13230.	13000.	14000.	13000.
RIVERSIDE TWP		17975.	19475.	19901.	19000.	19000.	20000.
SCHAUMBURG TWP		10587.	50541.	69996.	86000.	110000.	140000.
STICKNEY TWP		31404.	41752.	42106.	45000.	50000.	67000.
THORNTON TWP		138444.	138014.	202248.	232000.	242000.	297000.
WHEELING TWP		58910.	119219.	133310.	145000.	153000.	160000.
WORTH TWP		107761.	155834.	165790.	195000.	202000.	203000.

FORECAST RESULTS -- DUPAGE COUNTY							

ADDISON TWP		41808.	72290.	76122.	89000.	110000.	120000.
BLOOMINGDALE TWP		14924.	36654.	47666.	62000.	81000.	104000.
DOWNERS GRV. TWP		66664.	94637.	103914.	114000.	140000.	160000.
LISLE TWP		20982.	47793.	56496.	65000.	85000.	93000.
MILTON TWP		51361.	75872.	85777.	93000.	117000.	137000.
HAPERVILLE TWP		9219.	13028.	14702.	24000.	44000.	90000.
WAYNE TWP		3077.	5492.	8092.	11000.	21000.	30000.
WINFIELD TWP		16437.	23001.	26130.	31000.	47000.	61000.
YORK TWP		89989.	122065.	124686.	130000.	138000.	147000.

FORECAST RESULTS -- KANE COUNTY							

AURORA TWP		81433.	95176.	99143.	110700.	131700.	148500.
PATAVIA TWP		10574.	13313.	14974.	17000.	22000.	24000.
BIG ROCK TWP		1033.	1349.	1474.	1300.	2200.	2400.
BLACKBERRY TWP		1935.	2450.	2635.	3700.	12400.	19500.
BURLINGTON TWP		1039.	1233.	1299.	1600.	1900.	2100.
CAMPTON TWP		1379.	2152.	2603.	3600.	7200.	10000.
DUNDEE TWP		24633.	34575.	37212.	44000.	58000.	66000.
ELGIN TWP		52640.	58972.	59915.	74000.	97000.	117000.
GENEVA TWP		9575.	10787.	11470.	16000.	23000.	27000.
HAMPSHIRE TWP		2151.	2517.	2685.	2900.	3400.	3700.
HANEVILLE TWP		899.	870.	943.	1000.	1500.	1700.
PLATO TWP		1195.	1307.	1415.	1300.	2600.	3000.
RUTLAND TWP		1077.	1264.	1346.	1900.	2600.	3300.
ST. CHARLES TWP		15393.	20352.	24115.	29000.	40000.	45500.
SUGAR GROVE TWP		1627.	2974.	3315.	4300.	9000.	12500.
VIRGIL TWP		1647.	1709.	1746.	2100.	2500.	2900.

Table 8 Continued

		Actual			Forecast		
		1960	1970	1973	1980	1990	2000
FORECAST RESULTS -- LAKE COUNTY							
ANTIOCH	TWP	9913.	11639.	13019.	16200.	20000.	23500.
AVON	TWP	16555.	19953.	22853.	32000.	54500.	72000.
BENTON/ZION	TWP	22471.	30866.	31957.	40000.	52000.	62500.
CUBA	TWP	6022.	9097.	9543.	14000.	19000.	22500.
DEERFIELD	TWP	32910.	37190.	35080.	41000.	46000.	48500.
ELA	TWP	9325.	12209.	14914.	21000.	32000.	40000.
FREMONT	TWP	8303.	12136.	12719.	15300.	20000.	22000.
GRANT	TWP	9091.	11007.	11366.	14600.	18000.	19000.
LAKE VILLA	TWP	3122.	11593.	12795.	16500.	22500.	27500.
LIBERTYVILLE	TWP	19491.	25577.	27944.	40000.	57000.	69000.
NEWPORT	TWP	2118.	2660.	2750.	3700.	5000.	6000.
SHIELDS	TWP	41307.	55093.	44856.	60000.	65000.	69000.
VERNON	TWP	6627.	12835.	14768.	22400.	30500.	37000.
WARREN	TWP	9699.	16291.	17250.	25300.	29500.	30500.
WAUCONDA	TWP	6950.	10494.	11512.	14000.	16000.	17000.
WAUKESHA	TWP	69865.	76630.	79175.	91000.	119000.	124000.
W-DEERFIELD	TWP	17097.	27269.	27333.	32400.	50000.	59000.
FORECAST RESULTS -- MCHENRY COUNTY							
ALDEN	TWP	955.	999.	999.	1500.	2000.	2700.
ALSONQUIN	TWP	20759.	31949.	35210.	47000.	61000.	82500.
BURTON	TWP	803.	1072.	1171.	1500.	2000.	2500.
CHEMUNG	TWP	5431.	6014.	6163.	7000.	9700.	10000.
CORAL	TWP	1429.	1576.	1712.	2100.	2600.	3100.
DORR	TWP	9652.	10765.	10936.	12700.	19000.	31500.
DUNHAM	TWP	1311.	1536.	1644.	2000.	3000.	3900.
GRAFTON	TWP	4022.	5018.	5262.	6000.	8500.	11500.
GREENWOOD	TWP	3057.	4777.	5514.	6700.	7900.	9900.
HARTLAND	TWP	957.	1093.	1174.	1700.	2300.	2900.
HEBRON	TWP	1453.	1515.	1576.	2000.	2700.	3400.
MARENGO	TWP	4170.	4926.	5029.	5500.	6400.	7300.
MCHENRY	TWP	17105.	22999.	25553.	32000.	42000.	56500.
MUNDA	TWP	9605.	12973.	14206.	22100.	29000.	39500.
RICHMOND	TWP	1979.	2316.	2417.	2900.	3500.	4100.
RILEY	TWP	919.	1030.	1129.	1300.	1900.	2300.
SENECA	TWP	795.	1198.	1357.	2000.	2900.	3600.
FORECAST RESULTS -- WILL COUNTY							
CHANNAGON	TWP	2125.	2712.	3328.	3700.	4800.	5900.
CRETE	TWP	11737.	15270.	16599.	23000.	31500.	38000.
CUSTER	TWP	651.	949.	999.	1900.	2500.	3400.
DUPAGE	TWP	4725.	20037.	33096.	49000.	62500.	73000.
FLORENCE	TWP	629.	671.	694.	1000.	2000.	3000.
FRANKFORT	TWP	5794.	9633.	10190.	16000.	27000.	35000.
GREEN GARDEN	TWP	679.	791.	975.	1300.	2300.	3900.
HONER	TWP	4078.	6866.	7483.	12000.	22000.	33900.
JACKSON	TWP	1461.	1755.	1979.	2200.	2700.	3200.
JOLIET	TWP	94116.	95001.	95291.	105000.	112000.	117500.
LOCKPORT	TWP	26982.	33354.	33864.	40000.	49000.	55800.
MANHATTAN	TWP	1923.	2374.	2511.	3000.	3800.	4500.
MONEE	TWP	5131.	7240.	9619.	19000.	31000.	41900.
NEW LENOX	TWP	6232.	10049.	11705.	16000.	29000.	40500.
PEOTONE	TWP	2392.	2914.	3110.	3700.	4500.	5200.
PLAINFIELD	TWP	6655.	11029.	12612.	17000.	24000.	29300.
SEED	TWP	2192.	2646.	2964.	3500.	4000.	4700.
TROY	TWP	2679.	9895.	12232.	17500.	26000.	36500.
WASHINGTON	TWP	2347.	2940.	3122.	3500.	3800.	4200.
MESLEY	TWP	1741.	2331.	2412.	3000.	3900.	4500.
WHEATLAND	TWP	1023.	1794.	2632.	4000.	7000.	10400.
WILL	TWP	774.	750.	771.	1000.	1500.	1900.
WILMINGTON	TWP	5132.	5296.	5375.	6900.	9000.	10500.
WILTON	TWP	630.	709.	723.	1000.	2200.	3300.

III. PLANNING GOALS

The regional, county and township forecasts are significantly influenced by assumptions derived from the goals of the Comprehensive General Plan for the Development of the Northeastern Illinois Counties Area.¹ Only those goals which are considered essential to the making of the regional, county and township forecasts are listed here. There are other goals which are important to the development of an orderly region, but are not referred to in this document because they have a limited impact on the regional or township forecasts.

GOAL 1 - SOCIAL EQUITY

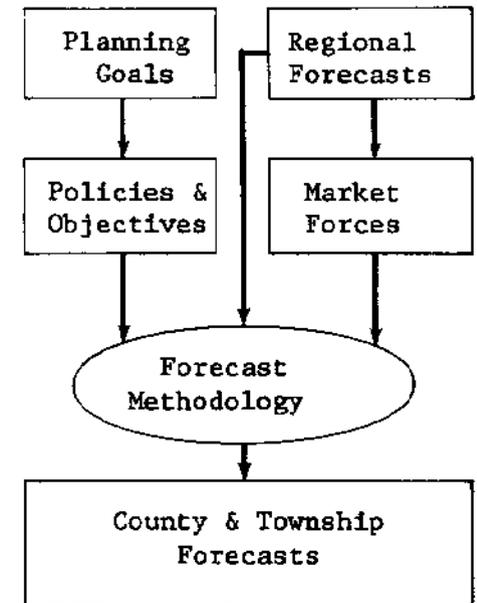
"Maximum opportunity for all persons to improve their cultural, social and economic condition, and to contribute to the fullest extent of their abilities without regard to race, creed, national origin or sex."

Implications

The income, educational attainment and occupational characteristics of minority races will be the same as those of whites by the year 2000. All the social, health and urban services available to minority races will be equal in quality to those of whites. Differences in life expectancies and birth rates between the various races will be eliminated by the year 2000.

Participation rates of women in the labor force will continue to increase; those of white men will continue to decrease. Differences between the participation rates of males and females will decrease, but will not disappear by the year 2000. Differences in participation rates between the races will completely disappear by the year 2000.

In the regional housing market, discrimination, direct or indirect, against members of minority races will disappear by the year 2000. The out-migration



¹ Following a public hearing, this plan was adopted by the Northeastern Illinois Planning Commission on April 19, 1968.

rates from the City of Chicago of whites and minority races will be equal by the year 2000.

GOAL 2 - ECONOMIC HEALTH

"Optimum growth free from violent fluctuations in the area's production, employment and income."

Implications

Jobs will be provided for the labor force implied in the adopted population forecasts. The employment forecast represents the high range of the probable forecasts given the national outlook and the relative competitive position of this region as compared to other economic regions. The Chicago region has an industrial composition favorable to growth, but, relative to younger areas, the region is at a competitive disadvantage. The employment forecast assumes that this relative disadvantage will diminish over a period of time and will completely disappear by the year 2020. It is this last assumption, reversing past trends, which resulted in a relatively high employment forecast. Selecting a lower employment forecast would have implied greater out-migration from the region, lower participation rates of population in the labor force or higher unemployment.

The goal of optimum growth is applied in developing county and township forecasts by balancing the distribution of the labor force, jobs and housing. Furthermore, this goal is used to ensure that growth in certain parts of the region would not occur at the expense of other parts, or in a fashion detrimental to the economic health of the region as a whole.

GOAL 3 - MAXIMUM QUALITY OF DAILY LIVING

"Enhancement of the quality of life through improved personal health and safety, convenient urban services, optimum distribution of land uses, preservation and extension of cultural resources and diversity and attractiveness of the visual environment."

Implications

The distribution of the various land uses within a region determines to a significant extent the level of accessibility of the population to the various activities.

The implication of this goal is that the various land uses are arranged to ensure that the trip lengths to jobs, shopping facilities, institutional services, recreational facilities and social opportunities will be maintained at 1970 levels. This requires a reversal of the trends which have resulted in significant increases in trip lengths over the last few decades. This assumption recognizes the differences between the accessibility requirements of different income groups and activities. This assumption implies reduction in the time expended traveling to fulfill daily needs as a result of a more efficient transportation network.

A viable public transit system is not only necessary for maintaining the economic health of the region, but is also essential for maintaining and enhancing the quality of daily living. Public transportation, however, cannot be supported by a pattern of low density urban sprawl. Consequently, the land and density distribution implicit in the forecasts will be supportive of a viable transit system.

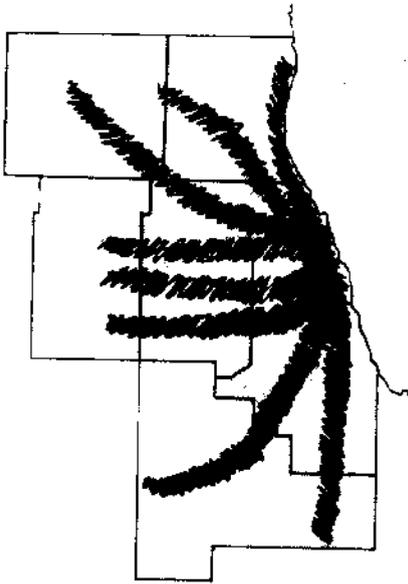
The township forecasts of employment and land uses will ensure adequate services and facilities for the forecasted population. The demands of the population of each township need not be met within the same township. The implication of this assumption is that the population of the inner and intermediate suburbs will not grow significantly because remaining vacant land is needed to provide space for urban services.

GOAL 4 - OPTIMAL USE OF NATURAL RESOURCES

"A better adjustment between man and his total environment."

Implications

Not all land areas within a township are suitable for urban development. There are areas with resource characteristics which render the areas unsuitable for urban development, e.g. flood plains. Some of these areas with resource limitations are designated as prime open space and others are to remain vacant. In either case, residential or other intensive urban uses are not allowed to occur in these unsuitable areas.



GOAL 5 - ORDERLY URBAN FORM

"Achieving an urban form reflective of the concept of order as specified in the Comprehensive General Plan."

Implications

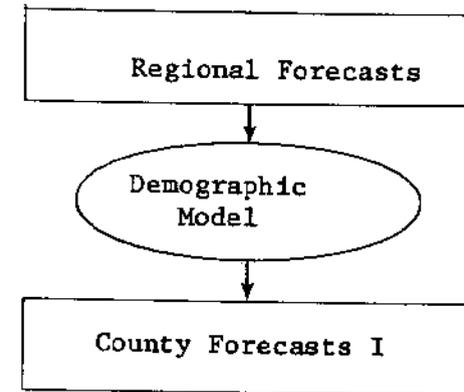
The pattern for the urban development of the region, as recommended in the Comprehensive General Plan, is one of high intensity development along corridors served by rapid transit with open space and other low intensity uses separating the development corridors. This pattern is an extremely important factor in influencing the distribution of population, employment and land uses to the various townships in the region.

IV. FORECASTING PROCESS AND REQUIRED POLICY ASSUMPTIONS

1.0 Summary of Process

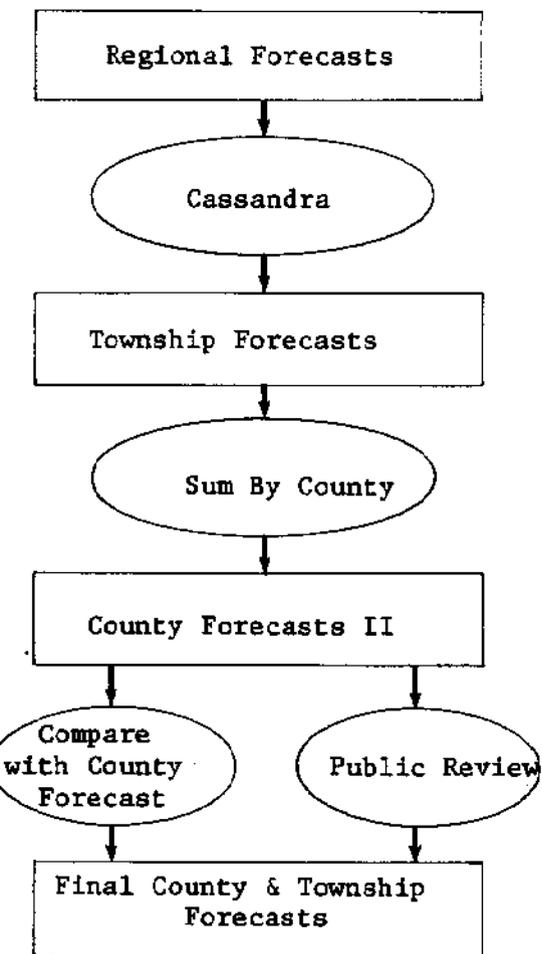
Two methods are used in developing the county forecasts. The first uses the demographic technique of cohort-survival* for generating the population forecasts and the shift-share technique for employment forecasts. The second method develops township forecasts directly from the regional forecasts and then adds them to obtain county totals. This method utilizes an activity allocation model referred to as CASSANDRA (Comprehensive Allocator of Systems, Services and Regional Activities).

- a. The demographic method for population forecasts starts with the 1970 population for each age-sex-race group in each county. To each of these population groups the new births are added, the deaths are subtracted and adjustments are made for net migrations. The fertility, mortality and migration assumptions made in the regional forecast limit the assumptions that can be made for the counties.
- b. The shift-share technique of employment forecasting assumes that every county and metropolitan area gets its share of national employment growth in each industry and makes adjustments for persistent differences between regions and counties. Technological change and the preferences of society are assumed to be reflected in the national forecasts.
- c. The CASSANDRA method operates on the basis of real or assumed interrelationships between different land uses and between land uses and factors which influence the distribution of households and employment within a metropolitan area. Population forecasts are then derived from the household forecasts. The first



EXISTING POPULATION
+ Births
- Deaths
± Migration
= NEW POPULATION

* The computer programs for this method were provided to NIPC by Professor Donald Bogue, Department of Sociology, University of Chicago.



step in this method is to determine the total number of households seeking housing units during a given forecast decade (e.g. 1970-1980). This total number of households equals the net growth expected in the region during the 1970-1980 period plus all those households which would seek to change their place of residence during this period. The net growth is derived from the regional forecasts, while the number seeking relocation is derived from the assumption relating to the mobility of households.

In considering the choice of new housing units, a household considers proximity or accessibility to a number of variables including jobs, retail facilities, governmental or institutional services, recreational facilities, households of similar socio-economic characteristics, households of differing socio-economic characteristics, etc. If households were to locate solely on the basis of accessibility of jobs, they would distribute to townships initially in proportion to the number of jobs in each township. Starting from this initial distribution each household will seek to find a housing location by reviewing all the housing opportunities available, starting from those nearest the township of employment and moving successively further away. The probability that any worker would accept a given housing opportunity is dependent upon his willingness to travel. The shorter the distance he is willing to travel, the greater the probability that he will accept a given housing opportunity.

Based on the above concept, several distributions of households can be determined, each reflecting the influence of a different variable, of which job location is but one. The final distribution of the households is a weighted average of the various theoretical distributions. The weights used in developing the average can be derived from observing past trends, or can be based on modification of past trends to reflect the various planning goals and policies. The process for determining the distribution of employment is precisely the same, with the exception that employers and not employment are being located.

The township forecasts are influenced by the weights assigned to each variable, the regional forecasts, the mobility assumption, the number of opportunities available in each township, the distance persons are willing to travel to fulfill

different needs and the transportation network. Each of these factors is influenced by planning policies regarding the future of northeastern Illinois. The remainder of this section describes the planning policies assumed in developing the township forecasts.

2.0 Policies Relating to Definition of Development Corridors

2.1 Current CGP Definition of Development Corridors

Development corridors are defined as areas with high accessibility, adequate urban services and a natural resource base capable of supporting high density development without detriment to the environment. The definition of development corridors is crucial to the making of the township forecasts. High intensity urban developments (e.g. residential development with more than one dwelling unit per acre) are restricted to these corridors. Areas outside these corridors are only permitted to attract developments which do not require urban services, that is, low density developments. A development corridor must have the following services or characteristics:

a. Rapid Transit Service

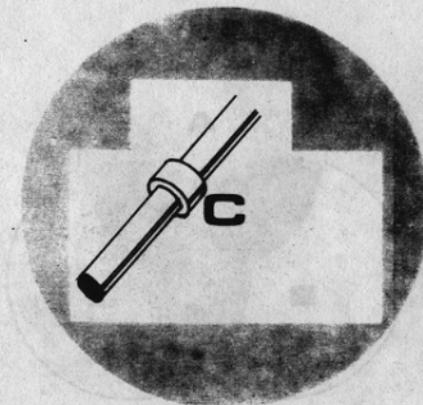
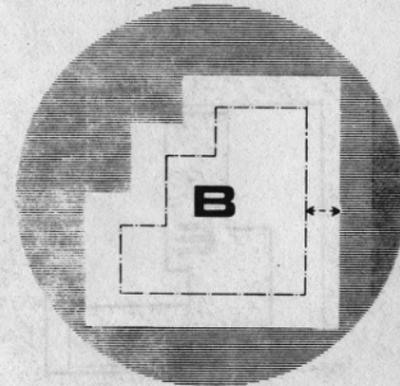
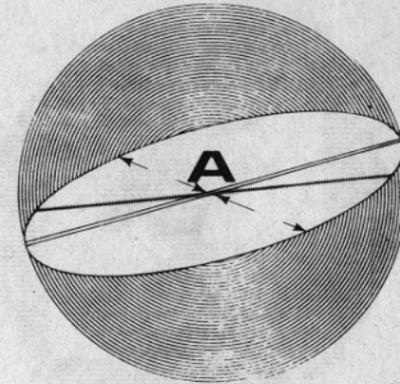
Areas within 6 minutes of existing rapid transit stations are defined as potential development corridors for the 1980 forecasts. Time of travel was measured using the 1970 existing transportation network. For the decade 1980-1990, areas within 6 minutes of stations proposed by the test network for the final 1995 transportation plan are considered potential corridors. For the decade 1990-2000, a few additional stations beyond those included in the test network have been included for defining corridors.

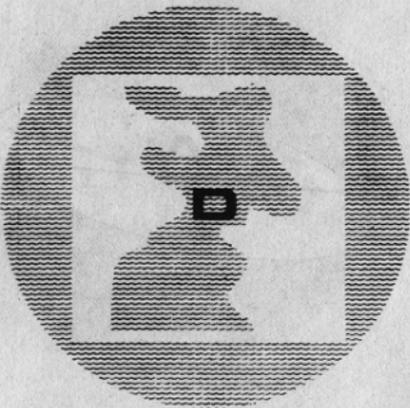
b. Municipal Service

The area is incorporated or can be provided with municipal services through annexation. Areas within existing municipalities or within 1 1/2 miles of an existing municipality were considered as having municipal services in 1980. Additional areas in 1990 and beyond are assumed to have municipal services if the area meets the other criteria.

c. Sanitary Sewer Service

For the decade 1970-1980, the only areas considered as having sanitary sewer service are those with existing service. For the decade 1980-1990 and beyond, areas

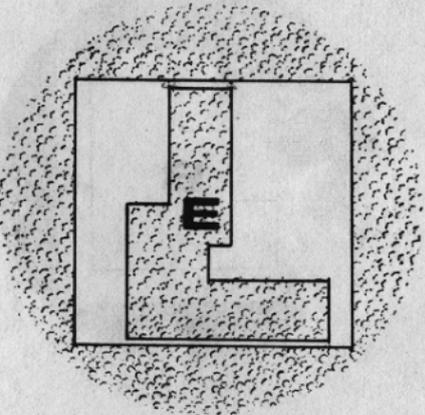




which are designated by the NIPC Regional Wastewater Plan as requiring sanitary sewer service are assumed to have met this requirement for corridor definition. Since the population forecasts used in developing the Regional Wastewater Plan are considerably higher than the new NIPC forecasts, no area will suffer due to this assumption.

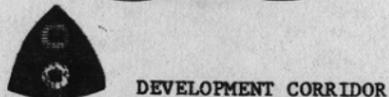
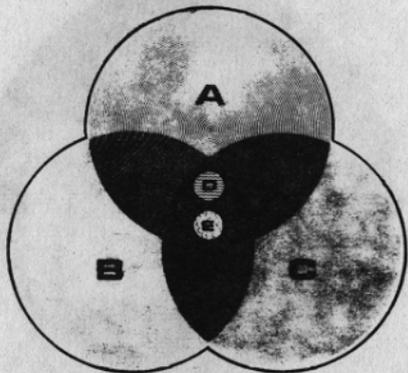
d. Adequate Resource Base

Land included in development corridors must have a resource base adequate to support high density development. All vacant lands within flood plains were automatically defined as outside development corridors. Also excluded from development corridors are those areas with unique flora, fauna or geology. Areas with soils or geology having severe limitations to urban development are not excluded from the development corridor during the phase of generating the township forecasts. The reason for this assumption is that soils with limitations for urban development are local in nature. Soil limitations will be used as constraints in developing the quarter section forecasts.



e. Compatibility with the Open Space Plan

On March 3, 1971 the Northeastern Illinois Planning Commission adopted the Regional Open Space Plan. The plan recommended the acquisition of certain areas which fulfill certain policy objectives. These objectives included the provision of adequate recreational space for the existing and future population, the preservation of natural resources and the guiding of urban development into development corridors as recommended by the Comprehensive General Plan. The 1971 plan was based on data from 1968. In 1973 the areas designated as first priority open space were reviewed to determine whether or not they are still available for preservation. On the basis of this review, the first priority open space areas were updated. The update did not assume any change in the policy objectives specified in the original plan, it merely reforecasted the new open space areas using more current data. All areas designated as first priority open space in the updated plan are excluded from the development corridors. The vast majority of first priority areas are outside the development corridors as defined by the other criteria.



2.2 Alternate Definition of Development Corridors

It has been suggested that the definition of development corridors might be expanded to include those areas outside of traditionally defined development corridors which are served by expressway interchanges. To test such a revision of the Comprehensive General Plan, an alternative set of 1990 county population forecasts was produced, with expressway interchanges treated as the equivalent of rapid transit stations and all other goals, policies and assumptions held constant.

Township forecasts were prepared using the experimental highway corridor definition. Townships which have large amounts of vacant land and which are served by expressways have larger forecasts than under the traditional definition. These townships are in Will, southern and northwestern Cook, western DuPage and central Lake counties.

Table 9 compares the forecasts made using the experimental highway corridor definition with those made with the traditional rail definition. It can be seen that only suburban Cook and Will counties gained population under the experimental definition. This is the case because Cook and Will counties had a competitive advantage over the other areas due to other factors.

Table 9: Comparison of 1990 Population Forecasts Reflecting Alternative Definition of Development Corridors (All Population Figures Are In 000s)

	<u>1970 Population</u>	<u>Rapid Transit Definition</u>	<u>Highway Definition</u>	<u>Difference Highway-Rapid Transit</u>	<u>Difference As Percent Of 1970-1990 Change</u>
City of Chicago	3,367	3,215	3,185	-30	-20%
Suburban Cook	2,125	2,716	2,790	74	13
DuPage	492	783	760	-23	- 8
Kane	251	417	417	0	0
Lake	383	655	635	-20	- 7
McHenry	112	205	196	- 9	-10
Will	249	467	476	9	4
Total	6,979	8,458	8,459	1*	0

*Difference Due To Rounding

These results indicate that the proposed revision to the corridor definition may have a significant negative impact on the urbanized townships and would lead to a forecast of urban sprawl. Thus, it was decided not to revise the Comprehensive General Plan at this time, but rather to continue studying the impact of this or similar revisions to the corridor definition, reserving the option of amending the Comprehensive General Plan at a later date.

3.0 Policies Relating to Residential Development

3.1 Density Assumptions

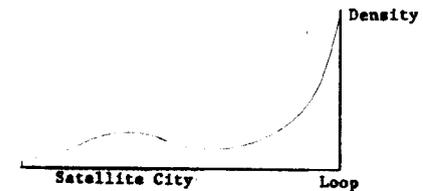
The density assumptions for new residential developments on vacant land or redeveloped land play an extremely important role in determining the household and population forecasts for townships. The density assumptions determine the total number of potential opportunities for housing units and set the limits for the growth of a township.

Due to the importance of the density assumptions, a special questionnaire was mailed to all chief elected officers of municipalities in northeastern Illinois.* The questionnaire sought information regarding the maximum desirable population (limits of growth) and the expected housing mix (residential density). The NIPC assumptions were compared to those of the mayors and presidents. In six townships conflicts existed between the initial NIPC assumptions and those of the elected officials. In those townships special adjustments were made to increase the NIPC density assumptions and to bring them in line with those of the mayors for the areas within development corridors. In seven other townships conflicts existed. NIPC assumptions conformed with those of some officials and were in opposition to others, these were left to stand without modification. It should be noted that agreements on density assumptions do not necessarily result in agreements on forecasts, unless townships reach their saturation levels.

*Mayors and presidents representing 82 percent of the regional population responded to the questionnaire.

The specific density assumptions are:

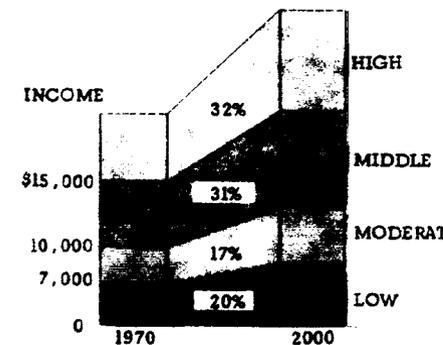
- a. Densities outside development corridors will be limited to a net density of less than one dwelling unit per acre (gross density of 1.2 dwelling units per acre).
- b. Net residential densities greater than or equal to one dwelling unit per acre are restricted to development corridors.
- c. Densities of areas within development corridors are determined by their existing densities, distance from the regional core or satellite cities, and the forecast period. (The density of each ring of townships increases with time).
- d. Townships already at saturation at the end of a forecast period are allowed to increase their density by a maximum of 5 percent per decade.



3.2 Housing Mix

The assumptions for the housing mix are derived from residential policy #1 of the NIPC Comprehensive General Plan. "Housing suitable for all family sizes and income levels should be available to meet consumer demands within each developing sector of the six-county area."

The behavior of the various income groups in the selection of their housing units is different. Accordingly, four income categories are identified. These are low, moderate, middle and high income. The 1969 family incomes for these groups were: less than \$7,000; 7,000-9,999; 10,000-14,999; and 15,000 plus, respectively. Rather than forecasting an income distribution in terms of dollars, which would require a projected rate of inflation and several subjective inputs, it is assumed that the behavior of various income groups is a relative matter. Accordingly, a particular percentage of households with relatively low income will behave and be treated by other income groups accordingly. The same applies to the other income groups. Thus, for the purposes of the forecast, 20 percent of the total will be considered low income. The moderate, middle and high income groups will constitute 17, 31 and 32 percent respectively.



In determining the appropriate percent of total vacant land to be devoted to each income group within each township, the higher of two percentages is selected: (1) the regional percent or (2) the township percent of the total urban land devoted to residential use for that income group. Note that according to this assumption more land can be made available to residential uses than there is total vacant land in a particular township. However, we are concerned here with the maximum supply of land possible for each income group. If the demand for this land exceeds the supply then the available supply should be distributed among all income groups on the basis of the demand of each group.

The existing housing stock is assumed to stay within the same income group except for the filtering down or filtering up process. Filtering is the process whereby housing units of one income group become available for occupancy by another income group. Filtering usually works downward i.e., higher income families move to better units vacating units which will be occupied by lower income groups. Housing also filters upward through the renewal and renovation processes. Table 10 shows the maximum levels for filtering assumed for any township. Read horizontally, the table indicates that zero percent of the housing units vacated by high income families will be available to low income; 5 percent to moderate income; 10 percent to middle income and 85 percent will remain for high income families.

Table 10: Percent of Vacated Housing Units Becoming Available to Various Income Groups

Income of Vacating Family	Maximum Percent Becoming Available To				Total
	Low	Moderate	Middle	High	
High	0	5	10	85	100
Moderate	5	15	75	5	100
Middle	15	70	10	5	100
Low	70	15	10	5	100

Notwithstanding the data in Table 10, if a township fails to attract adequate families to use all the available housing units for a specific income group, adjustments were made to take advantage of excessive vacancy rates in the housing stock by adjusting the filtering down rates.

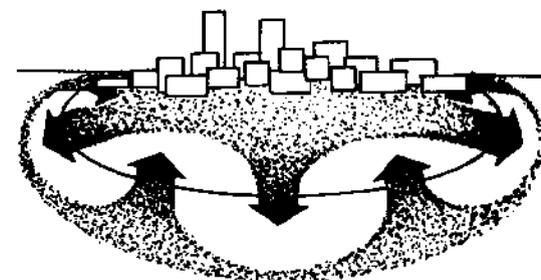
3.3 Residential Relocation

During the period 1960-1970, approximately 58 percent of the suburban and 72 percent of the City of Chicago families changed their dwelling units. These rates varied slightly from township to township, and by income group. The specific experience of each township is assumed to remain constant throughout the forecast period. The housing units vacated by these families become available housing opportunities for those seeking new dwelling units and will be affected by the filtering process.

Due to the fact that the total number of opportunities on vacant land far exceed the opportunities vacated by relocating families, the forecasting model, if unchecked, disperses the population away from the already urbanized areas. This dispersion will cause significant abandonment of housing units in the older townships and the City of Chicago. In order to counteract this undesirable trend, all existing housing opportunities were multiplied by a weight to ensure that vacancy rates in existing units will not exceed reasonable limits.

3.4 Assumptions Relating to Importance of Variables Used in Distributing Households

The households of each income group were distributed on the basis of thirteen variables. The importance of each variable was determined from actual experience. The most important variable in explaining the locational behavior of a given group in 1970 is the distribution of that group in 1960. Seventy percent or more of locational behavior for each group can be explained on the basis of this 1960 distribution. This reflects both the pricing structure of existing dwelling units and a tendency for households of the same income group to cluster together. This second factor implies either social barriers to economic integration or different locational preferences, which in turn may reflect social barriers.



Another factor selected as important to the locational behavior of households is open space. Its importance is directly related to household income; that is, its explanatory significance declined as income declined. In fact, open space was found to be insignificant in explaining the behavior of low income groups. Nonetheless, this variable is included for all groups. Its importance is a theoretical one, since open space was considered in the model as a surrogate for scenic areas and topographic features.

Manufacturing and transportation, communication and utilities (TCU) employment appear as negative forces, acting as repellents to households. Institutional and governmental employment attract low, moderate and middle income housing. Trade employment appears as an important positive variable in explaining the locational behavior of low income families. This may be due to the need for proximity to shopping outlets. It is of great interest to note that although employment was a significant variable it was relatively unimportant in comparison to the other variables.

If the weights derived from observing household behavior in the 1960s are used without modification, then the implications for the forecasts are:

1. Patterns of concentrations of households by income will continue into the future.
2. Low and moderate income households will continue to locate away from high income households and vice versa.
3. Distribution of moderate and high income households will not be significantly influenced by distribution of employment opportunities.
4. Manufacturing and TCU employment will continue to have negative impacts on locational behavior of households.
5. Low and moderate income households will not be as sensitive to distribution of open space as the higher income families.

These forces are in opposition to the goal and policy assumptions listed earlier in this paper. In order to redirect these forces, target weights for the year 2000 were derived from questionnaires to the Commission's Small Area Forecast Technical Advisory Committee. Weights for 1980 and 1990 are obtained by interpolating the target and existing weights.

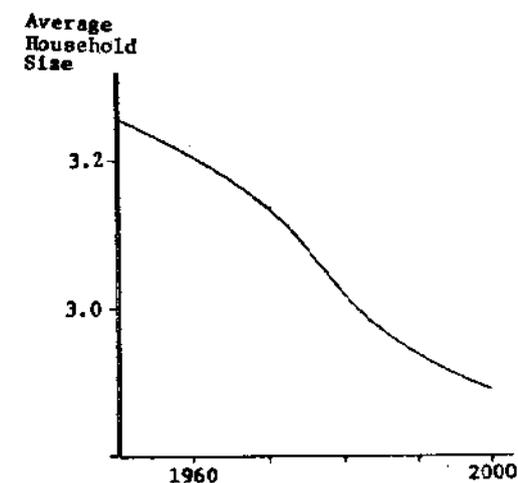
3.5 Average Household Size

The CASSANDRA method yields household forecasts. In order to develop population forecasts from the household forecasts it is necessary to develop household size forecasts. Household size forecasts are derived from the demographic forecasts for each county which provide population by decade for each age-sex-race group. A percentage of each of these groups are heads of households and this percentage is called the headship rate.

Headship rates for white males and females were maintained at 1970 levels while headship rates of the minority races are assumed to equal those of whites by 2000. The headship rates were multiplied by population forecasts and the results added to develop the total household totals for each county. Average household size is derived by dividing the county's population forecast by its household forecasts. The resulting average household sizes for each county are shown in Table 11.

Table 11: Average Household Size For Suburban Counties And The City Of Chicago

	1950	1960	1970	1980	1990	2000
	Actual			Forecasted		
City	3.18	3.01	2.91	2.86	2.80	2.71
Suburban Cook	3.44	3.50	3.34	3.15	3.01	2.92
DuPage	3.50	3.66	3.56	3.32	3.11	3.00
Kane	3.23	3.34	3.26	3.13	3.07	3.03
Lake	3.41	3.52	3.42	3.25	3.11	3.01
McHenry	3.37	3.45	3.35	3.24	3.13	3.07
Will	3.41	3.44	3.43	3.26	3.12	3.01
Northeastern Illinois	3.25	3.20	3.14	3.02	2.94	2.90



The average household size for each township is derived by maintaining the ratio of the township household size to that of the county in 1970 constant for the forecast period. This implies that townships will remain different from each other, although differences will be reduced as the average household size for all counties declines.

Population forecasts for townships are derived by multiplying the household forecasts by the average household size. The smaller average household size for all townships and counties implies that townships which do not show an increase in forecasted households will experience a loss of population.

4.0 Policies Relating To Employment Location

Many of the assumptions relating to the distribution of regional employment are similar to those derived for the distribution of households. The major conceptual difference is that when we speak of the relocation of households, households are actually moving, but when employment is relocated, employers not employees are making the decisions to move. As a result, while households may be attracted to certain activities, employment is "attracted" only to the extent that employers discover that new locations are more efficient with respect to access to consumer, material and/or labor markets.

4.1 Density Assumptions

Although low density residential development is allowed in the wedge areas, all new employment opportunities are assumed to occur only in development corridors.

4.2 Employment Categories

It is assumed that each employment category has a different location behavior which will vary because of differing orientations to consumers, materials and labor. Accordingly, six categories are defined: manufacturing; TCU (transportation, communication and utilities); trade; FIRE (finance, insurance, real estate and miscellaneous services); institutions and government; and other employment, including self-employed, construction, mining and agriculture. These activities compete for space with one another and with households just as households of varying income levels do.

4.3 Employment Relocation

Because of the relative importance of fixed capital stock, established markets and the desire to prevent erosion of actual employment opportunities in existing areas it is assumed that employers are not as flexible in their ability to relocate as are households. For manufacturing and TCU employment in the initial period, 25 percent of existing Chicago employment, 10 percent of existing satellite township employment and 5 percent of employment in the other zones were allowed to consider relocation. These differences are allowed because the capital stock is likely to be older in the more established areas, as reflected in the experience of manufacturing firms during the period 1958-1964. By the decade 1990-2000, however, 10 percent of existing manufacturing and TCU employment is allowed to move regardless of initial location. Other employment, primarily service industries, is assumed to stay in its initial location, promoting stability in the provision of services to consumers in the established areas. Growth in employment in these industries is thus the only source of growth in new developments.

4.4 Assumptions Relating to the Importance of Variables Used in Distributing Employment

Employment in each industry grouping was distributed on the basis of thirteen variables. The importance of each variable was determined by comparing the results of the theoretical distribution to the actual distribution which occurred in the 1960s. Precisely the same procedure is used as was used for evaluating the variables relating to household location, with one exception. "Other" employment was assumed to be attracted to zones where growth was occurring. The average of the percentage growth in the sum of the remaining employment categories and growth in population was used to distribute "other" employment.

For the remaining five categories, growth in any one category seemed to be attracted towards existing concentrations of employment in that category. To the extent that existing concentrations serve as a proxy for all the factors attracting a certain industry, this fact was not surprising. This problem is also simplified because there are not great social implications in the concentrations of employment groupings. Adjustments in the relative importance of variables were nonetheless made to reflect improvements in the access to buyer, supplier and wider labor markets. Thus for manufacturing, the relative importance of the locations of trade employment, TCU employment and all households was

increased. For TCU employment, the relative importance of manufacturing, all households and trade was increased. Trade becomes relatively more attracted to all households and manufacturing. The importance of all households and trade employment increases for FIRE and miscellaneous services. Institutional and government employment becomes more attracted toward all households and trade employment.

V. OTHER REFERENCES

For more detailed information regarding the population and employment forecasts, refer to the following documents:

Chicago Area Transportation Study

"Regional Transportation Interim Plan and Program," March, 1971. (Adopted by the Northeastern Illinois Planning Commission as an element of the Comprehensive General Plan on October 21, 1971).

Interstate Planning Committee

1. "Activity Allocation Land Use Model for the Northeastern Illinois Region. Comprehensive Allocator of Systems, Services and Regional Activities (CASSANDRA) for the Northeastern Illinois Region." Research Memorandum #18a. October 11, 1973.
2. "Alternative Demographic and Employment Forecasts for the Chicago/Northwestern Indiana Standard Consolidated Area." Research Memorandum #16. April 25, 1973.
3. "Components of Demographic and Economic Growth of the Chicago/Northwestern Indiana Standard Consolidated Area." Research Memorandum #14. January 12, 1973.
4. "Forecast Decisions Facing the Chicago/Northwestern Indiana Standard Consolidated Area 1972-2020." May 22, 1973.
5. Forecast Technical Advisory Committee. "Recommendations on Future Growth Facing the Chicago-Northwestern Indiana Standard Consolidated Area 1972-2020."

6. "Regional Growth Policy and Governmental Powers." Research Memorandum #17. February 5, 1974

Northeastern Illinois Planning Commission

1. "The Comprehensive General Plan for the Development of the Northeastern Illinois Counties Area." April 19, 1968.
2. "Regional Open Space Plan: An Element of the Comprehensive General Plan for Northeastern Illinois." March, 1971.
3. "Regional Growth: Pro and Con: Public Comment to the Interstate Planning Committee Hearing on Population and Economic Forecasts for the Chicago-Gary Region, 1970-2020." July, 1973.
4. "Regional Wastewater Plan: An Element of the Comprehensive General Plan for Northeastern Illinois." March, 1971.

Copies of these reports may be obtained by contacting the Public Services Department of the Northeastern Illinois Planning Commission at the following address:

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