HANSCOM FIELD

MASTER PLAN

and

ENVIRONMENTAL IMPACT STATEMENT

Prepared by the

Massachusetts Port Authority

June 15, 1978

VOTED:

THAT THE HANSCOM AIRPORT MASTER PLAN AND ENVIRONMENTAL IMPACT STATEMENT, HEREBY ATTACHED, IS ADOPTED BY THE MASSACHUSETTS PORT AUTHORITY AS ITS OFFICIAL POLICY STATEMENT REGARDING THE FUTURE DEVELOPMENT AND MANAGEMENT OF HANSCOM FIELD. THIS PLAN WILL TAKE EFFECT AS OF JULY 21, 1978 AFTER THE ENVIRONMENTAL REVIEW PERIOD HAS EXPIRED PROVIDED THAT ALL PROVISIONS OF THE REVIEW PROCESS ARE COMPLIED WITH.

THAT THE MASSACHUSETTS PORT AUTHORITY EXPRESSES ITS GRATITUDE TO THE HANSCOM FIELD SUBCOMMITTEE OF THE BOARD AND THE HANSCOM FIELD TASK FORCE, THE STAFF OF THE AUTHORITY, AND THE MEMBERS OF THE PUBLIC FOR THEIR CONTRIBUTIONS TO THE PRESENTATION AND REVIEW OF THE MASTER PLAN.

THAT THE HANSCOM FIELD MASTER PLAN BE PUBLISHED FOR FREE DISTRIBUTION TO INTERESTED PARTIES AND THAT A COPY OF THIS VOTE BE INSERTED IN THE DOCUMENT OVER THE SIGNATURE OF THE SECRETARY-TREASURER.

James S. Hoyte, Secretary-Treasurer

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INTRODUCTION

Hanscom Field is an important regional transportation facility, providing aviation facilities for pilot training, business travel, military and cargo flights, and personal flying. Over the past ten years its function has changed from predominantly military operations to a major civilian general aviation facility with 220,000 operations in 1977. While the airport is seen as an economic asset for the region, the prospect of future growth in operations and noise at Hanscom Field has been a source of concern for those living in the towns around it.

This Master Plan seeks, through a series of succinct policy statements, to address those concerns and to direct and guide the future of Hanscom Field in a manner which preserves the economic utility of the Field while minimizing the environmental impacts of its operations.

Throughout the Master Plan process, both economic and environmental concerns have been carefully weighed in defining the policies set forth in the Plan. This document serves the dual purpose of Master Plan and Environmental Impact Report, incorporating extensive environmental analysis of the policies

stated herein. While all the basic background analysis upon which the Plan is predicated is summarized here, detailed material can be found under separate cover in the following reference documents.

1) Hanscom Field Master Plan Study, Massachusetts Port Authority, September 1977.

   A1. Projections of Future Activity
   A2. User Analysis
   A3. Land Use Analysis

2) Alternative Futures for Hanscom Field Master Planning, R. Dixon Speas and Associates, June 1977.

This Plan could not have reflected the diverse interests of Hanscom Field users and neighbors without the active and insightful participation of the Governor's Hanscom Task Force. The Task Force, representing neighboring towns, airport users, the State Legislature, public interest groups, and others, committed enormous amounts of time and energy to ensure that all concerns were considered in the Plan. The comprehensive and cooperative process resulting from their efforts is perhaps the most important product of the Master Plan effort. As no Master Plan can be static, it is essential that a body similar to the Task Force be established to review regional and local needs as they evolve and to advise on Hanscom Field policy on a continuing basis. The establishment of this body is an integral element of this Master Plan.

DEVELOPMENT OF THE PLAN

The process by which this Master Plan has been developed has shaped the nature of its policies. In reviewing the Plan, it is important to consider the steps followed in its development, and the alternative futures considered.

The Governor's Hanscom Task Force consisting of representatives of neighboring towns, user groups and others was established in 1974 to review the transfer of surplus Air Force properties at Hanscom Air Force Base to the Massachusetts Port Authority, the owner and operator of the Field. Massport initiated this Master Plan effort in late 1974 and reviewed the issues confronting the towns, the users and the airport, with the Task Force serving in an advisory capacity throughout the development of the Plan.

The consultants for the Master Plan background analysis, R. Dixon Speas Associates, prepared a Phase I report in August of 1975 which provided a description of the environment in the Hanscom vicinity including air quality, water quality, noise, historical and other characteristics, an inventory of

existing airport facilities, a projection of future activity at the Field and preliminary evaluation of five alternative futures for Hanscom Field.

The consultants prepared a maximum forecast of future aircraft activity at Hanscom Field, assuming strong growth, no constraints on demand and no constraints on the capacity of the airport to accommodate that demand. Based on this maximum forecast, they prepared preliminary projections of the likely mix of aircraft and level of activity for five potential scenarios.

-- 320,000 operations - projecting the effects of the field from its current level of aircraft operations (240,000) to its estimated capacity with existing runways, and without restriction as to type of aircraft or time of operation;

-- 476,000 operations - projecting the effects of the field to an expanded capacity by adding a short parallel runway, and with no restrictions imposed;

-- No Night Flying - projecting the maximum level of operations without constraints on airport capacity and with no aircraft operations between 7 PM and 7 AM;

-- No Jet Activity - projecting the maximum level of operations without constraints on airport capacity and with no jet aircraft operations allowed;

-- Restricted Training - projecting the maximum level of operations without constraints on airport capacity and with no touch and go training operations allowed.

The consultant's preliminary findings on these alternatives were reviewed by Massport, the Task Force, and the public. Two important determinations at this point shaped the alternatives to be analyzed in the consultant's final report. First, members of the Task Force expressed strong interest in exploring scenarios which sought to preserve the character of the surrounding communities and to reduce aircraft noise by limiting either the level of operations or operations in selected types of aircraft. Second, Massport determined that no major construction would be undertaken at Hanscom Field which would increase the capacity of the existing airfield. As a result, the final report did not consider scenarios which assumed that new runways or runway extensions would be built.

The consultants analyzed eight scenarios in their final report:

-- Baseline 250,000 operations - Limitation of aircraft activity to the current level and mix of operations;

-- Future 320,000 operations - Growth of aircraft operations to the estimated capacity of the existing runways, without other restrictions on demand;

-- No Jet Operations - Growth to the capacity of the existing field, with no jet operations allowed;

-- No Night Flying - Growth to the capacity of the field with no operations between 11 PM and 7 AM;

-- Minimize Training Activity - Growth to the capacity of the field with no touch-and-go training operations allowed;

-- Maximum Take-off Weight of 12,500 Lbs. - Growth to the capacity of the airfield with no operations by aircraft above this weight;

-- Modified Basic Transport, Minimize Training - Growth to the capacity of the airfield with no operations by aircraft above 30,000 lbs. and no touch-and-go training operations;

-- No Helicopter Operations - Growth to the capacity of the field with no helicopter operations allowed.

For each of these scenarios, facility requirements, noise levels, environmental and social impacts, ground access and financial implications were assessed.

The draft version of the final report was completed in October 1976. Massport and the Task Force reviewed the document and suggested revisions. In April 1977 a final summary report was completed. Based on the findings of the report the Task Force prepared its policy recommendations for the future of the field. These recommendations, along with the summary of the consultant report, were the subject of a series of public meetings held in May, 1977 by the Task Force in Bedford, Burlington, Concord, Lexington and Lincoln. The final report was completed in July 1977. Subsequently, the Task Force reviewed policy proposals with local Selectmen and submitted 15 policy recommendations to Massport.

These recommendations comprised policies on the character of the airport, noise, land use and ground access. Specific recommendations were made including the establishment of regulations to prohibit aircraft not meeting certain noise emissions levels from using the airport after 1980 (military aircraft were exluded from this recommendation) and policies supporting either (a) continuing the existing program of discouraging night operations or (b) instituting a curfew.

Using these recommendations and the consultant report as a guideline, Massport staff prepared a final analysis of three key aspects of Hanscom Field: 1) revised forecasts of aircraft activity based on most recent trends; 2) analysis of the impacts on users of the alternative futures for the Field; and 3) potential future land use around the Field. A subcommittee of the Authority, convened to consider the Master Plan, worked with staff to develop the policies set forth in this plan.

DESCRIPTION OF ENVIRONMENT IN THE VICINITY OF THE AIRPORT

Since Hanscom Field is located within four communities; Bedford to the north, Concord to the west, Lincoln to the south and Lexington to the east, it plays a significant role in the environmental and open space plans of each community. These communities offer high quality residential environments with low levels of pollution, ample open space and other attractive characteristics. The area is also a regional historic resource, with Minuteman Historic National Park, among others, located in the Hanscom vicinity. Compatibility with and enhancement of these historic and open space areas has been and will continue to be an objective of the policies developed for Hanscom Field.

There are numerous wetlands within the boundary of Hanscom Field. Extensive alder and red maple swamp areas extend through the airport along the runway approach lights. Nearly all of this land is undeveloped and forested and the policies proposed are unlikely to alter this rural environment.

The existing storm drains deliver runoff water to three points at the periphery of the airfield. Each outfall directs storm water to surface drainage ditches, all of which terminate in the Shawsheen River or its tributary, the Elm Brook. The nearest catch basin to the fuel farm is 150 feet from the aviation

fuel storage area. Fuel spill control procedures at Hanscom are designed to intercept and contain a spill before it enters the storm drainage system. This spill control technology currently prevents deterioriation of water quality in the Hanscom Field area and is capable of servicing 320,000 operations at the Field. De-icing chemicals, or other potential contaminants, are not used for snow removal at the Field.

Hanscom Field is in an area that does not suffer from air pollution, so the air quality near Hanscom is comparable to rural areas. Noise from non-aircraft sources approximates level found in denser urban areas in the neighborhoods near Route 128, but in the less densely developed areas the levels are closer to rural ambient noise. Individual aircraft noise events by jet and other noisy aircraft can be above the ambient level, particularly in neighborhoods under or near flight tracks. These <u>individual</u> noise events, are the source of greatest community concern rather than the noise levels resulting from total Hanscom operations.

GROWTH

The wide range of purposes for which general aviation flying is undertaken, the diversity of aircraft types in use, and the complex considerations entering into the purchase and use of general aviation aircraft make reliable prediction of flight activity at Hanscom Field a difficult task. Consultants for the Master Plan developed a maximum forecast of demand assuming strong growth and no constraints on aviation demand or on the capacity of the airport to accommodate that demand. Based on this maximum forecast, they estimated that Hanscom Field, with its present runways, would reach its capacity of 320,000 operations by 1980.

This consultant work was prepared in early 1975 and since that time activity at Hanscom Field has grown at a rate substantially below the projections. Based on more recent trends, the Federal Aviation Administration estimated that Hanscom Field would not reach its capacity before 1988. 1977 activity has generally been lower than 1976 levels suggesting that the airport may not reach its capacity before 1990.

The one factor which could affect these trends, - potential diversion of general aviation or commuter aircraft from Logan, - is unlikely to occur in the near future. Even if growth in Logan activity should require an effort to divert traffic, aircraft would first be diverted to off-peak hours at Logan. Only if this effort were unsuccessful would some diversion to other airports be likely. However, diversion would be limited by several factors. First, commuter airlines, which depend heavily on passengers connecting to other flights at Logan, are unlikely to divert. Second, since users of jet aircraft seem to be the least sensitive of general aviation users to increased landing and congestion costs, only the operators of lighter airplanes would be likely to divert. Third, general aviation and commuter activity at Logan amounts to 70,000 operations per year. Even if a high estimate of 30% of these operations diverted to other regional airports, the increase in Hanscom operations would be less than 5% over current Hanscom levels, assuming one half went to Hanscom.

The relationship between Hanscom Field and Logan Airport was considered throughout the development of this document. Growth in the number of operations and changes in fleet mix at either airport will affect noise levels in surrounding communities. As part of the Continuous Airport Systems Planning Program, Massport will be studying the relationships among the regions airports and the implications of the Authority's policies for those airports.

CHARACTER OF THE AIRPORT

Background

Hanscom Field serves a wide range of general aviation demand. Business users, flight training and pleasure flying all contribute to its aviation activity. In addition, military and cargo operations serve the adjacent United States Air Force Electronics Systems Division and a number of area businesses.

In 1976, these users performed 244,000 operations at Hanscom Field. Over two-thirds of these operations were performed by aircraft based at Hanscom Field and 93% were in light, propeller aircraft. Training flights accounted for 44% of overall activity, while personal and pleasure flights were 27% of operations. Business users, including corporate personnel engaged in management and sales, as well as based users making test flights with equipment developed near the field performed 26% of the operations. Cargo and military operations accounted for the remaining 3% of operations.

Hanscom's high use derives from its excellent location and facilities. Business users, in particular, cite the Field's location near Route 128 and its many high technology industries and its navigational aids as prime reasons for using the airport. Among general aviation airports in the Boston metropolitan area, Hanscom is unique in its combination of these attributes. The Hanscom Task Force, in recognition of these attributes, recommended that the utility of the airport as a transportation facility for the economy of the region and for military support be preserved.

POLICY STATEMENT

THE MASSACHUSETTS PORT AUTHORITY IS COMMITTED TO MAINTAINING HANSCOM FIELD FOR THE USES IT NOW SERVES. THE AUTHORITY SEEKS TO PRESERVE AND ENHANCE THE ECONOMIC UTILITY OF HANSCOM FIELD WHILE MINIMIZING ENVIRONMENTAL IMPACTS RESULTING FROM OPERATIONS AT THE FIELD.

AIRPORT ACTIVITY AND RUNWAY FACILITIES

Background

Consultants for the Master Plan estimate that the existing runway facilities at Hanscom Field have a capacity of 320,000 aircraft operations per year. The slow rate of growth of aircraft activity indicate that this capacity will not likely be reached before the late 1980's. The Governor's Hanscom Task Force has recommended that there should be no expansion of airfield facilities for the purpose of increasing capacity or aircraft operations.

POLICY STATEMENT

THE EXISTING RUNWAYS AT HANSCOM FIELD ARE ADEQUATE TO SERVE EXPECTED AVIATION DEMAND FOR THE FORESEEABLE FUTURE. SHOULD FUTURE ECONOMIC OR OTHER FACTORS ALTER PROJECTED AVIATION DEMAND SUBSTANTIALLY, THE ADEQUACY OF THE RUNWAYS WOULD BE REASSESSED IN A PUBLIC REVIEW PROCESS INCLUDING THE HANSCOM FIELD ADVISORY COMMITTEE. AT THIS TIME, THE MASSACHUSETTS PORT AUTHORITY WILL TAKE NO ACTION TO EXPAND AIRPORT CAPACITY.

Alternatives Considered

Addition of a Short Parallel Runway. This alternative was considered in the first phase of the consultant work. At that time concerns were raised by the Task Force about the effects of such expansion on noise levels in surrounding communities and questions were raised about the need for such facilities given the uncertainty of forecasts of general aviation activity. It was determined that in the final consultant effort, addition to or extension of the runways would not be considered.

Limitation of Activity to 250,000 Operations. At the time this was proposed, there was concern that the high rate of growth projected by the consultants would result in rapid increases in the level of noise in surrounding communities. This alternative was not recommended by the Governor's Hanscom Task Force.

CERTIFICATED PASSENGER AIR CARRIER OPERATIONS

Background

The scheduled passenger airlines serving Logan International Airport are certificated by the Civil Aeronautics Board. The Authority has had a policy that certificated air carriers providing civilian passenger air services would not be allowed to operate at Hanscom Field except in an emergency, or when diverted to Hanscom due to weather or other unforeseen conditions. Some of Logan's certificated air carriers list Hanscom as a potential weather alternate but it is rarely used for this purpose.

This policy was established in recognition of the excellent air service already available at Logan and of the inappropriateness of a general aviation airport such as Hanscom serving large aircraft and large numbers of passengers associated with these operations. The Authority, in the Master Plan for Logan International Airport (April 1976), further stated its intention to maintain Logan as the major certificated air service airport for the region. In its policy on a second air carrier airport for the region, the Authority stated that it "does not presently support and will take no action toward the development of a second air carrier airport in the Boston region". (p. 13)

POLICY STATEMENT

THE MASSACHUSETTS PORT AUTHORITY WILL PRESERVE LOGAN INTERNATIONAL AIRPORT AS THE HIGH QUALITY CERTIFICATED AIR CARRIER SERVICE AIRPORT FOR THE REGION. CERTIFICATED PASSENGER AIR CARRIER OPERATIONS WILL NOT BE ALLOWED AT HANSCOM FIELD, EXCEPT IN AN EMERGENCY.

Implementation

Certificated passenger air carriers seeking to use Hanscom in other than emergency conditions will be notified of this policy and the few carriers which currently list Hanscom as a weather alternate will be asked to use other airports in the area which currently have certificated air carrier service.

PASSENGER COMMUTER OPERATIONS

Background

Commuter air carriers provide scheduled air service in small plans between two or more airports. The Civil Aeronautics Board currently defines passenger commuter carriers as those operating scheduled aircraft with up to 30 seats or 7,500 lbs. payloads. However, the weight and seating capacity limits for passenger commuters are currently under review, and proposals have been made to raise them substantially.

Passenger commuters do not require certificates or rate approvals from the Civil Aeronautics Board. They provide a wide range of services, including connecting service from small communities to major airports and replacement of previous air carrier service.

While there are a growing number of passenger commuter operations at Logan, it is unlikely that passenger demand at Hanscom Field will be sufficient in the near future to support passenger commuter service. Nonetheless, in that commuters can provide valuable service between remote airports and that the majority of commuter operations are in smaller (under 12,500 lbs.), quieter aircraft, the potential for commuter service at Hanscom should be maintained.

POLICY STATEMENT

PASSENGER COMMUTER OPERATIONS, AS DEFINED AS OF OCTOBER 1977 BY THE CIVIL AERONAUTICS BOARD, WILL BE PERMITTED TO OPERATE AT HANSCOM FIELD. PRIOR TO IMPLEMENTATION OF ANY NEW PASSENGER COMMUTER SERVICE, PROPOSALS FOR THESE OPERATIONS WILL BE THOROUGHLY REVIEWED WITH THE HANSCOM FIELD ADVISORY COMMITTEE FOR THEIR ECONOMIC, NOISE EMISSION AND GROUND ACCESS IMPLICATIONS.

Implementation

Proposals for new passenger commuter service will be reviewed thoroughly by Massport staff with the Hanscom Field Advisory Committee prior to initiation of service. This review will include economic impact, frequency and time of operation, areas to be served, noise emission characteristics of aircraft to be used, expected passengers, and ground traffic.

Current proposals for changes in Civil Aeronautics Board regulations pertaining to commuters will be monitored, and needed changes in this policy will be identified and evaluated with the Hanscom Field Advisory Committee.

CARGO OPERATIONS

Background

Currently there are a small number of cargo operations at Hanscom Field providing express air freight service to all parts of the country. These services are used widely by area businesses which ship high value parts and documents for next day delivery. There are also civilian cargo operations which support military mission under contract.

With the exception of military operations, there are two types of cargo service at Hanscom, 1) small business jets which have been converted for cargo use; 2) air taxi cargo services in small propeller-driven aircraft which are also modified versions of business passenger aircraft. These two types of service are currently provided in aircraft that are not usually used in major airline operations and they have been operating at Hanscom for several years. Until recently, the size of the equipment used in these operations has been limited by law.

On November 18, 1977 legislation was passed which deregulated the air cargo industry, thereby lifting weight, capacity, and route and rate restrictions previously applied to certificated and commuter cargo carriers. All presently operating cargo carriers may now apply to the Civil Aeronautics Board for certificates.

POLICY STATEMENT

THE PRESENTLY OPERATING TYPES OF CARGO SERVICES AT HANSCOM FIELD WILL BE CONTINUED. PRIOR TO IMPLEMENTATION OF NEW AND/OR EXPANDED CARGO SERVICE, PROPOSALS WILL BE THOROUGHLY REVIEWED WITH THE HANSCOM FIELD ADVISORY COMMITTEE FOR THEIR ECONOMIC AND NOISE EMISSION IMPLICATIONS.

Implementation

While the Port Authority will require a thorough review of new and expanded cargo service, it will also take the necessary steps to ensure that the review process is accomplished in an expeditious manner.

AIRPORT IMPROVEMENTS

Background

In light of the expected slow growth in aviation activity at Hanscom Field, the current terminal, hangar and apron facilities, including those to be transferred from the Air Force, are adequate to serve future demand. Many of these facilities were constructed twenty to thirty years ago and are in need of maintenanace and rehabilitation. An example of this need was the rehabilitation of portions of Runway 11-29 which has been completed.

In addition to this type of improvement, certain other potential improvements have been suggested by the consultant for the Master Plan which will improve the operation of the field without increasing its overall capacity.

POLICY STATEMENT

THE MASSACHUSETTS PORT AUTHORITY IS COMMITTED TO MAINTAINING AND ENHANCING THE QUALITY OF HANSCOM FIELD FACILITIES. IMPROVEMENTS TO THE FACILITIES WILL INCLUDE REHABILITATION OF EXISTING FACILITIES, AND THE ADDITION OF FACILITIES WHICH ENHANCE THE SAFETY AND CONVENIENCE OF THE AIRPORT WITHOUT INCREASING AIRPORT CAPACITY.

Implementation

Massport will review potential improvements and prepare an Airport Layout Plan, denoting planned improvements. Improvements proposed by the consultant include rehabilitation of the Civil Terminal and runway lighting, construction of a short parallel taxiway in the Civil Terminal Area, and additional navigational aids and hangar space for light aircraft, if required by demand.

AIRCRAFT NOISE

Background

Throughout the Master Plan process Hanscom Field neighbors have expressed concern about aircraft noise, especially the possibility of an increase in noise in the future resulting from either more operations or a change in the fleet mix using Hanscom. Where there is concern about exisiting aircraft noise, it is directed at the 4% of aircraft operations performed in noisier aircraft.

The expected low rate of growth in aircraft activity will have substantial implications for future noise levels at Hanscom. Slower growth in activity will mean that the absolute number of aircraft operations, and the number of individual noisy operations, will increase at a much slower rate than projected by the consultant. The natural rate of aircraft replacement, without any new regulations to existing federal regulations, will mean that approximately 75% of all aircraft operating at Hanscom in the late 1980's will be newer, quieter aircraft, as compared with approximately 20% of those craft operating currently. This will mean that although there may be slow growth in the number of operations, the majority of jet operations will be performed by aircraft 5 to 15 decibels quieter than current jet aircraft. While this future is not certain, it suggests that the level of noise at Hanscom will not increase significantly beyond today's level.

The objective of the Port Authority is to prevent noise at Hanscom from increasing beyond its present level. To achieve this objective a two step process will be followed. First, we will measure the noise contribution of the different types of aircraft operating at Hanscom; then the appropriate means for achieving this goal, either through voluntary or regulatory means, will be established.

POLICY STATEMENT

THE MASSACHUSETTS PORT AUTHORITY WILL WORK DILIGENTLY WITH THE USERS AND NEIGHBORS OF HANSCOM FIELD IN SEEKING TO PREVENT INCREASES IN AIRCRAFT NOISE.

THE AUTHORITY WILL INITIATE A PROGRAM FOR MONITORING FLIGHT ACTIVITY AND NOISE TRENDS, AND WILL REVIEW THESE TRENDS REGULARLY WITH THE HANSCOM FIELD ADVISORY COMMITTEE. AS PART OF THIS PROGRAM, THE AUTHORITY WILL INITIATE A TWO-YEAR PROCESS LEADING TO THE ADOPTION OF NOISE STANDARDS FOR HANSCOM FIELD.

Alternatives Considered

Limitations on Heavier or Noisier Aircraft. The consultant report reviewed a number of potential restrictions on specific aircraft. Based on consultant analysis, and on the discussion at public meetings, the Task Force recommended a phased implementation of standards applying to aircraft noise levels.

Limitations on Night Flights. The Task Force proposed two alternatives for night operations: (a) that the current voluntary discouragement of night operations be continued until such time as a curfew seems necessary, and (b) that a curfew on operations between 11:00 p.m. and 7:00 a.m. be imposed. Currently, there are an average of two flights per night between 11:00 p.m. and 7:00 a.m., one of which occurs between 6:00 a.m. and 7:00 a.m., when business flights are leaving for the day. This low level of operations, resulting in part from the existing policy of discouraging night flights, is not likely to increase in light of overall slowed growth. Since the voluntary program is working effectively in reducing nighttime flights, a total ban would accomplish little.

Implementation

Massport will work with the Hanscom Field Advisory Committee to establish an effective program for monitoring trends in flight activity and noise levels. Review of tower records and based aircraft, analysis of flight activity and aircraft types, and noise measurements will be elements of this program.

The future mix of users at Hanscom is dependent upon cost factors and their impact on discretionary pleasure flying and the rate at which business jet aircraft increase, among other things. If the proportion of business jet aircraft begins to increase beyond our current projections, the issue will be addressed by Massport in conjunction with the Hanscom Field Advisory Committee and appropriate noise abatement strategies will be developed.

A time period of two years is necessary to develop quantitative and qualitative measurements of noise disburbance and to allow for extensive public review of proposed noise standards. The criteria for these standards will favor the use of quieter aircraft while allowing current users sufficient time to plan for orderly transition of their aircraft fleets.

Special attention will be given to monitoring trends in late evening and nighttime activity, so that more rigorous policies toward this activity can be adopted if necessary. In addition, the Authority will review current noise abatement operating procedures with users to identify any additional abatement turns or other procedures which might reduce disturbance. The Authority also will develop a program to encourage users to consider aircraft noise when making aircraft purchase decisions.

SECTION II

LAND USE

Hanscom Field is located in the towns of Bedford, Concord, Lexington and Lincoln. Each of these towns has a distinct character and a distinct set of concerns. Together they include some of the region's most significant historic and open space resources. Land use decisions on Massport properties in the Hanscom vicinity can affect the character of surrounding towns. Similarly, land use decisions made by the towns affect the future use of Hanscom Field. A cooperative planning process between Massport, the towns and other major land owners, particularly the Minuteman National Historic Park and the Air Force is important in finding the best possible future use of lands in the Hanscom Field area and toward continuing the pattern of compatible land use.

During the early 1970's, Massport purchased a number of parcels of land adjacent to the Field primarily in Lincoln and Concord. These properties were purchased as noise buffers to preclude development incompatible with aircraft operations. It was not intended at the time of purchase that these properties be used for airport purposes and, based on the most recent projections of activity, these properties will not be needed for such purposes in the foreseeable future. In addition to these properties, the Port Authority will soon acquire a number of acres of Air Force property which are already being used for airport purposes.

Massport has recently undertaken a detailed review of the existing use, access, terrain, noise levels, and aviation restrictions of the property it owns. Town planners were also contacted to identify adjacent uses, town zoning, wetlands and other factors. This has only been a broad review to determine the overall characteristics of the parcels. Continuing discussion with local planning officials will be required before more detailed identification of future uses is possible. This Master Plan sets forth the general guidelines within which detailed planning will be undertaken.

AVIATION RELATED LAND USE

Background

The expected slow rate of aviation growth will mean that demands for apron space, hangars and other facilities will arise more slowly than previously projected. The aviation-related properties to be transferred from the Air Force to Massport will provide adequate space to accommodate growth.

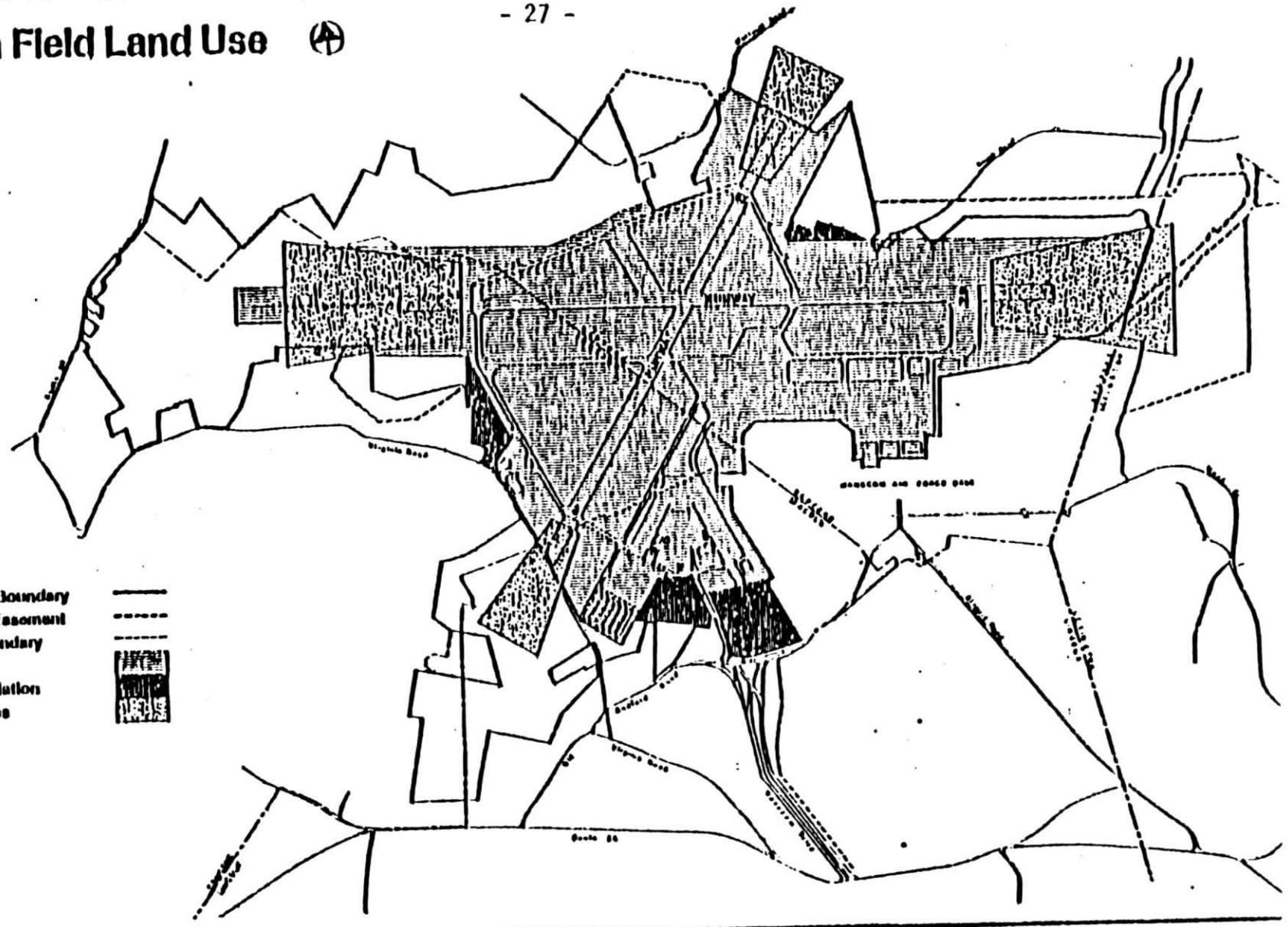
POLICY STATEMENT

THE LAND CURRENTLY DEDICATED TO AVIATION RELATED USE AT HANSCOM FIELD IS ADEQUATE TO MEET AVIATION NEEDS FOR THE FORESEEABLE FUTURE. 1977 23. ALL PLANNED IMPROVEMENTS, WITH THE POSSIBLE EXCEPTION OF NAVIGATIONAL AIDS, WILL BE MADE WITHIN THE AREAS INDICATED ON THE ATTACHED EXHIBIT. SHOULD ADDITIONAL AIR FORCE AVIATION FACILITIES BECOME AVAILABLE, THEY WOULD BE RESERVED FOR AVIATION USE.

Implementation

Massport will submit an Airport Layout Plan to the Federal Aviation Administration indicating those areas where improvements might take place.

Hanscom Field Land Use
Aviation



OTHER MASSPORT PROPERTIES

Background

The expected low rate of growth in demand for land needed for aviation purposes will result in a substantial amount of Massport land being available for non-aviation related use. Most of the parcels were purchased by Massport in the late 1960's and early 1970's for noise buffer purposes; other parcels were portions of the orginal Hanscom Field; and a few small parcels of land are part of the pending transfer of land from the Air Force to Massport. In all, the land not required for aviation use totals over 400 acres.

Potential uses for these lands range from conservation and low intensity recreational use to commercial and light industrial development. Due to the relatively higher noise levels on some of these parcels, as well as safety and clear zone considerations, new residential development would be incompatible. Massport has completed a preliminary review of these lands and intends to work closely with the adjacent towns and major land owners and interest groups to plan for the future development of these parcels.

POLICY STATEMENT

LAND USE ON PORT AUTHORITY LANDS NOT REQUIRED FOR AVIATION RELATED PURPOSES WILL BE PLANNED IN A MANNER COMPATIBLE WITH EXISTING ADJACENT USE AND WITH AIRPORT OPERATIONS. MASSPORT WILL SEEK THE COOPERATION OF THE TOWNS IN ENSURING THAT OTHER ADJACENT LANDS ARE PLANNED IN A SIMILAR MANNER. LAND USE ON THESE PARCELS WILL BE LIMITED TO MAINTAINING EXISTING USE, DEVELOPING CONSERVATION OR LIGHT INTENSITY RECREATIONAL USES OR, WHERE AFFECTED TOWNS ARE INTERESTED, DEVELOPING COMMERCIAL OR LIGHT INDUSTRIAL USES.

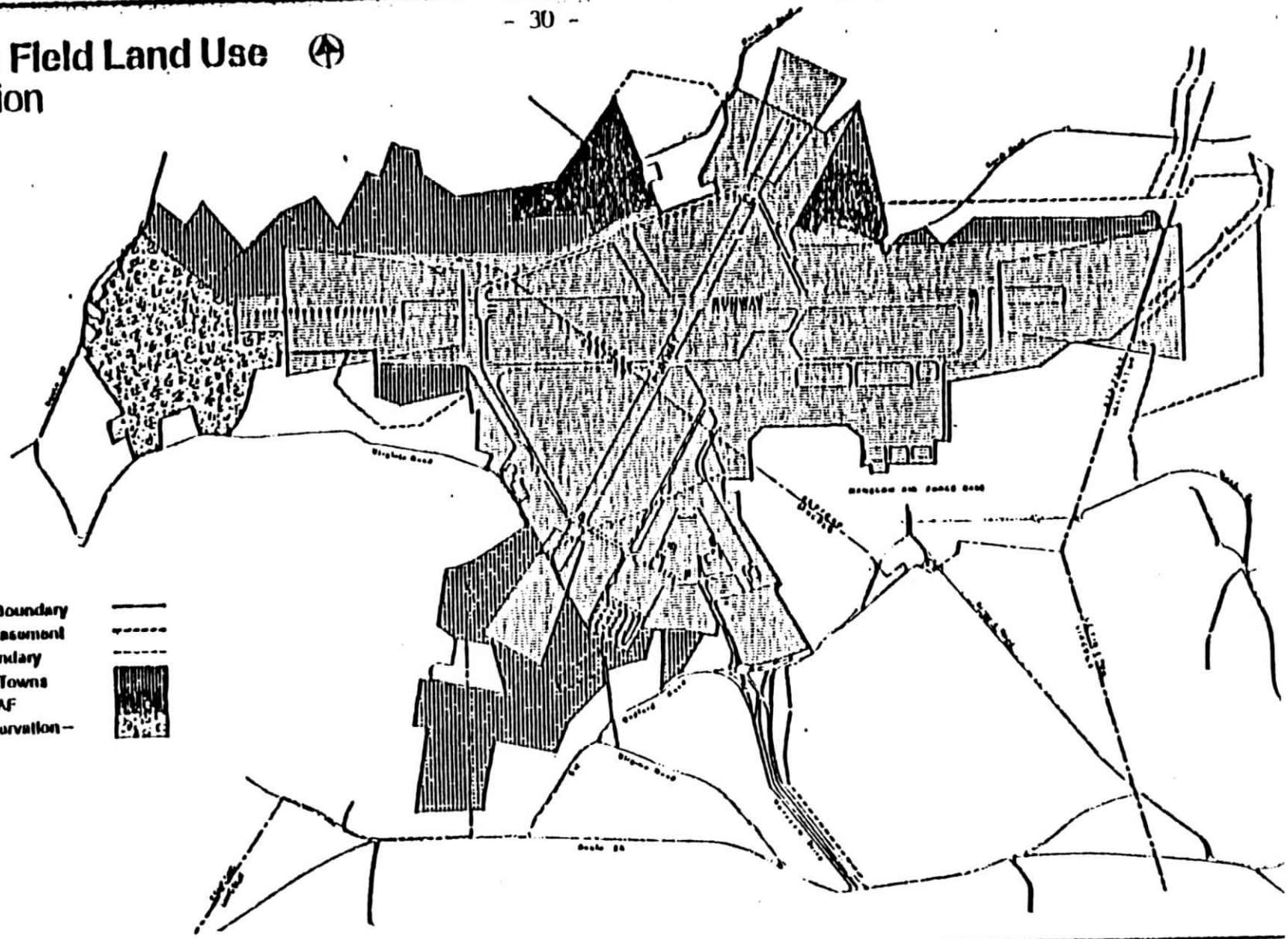
Implementation

Massport has already made initial contacts with surrounding towns to collect basic information on proposed land uses. These efforts will be continued and expanded to include liaison with the Hanscom Field Advisory Committee and review of potential land uses with appropriate town officials. National Park and Air Force officials will also be consulted.

The towns in which these properties are located have in the past expressed interest in certain of these lands being reserved for particular uses. In some cases the towns have wanted to ensure that the land be preserved as open space for conservation and recreational use. For example, Concord has sought the use of a major parcel in their town for low intensity recreational use. In other instances, towns have been interested in industrial development on particular parcels. Massport will work with these towns to ensure that any previous commitments made for the use of these lands will be met.

In some instances, Massport may consider either divestiture or additional acquisition of lands. Divestiture might be considered to purchasers who would maintain the land in low intensity use or would develop it in accordance with land uses designated by the Authority. Acquisition would be considered only in instances where it was essential to preclude major incompatible developments. Potential acquisitions would be made only after review with local officials.

Hanscom Field Land Use
Non-Aviation



SECTION III

GROUND ACCESS

Although Hanscom Field has a high volume of aircraft operations, these operations do not result in a corresponding by high volume of ground traffic. As indicated by the consultant for the Master Plan, ground traffic levels are low currently and are not likely to increase significantly even if total aircraft operations increase to 320,000 annual operations.

The one potential source of new ground traffic not considered by the consultant would be traffic resulting from the development of higher intensity non-aviation related land uses. The recent decision on the future of Route 2, as well as planned or prospective changes to Route 2A and other area roads will significantly affect the feasibility of more intensive land use.

POLICY STATEMENT

THE CURRENT ON-AIRPORT GROUND ACCESS FACILITIES AT HANSCOM FIELD ARE ADEQUATE TO SERVE FUTURE AVIATION RELATED GROUND TRAFFIC.

OFF-AIRPORT ACCESS FACILITIES ARE A CONTINUING SOURCE OF CONCERN FOR TOWNS AND AGENCIES IN THE HANSCOM VICINITY. THE MASSACHUSETTS PORT AUTHORITY WILL WORK CLOSELY WITH THE NEIGHBORING TOWNS, THE MASSACHUSETTS EXECUTIVE OFFICE OF TRANSPORTATION AND CONSTRUCTION, HANSCOM AIR FORCE BASE AND THE MINUTEMAN NATIONAL HISTORIC PARK AS THESE GROUPS PLAN IMPROVEMENTS TO TRANSPORTATION FACILITIES IN THE AREA.

Implementation

Massport is a member of the Metropolitan Planning Organization for transportation planning in the Boston Metropolitan Area. In this context the Port Authority will participate actively in ongoing transportation planning for the Hanscom area.

SECTION IV

PLANNING PROCESS

The Master Plan for Hanscom Field has been the result of extensive and fruitful cooperation with the Governor's Hanscom Task Force. This group has provided an important forum to guide studies, review Master Plan issues and recommend policies.

Implementation of the Master Plan will require continuing liaison with airport users, neighbors, local town officials and other interested groups. Hanscom's role as a part of the Boston regional airport system will also require continuing cooperation with the Massachusetts Aeronautics Commission and the Federal Aviation Administration.

HANSCOM FIELD ADVISORY COMMITTEE

Background

The Governor's Hanscom Task Force was established to review the transfer of surplus Air Force properties at Hanscom to Massport and has provided advice during the development of a Master Plan for Hanscom Field. With the completion of the Master Plan, its task will have been successfully completed. The implementation of the Master Plan will require continuing review of progress, problems and issues relating to the plan. Development of an advisory committee, similar in composition to the Task Force, is important to the successful implementation of the Master Plan.

POLICY STATEMENT

THE MASSACHUSETTS PORT AUTHORITY COMMITS ITSELF TO WORKING WITH A CONTINUING HANSCOM FIELD ADVISORY COMMITTEE, AS A SUCCESSOR TO THE GOVERNOR'S HANSCOM TASK FORCE, CONSISTING OF REPRESENTATIVES OF NEIGHBORING COMMUNITIES, USERS, CONCERNED GROUPS, AND APPROPRIATE PUBLIC AGENCIES. THE COMMITTEEE WILL REVIEW ACTIVITY TRENDS AND FACILITY NEEDS, NOISE ABATEMENT PROCEDURES, PROPOSALS FOR NEW, REGULAR, AND FREQUENT AIRCRAFT OPERATIONS, AND LAND USE PLANNING ACTIVITIES.

Implementation

Massport staff will work with the Task Force to develop plans for composition, staffing and tasks for the Committee.

AIRPORT SYSTEM PLANNING

Background

Hanscom Field is one part of a broader airport system. Policies and improvements at Hanscom may affect many other airports, and actions at those airports may affect Hanscom. The Massachusetts Aeronautics Commission and Massport have initiated a Continuous Airport System Planning Program, supported in part, by the Federal Aviation Administration. This program aims to identify the interrelationships between airports and to assess the impacts of actions at one airport on other airports in the region.

POLICY STATEMENT

POLICIES FOR GROWTH AND IMPROVEMENT OF HANSCOM FIELD WILL BE REVIEWED ON A CONTINUING BASIS FOR THEIR RELATIONSHIP TO POLICIES AT OTHER AIRPORTS IN THE BOSTON REGIONAL AIRPORT SYSTEM. THE MASSACHUSETTS PORT AUTHORITY WILL WORK WITH THE MASSACHUSETTS AERONAUTICS COMMISSION AND THE FEDERAL AVIATION ADMINISTRATION IN THIS CONTINUING REVIEW.

Implementation

Massport is already working with MAC to collect background data on aviation activity and user characteristics. Massport along with the Massachusetts Aeronautics Commission will develop a more detailed planning process to address airport system issues specifically for the Boston Area airport system. Specific emphasis will be given to the implications of any aircraft diversions from Logan to the other airports of the Commonwealth, including Hanscom.

EFFECTS OF PROPOSED POLICIES

Among the alternatives considered, the policies selected for adoption in this plan were those that produced the least adverse environmental impacts. As a result, the following effects can be expected.

Air and Water Quality

The effects on air quality will be minimal. Even at 320,000 operations the air pollution emissions of carbon monoxide, hydrocarbons and nitrogen oxides will increase only slightly over the 1975 base levels. Any pollution levels resulting from increase in airport use will be partially offset by the anticipated reduction in airport-related automobile and aircraft emissions anticipated by 1990. The level of air pollutants at Hanscom, even at 320,000 operations, is considerably below that allowed by state and federal standards. For example, the CO emissions are expected to increase from 14 to 16.4 micrograms/cubic meter, hydrocarbons from 1.4 to 2.0, and nitrogen dioxides from 0.60 to 0.86, all of which are substantially below the prevailing standards. If the emissions are calculated on a yearly basis, there will be roughly a 10% increase of carbon monoxide/hydrocarbon emissions by 1990. (The emission levels were adjusted from Scenario 2 of Speas Report - Figures 8.5 and 8.6, Sec. VIII.

Overall, there should be no decrease in water quality resulting from the policies. Since there is no major increase in paved area, there should be no increase in storm water runoff. Any improvement to the taxiways system would make an insignificant addition to water runoff. The existing management practices for runoff water are adequate to protect water quality at 320,000 operations (refer to Speas Report, Chapter VIII). This plan does not contemplate future developments which would cause additional storm water run-offs. Massport is sensitive to the possibility of flooding in the lower reaches of the Shawsheen River, and will examine the feasibility of storm water retention on the airport, and take the necessary steps to reduce its impacts. De-icing chemicals are not currently used for runway snow removal, and their use is not planned in the future.

Aircraft Noise

At 320,000 operations there will be more jet aircraft than today, but expected slow growth in activity should result in a fleet mix with approximately 75% of the jets meeting Federal noise emission levels as compared to 20% today (For explanation of this fleet mix, refer to User Analysis Report). Hence, there will be offsetting effects between increased aircraft use and a quieter mix of jet aircraft, in some cases 5 to 15 decibels quieter than current aircraft.

The effects of this change in fleet mix on the cumulative noise contours at 320,000 operations indicate only a slight increase over the present overall noise levels. This estimate was obtained by considering the consultant's estimate of a 4-6 dB reduction in the Average Day-Night Noise Level (Ldn, a weighted average which adds 10 dB for nighttime noise) at 320,000 operations due to the new fleet mix (refer to Section VII of the Speas Report). When that reduction is superimposed on the noise contour of the base case at 250,000 operations, the noise impact lines change little.

The noise levels in most of the area near the airport are within or below the 55-65 Ldn range. The 65 Ldn and above range is applicable only to those areas adjacent to the airport (refer to Speas Report). For example, all of Minuteman National Park falls within areas less than 65 Ldn, over half of it in an Ldn less than 55. It is important to note the significance of 55-65 Ldn. Noise experts estimate that most activities including residential are fully compatible with noise levels up to 60 Ldn, and are not incompatible until the Ldn reaches 65 or higher (refer to Speas Report, Chapter VII and Appendix). Given the proposed policies, therefore, it is expected that the noise level in the Hanscom area in 1990 will not be significantly above what it is today. It is possible, however, that if an unexpectedly high rate of growth or a slower

rate of aircraft replacement were to occur, then higher noise levels would result. As subsequent aircraft replacement with quieter equipment occurs, these levels would presumably decline to levels near or slightly above current levels.

Land Use

The effects on aviation related land use are expected to be minimal. The most important effect will be the establishment of areas to be used for aviation uses. The immediate effects of the non-aviation related land use policy will be small. Most of the proposed uses will not alter existing patterns. In cases where it is determined that more active land use be developed, detailed scrutiny of the potential effects on the environment, ground access, and local tax base will be required.

Ground Access

The effects of current and future aviation-related ground traffic are minimal. The consultants estimated that increases in this traffic would have insignificant impacts on ambient air quality and congestion. The effects of potential future non-aviation development will be evaluated in more detail should such developments be proposed.

MEASURES TO MITIGATE ENVIRONMENTAL HARM

The basic logic of minimizing adverse environmental impacts has been reflected in the proposed policies. When the decisions were made by Massport not to expand the airfield facilities and not to allow commercial carriers to use Hanscom, the major potential environmental impacts of noise, air pollution, and increased traffic congestion were significantly minimized. In other words, in the investigation of a variety of alternatives, Massport rejected those options that would cause extensive environmental harm.

Throughout its analysis, Massport attempted to balance its concerns for operating a viable airport to meet regional needs with the need to safeguard environmental quality. Further efforts such as limiting heavier aircraft would not allow the airport to meet the needs of the region. The imposition of an evening curfew at Hanscom would provide few additional noise reduction benefits.

The establishment of a permanent Hanscom Field Advisory Committee will assure that proposals for new operations will be reviewed and that noise abatement procedures and other environmental factors will be considered in future decision-making. The development of a program to monitor activity trends

and noise levels will aid in ongoing efforts to minimize impacts. In addition, any specific projects, should they be proposed, would be carefully scrutinized for their environmental effects and means to mitigate those effects.