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<td>BRYCE BILLINGS (Chairman) Mayor, Valparaiso</td>
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<td>TOM CONLEY City Engineer, Hammond</td>
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<td>WILLIAM CARTER County Highway Superintendent Kane County</td>
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<td>WILLIAM CARTER County Highway Superintendent Kane County</td>
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<td>EDWARD STREED Asst. Superintendent of Highways Lake County</td>
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<tr>
<td>ROY S. COUSINS Superintendent of Highways Will County</td>
<td>JACK OLEM Councilman, Portage</td>
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<td>ROBERT GARNHAM Lake County Planning Director</td>
<td>JAMES R. RAKOW Superintendent of Highways McHenry County</td>
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<td>VIRGIL S. KING Porter County Commissioner STEVE W. MANN Lake County Surveyor</td>
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<td>WILLIAM L. STAHLLE Model Cities Director, Gary</td>
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<td>JOHN VASCONI Director of Planning, East Chicago</td>
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<td></td>
<td>EVERETT WITTE Town Board, Chesterton</td>
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<tr>
<td></td>
<td>NORMAN E. TUFFORD Executive Director 8145 Kennedy Avenue Highland, Indiana 46322</td>
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</tbody>
</table>

Prepared by the Chicago Area Transportation Study, sponsored by the agencies on the Policy Committee in cooperation with the U. S. Department of Transportation, Federal Highway Administration.

The Work Program Committee was assisted in the preparation of this document by group and individual efforts of its membership. The Mass Transit Coordinating Committee also acted as a reviewing body for the Public Transportation section.
regional transportation interim plan and program

march 1971
March 25, 1971

To the Elected Officials of the
Northeast Illinois and the
Northwest Indiana Region:

We have the honor of transmitting the report on the "Regional Transportation Interim Plan and Program" for the eight county Illinois-Indiana region. The report consolidates, for the first time in this region, plans for all modes of transportation.

This is not a final plan, but as the title suggests, a working document on which implementation decisions may be based. Just as regional goals and activities change over time, so must a plan. The annual review and updating of the regional transportation plan is the objective of joint programs now being developed by the CATS and the LPCRTPC.

We respectfully recommend that this Interim Plan be reviewed and considered for adoption by appropriate governmental authorities as the regional transportation plan.

Respectfully submitted,

Bryce Billings, Chairman
LPCRTPC

Richard H. Goltermann, Chairman
Policy Committee - CATS
PREFACE

Events of recent years have brought about significant changes in the scope and scale of transportation planning in the Chicago region. These are most apparent in the change from four functionally defined planning regions to one six county region in Illinois and the inclusion of freight and aviation facilities as major elements of the transportation plan. While less evident, the importance of long range capital programming must also be acknowledged as part of the planning process.

The purpose of this report is to coordinate and consolidate transportation planning and to set the stage for planning activities during the year and years to follow. The plan is a composite of existing plans and relevant issues in the region.

Specifically, this report is directed toward:

1. Recognition that the comprehensive and continuing transportation planning process exists in the Chicago region through the joint efforts of the Chicago Area Transportation Study and the Lake-Porter County Regional Transportation and Planning Commission.

2. Consolidation of individual plans into a single "working" plan and program for the region.

3. Acceptance of this basic plan as the starting point for testing and evaluation of alternatives necessary for the delineation of a finalized plan.

4. Identification of specific conflicts in policies, objectives, plans and programs.

It should be clearly noted that the plans shown for Lake and Porter Counties in Indiana are staff recommendations of the Lake-Porter County Regional Transportation and Planning Commission. To date, the Commission has not registered formal acceptance of these plans.
This report is divided into six sections: Introduction, Public Transportation, Highways, Aviation Facilities, Freight Facilities and The Next Step.

The Introduction is a statement of goals and issues. Public Transportation is currently the most critical mode in the transportation system, therefore, its role is preeminent. The problems of the Chicago Transit Authority and the private railroads and bus companies must be faced immediately. The Highways section represents a consolidation of highway plans of the CATS and the other transportation studies in the eight county region. Aviation and Freight Facilities sections which are new to the CATS planning effort, must be considered in the comprehensive transportation planning process. Rapid growth in air travel is anticipated and planning is needed to prepare for its impact on the surface transportation system in the region. The movement of goods by rail, highway, air, water and pipeline must also be coordinated to maintain a strong regional economy.
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INTRODUCTION

The investment in transportation facilities in the Chicago-Northwestern Indiana Consolidated Area is staggering. Administration of this complex physical plant is divided among federal, state, county, and local levels of government and private firms in two states. There are numerous public and private agencies responsible for maintenance of facilities, collection of revenues, regulation and construction of new facilities.

The need to coordinate the operations and activities of these many agencies to prevent administrative conflicts is obvious. Consistency of design and continuity of improvements essential to the safe and efficient movement of persons and goods can only be brought about with interagency cooperation and planning. All these agencies must direct their efforts toward the realization of objectives that are both regionally and locally beneficial. In transportation planning, these objectives take the form of proposed improvements and modifications to the existing eight county system.

Within the six county Illinois portion of the region there have been four major transportation studies: Fox River Valley Transportation Study; Joliet Area Transportation Study; Lake County Transportation Study; Chicago Area Transportation Study (CATS). Only recently has planning for the future system come under the aegis of a single transportation agency (CATS). Along with the Northeastern Illinois Planning Commission (NIPC) and the City of Chicago, the CATS provides continuing planning services to the entire Illinois portion of the region. Adjacent to the CATS area, in Northwestern Indiana, is the Lake-Porter County Regional Transportation and Planning Commission, the transportation and general planning agency for that area.

AGENCY POLICIES AND GOALS.

The following briefly describes the policies and goals that have been developed by the several agencies. Later chapters more specifically discuss recommended plans.

Chicago Area Transportation Study

"The overall objective of transportation (planning is) ... to secure a transportation system for the Chicago area which will reduce travel frictions within the constraints of safety, economy, and the desirable development of land use."

"...criteria ... toward which transportation planning should strive:

1. Greater speed."
2. Increased safety.
3. Lower operating costs.
4. Economy in new construction.
5. Minimizing disruption.
6. Promoting better land development.\textsuperscript{2}

\textbf{Northeastern Illinois Planning Commission}

"Transportation systems, while they are generally designed to serve the pattern of developed land, also have a strong impact on land development. The mutual interaction of land use and transportation points up the importance of closely relating policies dealing with land development and the transportation system... The recommended land development policies affirm the desirability of strengthening all elements of the transportation system and combining the best features of each element for greater travel convenience, efficient use of existing investment, and savings in land and construction costs.\textsuperscript{3}

\textbf{City of Chicago}

"Increasing freedom of movement and choice of travel mode through the transportation system is essential in order to expand human opportunities and strengthen the economy. To do this, it will be necessary to relate the various transportation modes and coordinate their development so that the entire system operates as a unified whole, and so that each mode performs the functions for which it is best suited as efficiently as possible.\textsuperscript{4}

"... the major policy is to develop a system of corridors of high accessibility ...\textsuperscript{5} Each corridor would include both mass transit (express bus, rapid transit, or commuter railroad) and a major road (expressway or major street) ... The corridor system provides a means of using each type of ground transportation to best advantage, strengthening and supporting existing and future lines, and using transportation to improve other aspects of the city's environment ... Concentrating intensive uses in the corridors would help relieve congestion in other parts of the city.\textsuperscript{6}

"... recognize that a realistic national transportation policy must be comprehensive -- that all of our modes of transportation are complementary and interdependent.
"It is obviously essential that the mass transit systems be retained and improved.

"We are witnessing the beginning of the end of the long neglect of our cities. Thus, stronger communities which attract and retain residents in the city should be a goal of comprehensive highway planning.

"It is clear that we need highways. We also need mass transit systems and we believe the two are complementary. Basically, we need an overall comprehensive transportation program which takes into account all modes of transportation." 

Fox River Valley Transportation Study

"The original purpose of the Fox River Valley Transportation Study was to produce an adequate system of street and highway improvements, considered necessary to handle the vehicular transportation requirements throughout the Area in 1985. Such projects would be related to the socioeconomic growth taking place in the Study Area and the indicated expansion of this growth.

"The ultimate purpose of this Study ... is the establishment of a comprehensive planning outline ... (to) form a broad basis for a continuing review and updating of overall planning decisions in the Fox Valley Area." 

Joliet Area Transportation Study

"The plan for large scale public improvements, such as transportation systems, must meet with the goals and objectives of the communities within the region." (Therefore) " ... two top ranking objectives were to design highways to the highest possible standards of safety and to provide adequate connections between residential areas and major industrial complexes. These goals and objectives were held paramount in the development of the transportation plan for the Area." 

Lake County Transportation Study

" ... to advance the travel values held by the Lake County population .... Travel (is valued for its) speed, comfort, convenience, and increased opportunities for human interaction."

" ... to reduce the direct costs of providing transportation services (by) ... designing a system which is most economical for government and various public and private corporations to build and operate."
"... to reduce the cost of using the transportation system once it is developed and built....

"... to establish a continuing procedure of maintaining the county's transportation plan in harmony with other plans and changing conditions over the coming years."12

Lake-Porter County Regional Transportation and Planning Commission

"1. The construction of regional transportation facilities should be used as an important means of shaping the entire land-development pattern of the region.

2. Provision for shared expressway and rail facilities or closely parallel rail and expressway routes should be continued so that within intensive-development areas there will be a choice of travel mode.

3. More opportunities for transfer should be established within the rail network, and between rail and road facilities."13

COORDINATED GOAL.

There is nothing that conflicts in the policy and goal statements of the transportation studies, and other planning groups in the eight county region. Each organization has been dedicated to solving the transportation problem in its respective area. Each transportation plan must move from the general to the specific.

The plan presented herein is a first step in the ultimate delineation of a transportation plan for the area. Being a composite of plans prepared by various study groups, it evidences already accepted proposals of the various agencies rather than startlingly new ideas. A long range plan, of which this is only a first step, will result in specific proposals.

The CATS purpose in preparing this document is to stimulate discussion which will in turn result in various alternatives. These will be tested, modified, and detailed before a final plan is selected. When a selection is made, it will manifest the individual efforts of many agencies and represent a sound transportation system that can be programmed, scheduled and built over the projected time span.

REGIONAL SUB-GOALS.

The transportation problem consists of a myriad of individual parts. Inadequate traffic facilities, congestion, air pollution, frequency of crime on transit facil-
ilities, ugliness of the highway system and poor airport access are all part of the total problem. Solutions to these problems are sub-goals to the overall aim of transportation planning.

The ability to measure the effect of transportation plans on the solution of these problems varies. The CATS has collected traffic accident data which allow the correlation of accident rates with roadway design and congestion levels. The values of time and operating costs of various systems can be estimated. Vehicle emissions, or for that matter, the amount of coal burning required to generate electricity for a transit line can be measured.

Yet, the effect of the transportation plan on other regional goals is more subjective. There are no mathematical models which result in a measure of beauty in road design. Compatible land use is only slightly more definable. Nevertheless, one must remember that the solution to these problems often can be achieved at the implementation stage of the transportation plan when an alignment for a facility in a recommended corridor is being located. The concept of joint development of the area, being used in the Crosstown Corridor, is an example of this type of solution.

The solution to our transportation problems must evolve from the implementation of a comprehensive regional transportation plan.

ISSUES.

The planning process has raised several issues that must be considered.

If we are to plan for equilibrium between transportation modes, it must be done under realistic policies affecting their operation. There currently is a well-defined legal and administrative policy framework for streets and highways. Road construction plans have been developed and coordinated, and funding and administrative responsibility has been allocated. Transit planning, however, has not experienced this to date since funding and operational responsibility has been fragmented, adding to the problem of declining ridership.

Recently, a referendum was approved to provide one-third of the funds for the Chicago Central Area Subway and Distributor System. The CATS worked with the City in the development of this system and it is part of the transit recommendations. Local funds would be used to match a two-thirds federal grant. Under existing federal policies, these applications will be competing for funds with other states and cities. This positive action occurs at a time when clear policy concerning support of transit operations is non-existent. It is evident that immediate priority must be given to operating policies for transit facilities. New facilities can only be built if operating funds are assured.
In addition to the transportation problem, we must be concerned with environmental conditions, housing, education, and other social and economic problems. Transportation interacts with these issues and often conflicts. The CATS has attempted to minimize conflicts and incorporate the recommendations of the agencies concerned with these issues into the plan. The objective of the transportation plan is to serve the transportation needs of the citizens of the region within the context of their own overall goals.
REFERENCES.


2. Ibid., p. 8.


5. Ibid.

6. Ibid., p. 68.


10. Ibid., p. 17.


12. Ibid., p. 182.

PUBLIC TRANSPORTATION

THE INTERIM PUBLIC TRANSPORTATION PLAN AND PROGRAM PROVIDE THE BASE FOR CONTINUING IMPLEMENTATION AND FURTHER SYSTEM EVALUATION.

EXISTING SYSTEM.

There are 28 individual carriers providing service in the eight county Chicago region. As depicted on the adjoining map, the existing system, operated by the Chicago Transit Authority, nine commuter railroads, sixteen suburban bus companies, and two airport bus companies, is extensive both in network miles and in area served.

The region's public transportation system is made up of the following components: suburban railroad, rapid transit, express bus, local bus and terminal and station services. Although there is some overlap in service areas for each mode represented, there are specific characteristics that distinguish one from the other. These are summarized in the table on page 10. It should be noted that intercity bus and railroad services have not been described. Railroad service generally shares facilities of commuter operations, while two intercity bus terminals serve downtown Chicago.

Suburban Railroads

Commuter rail routes are high-capacity travel arteries, on private rights-of-way, radiating from the central business district to outlying suburban areas. The capacity of each train varies depending upon need.

Use of suburban railroads in metropolitan Chicago fell off continuously between the post-World War II period and 1963. Since then, modest growth has occurred, the result of continuing demographic change, population shifts and service improvements. This growth can be expected to continue as suburban population increases. Furthermore, the future of suburban railroads is directly related to the continued strength of the Chicago Central Area.

Rapid Transit

Rapid transit lines are travel arteries of high passenger capacity usually on exclusive rights-of-way, which provide service generally within the City of Chicago, although lines extend into eight suburbs to the north and west. The service impact of rapid transit is greatest between outlying areas and the central business district, although other travel generators are also served. The capacity of each line can be altered to meet passenger need by increasing the number of cars and by scheduling additional trains.
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<td>10 Routes Focus on 7 lines entering the CBD</td>
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<td>Percent Over Age</td>
<td>47.5%</td>
<td>6.9%</td>
<td>49.6%</td>
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<td>Type of Power</td>
<td>186 MU Electric 117 Diesel Loco.</td>
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<td>2,274 Diesel 315 Elec. 81 Gasoline 1,455 Propane</td>
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<td>Seating Capacity Per Unit</td>
<td>Bi-level: 135-169 Standard: 36-100</td>
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<td>23 to 51</td>
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</table>

\[a\] Estimated by CATS.

\[b\] Based on Railroad and Rapid Transit car retirement at 25 years of age and Buses at 12 years of age.

**NOTE:** CBD bounded by the Chicago River on two sides, Harrison Street and Lake Michigan.

Central Area bounded by North Avenue, Halsted Street, Roosevelt Road and Lake Michigan.
Rapid transit usage in metropolitan Chicago has been relatively stable since 1950, in spite of a slight decline in the population served. Where extensions have been built, the ridership includes new riders as well as riders that have switched from other modes.

Express Buses

Express buses provide moderate-capacity transport service, which usually operate as local buses through a pick-up area, then move through a trunk line, again to become local buses in the terminal area. They provide service between outlying areas and downtown Chicago, between travel generators other than downtown, and as feeders to rail lines.

Local Buses

Local buses are moderate-capacity transport facilities, generally serving short trips. Because the system operates on the existing street system, routes are flexible and can be made to accommodate varied passenger needs. Dispersal of population, commercial and employment activity and increased automobile ownership, have reduced the former demand for local service. Many suburban bus operations are no longer self-sustaining, causing in some cases, discontinuation of service. The cities of Elgin and Joliet have, in fact, taken over bus operations from private owners. To forestall abandonment of essential service, even though use had declined, other municipalities are considering subsidies.

Terminal and Station Services

An important element of the public transportation system is parking at rail stations, which contributes to growth of suburban rail and rapid transit services. Parking at suburban stations has been substantially expanded in the past ten years, primarily by local communities. In spite of the increased space provided, the demand for parking continues to grow and the supply is limited at many heavy-volume stations.

Since open space for parking is no longer available, officials are exploring the concept of multi-level parking structures. These are envisioned as transportation terminals that could include station services, such as waiting areas, comfort stations, convenience shops, and transfer facilities for taxicabs and buses. An example of such a facility is the Englewood Terminal which incorporates many of these services.
EXISTING PLANS.

Chicago Area Transportation Study

The Chicago Area Transportation Study's (CATS) recommended 1980 Plan, published in 1962 for public transportation, emphasized the need for strong efforts to maintain and improve public transportation services. Shown as particularly important was the need to sustain transit services to the Chicago central business district.

- Rail Services - The plan as illustrated on page 13 concentrated on rail routes radiating from downtown Chicago, with rapid transit routes serving the area of high-density development, and suburban railroads serving the lower density areas beyond. Four new rail rapid transit routes were recommended, three of which have now been completed (Skokie Swift, Dan Ryan, and Kennedy). The fourth proposed route, an extension of the Englewood rapid transit branch, has been constructed in part, with an extension to Ashland Avenue.

The plan for rail facilities also called for a series of special transfer stations to be built between rapid transit and suburban rail services, so that the railroads could run express from the transfer stations to downtown Chicago. Persons with intermediate destinations could easily switch at the transfer points to rapid transit. One such transfer station has been built at Jefferson Park, where the new Kennedy rapid transit extension runs adjacent to the northwest commuter line of the Chicago and North Western Railway. The railroad stops, however, have not been changed.

Finally, the plan for rail facilities emphasized the need for commuter parking and for feeder bus services.

- Bus Services - The CATS Plan recognized in general the importance of bus service to the region. Based, however, on the assumption that such service can easily be adjusted to changing demand conditions, the plan did not for the most part recommend actual bus routings. In two specific cases, though, the plan did recommend routes. Experimental express bus service was proposed for the Southwest (Stevenson) and Crosstown Expressway rights-of-way, in order to investigate potential demand for possible future rail routes.

- The Central Area - The plan made two basic proposals for transit service in the Chicago Central Area. The first was that the "Loop" elevated structure be torn down. The second was that a system of separated pedestrian-ways be constructed to improve internal circulation and to better link rail stations with downtown trip destinations.
Financial Considerations  A basic assumption imposed on the public transportation planning effort was that the proposed system would be able to pay for operating costs through fares. The plan did recognize, however, the ample precedents of public capital subsidy. Further, it expressed confidence that where public financial support was necessary, particularly to sustain service to non-drivers and others requiring transit service, such support would be forthcoming.

Plan Acceptance  In 1964, the Northeastern Illinois Planning Commission (NIPC) contracted with the Illinois Division of Highways to prepare land use and population projections according to NIPC alternative development policies. The CATS then reassessed its proposed public transportation system by substituting these alternatives into the study procedure. The results of this study, known as the Land-Tran project, completed in 1968, showed the CATS public transportation plan to have no serious deficiencies for any of the four alternatives tested. With the exception of the central area portion, the CATS public transportation plan was subsequently adopted by the Commission as part of its Comprehensive Plan for the region. The central area portion of the plan was omitted because at the time of plan adoption it was undergoing revision in the Chicago Central Area Transit Planning Study.

The Comprehensive Plan of Chicago

The public transportation plan contained in the December, 1966, Comprehensive Plan of Chicago (see page 13) was an expansion of the CATS Plan. As in the CATS Plan, the Chicago Comprehensive Plan called for primary emphasis on radial rail routes with rapid transit serving inner areas and suburban rail serving outer communities. Transfer stations between suburban rail and rapid transit were proposed as well as special parking facilities at the terminals of rapid transit lines. For downtown Chicago a distributor subway was envisioned as well as replacement of the present "Loop" elevated structure with underground facilities and construction of an expanded network of enclosed pedestrian passageways. Specifics for downtown were not detailed pending completion of the Chicago Central Area Transit Planning Study. Throughout, the Comprehensive Plan of Chicago called for maintenance and improvement of the present public transportation system.

In line with its corridors of high accessibility, the Comprehensive Plan proposed rapid transit services (either rail or bus) along Cicero and Western Avenues. In the CATS Plan the Cicero recommendation was for express bus, while no specific proposal was made for Western. Further, the Plan proposed detailed study of possible extension, reconstruction, or relocation of portions of the Douglas Park, Ravenswood and North-South rapid transit lines. Finally, the transfer station
and special parking facility recommendations of the Plan were in some cases at variance with those of CATS, or not covered by CATS.

Chicago Central Area Transit Planning Study

The plan of the Chicago Central Area Transit Planning Study (see page 13), completed in April, 1968, called for construction of two subways in downtown Chicago: a distributor subway extending from the University of Illinois via Monroe Street to two lakefront branches which would serve the near northeast area and lakefront activities including McCormick Place; and a subway under Franklin, Van Buren, Wabash and Randolph Streets, providing improved subway connections to the north, west and south. The plan included an expanded system of enclosed pedestrian passageways with moving sidewalks to commuter railroad stations. It also called for removal of the present "Loop" elevated structure.

Other Planning

• Southward Transit Area Coordination Study • This implementation study, a cooperative effort of five Illinois and Indiana public agencies, and the ten carriers operating in the southern third of the region, created a short-range plan and capital improvement program for public transportation. One of the proposals in the plan was a "special corridor" bus route that would provide public transportation services intermediate in service characteristics between that offered by local buses and that of rail rapid transit lines. The capital improvement program included the investment that would be necessary to bring the present system up to a reasonable level of quality in a five-year period.

• North Suburban Transportation Council • A technical study being conducted by the North Suburban Transportation Council is addressing short range public transportation problems in eleven suburbs north of the City of Chicago.

• Capital Improvement Programs of Transit Carriers • Carriers providing public transportation services in the Chicago region have prepared five-year capital improvement programs for their individual systems. These programs emphasize maintenance and upgrading of present systems, rather than creation of additions.

• Organizational Structure • Several mass transportation districts have been created in the Chicago region, primarily for the purpose of improving
transit service by utilizing federal mass transportation capital by commuter communities. The Chicago South Suburban Mass Transit District is the recipient of a federal grant for new cars which have been leased to the Illinois Central for its suburban service. In Indiana, the Lake-Porter County Regional Transportation and Planning Commission has applied for funds for the South Shore Railroad. A district composed of communities along the Burlington Northern suburban route has made preliminary application for funds to help finance new cars for the Burlington service. Other suburban districts are in the process of organization. Finally, the downtown Chicago Urban Transportation District has been established for implementation of the Central Area Transit Plan. The District will issue bonds and levy property taxes to provide one-third local matching funds for the project.

On a regional level, a number of efforts are underway to investigate possible changes in public transportation organization. Various proposals have been made to create a coordinated regional authority.

THE COMPOSITE PLAN.

The composite public transportation plan for the Chicago area (see page 18) includes all plans generally agreed to by regional planning agencies in Illinois and Indiana, the City of Chicago, and the public transportation carriers. In essence, it is the original CATS Plan as adopted by NIPC extended to cover the eight northeastern Illinois and northwest Indiana counties, with the Chicago Comprehensive Plan and the Chicago Central Area Transit Planning Study added.

The composite plan is intended to be an updating of the adopted regional plan, integrating new plans and developments in this revised statement of regional public transportation. In addition to the plan, which as in the past, recommends specific projects, this report also includes regular cyclical renewal within each of the elements of the system.

Suburban Railroads

The interim plan recognizes the continued importance of suburban railroads to the total transportation system. While no new lines are proposed, system improvements are included in the program.

The composite plan on page 18 does not include the routes presently operated by the Norfolk and Western, the Gulf, Mobile and Ohio, and the Penn Central Railroads. These have commuter operations at present, but the ridership and service levels are extremely low. Further detailed study is required prior
to final recommendations relative to the future of each line. If any of these lines should discontinue service, other facilities to accommodate existing and potential commuters in the southwest and southeast sectors of the metropolitan area will be required.

Rapid Transit

The proposed distributor system, shown in Chicago's Central Area Study, connects the North Michigan Avenue area, the Chicago Circle Campus, and McCormick Place to the loop system as shown on page 18. These subways and auxiliary pedestrian walkways will help tie together existing suburban railroad stations with rapid transit stations, providing service in the traditional loop as well as in densely developed areas beyond it. The plan includes the replacement of downtown elevated structures with a subway, thus providing improved service. Improvements would include aesthetically pleasing entrance and loading areas, improved safety and comfort, and elimination of operating restrictions which lower speed and capacity.

With the continued growth of airline traffic and residential and commercial development in the far northwest corner of the city, O'Hare Airport will need improved transit service. A study proposed by the City of Chicago would determine needs, desired characteristics, service criteria, and route. Similar needs may develop at Midway Airport in the southwestern portion of the city and at a potential third Chicago jetport.

Express Bus

Express bus services in metropolitan Chicago should be considered for moderate density crosstown corridors and for radial corridors where trip demand is insufficient to warrant rail facilities. Special lanes or streets for express bus services should be fully explored.

Two express lines, a southwest line and the Crosstown, are proposed and shown on the Composite Plan. Both routes need further analysis to determine the exact type of service and actual alignment.

Local Bus

Chicago bus service will continue to serve more public transportation passengers than all other transit services, despite expected declines in its usage. Feeder/distributor functions to rail facilities may increase in outlying areas
PUBLIC TRANSPORTATION
INTERIM PLAN

- EXISTING SUBURBAN RAILROAD
- SUBURBAN RAILROAD NOT A PART OF PLAN
- EXISTING RAPID TRANSIT
- PROPOSED RAPID TRANSIT (RAIL-BUS)
- POTENTIAL LOCAL BUS SERVICE
- TRANSFER STATION
- HIGH ACCESSIBILITY CORRIDOR
to the extent that routes can be reoriented to take advantage of suburban rail or rapid transit for long portions of their journeys. Preferential treatment of buses in traffic may result in increased usage.

The plan stresses the need for modernized equipment on practically all routes. Service should be structured to meet local needs in terms of seating, comfort, speed and dependability. Coordination is needed to provide complete, and yet not competitive bus service.

Terminal and Station Services

The railroad-rapid transit transfer stations, recommended in the CATS Plan continue to be a part of the Plan. Parking at rail stations must be recognized as an essential element in any regional public transportation system. Experimentation and funding through all available sources should be employed. Currently, some parking at railroad stations is being provided on a community basis, and limited space has been provided by the CTA. Further, the impact of the national Railpax program on central railroad stations will have to be balanced with commuter operations.

PROBLEMS.

The composite plan as a consensus working document by no means addresses all problems of public transportation in metropolitan Chicago. In particular, there are functional, financial and environmental problems that must be addressed in future regional planning.

Functional

• Three railroads; the Gulf, Mobile, and Ohio, the Norfolk and Western, and the Penn Central, operate minor commuter services to downtown Chicago. At present these services carry few passengers. From a regional planning point of view, however, it appears desirable that all sectors of the region have commuter rail service. This question must be resolved.

• A number of proposals suggest rapid transit services in east-west and north-south corridors. These services are usually envisioned as either express bus or rail rapid transit. In the case of the STAC Plan, a "special corridor" bus service is envisioned. Careful demand analysis of corridor operations is necessary in order to determine the role that such services can play in satisfying urban public transportation needs, and to help determine the exact types of services necessary.
Chicago's Crosstown Expressway is proceeding through general design stages now. Specific alignment and service characteristics need to be evaluated in order to make the determination as to the type of public transportation that will be provided in this corridor.

Air traffic at O'Hare Airport is outgrowing existing ground access capacity. In peak hours daily, the highway lanes which form the only present ground access, operate well below design speeds. Projected growth rates for air traffic cannot be served without substantial expansion of ground access capacity. Plans should be developed now, for improved linkage to the area transportation system, considering and evaluating alternative rail, bus or new modes. As air traffic at Midway Airport develops, evaluation of ground linkage to O'Hare by public transportation will also be required.

Demand for local bus service has fallen off in metropolitan Chicago (as elsewhere) over the last decades. This has particularly been true in lower-density suburban areas. The question will need to be addressed regarding where local bus service can be sustained in future years. Where fixed-route local bus services cannot be sustained, alternatives will need to be explored.

Parking at rapid transit and commuter rail stations is a major problem for the regional public transportation system. For future planning, detailed studies of parking demand will be appropriate in order to properly determine the physical characteristics, size and location of necessary parking facilities.

Financial

Public transportation in metropolitan Chicago is extensive and well developed, but yet in trouble. Ridership as a whole has dropped sharply in the past 20 years. This problem is severe in all major cities.

In addition to decreasing ridership, costs of public transportation have gone up. Manpower and equipment productivity cannot be drastically changed, and the speed and capacity of many vehicles are at their practical limits under today's conditions.

Operation costs for 1969 are shown in the following table, along with revenue and income by type of service.
Suburban Railroads$^{a}$ (9 companies) Chicago Transit Authority Bus$^{c}$ (18 operators)

<table>
<thead>
<tr>
<th></th>
<th>Suburban Railroads</th>
<th>Chicago Transit Authority</th>
<th>Bus</th>
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</thead>
<tbody>
<tr>
<td><strong>Total Income</strong></td>
<td>$52,343,453</td>
<td>$179,958,000</td>
<td>$24,841,489</td>
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<tr>
<td><strong>Total Expense</strong></td>
<td>54,359,520</td>
<td>183,477,000</td>
<td>24,638,200</td>
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<tr>
<td><strong>Net Income (Loss)</strong></td>
<td>(2,016,067)</td>
<td>(3,519,000)</td>
<td>203,289</td>
</tr>
<tr>
<td><strong>Before Income Tax</strong></td>
<td>(2,016,067)</td>
<td>(3,519,000)</td>
<td>203,289</td>
</tr>
</tbody>
</table>

$^{a}$Compiled from 1969 survey data, STAC Report and rate cases. Seven out of 9 companies experienced a loss.

$^{b}$Includes entire CTA system, rapid transit and bus.

$^{c}$Includes two airport service companies and excludes CTA bus. Of the 16 suburban service companies, 8 experienced a loss of $473,362.

Insufficient investment capital has resulted in the deterioration of some elements of the system's plant and vehicles beyond the point of economic maintenance. Some of it is near collapse, and service failures are occurring with increased frequency.

Public investment has been made in rapid transit line extensions (Dan Ryan, Kennedy, and Englewood), and some new cars. While these extensions have benefited the public, they have not eliminated the need to operate old cars on several lines.

Capital requirements for urban mass transportation systems must include all those needed to renew or improve the existing system. Without systematic cyclical replacement of rolling stock as it wears out, service would gradually deteriorate and come to an end. The same is true, on varying time scales, for tracks, buildings and all other property of the public transportation system, other than land. Not to provide for its cyclical renewal would indeed be negative planning. The planning review for expenditures for renewals should mainly confirm that the service involved is to be continued.

Since the transit system has not been able to maintain adequate equipment, much less expand service, an estimate of necessary expenditures to compensate for deferred renewal and betterment must be made. It is conservatively estimated that $543 million is needed to bring the system up to a reasonable standard.
The public assistance programs, as they exist today, create a problem of inequity between carriers. In effect, the carrier which has succeeded in keeping its equipment modern at its own expense may find public funds granted to other carriers.

All public transportation, whether publicly or privately owned, is recognized as providing a public service. Some municipalities have assumed increasing responsibility in providing assistance to it, since there is no state wide general transit subsidy program. The recently passed Illinois State Constitution, however, acknowledges the general public's responsibility toward mass transportation of people.

Environmental

Land utilization within metropolitan areas is of increasing concern to public officials and planners. Transportation is a major user of space, not only for corridors of movement, but also for storage of vehicles at trip ends. Public transportation in corridors of substantial movement offers the potential for economies in space requirements.

Air pollution, too, has taken its place as a major issue in urban living. It is related to the consumption of energy; and as a heavy user of energy, transportation must accept its responsibility to mitigate the problem. Public transportation has the potential to contribute to a solution. With the present technology of the various transportation modes, rapid transit and suburban railroad seem to offer an advantage through inherent energy savings. Trains using electric power generated at a central station further minimize one form of air pollution.

Another problem experienced by public transportation is the activity density of the area to be served. In the central area, densities justify high-capacity service, while densities in outlying areas are insufficient to warrant the same level of service. The use of public transportation is directly related to such variables as population and employment density and family income. Concentration of activities is a critical factor. Conversely, the amount and quality of transit service also has its effect on densities, land values and number of trips. This is a problem of service related to ridership, manifest in the financial aspects of public transportation.

PROGRAM AND PRIORITIES.

The need for improvement in public transportation facilities and service is immediate. The program and priorities shown in this section are developed from an evaluation of the needs as cited by the individual carriers, both public
and private. Questions of priority are more than a matter of relative cost/benefit ratios; they involve issues regarding the division of funding responsibility between the public and private sectors. They also involve decisions between investing in system additions as opposed to replacement and renewals of present systems. When public transportation service is operated by independent corporations, public or private, there is no ready formula for a planning agency to use in selecting between equally urgent needs.

A table of capital needs showing five year and future programs for public transportation is shown on pages 24 and 25. This summarizes the regional needs as perceived by the various carriers. It should be noted that the recommendations of the STAC project as they relate to the Lake-Porter Indiana portion of the study area are the transit priorities for that area.

Projects for which federal grants are sought now require one-third local participation. Availability of local matching funds may determine whether a project can be implemented, regardless of priority. In the Chicago metropolitan area, investments have been made in recent years in public transportation systems without benefit of federal matching funds. These should be considered in the establishment of the local matching funds.

The priority items shown are well supported. They closely relate to serving those portions of the public transportation system that are most critical today and in the future. They utilize technology within the current and foreseeable state of the art. Priority of projects is in accord with variations in degree of public acceptance for them and existing regional plans.

Rolling Stock Renewals

High priority is given to rolling stock renewal. A substantial portion of the rail rolling stock in use in metropolitan Chicago is obsolete and needs to be replaced or rebuilt. Normal replacement life for rapid transit and rail cars is considered by the industry to be 25 to 30 years. Today, some companies are suggesting that shorter lives are necessary to stay competitive. Only the Chicago and North Western Railway, among all the rail and rapid transit carriers, has 100 percent modern coaches. Diesel-electric locomotives operated by all carriers are about 20 years old. Provision of a new fleet of electrically powered commuter rail cars for use by the Chicago, South Shore and South Bend Railroad, plus related improvements to power supply, is critical.

The accepted replacement life for vehicles in the bus industry is 12 to 15 years. Some companies are suggesting eight years. By these standards, the average age of buses in the metropolitan Chicago fleet is about twice that of recognized practice.
# Public Transportation Capital Needs

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<th>Year 1</th>
<th>Year 2</th>
<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
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<th>Program</th>
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## Renewal

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### Rolling Stock

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<th>Year 5</th>
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<th>Program</th>
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<td>37,100</td>
<td>33,100</td>
<td>29,100</td>
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### Physical Plant

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<th>Year 5</th>
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<th>Program</th>
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<tr>
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<td>17,100</td>
<td>18,500</td>
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## Additions

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<th>Year 4</th>
<th>Year 5</th>
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<tr>
<td><strong>Total</strong></td>
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### Rolling Stock

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<th>Year 4</th>
<th>Year 5</th>
<th>Total</th>
<th>Program</th>
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<tr>
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### Physical Plant

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<th>Year 4</th>
<th>Year 5</th>
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<th>Program</th>
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## Extensions

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<th>Year 4</th>
<th>Year 5</th>
<th>Total</th>
<th>Program</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Total</strong></td>
<td>30,650</td>
<td>157,300</td>
<td>148,100</td>
<td>111,100</td>
<td>33,300</td>
<td>520,450</td>
<td>805,800</td>
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### Rolling Stock

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<th>Year 1</th>
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<th>Year 3</th>
<th>Year 4</th>
<th>Year 5</th>
<th>Total</th>
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</tr>
</thead>
<tbody>
<tr>
<td>CTA</td>
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<td>157,300</td>
<td>148,100</td>
<td>111,100</td>
<td>33,300</td>
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<td>805,800</td>
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### Physical Plant

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<th>Year 1</th>
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<td>33,300</td>
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## Grand Total

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<th></th>
<th>Year 1</th>
<th>Year 2</th>
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<th>Year 4</th>
<th>Year 5</th>
<th>Total</th>
<th>Program</th>
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<tbody>
<tr>
<td><strong>Total</strong></td>
<td>205,654</td>
<td>246,807</td>
<td>257,837</td>
<td>182,986</td>
<td>94,515</td>
<td>988,799</td>
<td>1,004,207</td>
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</table>
a The principal projects included in the program for system replacement include:
--replacement of all pre-war rail rolling stock
--replacement of most rail power equipment
--replacement of all buses over 12 years old
--replacement of antiquated rail stations
--replacement of non-grade separated rail lines
--replacement of dilapidated elevated transit lines

b The principal projects included in the program for system additions include:
--rail rolling stock of increased capacity
--buses for routes in newly urbanizing areas
--garages, tools and other facilities for additional buses
--trackage and signals for rail lines

c The only rail extensions to the public transit network are:
--Illinois Central Railroad--extension of suburban lines to Park Forest South
--City of Chicago sponsored projects for the CTA including--Distributor and Loop Subways.

Capital needs of suburban bus companies contain CATS estimates for the Joliet-Aurora Bus Company and the Continental Air Transport Company.

Estimates for extension to the CTA system are provided by the City of Chicago, Department of Public Works.

The Future Program includes projects which, if funding becomes available, could be implemented in the initial 5 year program.
Physical Plant Renewals

The tracks, structures, buildings, communications and tools of any transportation system have limited useful lives and must periodically be renewed. Of all transportation property, only land has infinite usefulness. Bridges and buildings have long lives, possibly as great as 50 years, while supervisory automobiles operating around the clock last only one to two years. Other property generally has intermediate life.

Antiquated and costly maintenance and servicing centers for transit equipment add substantially to costs of operation and fares. Consolidations of such facilities should be made.

Rolling Stock and Physical Plant Additions to Serve Growth

Investments to accommodate suburban rail, rapid transit and bus system growth have priority just below that for stock and plant renewal. Parking and related station improvements rank high in this category.

New Rapid Transit Lines

- Downtown Distributor to North Michigan Avenue, Circle Campus and McCormick Place - Final plans and construction should begin as soon as possible, so that completion will occur before the lack of such facilities can have long-term adverse effects upon the vitality of the Central Area.

- Loop Subway System - Though directly related to the distributor system, this project should be staged to follow the distributor service. An improvement to the present loop system, it must be committed simultaneously with the distributor system.

- Other Projects - Having a lesser priority, but requiring recognition, are the Crosstown and Southwest lines and airport routes. Planning for Chicago's Crosstown Expressway is currently proceeding through general design stages. The first section of this project will be ready for construction soon. Questions relating to transit in the north-south (Cicero Avenue) corridor and the east-west (76th Street) corridor, which require simultaneous solution, have been under study. Alternative approaches involving rail, bus or new modes of transit will need to be evaluated in order to determine the type of public transportation that will be provided in these two corridors now served by conventional local buses.
Studies to determine the need for airport routes should be continued and reviewed as soon as possible. A decision as to need should be forthcoming soon.

Other extensions and new lines which are part of the future program and a part of the plan must be further evaluated. A new extension of the Ravenswood line and a new line on Western Avenue are part of this program. Detailed studies are to be made relative to extension, reconstruction, or relocation of sections of the Douglas, Milwaukee, Lake, Ravenswood, and North-South transit lines.

REFERENCES

THE COMPOSITE OF RECOMMENDED HIGHWAY SYSTEMS PRESENTS RELEVANT FREEWAY AND ARTERIAL PLANS SHOWN AS ONE COORDINATED HIGHWAY PLAN FOR THE ENTIRE CHICAGO AREA.

EXISTING SYSTEM.

The system consists of 465 miles of freeways and 6,000 miles of arterials and other major roads. Not shown, but a part of the total network, are some 14,700 miles of local service roads and streets. It is on this base of freeways and arterials that future highway networks will be developed. The highway system is viewed as only one part of an integrated highway, transit and freight movements network.

EXISTING PLANS.

Chicago Area Transportation Study

The Chicago Area Transportation Study (CATS) 1980 plan for highway facilities included an extensive network of freeways in major transportation corridors and general recommendations for arterial street facilities to supplement the freeway system. The recommended network of high capacity facilities, commonly called the L-3 network, evolved after a quantitative study of the ability of network alternatives to serve the 1980 demand for highway transportation. Functional and economic characteristics of these networks were compared after simulating 1980 highway trips over the alternatives. In 1964, the Northeastern Illinois Planning Commission contracted with the Illinois Division of Highways to prepare alternative land use and population projections according to particular planned development policies. The CATS then re-assessed its L-3 network by substituting these land use alternatives into the study procedure. The results of this study, known as the Land-Tran project, completed in 1968, showed L-3 to have no serious deficiencies for any of the four land use alternatives tested. It was subsequently adopted by the Commission as part of its Comprehensive Plan for the region.

The L-3 network is shown on page 31, with the recommended staging for its construction. As noted in the CATS Final Report, "This is not a plan of detailed locations -- it is a system or network plan."2

City of Chicago

The City's 1969 Preferential Street System, showing existing and proposed expressways and arterials, was used to establish non-freeway-type arterials within the corporate limits of Chicago. It should be noted that this plan shows
only limited freeway additions other than the Crosstown Expressway, suggesting that the City plans to emphasize mass transit and arterial improvements within corridors of heavy travel demand after the completion of the Crosstown route.

**Fox River Valley Transportation Study**

Directly west of the limits of the original Study Area for the CATS lies a north-south corridor centered on the Fox River. Within this region are the cities of Elgin, St. Charles, Geneva, Batavia and Aurora. This area has developed rapidly since the end of World War II, and growth is expected to continue.

In 1961, a consultant was retained by the Illinois Division of Highways to conduct a study of future highway needs in the Fox River Valley area. A study area adjoining that of the CATS area and containing all major developed land in the corridor was selected for analysis. Evaluation was done by the consultant and the Illinois Division of Highways, using trip data developed by the CATS.

**Joliet Area Transportation Study**

The Joliet Area Transportation Study was one of a series of studies prepared to meet the requirements of the Federal Aid Highway Act of 1962. The study was based on planning procedures established by the Bureau of Public Roads and the Illinois Division of Highways to satisfy the requirements of the act. The study area encompassed 13 townships in west and north Will County.

The Joliet Area Transportation Study was significantly different from the other studies in the region in the way its recommended plan evolved. Desired levels of service were specified for all major facilities in the area, then improvements were added to the existing highway network until those levels of service were achieved. After each set of improvements was added to the base network, a travel simulation of future highway travel on that network was prepared and additional improvements recommended.

A further refinement in this study was the development of a minimal plan and a financially attainable program. In developing the minimal plan, the levels of service were first lowered to minimal standards, and the recommended plan was cut back until these minimal standards were met. Since even this minimal plan was found to cost more than the maximum forecasted funds for construction in the area, a financially attainable program was also proposed. In developing this plan, roadway improvements were eliminated or changed until the funds available were equally matched with the construction program.
Lake County Transportation Study

The Lake County Transportation Study was initiated in 1962. Only Lake County in Northeastern Illinois was included in the study area. This county is, however, quite developed, particularly along Lake Michigan in the Waukegan, North Chicago, Lake Forest, and Highland Park corridor.

The study was based on procedures established by the CATS, the Bureau of Public Roads and the Illinois Division of Highways. A recommended future highway network was proposed along with a minimal plan and a financially attainable program. The minimal plan was developed by cutting back the recommended plan to minimal levels of service. Since even this minimal plan exceeded the forecasted future funds available for construction, a financially attainable program was then developed. Proposed projects were cut back until they exactly matched the funds available for construction purposes.

Lake-Porter County Regional Transportation and Planning Commission

Much of the work of the Lake-Porter Commission is still formulative. Although it also was organized in response to requirements for Federal Aid participation under the Federal Highway Act of 1962, funding was delayed for several years. The 1965 Indiana General Assembly passed appropriate legislation creating the commission. A preliminary comprehensive plan of LPCRTPC includes the transportation elements of Lake and Porter Counties' individual comprehensive plans. An advance copy of this report contains the following statement, "... while the Lake-Porter regional transportation network is not yet completed, comprehensive plans for both Lake and Porter Counties, which contain transportation elements, have been completed and adopted."

THE COMPOSITE PLAN.

The composite highway system for the Chicago Area (page 33) includes a network of freeways and arterials based in part on the plans mentioned above. The Illinois Division of Highway plans were used to consolidate each plan into an integrated system.

For the purpose of this report, a freeway is defined as a fully access controlled, divided facility serving high traffic volumes, generally at high speeds. Arterials in this report include expressways (partially access controlled, divided highways for moderate to high speeds) and all other potentially high-type urban facilities which have continuity through an urban area. Further, the plan shows a facility as existing if it is under construction or committed to be built.
The proposals shown in this plan point out the major highway travel-demand corridors. Proposed alignments of these facilities can be varied and original recommendations replaced with higher or lower type facilities. The eventual design of the highways in the high-demand corridors will vary with density of land development. The suburban corridors in outer portions of the region will most probably follow current design standards for these areas, e.g., Interstate 80. The designs in more densely developed areas and especially within the City of Chicago will vary because of the cost of land, relocation problems, et cetera. These designs must take into consideration lower operating speeds and the probability of adjacent rail or bus rapid transit. It is recommended that this joint-development approach, successfully performed for the Cross-town corridor, be used in the design of these facilities.

It is difficult to imagine a radically altered plan of development in the near future which would dictate major change in these high demand corridors. They are closely aligned with existing and realistic short term development in the region. To paraphrase the CATS Final Report, the illustrated network need not strictly be a plan of detailed locations -- it is a system or network plan, a plan that designates the major highway demand corridors in the region.

PROBLEMS.

Any plans of the magnitude proposed are bound to initiate questions. With respect to specific parts of the plan, two major questions must be considered. One is additional freeway facilities within the City of Chicago. A second specific problem involves proposed facilities which are not compatible with the original corridor proposals.

In its comprehensive plan, the City of Chicago recognizes a system of corridors of high accessibility nearly identical with the L-3 network. While the L-3 network delineates freeways, the corridor of high accessibility represents a generalized path of high intensity activities served by a combination of highway and transit facilities. The high density of activity warrants special consideration to determine the optimum combination of these services. The facility may or may not include a freeway, depending upon traffic volume and type of traffic to be handled.

In order to understand problems of compatibility with original corridor proposals, the corridor concept must be understood. A corridor represents a generalized freeway location that has a demonstrable future traffic demand for high capacity and high level of service. Its dimensions are determined primarily by the demand for its use. Access to and from the freeway, the availability of alternate route choices, levels of service, purposes of traffic movements to be served, and land development within a corridor all have a part in determining
The limits of a corridor. To set specific limits is not reasonable; however, care must be taken that final location does, in fact, serve the traffic demand which defines the corridor. If it does not, then problems of compatibility with other existing and planned freeways will have an adverse effect on the system. Extensive deviation from the original corridor must be carefully evaluated.

The problem of grade separations at rail crossings is a significant one to efficient traffic movement. Studies are needed to detail specific improvements.

PROGRAM AND PRIORITIES.

Using the eight county network as a guide, a short range program for highway improvements and priorities can be delineated. The plan will quite naturally undergo modification as proposals in McHenry County in Illinois and Lake and Porter Counties in Indiana are finalized. These and other modifications will be incorporated into the final plan.

The following is a listing of Interim Plan proposals. These are listed in three divisions: 1. Cook County, 2. Illinois counties outside Cook County, 3. Lake and Porter Counties in Indiana.

Cook County

The staging of the CATS L-3 plan and proposals by the City of Chicago and the Illinois Division of Highways indicate the following short term priorities:

1. Freeways
   Within the City of Chicago, the Crosstown Expressway has the highest priority, followed by the Franklin Street connection between the Dan Ryan Expressway and Wacker Drive. In the remainder of Cook County, the next priorities are suburban freeway facilities in the CATS L-3 plan which now have location studies underway or about to start. These facilities represent most of the remaining facilities in the second stage of the L-3 plan and part of the facilities in the third stage. Advance purchase of right-of-way for the South and Southwest Suburban Corridors is especially critical.

2. Other Major Facilities
   In the City of Chicago development of the major street network, a 218 mile grid follows Freeway development in importance. Because assistance in the form of Federal funds is available, priority should go to those projects eligible for funding in
TOPICS and DOT Programs. If high capacity facilities are not constructed, portions of the network situated in high demand corridors will require a high priority to satisfy immediate demands. In the remainder of Cook County, emphasis should be on improvement projects eligible for TOPICS Program Funding.

Illinois - Counties Outside Cook County

For McHenry, Will, Lake, Kane and DuPage Counties, the three transportation studies in these counties and CATS each independently developed a set of study area priorities. The priority projects in the Fox River Valley Transportation Study form a program that is realistic and comparable with similar programs in the Joliet and Lake County studies. These three studies and the CATS Final Report indicate the following short term priorities for the remaining five counties in Illinois:

1. Freeways

Besides the Lake-Will Freeway (FAP61), there are four major sections of freeway given high priority for completion before 1985; the portion of the Fox Valley Freeway which runs north-south on the east side of the Fox River between Carpentersville and Aurora, the Richmond-Waukegan Freeway (FAP26), the 420 Lakefront Freeway (Melvin E. Amstutz) extending north along the lake front from I.R. 94 to Winthrop Harbor, and Relocated U.S. 41 Freeway, which is a north-south proposal to the Wisconsin border, ultimately tying into the Lake Freeway, currently under design by the State of Wisconsin. A high priority is given to the section from I.R. 94 to FAP201.

2. Other Major Facilities

The proposals for other major facilities from the three studies, even only those included in the financially attainable programs, are so numerous that they cannot be mentioned individually.

Recommended improvements consist of traffic operation modifications such as widening and channelization of intersections not listed separately in this report. Many of these projects will qualify under the TOPICS program and should thus be given first consideration.

Lake and Porter Counties in Indiana

The freeway recommendations are as follows. First, completing I-94, is essential to movement in the major travel corridor at the south end of the Lake. Next,
continuation of the South Suburban Corridor into Indiana is desired for network continuity. Such a corridor would also link the rapidly growing Porter–Chester ton and Valparaiso areas. Finally, there appears to be an excessive gap between the two major north–south routes in the area; I-94 (the Calumet Expressway) and I-65. A freeway corridor midway between these two routes would provide improved access to the lakefront industry in the East Chicago–Whiting areas. It should be mentioned that a new regional airport, which may be located in Indiana in either Lake or Porter County, could amend these sketch proposals.

COSTS.

Since detailed estimates are currently underway in connection with the National Transportation Needs Study, no attempt has been made to show detailed highway costs. The annual costs shown are derived from the Illinois Division of Highways and the Lake–Porter County Regional Transportation and Planning Commission estimates.

<table>
<thead>
<tr>
<th>Highway Needs</th>
<th>Annual Estimated Costs ($000)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cook County</td>
<td>$585,320^a</td>
</tr>
<tr>
<td>Illinois - Counties outside Cook County</td>
<td>152,723^a</td>
</tr>
<tr>
<td>Lake and Porter Counties in Indiana</td>
<td>100,802^b</td>
</tr>
<tr>
<td>Area Total</td>
<td>$838,845</td>
</tr>
</tbody>
</table>

^a Proportioned from 20 year highway needs estimate of the Illinois Division of Highways.

^b Proportioned from Lake–Porter County Regional Transportation and Planning Commission estimates.

REFERENCES.


EXISTING AIRPORTS

- Airport Facility
- Facility with FAA Control Tower
- Military Airport
AVIATION FACILITIES

THE INTERIM AVIATION PLAN PRESENTS THE CURRENT STATE OF AVIATION PLANNING IN THE AREA AND PROVIDES A COMPOSITE PLAN FOR THE DEVELOPMENT AND IMPROVEMENT OF AVIATION FACILITIES IN THE CONTEXT OF EXISTING AVIATION FACILITY PLANS.

EXISTING SYSTEM.

The Chicago area has 34 public use civil airports, 29 of which are in Illinois, and five in Indiana. O'Hare International and Midway Airports are used by the commercial airlines, and the remaining 32 airports are used exclusively for general aviation. The region has two military airfields, the Glenview Naval Air Station and the army airfield at Fort Sheridan; and in addition, U.S. Air Force Reserve and Air National Guard units operate at O'Hare International. The existing civil and military airports are shown on the opposite page.

The Federal Aviation Administration classifies civil airports according to size of aircraft the facility accommodates.

<table>
<thead>
<tr>
<th>Airport Classification</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>Basic Utility</td>
<td></td>
</tr>
<tr>
<td>Stage I</td>
<td>Facility accommodates 75 percent of the propeller aircraft types of less than 12,500 pounds.</td>
</tr>
<tr>
<td>Stage II</td>
<td>Facility accommodates 95 percent of propeller aircraft types of less than 12,500 pounds.</td>
</tr>
<tr>
<td>General Utility</td>
<td>Facility accommodates all aircraft types of less than 12,500 pounds.</td>
</tr>
<tr>
<td>Larger than General Utility</td>
<td></td>
</tr>
<tr>
<td>Basic Transport</td>
<td>Facility accommodates turbo-jet-aircraft up to 60,000 pounds.</td>
</tr>
<tr>
<td>General Transport</td>
<td>Facility accommodates turbo-jet-aircraft up to 175,000 pounds.</td>
</tr>
<tr>
<td>Air Carrier Transport</td>
<td>Facility can handle large commercial scheduled jet airliners in excess of 175,000 pounds.</td>
</tr>
</tbody>
</table>
In this section the FAA classifications are generalized slightly to include basic utility, general utility, larger than general utility and air carrier transport. Chicago, having airports in each class, has facilities of varied quality and service. They range from large, well-equipped air carrier transport airports to small utility airports, having limited facilities.

O'Hare International, one of the finest airports in the country, has six runways, four of which are available for instrument flight rule conditions. It has three large, well maintained terminal buildings and many boarding gates, but is now experiencing problems of excessive passenger and aircraft flights. The region's other major airport, Midway, is quite limited by O'Hare's standards, but is capable of handling smaller types of scheduled jet aircraft such as the Boeing 727.

The region's 32 general aviation airports range from those handling business jets to airports which are primarily used for pleasure flights. Airports, such as Pal-Waukee, provide a source of access to the region for business and general aviation users. Many of the larger general aviation airports have lighting, hard surface runways, well equipped service areas, and in some cases, control towers. These facilities and other amenities, such as restaurants and motels, make these airports attractive to business users. The majority of the region's airports are not as well equipped as Pal-Waukee since they serve different users and aircraft. The small pleasure aircraft can use turf runways, and do not require sophisticated navigation aids or service facilities.

THE PLAN.

The future of the Chicago area's airport system, like other transportation modes, will have great economic impact on the area. It is one of several modes of transportation that together provide intercity communication between Chicago and other distant cities. Therefore, it is of great importance in any integrated transportation plan. The rapid expansion of commercial and general civil aviation in large urban areas is evident to users because of increasing delays in the air and on the ground.

Recognizing the problems facing aviation, governmental agencies have prepared airport plans for the Chicago area. The Federal Aviation Agency (FAA), the Illinois Department of Aeronautics (IDA), the City of Chicago and the Lake-Porter County Regional Transportation and Planning Commission (LPCRTPC) have prepared plans and site studies. The plans of these agencies are shown on page 41. Sites shown are general rather than specific locations.

The FAA Plan for the eight county Chicago Area was developed as part of the National Airport Plan. It consists of eleven existing airports and the develop-
ment of ten new ones in the region. The IDA Plan for the six Illinois counties was prepared as part of the statewide airport plan and consists of two new airports and improvement to six existing airports. The City of Chicago Plan recommends improvement of the three airports it controls and the development of a new air-carrier transport airport for the region. This would be designed to relieve O'Hare International. A planning study for a transport facility has recently also been completed for northwestern Indiana.

These plans are the basic working documents used in preparing the interim Eight County Airport Plan, which includes the development of a new transport airport; nine new utility airports; improvement of eight existing airports, and the retention, if possible, of all other existing airports in the region. A composite map of existing and planned facilities is shown on page 42.

Three alternative sites are shown for the new transport airport as a final selection requires more detailed study. The three general locations are shown on the interim airport facility plan to indicate their relationship to other facilities.

The plan shows each IDA and FAA airport as one since their plans are compatible. Although no specific sites for new utility airports are indicated in these plans, possible sites were selected by the CATS staff. The criteria used to locate these airports to minimize ground access problems and airspace conflicts were that adequate highway access must be provided and airports must be at least five miles apart.

PROBLEMS.

A number of issues have been raised in compiling the Eight County Airport Plan. They include the general areas of environmental aspects, land use needs, airspace requirements, ground access, and development problems. There are also problems associated with the ownership and development of the region's airport system. The major problem is the location of the new transport facility. With the uncertainty of available land, all planning must be considered tentative, pending a final location decision. Time advantages originally experienced in air travel are now being lost, as time requirements between the airport and the center city exceed flight time between cities in some cases.

O'Hare International, the region's major transport airport, has congested ground access routes, parking lots, curb loading and unloading space, boarding gates and airspace surrounding the airport. In 1969, O'Hare International handled 30,000,000 passengers and 676,000 aircraft movements. The expected increased growth in volumes of passengers and aircraft movements can only result in increased stress on the region's commercial airports. A parking garage for
9,200 vehicles is currently under construction. Other plans for expansion are underway.

Less well known, but of great importance to its users, are the problems facing general aviation. This category has grown to a point where it utilizes 97 percent of the nation's airfleets of 180,000 aircraft. While the problems facing general aviation are not as visible as those facing the commercial airline users, the problems are as real. Serious problems occur in our large urban areas where interest in this type of flying is growing, while the number of available airports is declining. In 1968 and 1969, two general aviation airports closed in Illinois and one in Indiana, while only one new airport was developed in the region. These closings concentrate the activity at the region's remaining facilities.

Environmental Aspects

Two of the most serious problems facing airport planners today are the environmental factors of noise and air pollution. Noise from large jet powered aircraft can stop conversations miles from the airport; and aircraft engine emissions are very unpleasant near the airport and along glidepaths. These factors mean increasing opposition to expansion of existing airports and development of new ones. With jet aircraft becoming more popular, problems will increase and opponents of airport development will become more vocal.

Land Use Needs

Airports have a strong impact on the land use of the region because of their land requirements. Locational problems also arise since airports should be near users, but removed from population centers for reasons of safety. Currently, transport airports, like O'Hare, use up to ten square miles of land, while newly designed airports require three times that much space due in part to buffer area requirements. This amount of land is difficult to acquire in large urban areas, necessitating locations 30 or more miles from the central city. Even the class of larger than general utility airports requires more than a square mile of land.

Airspace Requirements

Airport spacing and runway alignments to minimize conflicts in the airspace is another serious problem. Since airspace is limited, careful analysis of flight paths about existing and proposed airports must be made.

In planning the use of the region's airspace, the conflict between the commercial airlines and general aviation users must be recognized. The commercial air-
lines wish to place severe limitations on the use of the airspace by general aviation users, while general aviation fliers emphasize their right to use any public airport. The new Terminal Control Area regulations of the FAA may help solve this conflict.

The installation of instrument landing systems (ILS) at new and existing airports also limits the region's airspace. Airports having ILS capability must be more widely spaced than visual flight rule (VFR) airports, and their runways must not have the same alignment. It is possible that all of the larger than general utility airports in the region will have Instrument Flight Rule (IFR) capabilities in the future.

Ground Access Requirements

Congestion of ground access facilities near transport airports is a growing problem facing the airline user. In almost every large city, the access highway to the airport serves local trips, and since the aviation and highway peaks occur at the same time, congestion results. In the Chicago area, where 30 percent of the airline users are destined for the Central Area, travelers regularly battle local morning and evening commuters. Mass transportation facilities serving transport airports would be highly desirable.

Problems of ground access are not as prevalent for the users of the three classes of utility airports. Locating new utility airports near freeway exits or on major arterial highways is of primary importance for such facilities.

Development Problems

The airport planner, in seeking new sites, faces problems of ownership and development. It is necessary to have a local public agency sponsor the airport and provide local funding. While the FAA shows privately owned airports in its plan, it does not recommend future development for these airports. In fact, the FAA recommends that private facilities should be acquired by a local public agency.

As stated earlier, the Airport Facilities Interim Plan shows three alternative sites for the development of a new transport airport. These are the result of two agency studies. The City of Chicago studied a Lake Michigan site and three land sites in Illinois, while the Lake-Porter County Regional Transportation and Planning Commission investigated five alternative Indiana sites.
In addition to these agencies, the State of Illinois has expressed interest in the development of the new commercial facility and is currently studying the parameters in locating a new facility, while the State of Indiana is carrying out another study.

PROGRAM AND PRIORITIES.

In order to implement the composite airport plan for the eight county Chicago Area, an improvement program and a set of priorities were developed. The composite plan recommends improvements at publicly owned airports which are part of the Federal Aviation Administration Airport Plan for the region. These sites, along with the existing airports in the Chicago area, will accommodate activity through 1980. In order to insure that the development program is successful, local agencies must make the decision to sponsor the new airports in the plan.

Several public agencies have already expanded their airport facilities or have planning studies under way. The City of Chicago has recently expanded both O'Hare International and Midway Airports, and has prepared studies for the location of a third. Development studies have been made at Porter County and Du Page County Airports. A few private airports, such as Pal-Waukee have improved their facilities, but major upgrading of private airports is not expected.

The airport development program, as proposed, consists of improving the eight publicly owned airports which are part of the FAA plan. The list of airports in this program is shown at the end of this section.

In order to allocate the limited amounts of funds available for airport development, priorities have been established and are shown on page 47. New airport construction and improvement of existing airports have been organized into five broad categories. These are as follows:

1. Improve the existing transport airports.

2. Construct a new air carrier transport airport.

3. Expand existing general aviation airports which are part of the FAA plan.

4. Construct new larger than general utility, general utility, and basic utility airports.
### PROGRAM AND PRIORITIES

<table>
<thead>
<tr>
<th>Priority Project</th>
<th>Estimated Costs (Thousands of dollars)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Improve existing transport airports.</td>
<td></td>
</tr>
<tr>
<td>Chicago Midway</td>
<td>$2,530&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>O'Hare International</td>
<td>306,103&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>2. Construct new transport airport.</td>
<td>500,500</td>
</tr>
<tr>
<td>3. Expand existing general aviation airports.</td>
<td></td>
</tr>
<tr>
<td>Aurora Municipal</td>
<td>2,018</td>
</tr>
<tr>
<td>Du Page County</td>
<td>1,108</td>
</tr>
<tr>
<td>Gary Municipal</td>
<td>701</td>
</tr>
<tr>
<td>Meigs Field</td>
<td>535&lt;sup&gt;a&lt;/sup&gt;</td>
</tr>
<tr>
<td>Porter County</td>
<td>1,223</td>
</tr>
<tr>
<td>Waukegan Memorial</td>
<td>4,622</td>
</tr>
<tr>
<td>4. Construct new general aviation larger than general utility airports.</td>
<td></td>
</tr>
<tr>
<td>Joliet Municipal</td>
<td>9,344</td>
</tr>
<tr>
<td>Northwest LG</td>
<td>9,344</td>
</tr>
<tr>
<td>South LG</td>
<td>9,344</td>
</tr>
<tr>
<td>Southwest LG</td>
<td>9,344</td>
</tr>
<tr>
<td>West LG</td>
<td>9,344</td>
</tr>
<tr>
<td>5. Construct new general utility and basic utility airports.</td>
<td></td>
</tr>
<tr>
<td>Crown Point</td>
<td>385</td>
</tr>
<tr>
<td>Elgin</td>
<td>604</td>
</tr>
<tr>
<td>Harvard Woodstock</td>
<td>384</td>
</tr>
<tr>
<td>Hobart</td>
<td>1,082</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>$868,520</strong></td>
</tr>
</tbody>
</table>

<sup>a</sup>City of Chicago Capital Improvement Program.
FREIGHT FACILITIES

THE FREIGHT FACILITIES PLAN IS A SYNTHESIS OF PROPOSED AND COMMITTED FREIGHT CARRIER PLANS.

EXISTING SYSTEM.

The Chicago region's complex of transportation arteries annually moves an estimated 86 tons of goods per resident compared to the national average of 54 tons per capita. The area's strategic position as a national transportation gateway accounts for this larger than average transport index.

The multimodal services currently handling this work load include the following:

<table>
<thead>
<tr>
<th>Mode</th>
<th>Description</th>
</tr>
</thead>
<tbody>
<tr>
<td>RAIL</td>
<td>17 line haul railroads</td>
</tr>
<tr>
<td></td>
<td>4 belt line railroads</td>
</tr>
<tr>
<td></td>
<td>8 industrial switching railroads</td>
</tr>
<tr>
<td>TRUCK</td>
<td>843 for-hire carriers</td>
</tr>
<tr>
<td></td>
<td>360 moving van lines</td>
</tr>
<tr>
<td>AIR</td>
<td>23 scheduled carriers of air cargo</td>
</tr>
<tr>
<td>WATER</td>
<td>42 scheduled overseas carriers</td>
</tr>
<tr>
<td></td>
<td>14 barge lines</td>
</tr>
<tr>
<td></td>
<td>64 commercial waterway terminals</td>
</tr>
<tr>
<td>PIPE</td>
<td>21 carriers of petroleum and petroleum products and 7 refineries</td>
</tr>
<tr>
<td></td>
<td>3 carriers of natural gas</td>
</tr>
<tr>
<td></td>
<td>4 utility companies</td>
</tr>
<tr>
<td>OTHER SERVICES</td>
<td>138 warehouses</td>
</tr>
<tr>
<td></td>
<td>56 freight forwarders</td>
</tr>
</tbody>
</table>

Government and industry forecasts indicate that the national work load of the freight industry will increase 62 percent by 1950. The map at the beginning of this section illustrates the current extensiveness of the region's freight facilities. Subsequent maps delineate anticipated changes to existing freight facilities.

FREIGHT CARRIER PLANS.

The projects described herein are a compendium of the industry's projected facility investment programs. It provides a forecast of freight facility development through 1975 based on the industry's current perception of the demand
for its services. Information was supplied by local representatives of each freight transport mode.

**Rail**

Rail industry plans are directed toward two major goals: increasing operating capacity of outlying yards and improving intermodal facilities.

Historically, as the demand for rail service grew, individual railroad companies responded by building new yards farther out along their lines without closing older yards. The relocation of facilities along the urban periphery has now ceased, and operations continue at both inner city and outlying yards. Following are some reasons for this stabilization:

1. Unavailability of land for expansion along the urban periphery.
2. Lack of capital to fund new investments.
3. Conversion to piggyback terminals of urban yards that would otherwise be abandoned.

The static boundary of the Chicago Switching District (C. S. D.) offers an institutional stabilizing influence. Only one new yard has been built in the last decade outside the C. S. D., and it serves the developing industrial complex at Burns Harbor, Indiana.

Plans call for numerous improvements and renovations at outlying yards with fewer improvements at inner city yards. Only 5 of the 80 yards in the City of Chicago are slated for expansion programs. The 5 are major terminals located in areas of concentrated industrial activity. Improvements planned at all car-load operating yards are mapped on page 51. There are also plans to reduce the extensiveness of some inner city yards.

The largest category of urban rail investment consists of improvements in intermodal service, called TOFC (Trailer-On-Flat-Car) and COFC (Container-On-Flat-Car). Aside from increased revenues from unit trains, TOFC/COFC has been the highlight of the rail industry. Reflecting a healthy annual growth rate of 15 percent over the past decade and anticipating annual growth rates averaging 11 percent through 1975, Chicago carriers are rapidly expanding their intermodal service capabilities. Plans for these facilities are mapped on page 52.
Each railroad offering TOFC/SOF/OF service is defining its particular Chicago market and investing in single operating facilities. Unlike classification yards, the locational pattern of the area's TOFC/SOF terminals reflects an adherence by the carriers to sites within the City of Chicago. The majority of these sites provide convenient nodes for originating and terminating line haul movements and, at the same time, place the carriers close to local shippers. Capital improvements currently focus on substituting high capacity mechanical cranes and portable unloaders for the less efficient ramp-type facilities. At the present time, there are no plans to jointly operate terminals except among those firms recently or soon to be merged.

Truck

For-hire trucking began as an intracity pickup and delivery service. As the industry grew and acquired intercity transport capability, the terminal location pattern became more dispersed. Like rail, trucking spread outward from the city core to escape congestion and acquire less costly, open land. Because trucking also retained its pickup and delivery functions, the present distribution of terminals stretches from city center to the outer fringe of the region.

At present 69 percent of the region's terminals are within the City of Chicago. Several concentrations exist, the most prominent being along the Stevenson Expressway. The remainder of Cook County contains 19 percent of the region's terminals. The largest concentrations outside of Cook County are in the Gary-Hammond area in Indiana and the Fox River Valley in Illinois.

Plans of local trucking companies suggest the following patterns of location:

1. Movement in a generally southwesterly direction to newly constructed terminals. These new sites are near the Stevenson Expressway and east of the Tri-State Tollway.

2. Movement by smaller or local carriers from inefficient terminals to terminals vacated by larger firms.

3. Random movement of carriers on the north side of Chicago as a result of displacement by urban renewal projects.

4. Adherence by carriers to sites which are close to other carriers' terminals and within the Chicago Commercial Zone.
Planned terminal construction reflects to some extent the outward migration of industry. However, the City of Chicago continues to be the center of truck terminal locations. Of the planned new terminals, 37 percent will be in Chicago, 30 percent in suburban Cook County, and 33 percent in the rest of the eight county region. Locational plans for these new truck terminals correspond to those areas where the carriers currently in operation anticipate substantial business growth in the next five years. Plans are mapped on page 54.

Air

Chicago's air cargo facilities center around O'Hare International Airport. These facilities are confined to 130 acres on the eastern periphery of O'Hare. However, most of this land is developed to near capacity and cannot accommodate projected future growth.

All air cargo carriers responding to the CATS survey predicted a positive growth rate for future freight business. Based on this survey and City of Chicago, Department of Aviation statistics (1961-1969), estimates for air cargo growth in the period 1970 to 1975 are as follows:

<table>
<thead>
<tr>
<th>Type of Air Cargo</th>
<th>High Estimate</th>
<th>Low Estimate</th>
</tr>
</thead>
<tbody>
<tr>
<td>Air Freight</td>
<td>19%</td>
<td>12%</td>
</tr>
<tr>
<td>Air Express</td>
<td>5%</td>
<td>-3%</td>
</tr>
<tr>
<td>Air Mail</td>
<td>25%</td>
<td>22%</td>
</tr>
</tbody>
</table>

Survey results showed that for 75 percent of the airlines serving O'Hare, present cargo facilities will prove inadequate in handling expected traffic in the period 1970-1975. Forty-five percent of all the carriers must relocate their present operations to new facilities in order to attain projected growth rates.

Only two carriers are able to expand their present facilities. The rest must await the development of Air Cargo City, a proposed complex of cargo buildings and related construction to be located on some 580 acres of land in the southwest quadrant of O'Hare. (See map on page 56.) This land would be available to individual companies for development under leasing agreements with the City of Chicago. Preliminary plans suggest grading of the land, taxiway and road construction, and extension of utilities. A tunnel connecting the air cargo complex with main terminal facilities is 70 percent completed. Final plans for the layout of Air Cargo City have not been published, but airlines are planning to lease sites ranging from 4 acres to, in one case, 106 acres. Operations at Air Cargo City will not commence before 1973.
The satellite terminal has been suggested as an answer to the capacity problems of the growing air cargo business. The system would involve a series of regional, off-airport satellite terminals, collecting and consolidating cargo for each area and shipping it to the main airport terminal for final consolidation and loading. Incoming cargo would be unloaded and shipped to the appropriate satellite terminal for "break-up" and delivery. The great advantage of the satellite terminal concept is that the growth of air cargo business can be accommodated by adjusting the number and sizes of the satellites, while minimizing the effect on operations at the main airport terminal.

Water

Improvements to Chicago area waterways are administered by various levels of government. Future traffic volumes will depend largely upon the long range development of river, harbor, and waterway facilities.

Four river projects in the Chicago region have been authorized by Congress and are being directed by the U.S. Army Corps of Engineers.

<table>
<thead>
<tr>
<th>Projects</th>
<th>Date Authorized</th>
<th>Date Started</th>
<th>Scheduled Completion</th>
<th>Distance In Miles</th>
<th>Estimated Cost</th>
</tr>
</thead>
<tbody>
<tr>
<td>Illinois River Locks</td>
<td>1962</td>
<td>...</td>
<td>...</td>
<td>...</td>
<td>$167,000,000</td>
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<tr>
<td>Cal-Sag Navigation Part 1</td>
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<td>1955</td>
<td>1972</td>
<td>16.2</td>
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<tr>
<td>Cal-Sag Navigation Part 2</td>
<td>1946</td>
<td>...</td>
<td>...</td>
<td>7.0</td>
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<tr>
<td>Cal-Sag Navigation Part 3</td>
<td>1946</td>
<td>...</td>
<td>...</td>
<td>10.4</td>
<td>N.A.</td>
</tr>
</tbody>
</table>

Source: U.S. Army Corps of Engineers.

The only current harbor project involves the completion of Stage I of Burns Harbor in Porter County, Indiana. Stage I consists principally of constructing the basic harbor and port configuration, while securing lake access for adjacent steel mills for the receipt of iron ore and limestone. Plans for cargo sheds...
and transfer equipment are still being developed. A complete definition of Stage II is not available.

There have been repeated suggestions for the construction of a new harbor at the Illinois-Indiana state line, called Illiana Harbor. Several benefits from such a project are claimed. Extension of the existing Calumet Harbor breakwater southeastward, for instance, would create an all-weather barge route connecting all parts of the Calumet industrial district. To date, authorization has not been given for financing this proposed project.

There are several proposals for designing a regional containership facility. However, no current commitment for construction work exists, and such authorization may be withheld due to a special management consultants' report\(^4\) indicating that Great Lakes-Overseas containership operation through the present St. Lawrence Seaway would prove uneconomical.

Another project under consideration calls for the expansion of the St. Lawrence Seaway network through lock duplication and enlargement. Projected expansion costs range from $3.3 billion to $4.9 billion. However, on the basis of the above mentioned federally financed study (EBS), the U.S. Department of Transportation concluded that such an improvement project was not justified for the immediate future.

Staff analysis of waterborne data (1960–1969) and local traffic forecasts for the regional port complex indicate a trend toward traffic stabilization. Lake Calumet and the Calumet-Sag Channel will show traffic increases, while Burns Harbor will demonstrate a substantial increase in traffic as a new industrial-public facility. Overseas trade through the Seaway will stabilize and may decline under certain competitive conditions.

Pipe

Chicago's natural gas and petroleum companies have anticipated the region's demand for energy and are developing new facilities to meet these demands.

The eight county Chicago region is expected to increase its demand for natural gas at an annual compounded rate of six to ten percent. In order to meet this increase in demand, the four utility companies are expanding their pipeline distribution network, procuring additional underground storage capacity, and negotiating with suppliers for increased receipts of both domestic and Canadian gas. New underground storage sites are currently being developed near Lake Bloomington, Lexington, Normal, Crescent City, and Herscher, Illinois, with one field under development in Marshall County, Indiana. Natural gas suppliers
PIPE AND RELATED FACILITY PLANS
will improve present network capacity on a selective basis and consider proposals for a new Canadian supply line.

New source areas and pipelines highlight improvements by petroleum suppliers. Crude petroleum pipelines of 48-inch diameter may be built in the next half decade to handle crude from Prudhoe Bay, Alaska. No alignment commitment has been made, and the earliest likely date for construction will be 1973-1975. These sources of crude would supplement the already extensive crude oil network around Chicago, the most recent line -- Capline/Chicag having been completed in 1969. A 24-inch refined products line, known as Explorer, is to be built between Tulsa, Oklahoma, and Chicago in the period 1971-1973. An approximate 20-percent increase in regional refinery capacity is also projected by 1973. There are no firm plans beyond that date, but there is a high potential for improvements to any or all existing regional refineries through 1980. (See maps on page 59.)

PUBLIC AGENCY PLANS.

The Comprehensive Plan of the City of Chicago recommends development of high accessibility corridors within the City and a concentrated expansion of freight facilities in the Lake Calumet and O'Hare Airport regions.

Specific City recommendations designed to realize broad policy goals include the following:

1. Development of new industrial parks on land vacated by the removal of obsolete rail yards in the central city.

2. Continued expansion and development of waterborne terminals at Lake Calumet.

3. Filling in of slips along the south branch of the Chicago River and their conversion to alternative industrial uses.

4. Continued maintenance of general cargo facilities at Navy Pier.

5. Construction of additional air cargo terminals at O'Hare.

6. Provision for air cargo handling facilities at Midway to relieve the congestion at O'Hare.

7. Improved expressway interchange access for those truck
terminals in strategically located and properly zoned areas.

8. Encouragement of wholesaling, warehousing, and truck terminal development on vacant land in the Calumet region.

U.S. Army Corps of Engineers plans were discussed in the preceding waterway section.

FREIGHT CARRIER PROBLEMS.

Rail

A more efficient rail system for the Chicago region will depend upon the elimination of excess facilities. The region's 29 railroads currently operate over 6,000 miles of track and 134 rail yards. The 16 lines operating piggyback services in the area have established 22 separate TOFC/COFC terminals within the eight county region. The existence of multiple facilities would seem to indicate the availability of a desirable level of rail service. But, in reality, this situation represents poor utilization of capital and land. As a result, the railroad industry as a whole experiences declining rates of return, is unable to invest in maintenance and capital improvement, and must offer a decreasing level of service.

The Department of Transportation and other sources have indicated that railroads would function more efficiently with less trackage, a concept being utilized by Railpax. The merger of national railroad lines and alterations in operational policies provide the most logical method for eliminating excess yards and lines. Locations thus freed could be returned to the land market for alternative uses. However, the lack of a uniform policy guiding mergers is resulting in extensive court delays.

There is a need -- both local and national -- for railroad interests to recognize common problems hampering total efficiency. In order to expedite yard consolidations, adjust operating procedures, and facilitate intermodal transfers, all parties must cooperatively plan for improvements benefiting the entire rail system.

Truck

For-hire trucking firms are generally locating their break bulk terminals in central Cook County (Map, page 62), within the Chicago Commercial Zone.
This tendency to locate within one county is creating potential service problems in the outlying counties. Over 85 percent of the region's developing industrial park acreage is located in outlying areas beyond the commercial zone. This area of potential service deficiencies lies between the Tri-State Tollway and the Fox River Valley. The service deficiency is characterized by several factors, among them:

1. Cost of providing pickup and delivery service to outlying areas from central area terminals.

2. Addition of from 12 to 24 hours in routing interstate shipments. 6

3. Loss of access to a full range of interstate regulated carriers located within the commercial zone.

There is general agreement in private and government circles that the nature of large trucking operations requires the segregation of terminals from certain types of land use. The Comprehensive Plan of Chicago urges such a policy. At the same time, truck operators have sought land which would meet minimum site requirements for optimal terminal designs. 7 A major component of site selection is the proximity of access to the region's expressway network. Such terminal sites are often found adjacent to areas designated as single family residences. Access to the expressway network or major arterials in such areas is via streets designed neither for truck widths nor truck weights. Heavy truck traffic over these streets reduces pavement life and places trucks in direct conflict with automobiles for available roadway space.

Air

The air cargo industry throughout the Chicago region will experience definite growth in the seventies. However, the amount of growth realized will depend upon the nature of facility improvement and airport access.

Structurally and technologically, the present cargo terminals at O'Hare will prove inefficient in handling the volume of goods to be rapidly discharged and enplaned by jumbo-size aircraft. The carriers must improve capabilities for handling goods flow through existing terminals, invest in equipment and terminals at the proposed O'Hare cargo complex, and maintain the flexibility to service cargo operations at a third jetport.

Second, in developing cargo terminal plans, the air carriers will have to base their locational decisions on the concept of rationalizing pickup and delivery
functions. Access between the air carrier and the regional shippers will prove to be as important to sustaining traffic growth as are terminal and aircraft design. The air cargo industry, like the rail piggyback industry, is dependent upon good highway access. This intermodal relationship requires, at a minimum, cooperative planning between carriers and highway planners.

There will be a time lag during which the airlines will attempt to manipulate and adapt their operating procedures and their facilities to accommodate the technical advances in aircraft. The volume of traffic realized will reflect management's ability to effect these changes and to secure the highest level of access between their regional urban markets and their aircraft.

Water

The majority of Chicago's regional waterway facilities were developed to serve the heavy industrial complex in the Calumet District of Illinois and Indiana. Thus, Chicago now faces the same problem as other developed waterports of the world -- how to adapt a mature port site to the revolutionary technology and the operating techniques inherent in current maritime commerce. The following are examples:

1. Harbors dredged to 27 feet will not accommodate modern ocean vessels with loaded drafts in excess of 30 feet.

2. Harbors with excellent water access generally have restricted landward access.

Inland water carriers are facing increasing competition from alternative modes. The economies of unit trains, large-diameter pipelines, and flexible service trucking are increasing their attractiveness to shippers. The Illinois River, with its present lock network, is nearing optimal operating capacity; thus, barge operators are unable to increase tow size as a means of reducing unit costs in a competitive market.

Pipe

The pipeline industry finds that the cost of securing right-of-way in urban areas is becoming prohibitive. Rural construction costs for a 36-inch line may average $175,000 per mile, while urban costs average $350,000 per mile. The increased cost in urban areas is primarily due to the higher land values and the potential for damage to non-right-of-way property during construction. The advent of new crude and product lines, as well as electrical transmission
lines, could be expedited through a regional policy of sharing right-of-way among the surface modes, particularly along highway and railway routes. Provision for such multiple uses should be included as an integral part of transportation planning rather than being developed as a reaction to an evolving critical problem. The projected 48-inch crude lines should provide an excellent opportunity for implementing this concept.

While pipelines are reliable, efficient long distance movers of petroleum, the distribution of product to urban consumers is 90-percent dependent upon regional highways. This intermodal dependency must be more closely scrutinized in planning future highway needs and petroleum terminal sites.

PUBLIC AGENCY PROBLEMS.

It is questionable whether improvements to freight facilities suggested by local government will be realized in the immediate future.

The following examples illustrate this point:

1. The air cargo carriers have not indicated intentions to develop freight facilities at Midway. Currently, Midway air cargo is consolidated either at O'Hare or at freight forwarding firms. Meanwhile, O'Hare is reaching capacity in the handling of its own air cargo, and the carriers are concentrating on facility development there, rather than at Midway.

2. Despite the City's announced intention to encourage motor carrier business in the Lake Calumet area, trucking firms with high growth rate expectancies or plans to construct additional facilities are locating outside of this area.

3. The City intends to maintain general cargo operations at Navy Pier. While the pier affords optimal water approach, it possesses restricted access and maneuvering space for the motor carrier. In addition, the land around Navy Pier has been committed for residential redevelopment, a situation constituting mixed land use.

4. As stated in the section on rail problems, planned redevelopment of abandoned rail yards will be retarded
because of the difficulty in effecting rail mergers. This situation prevents the railroads from activating alternative operating procedures which would free land for redevelopment. Further, many railroads are now using these yards as TOFC/COFC sites.

PROGRAM AND PRIORITIES.

There is no systematic policy to guide freight facility investment on a regional scale. The preponderance of freight facility investments has been based upon plans which reflect the weighted judgment of management experienced in specific modes of transportation. Failure to consider intermodal exigencies when designing freight facilities ultimately results in a myriad of uncoordinated facilities imperfectly meeting the needs of consumer, shipper, and carrier. Thus, a comprehensive capital improvement program for Chicago regional freight facilities is not possible at this time.

In the absence of such a program, a list of priority objectives is presented for each of the modes. The following list represents the needs of each mode when viewed separately by the management of carriers within that mode or by the particular government body associated with that mode. The needs are not necessarily in order of priority.

**Rail**

- Upgrade main line track and way to accommodate higher speeds and larger equipment.
- Improve and expand TOFC/COFC terminals.
- Redevelop operating yards to expedite interchange of cars.
- Purchase additional motive power and specialized cars.
- Employ automatic car identification equipment to expand car utilization.

**Truck**

- Upgrade existing terminal facilities where appropriate.
- Locate and design new terminals for efficient road movement and physical handling.
Develop a system of satellite terminals in outer areas of the region in order to avoid further congestion at central city terminals.

Work for standardization of allowable vehicle lengths, widths, and axle loads on the highway system.

Work for completion of the Interstate Highway System as programmed and urge additional expressways for urban areas.

Air

- Expand present O'Hare cargo terminals.
- Develop additional terminals at proposed Air Cargo City.
- Improve automatic cargo handling equipment.
- Encourage unitization of shipments.

Water

U.S. Army Corps of Engineers

- Commence construction of Cal-Sag, Parts 2 and 3 as well as Illinois River lock duplication project.
- Complete Burns Harbor work.
- Continue maintenance program on existing navigable channels.

Other Public Agencies

- Expand services and facilities at Lake Calumet.
- Promote shipper utilization of Seaway route.
Carriers

- Develop federal subsidy program for construction of lake boats to replace aged fleet.

Pipe

- Utilize more powerful pumps to increase existing pipeline capacity.
- Develop new storage facilities for both natural gas and petroleum products.
- Add several supply pipelines to the existing network.
- Improve the potential for reducing right-of-way costs.
REFERENCES.

1. The Chicago Switching District is the official tariff area governing industrial switching movements in the Chicago region. There are specific rates established for such movements.

2. The Interstate Commerce Commission first defined the Chicago Commercial Zone (C. C. Z.) in 1957. A movement wholly within the zone is exempt from rate and operating authority regulation. Regulated motor carriers authorized to serve a point within the zone may serve all points and places within the zone. CATS' survey showed that 80 percent of present terminals are situated within the C. C. Z.


The conclusions expressed by EBS have been questioned by many persons and agencies involved in Great Lakes overseas commerce. In response, the U. S. Department of Transportation has contracted to study the feasibility of using feeder-ships on the Great Lakes to handle containers between headwaters at Montreal and inland ports on the Lakes.

5. "Nearly every transportation expert who has addressed himself to the subject has remarked on the critical need for rationalization of redundant rail facilities . . . Potential merger partners must be arranged sensibly so as to optimize use of existing facilities . . ." U. S. Department of Transportation, Western Railroad Mergers (Washington, D. C., 1969), pp. 5, 7, 20.


7. Considerations may include availability of ample open land, low cost land, land situated close to expressways, interlining carriers or shippers.

8. A recent purchase of right-of-way for an electrical transmission line ran approximately $290,000 per mile for a 200-foot width through a developing suburban industrial district.
THE NEXT STEP

The Interim Plan presented in the preceding sections consolidates the plans of CATS, LPCRTPC, NIPC and the City of Chicago. The Program relates these to other transportation proposals in the area. General priorities have been shown, which will be given further consideration as the Plan is tested and becomes more detailed.

The interim effort is unique in that it presents and inter-relates four general transportation types: public transportation, highways, aviation and freight facilities. There is a strong inter-relationship among these modes. As an example, transit passengers and some freight carriers use the highway network; even pipelines may utilize highway right-of-way. Aviation facilities are similarly dependent upon other modes. It is, therefore, essential that transportation planning include all types in one system, although such integrated planning has developed slowly. Consequently, the process used in this report will encourage planning for each mode as part of a whole, rather than as an independent system.

Integrated planning is particularly difficult with the complex administration and the multi-agency funding within the system. To date, planning efforts and funding have not been inclusive. While the Interstate Program (90 percent Federal assistance) has created a commendable freeway system, it was implemented while public transportation received little Federal assistance. This lack of concern in the past has resulted in financial collapse of some railroads and bus companies and near collapse of others. Concern for public transportation should result in both operating and capital funding assistance in the near future. Aviation and freight facilities, too, have not experienced a comprehensive approach to solving their problems.

Within the defined transportation policy, we need appropriate recognition of the elements involved to plan and implement a comprehensive system. We must find a way to preserve those parts of our system, which cannot await more detailed study, while at the same time expanding our long range planning efforts. Recommendations for regional organizations to further coordination, both in the short and long range, must be given careful consideration.

As stated in the Preface of this report, the Interim Plan is intended to set the stage for planning activities during the years to follow.

The "Next Step" in the planning process is directed toward a 1995 Regional Plan. This will be developed through evaluation of alternative systems, not simply an extension of existing plans. It will not be limited to plans of CATS, LPCRTPC, NIPC and the City of Chicago, but rather its objective will be to define a system utilizing the positive aspects of each mode, and coordinate planning of public transportation, highways, aviation and freight facilities.
The accompanying CATS flow chart outlines, in general terms, the work program for both the Illinois and Indiana portions of the region. Data for the target years of 1975, 1985 and 1995 have been prepared for use in plan development, evaluation and long range programming. Population, employment and land use estimates are nearing completion, and simulation models are available for the testing phase.

Implicit in this process is the feedback from public and private planning agencies and transportation carriers relative to the Interim Plan. It is through this feedback that alternatives can be identified and incorporated in the evaluation phase.

**Alternatives and Evaluation**

Two alternative systems for highways and public transportation presently are defined. First, the Interim Plan as presented in this report; and second, a minimum change system composed of the existing system plus minor improvements and extensions. Both will be evaluated against the estimated 1995 traffic demand. The process utilizes estimates of varied factors, such as population and employment. These estimates are used in simulating future traffic conditions.

It is hoped that review of the Interim Plan will result in other alternatives to be tested. Alternatives already suggested range from a $5.5 million improved bus system for the north suburban area to the City of Chicago's public transportation network as shown. With the development of a compatible highway system and further definition of the service proposed, these alternatives and others can be evaluated.
Aviation facilities are divided into two components for planning and evaluation purposes. General aviation, while interacting with commercial, must be related to need and the environment. The same conditions hold for commercial facilities with the major additional consideration of ground access. Locations for a new jetport will be evaluated concurrently with the alternate highway and public transportation systems.

Planning for regional freight facilities is perhaps the single most difficult task facing the transportation planner. Not only is the movement of goods complex in terms of modes, but freight facilities interact with all other elements. Further, it affects in some way nearly every human activity in the region. The immediate program calls for the evaluation of major interfaces and an examination of the joint use corridor concept.

As data are collected on the characteristics and magnitude of goods movement for each mode, it will be possible to evaluate the total system both within itself and as it relates to other activities.

Other Considerations

The testing and evaluation, while quantifying traffic conditions within the context of a particular alternative, must also include social and environmental considerations. In addition to accepted transportation objectives, it is necessary to consider the extent to which each mode will:

1. Improve quality of urban development and environment.
2. Use urban space.
3. Affect ecological balance.

Since a hierarchy of plans exists in a region, a regional plan is intended to provide conceptual recommendations, which can be further detailed in other plans in this hierarchy (i.e., community, neighborhood and development plans). Each level allows more specific recommendations at a more intimate scale. Such neighborhood amenities as parks, bicycle paths and pedestrian walkways can be included. These other plans, developed at a micro scale, should use the more conceptual regional plan as a general guide.
Summary

The Regional Plan then involves evaluating many alternatives to be tested. Initially these will be tested intuitively, through systematic review of the validity of each alternative. Valid alternatives, if not regional, must be tied together to include a whole system, and then more sophisticated analysis and testing will be undertaken. From these a Regional Plan based upon existing plans, rational analysis and consideration of environmental factors can be selected.

The Interim Plan as presented is but a first step, the Regional Plan being the next. This effort along with the forum for discussion and compromise that has evolved, the work program as outlined, annual reviews to keep plans current and an understanding of public policy will result in a Regional Plan. It is hoped that the Interim Plan will have a significant part in maximizing coordination and minimizing competition to further the development of a truly coordinated transportation system for the Chicago area.
chicago area transportation study

The Chicago Area Transportation Study was organized in late 1961, sponsored and financed by the State of Illinois, Cook County, and the City of Chicago, in cooperation with the U.S. Bureau of Public Roads. The basic study was completed in 1963, and a recommended long-range highway and transit facilities plan for the Chicago Metropolitan Area was published in 1963. Under the terms of the Federal-Aid Highway Act of 1962, the Study then undertook the comprehensive, continuing, and cooperative transportation planning for the Chicago Area.

In 1967, the Policy Committee expanded the area of CATS transportation planning responsibility to cover the six counties included in the Chicago Standard Metropolitan Statistical Area (Cook, DuPage, Kane, Lake, McHenry, and Will Counties). Transit interests were invited to participate at the Policy Committee level. Six commuter railroads (represented by one Policy Committee member), the Chicago Transit Authority, DuPage, Kane, Lake, McHenry, and Will Counties agreed to (financially) support the Study, and members from these agencies were added to the Policy Committee.

A wide range of organizations and agencies interested in transportation planning is represented on a Technical Advisory Committee. The 200 member membership within the Chicago Area are organized into eleven Regional Councils. Major carriers in the area are represented on the Mass Transportation Coordinating Committee.

Lake–Porter county regional transportation and planning commission

The Lake–Porter County Regional Transportation and Planning Commission was created in 1963 by the Indiana General Assembly for the purpose of carrying out transportation planning. The scope of the agency, funded by the two Indiana counties and the Federal Government, was broadened to include comprehensive planning.

The activities of the agency are administered by a Commission made up of 16 members appointed by local officials. Administrative and advisory planning committees assist the Commission in its program.

The work program of the Commission has included continuation of the AASHTO regional transportation plan, a water-saving master plan, a prototype study of the National Lakeshore, in-depth housing study, Gurnee-Dundee Tunnel Study, and preparation of lake maps for the region. Several reports have been made on solid waste, open space, water resources, and the Little Calumet River. A regional development program was begun and includes a regional directory and publication of (quarterly) newsletters.