

# Federal Aviation Agency

## ADVISORY CIRCULAR

*CANCELLED 60-25E*

AC NO: AC 150/5070-2

AIRPORTS

EFFECTIVE :

9/17/65

Consolidated Reprint  
Includes Change 1, 6/30/66

**SUBJECT : PLANNING THE METROPOLITAN AIRPORT SYSTEM**

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1. PURPOSE. This circular provides guidance and methodology for planning the metropolitan airport system as a part of the comprehensive metropolitan planning program. Specific techniques are set forth in other advisory circulars. Airport system planning is only one functional element of the comprehensive metropolitan planning program. This circular was prepared for use by area planners who may not be experienced in planning for aviation facilities so that they may effectively consider airport planning in conjunction with comprehensive planning for metropolitan areas.
  2. THE RELATIONSHIP BETWEEN AIRPORT SYSTEM PLANNING AND COMPREHENSIVE METROPOLITAN PLANNING.
    - a. The Need for Coordinated Planning. There is a need to consider the interrelated effects of airport planning and comprehensive metropolitan planning at the earliest possible time if such planning is to be fully effective. Although area planning is essentially a local problem, the importance of the concept of interrelated planning has been recognized by the Congress in the amendment to the Federal Airport Act, Public Law 88-280, which requires that the Federal Aviation Agency assure that Federal-aid Airport Program (FAAP) projects are reasonably consistent with the plans of public agencies for development in the same areas in which the projects are located.
    - b. The FAA and Metropolitan Planning. The FAA is responsible for regulating the use of navigable airspace over the United States. The FAA has a system of Regional, Area and District offices which operate directly with local government officials, airport sponsors and local aviation interests. In the past, airport planning was largely limited to planning for the development of an individual
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airport. With increased growth of the aviation industry, the need for more and bigger airports, and increased competition for urban land, areawide system plans will become more and more important in our growing metropolitan areas. The problem of airspace congestion created the initial thrust behind metropolitan airport system planning. Terminal area air traffic control must by necessity be dealt with on an areawide basis. The metropolitan airport system must be planned on an areawide basis.

Airports in and around metropolitan areas must be planned and operated as a system so that their interactions are not detrimental to their capacities and so that their functions are complementary. Furthermore, as air traffic continues to increase, more of these airports will approach and exceed a practical operating limit. It is desirable, therefore, to plan each airport in a metropolitan area as a part of a system of airports in order to obtain the most efficient traffic flow and the most effective use of facilities.

Beyond the air traffic control problem, coordination of airport planning with other kinds of planning adds a new dimension to airport system planning. In metropolitan areas the demand for airports is both local and areawide. Planning for major commercial airports and small general aviation airports must be coordinated and integrated. Further, airport planning to be most effective should be coordinated with areawide highway and transit planning as well as land use planning.

- c. The National Airport Plan. In order to receive FAAP assistance, a proposed airport project must be included in the National Airport Plan (NAP). The NAP lists the Nation's airport development needs for a five-year period. It is revised annually. The airports in the Plan represent locations at which the Federal government considers the possible expenditure of Federal monies under the Federal-aid Airport Program (FAAP). The FAAP assists in the implementation of the NAP by providing financial aid for airport development within the limits of available funds. It also assures that an airport will continue operating by requiring the sponsoring public agency to operate the airport for a 20-year period following the grant.
- d. The Role of Metropolitan Planning Programs. The initial phase of airport planning by metropolitan planning agencies

is to determine whether a new airport or airports is needed and, if so, where they should be located. This phase requires an analysis of the planning area's economy, population growth, transportation needs, and the social and economic costs and benefits related to the proposed airport development. This can best be accomplished as part of the metropolitan planning program.

- e. The Housing and Home Finance Agency (HHFA) 701 Program. The 701 Program provides Federal assistance for planning the metropolitan airport system as part of the comprehensive planning program. The 701 Urban Planning Assistance Program was authorized in Section 701 of the Housing Act of 1954, and substantially amended in 1959 and 1961. Federal grants are made to assist state and local governments in solving planning problems resulting from increasing population concentrations in metropolitan and other urban areas, including smaller communities; to facilitate comprehensive planning on a continuing basis for urban development, including coordinated transportation systems; and to encourage such governments to assist and improve planning staffs.

Grants may be made to state, metropolitan, county, and other planning agencies to assist in their comprehensive planning programs. Grants also may be made to disaster-affected cities and to federally impacted areas. Grants may cover up to two-thirds of the total cost of planning work (up to three-fourths for cities and counties in designated redevelopment areas under section 5 (a) of the Area Redevelopment Act). The remaining portion of the cost is paid by state, local or other nonfederal funds.

- f. Metropolitan Airport System Studies. The metropolitan airport system study should be developed as part of the comprehensive metropolitan planning program. Planning the metropolitan airport system is a complex job requiring coordination between several municipalities, counties, special districts, and sometimes two or three states.

In metropolitan areas the demand for transportation is not confined within political boundaries. Demand is "areawide." The airport serves several neighboring communities. The approach zones and takeoff patterns of one community airport often extend beyond municipal boundaries into neighboring political jurisdictions. Therefore, it is necessary to plan for the airport as part of a system. It should be the responsibility of each metropolitan planning agency in cooperation with local airport sponsors to begin to prepare airport system plans now in order to effectively influence

the NAP in future years. The suggested procedure can be summarized as follows: First, preparation of a long-range comprehensive plan including identification of areas which will need new airports; Second, preparation of a long-range airport system plan indicating generally where new airports should be located and where existing airports should be expanded; Third, preparation of a short-range comprehensive development program indicating the five-year development plans for highways, transit, open space, public utilities, land use, flood control and drainage for the metropolitan planning area; Fourth, preparation of a five-year airport development plan, including inputs from the long-range comprehensive plan, the long-range airport system plan and the short-range comprehensive development program. Each of these four basic parts of the metropolitan airport system study should be carried out concurrently and the "feedback" from each phase should influence each of the other phases.

Where the long-range comprehensive plan is not completed and is in the process of being developed, it may be necessary to proceed without benefit of the long-range comprehensive plan. In such cases the planning agency might begin planning the metropolitan airport system at step three with the preparation of a short-range comprehensive development program.

- (1) The Long-range Comprehensive Plan. The long-range comprehensive plan provides a statement of the goals and objectives for a wide range of metropolitan development activities, including highway, transit, recreation, open spaces, water systems, sewerage systems, residential, commercial and industrial land use, as well as airports. The definition of what constitutes "long-range" in terms of time is determined locally. A 20-year period is often used because it approximates one generation of population, but both longer planning periods and shorter planning periods are also used. In cases where the planning agency has not completed the long-range comprehensive plan, the agency might choose to prepare specialized staff studies and analysis to indicate where urban development is likely to occur and where airport facilities will be required to serve new growth. In this approach the metropolitan airport system study becomes an integral part of the continuing planning program which results in a long-range plan, which is revised periodically to keep it current.

- (2) The Long-range Airport System Plan. The long-range airport system plan indicates generally where new airports should be located and where existing airports should be expanded to meet the long-range (20-year) needs of the area. It should indicate the approximate amount of land area needed to accommodate new and expanded airports. It should also indicate how the land will be utilized. The long-range airport system plan provides the developmental goals and objectives for the five-year airport plan.
- (3) The Short-range Comprehensive Development Program. The short-range development program is a combination of the five-year airport plan described below in paragraph f.(4) and short-range functional development programs for highways, transit, open space, public utilities, land use, flood control and drainage, and other development programs that may have been prepared for the planning area. The short-range development program should provide the detailed development proposals for other functional systems which will influence airport planning and construction within the next five-year period. At the same time it should reflect the long-range goals and objectives which were broadly articulated in the long-range comprehensive plan. The short-range comprehensive development program provides a realistic and current planning framework for the five-year airport plan. The five-year airport plan should be prepared concurrently. It should be considered in the preparation of the short-range comprehensive development program.
- (4) The Five-year Airport Plan. The five-year airport plan specifies the type, location, timing and cost of proposed airport development. It should represent the first five-year development phase of the long-range airport system plan. It should be integrated with the short-range development program. It should also include a capital investments program which then becomes the primary method of implementing the five-year plan. In terms of the continuing planning program, the short-range comprehensive development program influences the five-year airport development plan; the five-year airport development plan in turn provides the basic development goals for day-to-day operational planning.

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The NAP is revised annually. The objective here is a "continuing planning program," which is directly responsible for guiding the airport dollar investments in the metropolitan area or region; in short, a capital investments program for airport system development.

### 3. ORGANIZATION FOR PLANNING THE METROPOLITAN AIRPORT SYSTEM.

- a. Metropolitan airport system planning should be carried out as part of the comprehensive metropolitan planning program. Today most metropolitan areas are served by one of the following types of planning agencies:
  - (1) A multijurisdictional planning agency which serves two or more counties.
  - (2) A city-county planning agency which serves a county and its central city.
  - (3) A county planning agency which serves an entire county.
- b. Determination of the appropriate agency for carrying out the metropolitan airport system study is a local responsibility. Preferably, the agency which is responsible for comprehensive planning for an area should also have primary responsibility for the metropolitan airport system planning in that area.
- c. The metropolitan airport system planning study should be coordinated with each agency which has an airport interest in the area. Such agencies might include the following:
  - (1) Port Authority.
  - (2) State Aeronautics Commission.
  - (3) State Planning and Development Agencies.
  - (4) State Highway Agency.
  - (5) Mass Transit Agencies and Companies.

- (6) Utility Companies.
- (7) The FAA Area Office.
- (8) The Housing and Home Finance Agency Regional Office, if it is anticipated that the study will be assisted by the 701 Urban Planning Assistance Program.
- (9) The Bureau of Public Roads, if it is anticipated that the study will be assisted by BPR research and planning funds.

d. The metropolitan planning agency should organize a meeting to which the representatives of all agencies in the area with a direct interest in airport planning and development should be invited. The purpose of the meeting should be to explain the objectives of the metropolitan airport study and to solicit the cooperation of airport interests and of the planning and development agencies in the area.

4. A GENERAL CHECKLIST OF ELEMENTS TO BE INCLUDED IN THE METROPOLITAN SYSTEM PLANNING PROGRAM. Airport planning for a metropolitan area should include consideration of the balanced needs of the area. Since determining an area's needs is a complex problem, it is essential that the planning approach be systematic and comprehensive. The checklist of elements to be included in the metropolitan airport system study is intended to provide the basis for such an approach. The elements of a metropolitan airport system study are listed below:

- a. A survey and analysis of the existing airport system.
- b. An inventory and analysis of existing local and regional development plans relating to transportation, land use, and socio-economic factors influencing the development of the metropolitan airport system.
- c. A survey and analysis of air traffic in the planning area and a forecast of future air traffic.
- d. A preliminary forecast of airport system requirements.
- e. A determination of the effects of the projected airport system on transportation and land use policies and development.
- f. The development of a long-range airport system plan.

- g. The development of a short-range comprehensive development program for the metropolitan area.
- h. The development of a five-year airport system plan based on the long-range comprehensive plan and the short-range comprehensive development program.
- i. An evaluation of other Federal, state and local airport plans in relation to the recommended metropolitan airport system plan.
- \* j. The development of an advance land acquisition plan and program for the metropolitan area. \*
- k. The continuing airport system planning program.

All airport studies carried out by either a planning agency staff or planning consultants should be presented to the FAA for review and comment.

5. A DETAILED CHECKLIST OF ELEMENTS TO BE INCLUDED IN THE METROPOLITAN AIRPORT SYSTEM PLANNING PROGRAM.

- a. Airport Inventory and Analysis. The objective is to determine the historical development, location and classification of the airport and the expansion which is currently planned by local airport sponsors and the NAP.
  - (1) A review of the financial, legal and administrative background of the airport development.
  - (2) A brief historical review of the development of general aviation in the metropolitan area.
  - (3) A brief historical review of the development of air carrier service for the metropolitan area.
  - (4) A survey of existing airports, both public and private.
    - (a) Location.
    - (b) Ground Accessibility.
    - (c) Land Use Controls.
    - (d) Availability of Land for Expansion.



- (e) Planned Expansion.
  - (f) Inventory of facilities at each airport including number of runways, length of runways, terminals, aircraft storage, repair facilities, and air navigation and traffic control systems.
- (5) Air traffic volume based on annual daily and hourly aircraft operations for the existing metropolitan airport system.
- (6) An analysis of the existing metropolitan airport system based on procedures outlined in "Capacity of Airport Systems in Metropolitan Areas: Methodology of Analysis" prepared for FAA by Airborne Instruments Laboratory, January 1964, and available through the FAA Area Airports Branch Chief for the locality.
- b. Inventory and Analysis of Existing Local Plans and Functional Regional Development Plans. The objective of this phase is to compile and analyze transportation, land use and other studies and plans which have been prepared by state, metropolitan, regional, or local planning agencies to determine factors which will affect airport development.
- (1) An overall metropolitan plan should be prepared based on the following elements: (Note: Additional studies may be useful, depending on the studies available for the planning area).
- (a) Highway and Transit Plans.
  - (b) Land Use Plans.
  - (c) Population Distribution.
  - (d) Resident and Nonresident Air Passengers.
- (2) A study should be made to determine the relationship of the airport location with respect to airport users based on the following surveys.
- (a) An origin and destination survey of air carrier users. The commercial air carriers serving the area can assist in supplying this information.

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- (b) An origin and destination survey by type of general aviation users. A survey of each general aviation airport in the planning area can supply the necessary origin and destination information.
- (3) Evaluate the effect of forecasted changes in the existing airport system to determine:
  - (a) Changes in location of air carrier passengers.
  - (b) Changes in location of general aviation users.
- c. Air Traffic Analysis and Projections. The objective of this phase is to determine the present and future sources of air traffic based on a projection of past trends on air traffic volumes, air traffic flows and origin and destination counts. Technical assistance for this phase is available through the FAA Area Airports Branch Chief for the locality.
  - (1) Analyze the air traffic volumes, traffic flow, and origins and destinations of air carrier, general aviation and air freight activity.
  - (2) Prepare a long-range forecast of air traffic assignments based on air traffic volumes, air traffic flow and origins and destinations, including air carrier, general aviation, and air freight activity for various sections of the study area.
- d. Preliminary Projection of Airport System Requirements. The objective of this phase is to develop alternative airport systems based on the long-range forecasts of air traffic.
  - (1) Develop alternative long-range airport systems to meet the air traffic requirements by sections of the study area (Par. 5 c. (2)) to determine the type, size and capacity of airports needed for the long-range planning period.
- e. Determination of the Impact of Long-range Airport Systems. The objective of this phase is to determine the impact of alternative long-range airport systems on land use development, population densities, economic development, and intrametropolitan ground transportation systems to determine (1) what changes in development

policies are needed to accommodate the airport system, (2) what changes are needed in land use and transportation policies, and (3) what changes are needed in the long-range airport system plan.

- (1) Analyze each of the alternative airport systems (par. 5 d.(1)) to determine its effect upon local and regional land use development, with particular emphasis on changes in land use which are likely to occur as a result of the use of each particular system.
- (2) Its impact on population location and densities, and the location of economic activity in the planning area.
- (3) The effect of highway and transit facilities planning on each system.
- (4) The impact of alternative interurban transportation systems on each airport.
- (5) Based on the foregoing analysis determine the possible changes in metropolitan development policies which will be needed to accommodate the alternative airport system.
- (6) Based on the foregoing analysis determine the possible changes in the long-range airport system which will be needed to accommodate metropolitan development policies.

f. The Long-range Airport System Plan. The objective of this phase is to develop a recommended long-range airport system plan.

- (1) Develop a long-range airport system plan based on the analysis and evaluation of the alternative airport system plans. The plan should include the following elements:
  - (a) A plan for the area indicating the location of new airports, expanded airports, and other support facilities.
  - (b) A program describing the amount of land areas, number and length of runways and building areas needed to accommodate the proposed system.
  - (c) A program of how the new and expanded airports will be utilized for air carrier and general aviation, including helicopters and other V/STOL aircraft, air taxis and other new aircraft which are expected to become operational within the planning period.

- (2) Re-evaluate the metropolitan airports system plan and its relationship to other elements of the long-range comprehensive plan for the planning area.
- g. The Short-range Comprehensive Development Program. The objective of this phase is to develop a short-range comprehensive development program for the planning area in order to provide a framework for the five-year airport plan.
- (1) Develop a short-range comprehensive development program for the following functional elements:
    - (a) Highways.
    - (b) Transit.
    - (c) Land Use.
    - (d) Open Space.
    - (e) Public Utilities.
    - (f) Flood Control and Drainage.
    - (g) Other elements prepared for planning area.
- h. The Five-year Airport Plan. The objective of this phase is to develop a five-year airport system development program with a five-year capital investments program and make any necessary revisions to the long-range airport system plan.
- (1) Develop a five-year airport plan consistent with the short-range comprehensive development program described in Par. 5 g.(1). The airport development program should include priorities, cost, and timing of facilities to be constructed in the five-year period.
  - (2) Make any necessary revisions to the long-range airport system plan based on the need to accommodate the five-year airport plan.
- i. Evaluation of the Airport Development Plans of the Other Federal, State and Local Agencies in Relation to the Recommended Airport System Plan. The objective of this phase is to compare and evaluate the airport development plans of other Federal, state and local

agencies with the recommended airport system. The recommended airport system is a yardstick for measuring the adequacy of other airport development plans. As indicated in Par. 3 c., contact and cooperation with other planning agencies and airport development agencies should begin at an early stage in the process of planning the metropolitan airport system.

- (1) Currently proposed airport plans prepared by Federal, state and local authorities and airport agencies as well as local communities plans, should be analyzed in relation to (1) the recommended airport system plan and (2) the five-year airport system development program. This evaluation should include a comparison of proposed new airports and airport facilities, a review of the factors influencing airport location and a determination of airspace use under each plan.
- (2) Evaluate airport plans prepared by other agencies in terms of consistency with the recommended airport system plan and program. This should also include recommended modifications to assure coordination with the airport system plan.

\* j. The Development of an Advance Land Acquisition Plan and Program for the Metropolitan Area. The availability of land suitable for airport purposes decreases with the increase in demand for land in rapidly growing metropolitan areas. Delay in acquisition of airport land may result in difficulties not only in increased cost but also in terms of incompatible land use development near the airport. Conflict between the airport and its neighbors can substantially limit the operational capability of the airport. Previous experience in some urban areas include expenditure of excessive funds for land acquisition and control of adjacent property as well as instances of inability to establish and develop needed airports. The planning and programming for advance land acquisition, suggested here, is a useful technique to prevent a repetition of these experiences.

- (1) Prepare an advance land acquisition plan indicating (1) specific new airport sites which should be acquired, and (2) land which should be acquired for the expansion of existing airports based on the following:
  - (a) The five-year airport plan.
  - (b) The long-range airport system plan.

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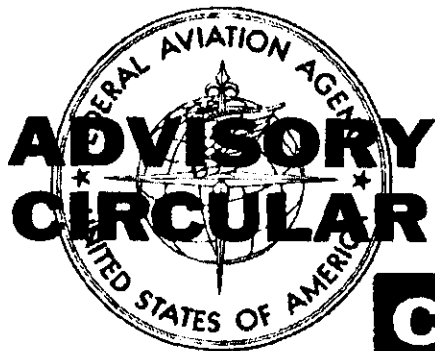
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- \* (2) Develop an advance land acquisition program indicating the following:
- (a) Specific acreage which should be acquired.
  - (b) An estimate of what the land would cost if acquired at the time recommended by the advance land acquisition program.
  - (c) An estimate of land costs if the land is purchased just prior to the time the proposed development is actually built.
- (3) Transmit a copy of the recommended advance land acquisition plan and program to the appropriate FAA Area Office to obtain advice that the plan and program is generally consistent with current FAA airport planning. The FAA Area Office can also discuss whether the proposed plan and program meets eligibility requirements for assistance under the Federal-aid Airport Program.
- (4) Apply for FAAP assistance to acquire the land. \*
- k. The Continuing Planning Program. The objective of this phase is to develop a continuing planning program for updating the metropolitan airport system plan.
- (1) Develop a program to provide annual updating and revision of the long-range airport system plan and the five-year airport development program. The annual updating should be coordinated with the FAA Area Airports Branch Chief for the locality to assure proper consideration in the National Airport Plan and in the annual Federal-aid Airport Program.
- \*6. DISTRIBUTION. Copies of Advisory Circular 150/5070-2 dated 9/17/65 may be obtained from Printing Branch, HQ-438, Federal Aviation Agency, Washington, D. C. 20553. \*

  
Cole Morrow, Director  
Airports Service

Cancelled 00-2EE

# Federal Aviation Agency



**CHANGE**

AC NO:

AC 150/5070-2 CH 1

EFFECTIVE:

1/11/66

**SUBJECT :** CH 1 TO ADVISORY CIRCULAR NO. AC 150/5070-2;  
**SUBJ:** PLANNING THE METROPOLITAN AIRPORT SYSTEM

1. PURPOSE. This change adds coverage of an advance land acquisition plan and program as an integral part of a metropolitan system planning program.
2. PAGE CONTROL CHART.

PAGE CONTROL CHART			
Remove Pages	Dated	Insert Pages	Dated
7 & 8	9/17/65	7 & 8	1/11/66
13	9/17/65	13 & 14	1/11/66

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The NAP is revised annually. The objective here is a "continuing planning program," which is directly responsible for guiding the airport dollar investments in the metropolitan area or region; in short, a capital investments program for airport system development.

### 3. ORGANIZATION FOR PLANNING THE METROPOLITAN AIRPORT SYSTEM.

- a. Metropolitan airport system planning should be carried out as part of the comprehensive metropolitan planning program. Today most metropolitan areas are served by one of the following types of planning agencies:
  - (1) A multijurisdictional planning agency which serves two or more counties.
  - (2) A city-county planning agency which serves a county and its central city.
  - (3) A county planning agency which serves an entire county.
- b. Determination of the appropriate agency for carrying out the metropolitan airport system study is a local responsibility. Preferably, the agency which is responsible for comprehensive planning for an area should also have primary responsibility for the metropolitan airport system planning in that area.
- c. The metropolitan airport system planning study should be coordinated with each agency which has an airport interest in the area. Such agencies might include the following:
  - (1) Port Authority.
  - (2) State Aeronautics Commission.
  - (3) State Planning and Development Agencies.
  - (4) State Highway Agency.
  - (5) Mass Transit Agencies and Companies.

- (6) Utility Companies.
  - (7) The FAA Area Office.
  - (8) The Housing and Home Finance Agency Regional Office, if it is anticipated that the study will be assisted by the 701 Urban Planning Assistance Program.
  - (9) The Bureau of Public Roads, if it is anticipated that the study will be assisted by BPR research and planning funds.
- d. The metropolitan planning agency should organize a meeting to which the representatives of all agencies in the area with a direct interest in airport planning and development should be invited. The purpose of the meeting should be to explain the objectives of the metropolitan airport study and to solicit the cooperation of airport interests and of the planning and development agencies in the area.

4. A GENERAL CHECKLIST OF ELEMENTS TO BE INCLUDED IN THE METROPOLITAN SYSTEM PLANNING PROGRAM. Airport planning for a metropolitan area should include consideration of the balanced needs of the area. Since determining an area's needs is a complex problem, it is essential that the planning approach be systematic and comprehensive. The checklist of elements to be included in the metropolitan airport system study is intended to provide the basis for such an approach. The elements of a metropolitan airport system study are listed below:

- a. A survey and analysis of the existing airport system.
- b. An inventory and analysis of existing local and regional development plans relating to transportation, land use, and socio-economic factors influencing the development of the metropolitan airport system.
- c. A survey and analysis of air traffic in the planning area and a forecast of future air traffic.
- d. A preliminary forecast of airport system requirements.
- e. A determination of the effects of the projected airport system on transportation and land use policies and development.
- f. The development of a long-range airport system plan.

- g. The development of a short-range comprehensive development program for the metropolitan area.
- h. The development of a five-year airport system plan based on the long-range comprehensive plan and the short-range comprehensive development program.
- i. An evaluation of other Federal, state and local airport plans in relation to the recommended metropolitan airport system plan.
- j. The development of an advance land acquisition plan and program for the metropolitan area. \*
- k. The continuing airport system planning program.

All airport studies carried out by either a planning agency staff or planning consultants should be presented to the FAA for review and comment.

5. A DETAILED CHECKLIST OF ELEMENTS TO BE INCLUDED IN THE METROPOLITAN AIRPORT SYSTEM PLANNING PROGRAM.

- a. Airport Inventory and Analysis. The objective is to determine the historical development, location and classification of the airport and the expansion which is currently planned by local airport sponsors and the NAP.
  - (1) A review of the financial, legal and administrative background of the airport development.
  - (2) A brief historical review of the development of general aviation in the metropolitan area.
  - (3) A brief historical review of the development of air carrier service for the metropolitan area.
  - (4) A survey of existing airports, both public and private.
    - (a) Location.
    - (b) Ground Accessibility.
    - (c) Land Use Controls.
    - (d) Availability of Land for Expansion.

- (e) Planned Expansion.
  - (f) Inventory of facilities at each airport including number of runways, length of runways, terminals, aircraft storage, repair facilities, and air navigation and traffic control systems.
- (5) Air traffic volume based on annual daily and hourly aircraft operations for the existing metropolitan airport system.
  - (6) An analysis of the existing metropolitan airport system based on procedures outlined in "Capacity of Airport Systems in Metropolitan Areas: Methodology of Analysis" prepared for FAA by Airborne Instruments Laboratory, January 1964, and available through the FAA Area Airports Branch Chief for the locality.
- b. Inventory and Analysis of Existing Local Plans and Functional Regional Development Plans. The objective of this phase is to compile and analyze transportation, land use and other studies and plans which have been prepared by state, metropolitan, regional, or local planning agencies to determine factors which will affect airport development.
- (1) An overall metropolitan plan should be prepared based on the following elements: (Note: Additional studies may be useful, depending on the studies available for the planning area).
    - (a) Highway and Transit Plans.
    - (b) Land Use Plans.
    - (c) Population Distribution.
    - (d) Resident and Nonresident Air Passengers.
  - (2) A study should be made to determine the relationship of the airport location with respect to airport users based on the following surveys.
    - (a) An origin and destination survey of air carrier users. The commercial air carriers serving the area can assist in supplying this information.



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- (b) An origin and destination survey by type of general aviation users. A survey of each general aviation airport in the planning area can supply the necessary origin and destination information.
- (3) Evaluate the effect of forecasted changes in the existing airport system to determine:
  - (a) Changes in location of air carrier passengers.
  - (b) Changes in location of general aviation users.
- c. Air Traffic Analysis and Projections. The objective of this phase is to determine the present and future sources of air traffic based on a projection of past trends on air traffic volumes, air traffic flows and origin and destination counts. Technical assistance for this phase is available through the FAA Area Airports Branch Chief for the locality.
  - (1) Analyze the air traffic volumes, traffic flow, and origins and destinations of air carrier, general aviation and air freight activity.
  - (2) Prepare a long-range forecast of air traffic assignments based on air traffic volumes, air traffic flow and origins and destinations, including air carrier, general aviation, and air freight activity for various sections of the study area.
- d. Preliminary Projection of Airport System Requirements. The objective of this phase is to develop alternative airport systems based on the long-range forecasts of air traffic.
  - (1) Develop alternative long-range airport systems to meet the air traffic requirements by sections of the study area (Par. 5 c. (2)) to determine the type, size and capacity of airports needed for the long-range planning period.
- e. Determination of the Impact of Long-range Airport Systems. The objective of this phase is to determine the impact of alternative long-range airport systems on land use development, population densities, economic development, and intrametropolitan ground transportation systems to determine (1) what changes in development

policies are needed to accommodate the airport system, (2) what changes are needed in land use and transportation policies, and (3) what changes are needed in the long-range airport system plan.

- (1) Analyze each of the alternative airport systems (par. 5 d.(1)) to determine its effect upon local and regional land use development, with particular emphasis on changes in land use which are likely to occur as a result of the use of each particular system.
- (2) Its impact on population location and densities, and the location of economic activity in the planning area.
- (3) The effect of highway and transit facilities planning on each system.
- (4) The impact of alternative interurban transportation systems on each airport.
- (5) Based on the foregoing analysis determine the possible changes in metropolitan development policies which will be needed to accommodate the alternative airport system.
- (6) Based on the foregoing analysis determine the possible changes in the long-range airport system which will be needed to accommodate metropolitan development policies.

f. The Long-range Airport System Plan. The objective of this phase is to develop a recommended long-range airport system plan.

- (1) Develop a long-range airport system plan based on the analysis and evaluation of the alternative airport system plans. The plan should include the following elements:
  - (a) A plan for the area indicating the location of new airports, expanded airports, and other support facilities.
  - (b) A program describing the amount of land areas, number and length of runways and building areas needed to accommodate the proposed system.
  - (c) A program of how the new and expanded airports will be utilized for air carrier and general aviation, including helicopters and other V/STOL aircraft, air taxis and other new aircraft which are expected to become operational within the planning period.

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- (2) Re-evaluate the metropolitan airports system plan and its relationship to other elements of the long-range comprehensive plan for the planning area.
- g. The Short-range Comprehensive Development Program. The objective of this phase is to develop a short-range comprehensive development program for the planning area in order to provide a framework for the five-year airport plan.
- (1) Develop a short-range comprehensive development program for the following functional elements:
    - (a) Highways.
    - (b) Transit.
    - (c) Land Use.
    - (d) Open Space.
    - (e) Public Utilities.
    - (f) Flood Control and Drainage.
    - (g) Other elements prepared for planning area.
- h. The Five-year Airport Plan. The objective of this phase is to develop a five-year airport system development program with a five-year capital investments program and make any necessary revisions to the long-range airport system plan.
- (1) Develop a five-year airport plan consistent with the short-range comprehensive development program described in Par. 5 g.(1). The airport development program should include priorities, cost, and timing of facilities to be constructed in the five-year period.
  - (2) Make any necessary revisions to the long-range airport system plan based on the need to accommodate the five-year airport plan.
- i. Evaluation of the Airport Development Plans of the Other Federal, State and Local Agencies in Relation to the Recommended Airport System Plan. The objective of this phase is to compare and evaluate the airport development plans of other Federal, state and local

agencies with the recommended airport system. The recommended airport system is a yardstick for measuring the adequacy of other airport development plans. As indicated in Par. 3 c., contact and cooperation with other planning agencies and airport development agencies should begin at an early stage in the process of planning the metropolitan airport system.

- (1) Currently proposed airport plans prepared by Federal, state and local authorities and airport agencies as well as local communities plans, should be analyzed in relation to (1) the recommended airport system plan and (2) the five-year airport system development program. This evaluation should include a comparison of proposed new airports and airport facilities, a review of the factors influencing airport location and a determination of airspace use under each plan.
- (2) Evaluate airport plans prepared by other agencies in terms of consistency with the recommended airport system plan and program. This should also include recommended modifications to assure coordination with the airport system plan.

\* j. The Development of an Advance Land Acquisition Plan and Program for the Metropolitan Area. The availability of land suitable for airport purposes decreases with the increase in demand for land in rapidly growing metropolitan areas. Delay in acquisition of airport land may result in difficulties not only in increased cost but also in terms of incompatible land use development near the airport. Conflict between the airport and its neighbors can substantially limit the operational capability of the airport. Previous experience in some urban areas include expenditure of excessive funds for land acquisition and control of adjacent property as well as instances of inability to establish and develop needed airports. The planning and programming for advance land acquisition, suggested here, is a useful technique to prevent a repetition of these experiences.

- (1) Prepare an advance land acquisition plan indicating (1) specific new airport sites which should be acquired, and (2) land which should be acquired for the expansion of existing airports based on the following:
  - (a) The five-year airport plan.
  - (b) The long-range airport system plan.

\*

- \* (2) Develop an advance land acquisition program indicating the following:
- (a) Specific acreage which should be acquired.
  - (b) An estimate of what the land would cost if acquired at the time recommended by the advance land acquisition program.
  - (c) An estimate of land costs if the land is purchased just prior to the time the proposed development is actually built.
- (3) Transmit a copy of the recommended advance land acquisition plan and program to the appropriate FAA Area Office to obtain advice that the plan and program is generally consistent with current FAA airport planning. The FAA Area Office can also discuss whether the proposed plan and program meets eligibility requirements for assistance under the Federal-aid Airport Program.
- (4) Apply for FAAP assistance to acquire the land. \*
- k. The Continuing Planning Program. The objective of this phase is to develop a continuing planning program for updating the metropolitan airport system plan.
- (1) Develop a program to provide annual updating and revision of the long-range airport system plan and the five-year airport development program. The annual updating should be coordinated with the FAA Area Airports Branch Chief for the locality to assure proper consideration in the National Airport Plan and in the annual Federal-aid Airport Program.
- \*6. DISTRIBUTION. Copies of Advisory Circular 150/5070-2 dated 9/17/65 may be obtained from Printing Branch, HQ-438, Federal Aviation Agency, Washington, D. C. 20553. \*

  
Charles H. Morrow, Director  
Airports Service