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SIX HELIPORT CASE STUDIES

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Dear Colleague:

Over the years, the need for landing facilities has been a perennial concern of the rotorcraft industry. For this industry to prosper and grow, an expanding number of public-use landing facilities is needed. A number of heliports have been built and operated successfully. Other heliports have closed when they failed to achieve success. Recently, the Federal Aviation Administration (FAA) has studied this issue, attempting to understand why some facilities are successful and others are not. A copy of this document, **Six Heliport Case Studies**, FAA report number FAA/ND-97/1, is enclosed.

This report documents six case studies of actual heliports throughout the country. These facilities include both successes and failures. Such studies can help heliport developers achieve a greater success rate in the future by developing a better understanding of what is critical to the success of such projects.

This report is one of several dozens that have been published by the FAA on issues dealing with heliport/vertiport planning and design. (The majority of these documents are discussed in a bibliography entitled *Safe Heliports Through Design and Planning - A Summary of FAA Research and Development*, FAA report number FAA/RD-93/37). The rotorcraft industry does much to assist the nation in satisfying its transportation requirements. By publishing these various documents, the FAA hopes to continue fostering an increase in the benefits provided to the nation by this unique mode of transportation.

Sincerely,



Dean M. Resch

Acting Manager, General Aviation and
Vertical Flight Program Office

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<p>Abstract</p> <p>Over the years, one of the main concerns of the vertical flight industry has been heliport development. The record shows that most proposed heliports are never built, and that even a heliport that has been fully operational for years can be closed due to changing community priorities. This report evaluates the dynamics of heliport development and operation in order to achieve greater success rate in the future through the case study investigation of six heliports that have both succeeded and failed. The heliports studied are: Houston Central Business District Heliport, Houston Texas; E.34th Street Heliport, New York, New York; Garland HeliPlex, Garland, Texas; Annapolis Heliport, Annapolis, Maryland; Boston City Heliport, Boston, Massachusetts; and Cobo Hall Heliport, Detroit, Michigan.</p> <p>This study is a follow-on to two previous studies for the Federal Aviation Administration (FAA): "Four Urban Heliport Case Studies," (reference 1) completed in 1988, and "Heliport/Vertiport Implementation Process - Case Studies" (reference 2) completed in 1996. The first study endeavored to understand what causes a heliport to succeed or fail. The second investigated why heliports succeed or fail in the implementation process at the local government level and recommended ways to improve the success rate.</p>					
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1.0 BACKGROUND

For many years, heliport development has been a key concern of the rotorcraft industry. Even a limited investigation of the subject reveals that most proposed heliports are never built, and that even when a heliport has achieved community approval for construction, or is in full operation, it still can not be regarded as a permanent facility. Many elements can, and do, affect its future in the community. Even firmly established heliports can be threatened by various circumstance ranging from difficulties within the heliport operation, to changing community priorities.

Furthermore, it is a waste of taxpayer funds for the Federal government to spend millions of dollars to construct and otherwise support a heliport or vertiport only to have the facility fail within a few years. Both the Federal Aviation Administration (FAA) and the industry need to understand the technical, economic, and social forces determining successful heliport/vertiport development. This study is a continuation of earlier FAA efforts to meet this challenge.

1.1 INTRODUCTION

The FAA has published two prior heliport case studies: "Four Urban Heliport Case Studies," (reference 1), and "Heliport/Vertiport Implementation Process - Case Studies" (reference 2), completed in 1988 and 1996 respectively. The first study endeavored to understand what causes a heliport to succeed or fail. The second investigated why heliports succeed or fail in the local implementation process and recommended ways to improve the success rate. The primary purpose of this study, and these case studies in particular, is to identify trends and characteristics common to public-use heliports throughout the country, particularly those facilities that have been in operation and relatively successful for a number of years. These trends and characteristics, in turn, may serve to provide guidance for the successful development and operation of future public-use heliports in other parts of the country.

This task focuses on the cause-effect relationships between how a heliport is developed and managed and whether it is still in existence. The analysis consists of evaluating specific facilities that have either succeeded or failed for various reasons. It also investigates the nature of success. What is it about certain heliports that make them successful when other heliports are not? Is there a commonality among the heliports? Can successful elements be transferred from one facility to another? However, in recommending application of successful methodologies, it must be remembered that what makes a heliport successful in New York City may not translate to a different location. In other words, we can replicate a marketing *approach*, but not a marketing *feature* such as the skyline in New York, which may be what created some of the demand for helicopter use in New York.

As a starting point, let us restate the key conclusion first presented in "Four Urban Heliport Case Studies" (reference 1):

- that the local government's acceptance or rejection of the facility appears to be the single most significant factor in determining the success or failure of a heliport.

This means that no matter how successful a heliport is, if in the local government's opinion there is a better use for that location, then eventually, the heliport will be closed. Keep this hypothesis in mind as we evaluate the success or failure of these heliports, watch and see if it holds up as a significant factor, and look beyond it for additional contributory elements.

1.2 METHODOLOGY

Six heliports, including both successes and failures, were selected from around the United States in order to examine the factors leading to their current status. The heliports selected and their operational status are listed in table 1.

TABLE 1 STUDY LOCATIONS

Location	Status
Houston Heliport - Houston, Texas	Open
E.34th Street Heliport - New York, New York	Open
Garland Heliport - Garland, Texas	Open
Annapolis Heliport - Annapolis, Maryland	Closed
Boston City Heliport - Boston, Massachusetts	Open
Cobo Hall Heliport - Detroit, Michigan	Open

1.3 DATA COLLECTION

The specific factors to be investigated in these case studies were defined prior to data collection to improve comparability among the individual analyses. These include:

- the history of the heliport,
- who owns and operates it,
- its size,
- what types of helicopters can use it,
- how it is supported financially,
- who uses it,
- market area,
- what the users think of the heliport,
- ease of air and ground access,
- surrounding land use compatibility,
- public and government attitudes concerning the heliport,
- how the management markets the facility, and
- expected *future* use of the facility.

These factors were selected to portray a picture of the heliport starting with its development and leading to its current status. Where is the facility? When was it established? How does it relate to its surroundings? What were the critical steps in its development? What is its status in the community? Using these factors as a road map, the next six chapters present the analysis of the selected heliports.

2.0 HOUSTON CENTRAL BUSINESS DISTRICT HELIPORT, HOUSTON, TEXAS

2.1. BACKGROUND AND LOCATION FEATURES - HOUSTON CENTRAL BUSINESS DISTRICT HELIPORT

2.1.1 Background

In the late 1970s and early 1980s, the Houston, Texas helicopter activity was tied to the then booming oil industry. The lack of a zoning ordinance or any oversight resulted in a proliferation of unlicensed or permitted landing sites that generated numerous complaints. The city responded by drafting an extremely restrictive heliport ordinance. By 1983, the Department of Public Works (DPW) and Department of Aviation initiated a study of helicopter activity to be completed in two phases. The helicopter operators saw these studies as a way to resolve the very public and bitter debate that had been generated by the unrestricted helicopter activity.

Phase one was a "Heliport System Phase." Phase two was a "Master Plan, Site Selection and Environmental Assessment" for a public-use heliport within the central business district (CBD). The system plan documented existing helicopter activity and helipad facilities throughout the Metropolitan area, projected helicopter activity through 1995; identified the demand for public use heliports in certain areas of the city; classified the recommended heliports by role and design category; presented a priority for development of the recommended facilities; and identified heliport management alternatives and system plan implementation strategies (reference 3).

Phase two identified potential sites, evaluated the sites, and presented a recommended preferred site. It also developed a suggested heliport layout plan based on projections of demand developed in the system plan; prepared an initial environmental assessment to document what impacts, if any, would result from the construction and operation of a heliport; and prepared a financial analysis that included cost estimates for construction, recommended a fee structure, and projected revenues. The site recommended in this effort was on the rooftop of the center building of the George R. Brown Convention Center that was expected to be completed in July 1987 (reference 3).

This report projected that by 1995 the Houston metropolitan area would support 536 based helicopters, performing 228,000 annual operations, of which 10,200 would be instrument flight rules (IFR), and accommodating 513,000 passengers (reference 3). The system plan recommended a number of public-use heliports to be constructed throughout the Houston greater metropolitan area. The roof of the George R. Brown Convention Center (phase II expansion) was the recommended site for a permanent public-use heliport.

However, by the mid-1980s the "oil boom" had turned into an "oil bust" and helicopter activity severely declined. Nevertheless, the city did build the Houston CBD Heliport across the street from the Convention Center. It opened August 21, 1986, but was moved in 1990 to what is considered the permanent location, re-opening in March 1992. The current heliport is shown in figure 1. It is an excellent facility and can be deemed successful considering it has been in existence since 1986 and is expected to remain open for the foreseeable future. There are no

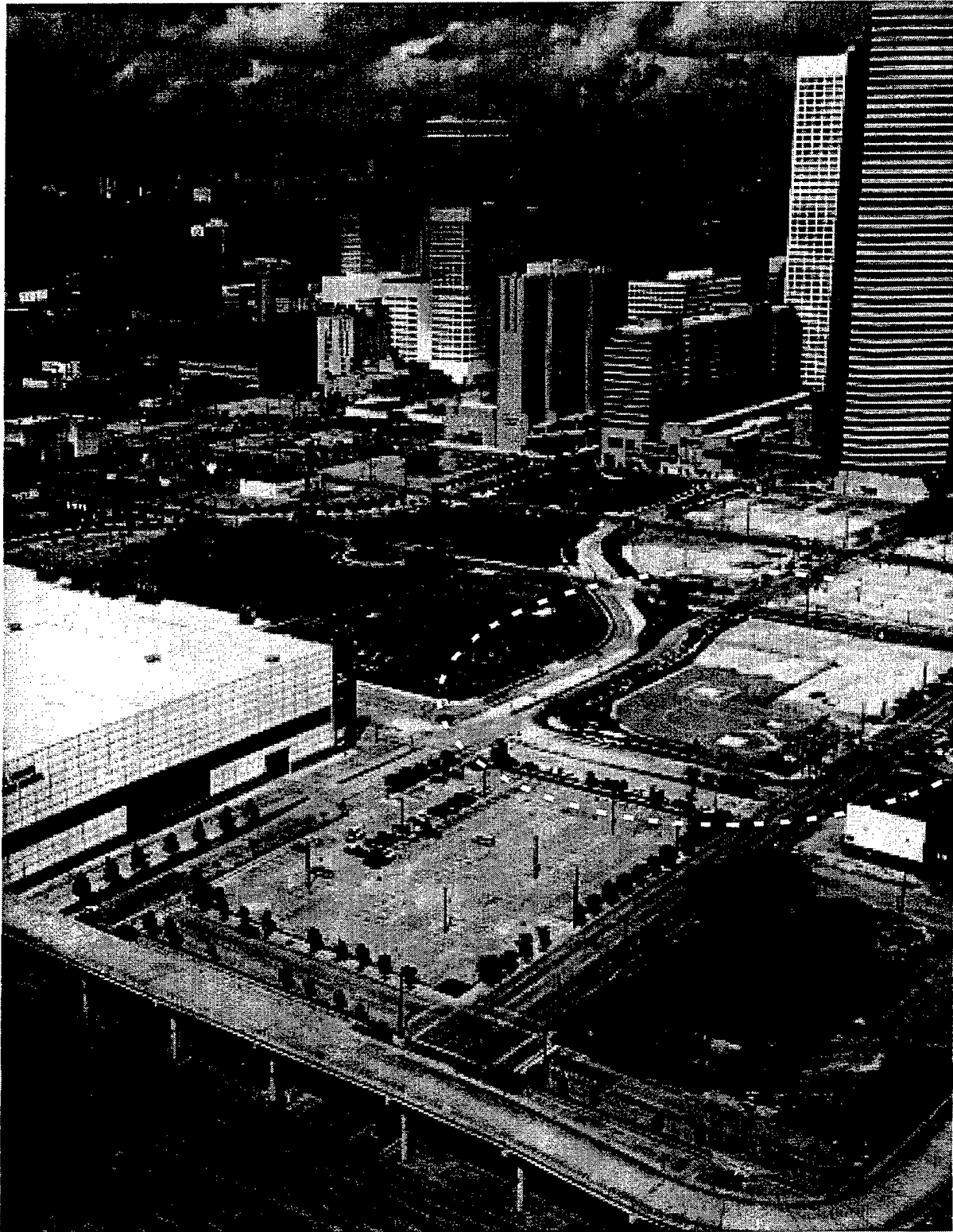


FIGURE 1 THE HOUSTON CBD HELIPORT

problems with land use or the surrounding community. Today, however, even in the helicopter industry, few people know that it is there. It is an under-used facility supporting very few operations.

2.1.2 Heliport Location

The original temporary facility had been built right across the street from the Houston Convention Center on land belonging to the Park Hotel Corporation. Prior to the construction of the convention center this section of Houston had been a derelict area. At that time there was a great deal of private helicopter activity, particularly from the oil business in the Gulf of Mexico. A plan also existed to build a major hotel near the convention center. It was expected that this market would use, and appreciate, the upscale hotel with a heliport. After the petroleum industry activity in the Gulf slowed, the hotel was never built. The heliport was moved and re-opened in March 1992 (section 2.1.1) to 800 Convention Center Blvd., Houston, Texas as shown in figure 2.

2.1.3 Classification and Function in the Aviation System

The Houston CBD Heliport is a public-use heliport, i.e., any rated pilot can use it without prior permission. The only limits are the heliport's hours of operation and its ability to accommodate aircraft over a specific size. The heliport is considered a part of the Houston airport system.

2.1.4 Developer and Owner

The city of Houston Aviation Department owns and operates the heliport and provides it as a service, since it does not generate any revenue itself.

2.2 HOUSTON CENTRAL BUSINESS DISTRICT HELIPORT - PHYSICAL FEATURES

2.2.1 Size, Orientation, and Physical Layout

The Houston CBD Heliport was designed to the 1977 FAA Advisory Circular (AC) "Heliport Design Guide" 150/5390-1B. It is large enough to accommodate a Bell 212/412-class helicopter (12,000 pounds gross weight with a 48-foot rotor diameter). It will accept larger aircraft with prior permission. This is possible because the entire surface of the facility can be used as a landing area if other aircraft are not allowed to park in the aircraft parking spaces adjacent to the touchdown and liftoff surface (TLOF). The TLOF is a 44-foot by 44-foot square within a 88-foot by 88-foot final approach and takeoff area (FATO). There are two aircraft parking positions, one 12 feet by 12 feet, and the other 22 feet by 22 feet. The TLOF surface is asphalt.

The overhead wires near the heliport are marked with red balls. There are four automobile parking positions located on heliport property strictly for official use by the Department of Aviation or heliport staff. There is a public parking lot adjacent to the facility. Figure 3 presents a layout of the facility.

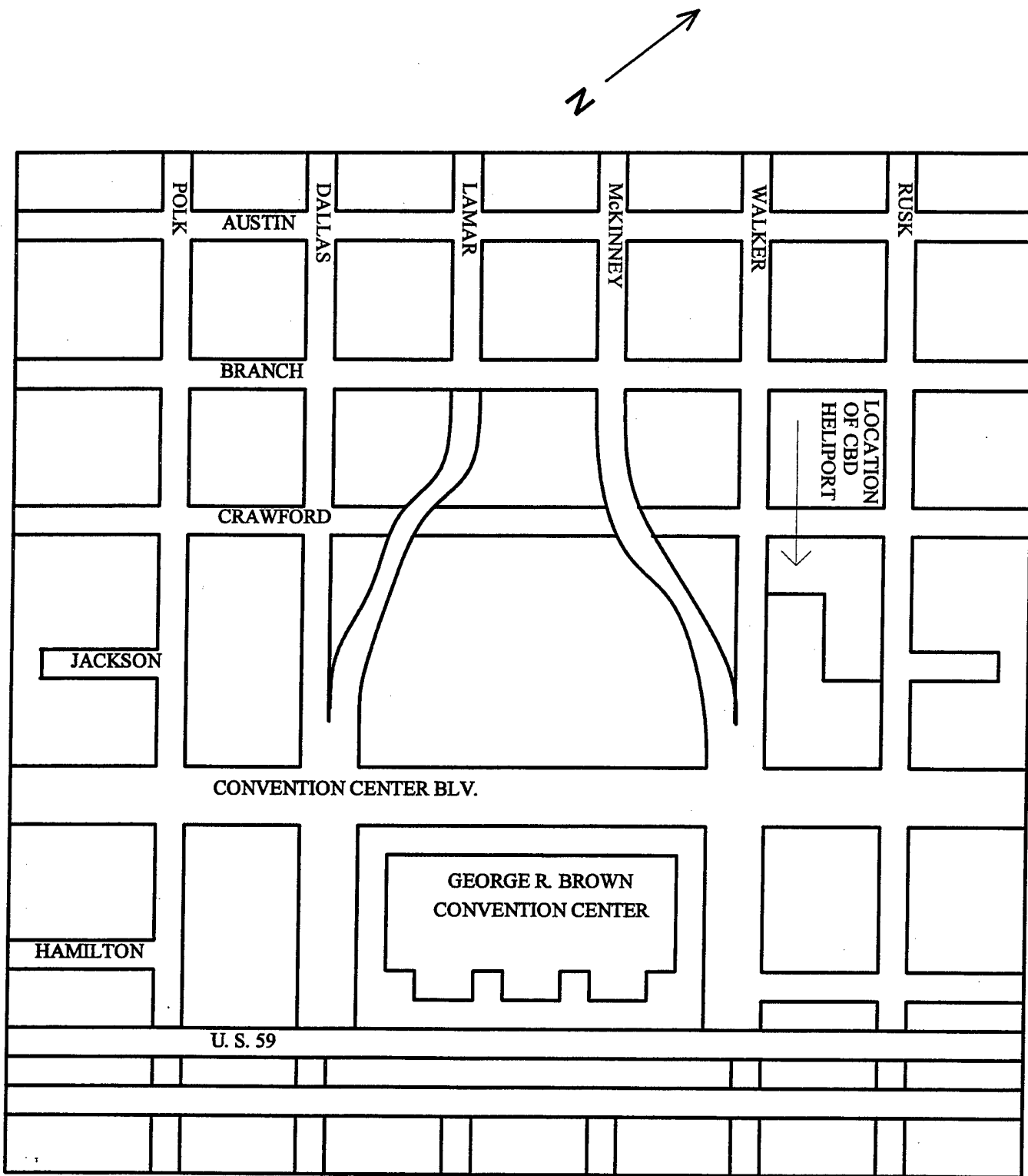


FIGURE 2 LOCATION MAP OF THE CURRENT HOUSTON CBD HELIPORT

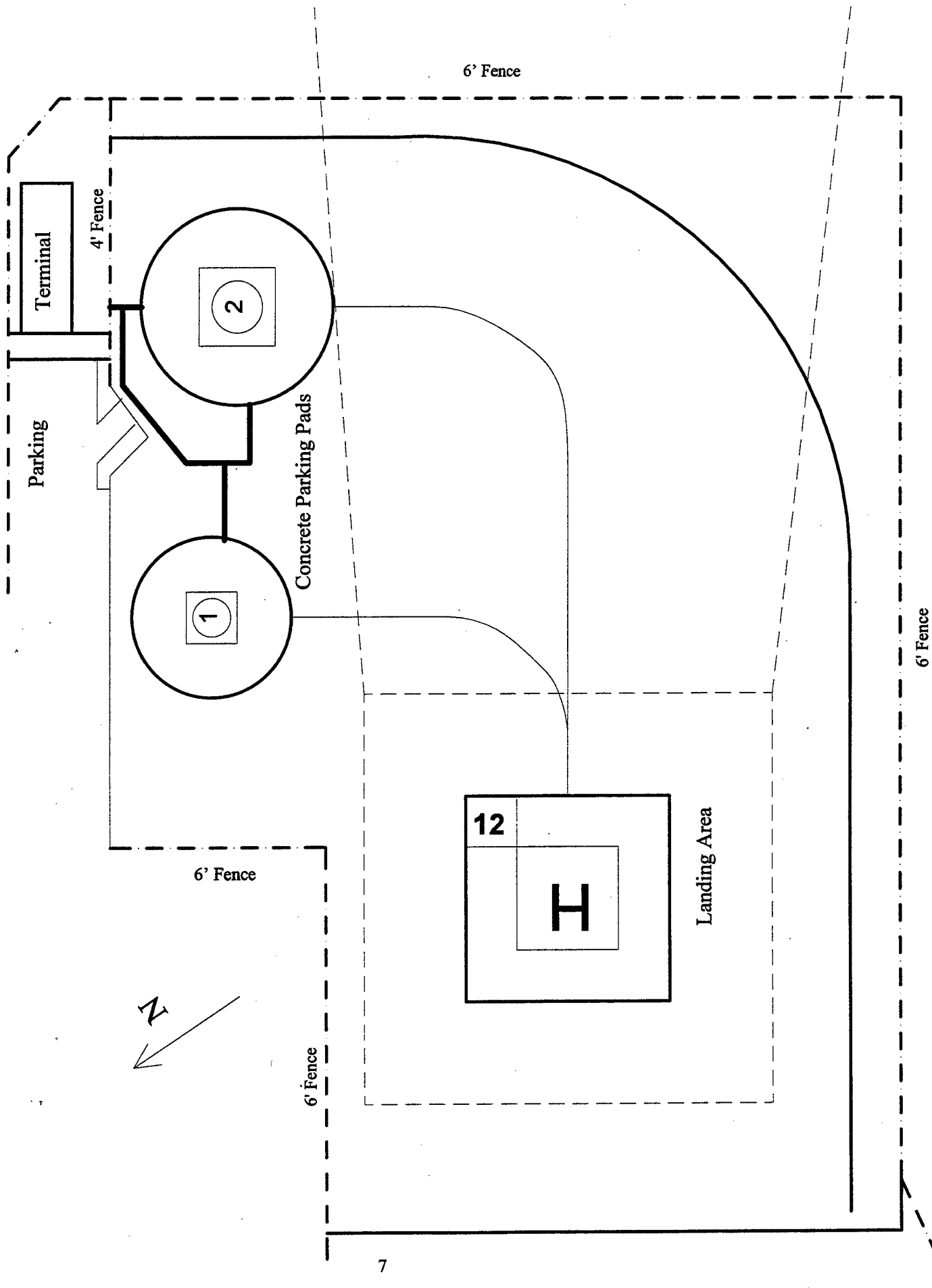


FIGURE 3 LAYOUT OF THE HOUSTON CBD HELIPORT

2.2.2 On-Site Facilities and Services

The terminal building is a large trailer. At one end, it has a restroom and a small waiting room that can be used as a conference area on one end. The other end is an operations room where the UNICOM (universal communication) radio and weather information equipment are located.

The terminal building and grounds are guarded by an electronic security service. This was necessary because there have been break-ins. To gain entry, one must push a button on the outside gate to notify the person staffing the facility. This is one of the reasons that prior notice is recommended to use the heliport after normal operating hours. There is also a button to push to let people out if a helicopter lands during times that staff are not on duty. It is now staffed by three "aide" level employees of Hobby Airport Operations. These personnel spend 2 weeks at the heliport then rotate for 1 week to the airport.

2.2.3 Acquisition and Construction Costs

No information was available on acquisition and construction costs.

2.3 HOUSTON HELIPORT - OPERATIONAL ASPECTS

2.3.1 Market and Service Area

The market area can be classified as very local, including traffic from the city of Houston and to and from the two major airports, Intercontinental and Hobby (see section 2.3.2). There is some activity with transient traffic and helicopters from the Gulf Coast oil interests.

2.3.2 Heliport Facility Users

One of the primary users of the heliport are the local news services that pickup and drop-off their reporters. It is sometimes used to fly blood to the University of Texas after a blood drive. The police use the facility, but base their helicopters at Hobby Airport. Some people using the heliport are petroleum companies from as far away as the oil producing regions of southern Louisiana. Also, local attorneys, corporate executives, and other VIPs who can afford to own their own helicopters use the facilities.

There is currently no small package delivery service that uses the heliport, although it appears to be an excellent potential collection point for pickup/delivery of packages to the downtown area. During the major floods and oil fire emergency in 1995, there were about 34 operations per day as the heliport was used as a staging location for emergency and rescue operations.

For 6 months during 1987 and 1988, a helicopter shuttle operated from the CBD Heliport to Intercontinental, Hobby, and Hull Field Airports. However, the aircraft for this service were based at Intercontinental Airport. There were more operations between the Houston CBD Heliport and Intercontinental Airport than Hobby Airport. Hobby is only 20 minutes away from downtown Houston by automobile while Intercontinental is 30-50 minutes away.

2.3.3 Operational Characteristics of the Facility

The heliport is open and staffed from 8:30 a.m. to 5:30 p.m. and can be used at other times by special request. The department of Public Works does the inspections, and it is operated through Hobby Airport. There are rules for aircraft operations on the facility. A helicopter can only spend 5 minutes on the TLOF, and only 15 minutes parking. However, these rules are not strictly enforced because the heliport is not busy. The rules exist in case they are required.

2.3.4 Revenue Sources for Financing the Operations

There are no landing fees, maintenance, fuel, hangars, or any other revenue generating services at the Houston CBD Heliport. It is supported solely by the Houston Aviation Department as a public service. The Aviation Department operates as an Enterprise Funds System so it is funded solely by internally generated revenues. The Department operates three public-use airports and generates an operating profit from these facilities.

2.3.5 Types of Based Rotorcraft

There are no aircraft based at the Houston CBD Heliport.

2.3.6 Activity Levels

The Houston CBD Heliport is not a busy heliport. It has about 45 to 50 operations per month, which translates to about 570 annual operations. An operation equals one takeoff or one landing.

2.4 HOUSTON HELIPORT - RELATIONSHIP TO THE SURROUNDINGS

2.4.1 Access - Airside and Instrument Operations

There are no instrument operations to or from the Houston CBD Heliport. It is strictly operated under visual flight rules (VFR). It is located in an open area and there are no obstacles that interfere with approaches and departures. The Houston CBD Heliport can accommodate departures within an arc of 135 to 315 degrees from the TLOF. However, the published approach is from U.S. 59, with the approach/departurero routes being northeast/southwest. There are high-rise buildings in the downtown area, but these are far enough away that they do not interfere with heliport operations. The Houston Convention Center is approximately nine stories high.

2.4.2 Access - Landside

The Houston CBD Heliport is easily reached by automobile. The heliport is only 20 minutes by car from Hobby Airport and 30 to 50 minutes from Intercontinental Airport. It is less than 5 minutes from the heliport to most locations in downtown by car or taxi. There are underground tunnels in the city of Houston with retail and fast food shops so that people can move around out of the heat. People can walk between the downtown, the convention center, and the heliport using these tunnels.

There is a public telephone at the heliport to call taxi or limousine services and a public bus stops next to the convention center.

2.4.3 Neighboring Land Uses, Zoning, and Economic Base: Compatibility and Obstacles

The closest heliport neighbor is the Houston Convention Center about a block away. In the opposite direction there are several blocks of open land. Beyond this is the high-rise area of central Houston. The rest of the surrounding area is a scattering of older, low income residential homes and some light industrial and business buildings.

There are no obstacles to hinder the heliport's operation. The few wires near the street behind the terminal building are marked. The high-rise buildings in the CBD are a few blocks away and do not interfere with the main approach from the freeway.

2.4.4 Operator, User, and Public Attitudes Regarding the Heliport Facility

There has been no public opposition to the heliport. The approach/departure is over the freeway and it is located in an area with few or no residences.

2.4.5 Government Agency Attitudes and Support

This heliport was constructed and is operated by a local government agency, the city of Houston Department of Aviation. There is no opposition from other city agencies.

2.5 HOUSTON HELIPORT - PAST AND CURRENT PLANNING

2.5.1 Marketing of the Heliport to the Community, Users, and Operators

There is no marketing for Houston CBD Heliport except for a Houston Airports video that has a section on the heliport. It was unknown whether the convention center does anything to market the heliport. Unlike other Texas heliports (i.e., the Dallas Vertiport and the Garland Heliport (section 4.0)), there has been no promotion, or even notice, in helicopter industry publications.

In fact, the key to the continuation of this heliport is the willingness of the Houston Aviation Department to fund and operate it. If it was aggressively marketed, it would most likely be used more by both the convention center users and close-by major corporations in the downtown.

There had been another Houston Heliport in the downtown area, built by Houston Public Works in conjunction with some helicopter operators then based at Hobby Airport. This heliport is now closed and few remember it. There have been discussions of building another heliport in the Galleria area (about 10 miles west of downtown) as was also recommended in the system plan (reference 3) but funds for its development do not currently exist.

2.5.2 Expected Future of the Houston Heliport

Since Houston's economic situation is improving, it is possible that the originally planned large hotel near the convention center could be built, but that is not certain. This would result in the city of Houston, heliport users, and the convention center having to make decisions about a new heliport. The fact that Dallas has a rooftop convention center heliport should be considered an important factor in any future decision because it allows for the possibility of a helicopter transportation system.

2.6 HOUSTON HELIPORT - CONCLUSIONS

The Houston Heliport can be considered a success in that it has been in existence for over 10 years and is expected to remain where it is indefinitely. However, it is seriously under-used. It is highly likely that if it were aggressively marketed, it could expect a significant increase in activity. Its location, near the convention center and within a few blocks of the CBD high-rise buildings of Houston, is ideal. The most obvious marketing effort would be to coordinate activities with the convention center.

3.0 E.34TH STREET HELIPORT, NEW YORK, NEW YORK

3.1 BACKGROUND AND LOCATION FEATURES - EAST 34TH STREET HELIPORT

3.1.1 Background

Although, the East 34th Street Heliport (E.34th) once could have been considered a definite success, it is now at risk due to community problems. It is one of the four public-use heliports serving the Island of Manhattan, the central Borough of New York City. The other three are, Wall Street Heliport (Manhattan Downtown, one of the FAA Prototype Heliports), East 60th Street (Pan Am Metroport), and West 30th Street. The E.34th Street heliport is located at the East River near E.34th Street, which is close to the "midtown" area of Manhattan (figure 4). E.34th Street is currently the busiest of the New York City heliports. Nearly 40 percent of the total helicopter flights arriving or departing Manhattan use it. With a 1995 level of activity of about 54,000 annual operations, it is believed to be the busiest public-use heliport in the world.

There is a long and complex history associated with the siting of heliports in New York City particularly public-use heliports. The concept of public helicopter service was the subject of a conference held in 1944. The first American Helicopter Conference was sponsored by a local business-oriented association, the Sixth Avenue Association, and involved various city officials. Among the topics discussed at the conference were the relative merits of waterfront and rooftop heliport sites.

The first actual heliport operations were initiated in the 1950s by the Police Department and by the Port of New York Authority, which is now named the Port Authority of New York and New Jersey (PANYNJ).

The first public-use heliport was opened in 1956 at W.30th Street alongside the Hudson River. This site is still in operation. Figure 5 identifies the general location of all four of the Manhattan heliports. There are two other public-use heliports in New York City, one at Kennedy Airport and the other at LaGuardia Airport. In 1988, there were eight private-use heliports within the city. Outside the city, in just the New York State part of the metropolitan region, there were 4 other public-use heliports and 42 private-use heliports. In addition, there are numerous heliports within 200 to 250 miles of Manhattan, the normal helicopter travel distance, in New Jersey, Connecticut, and eastern Pennsylvania.

3.1.2 Heliport Location

Significant to the location and operation of the Manhattan heliports is the unique geographic setting. The natural physical geography of Manhattan Island is a relatively long and narrow island, with wide rivers on each side. However, man-made features also create a sort-of geography—best characterized by the image of the world famous New York City skyline—that is also an important factor to helicopter operations. Figure 6 presents the spectacle of this man-made geography. These factors in combination with the intensity and economic value of human



FIGURE 4 E.34TH STREET HELIPORT

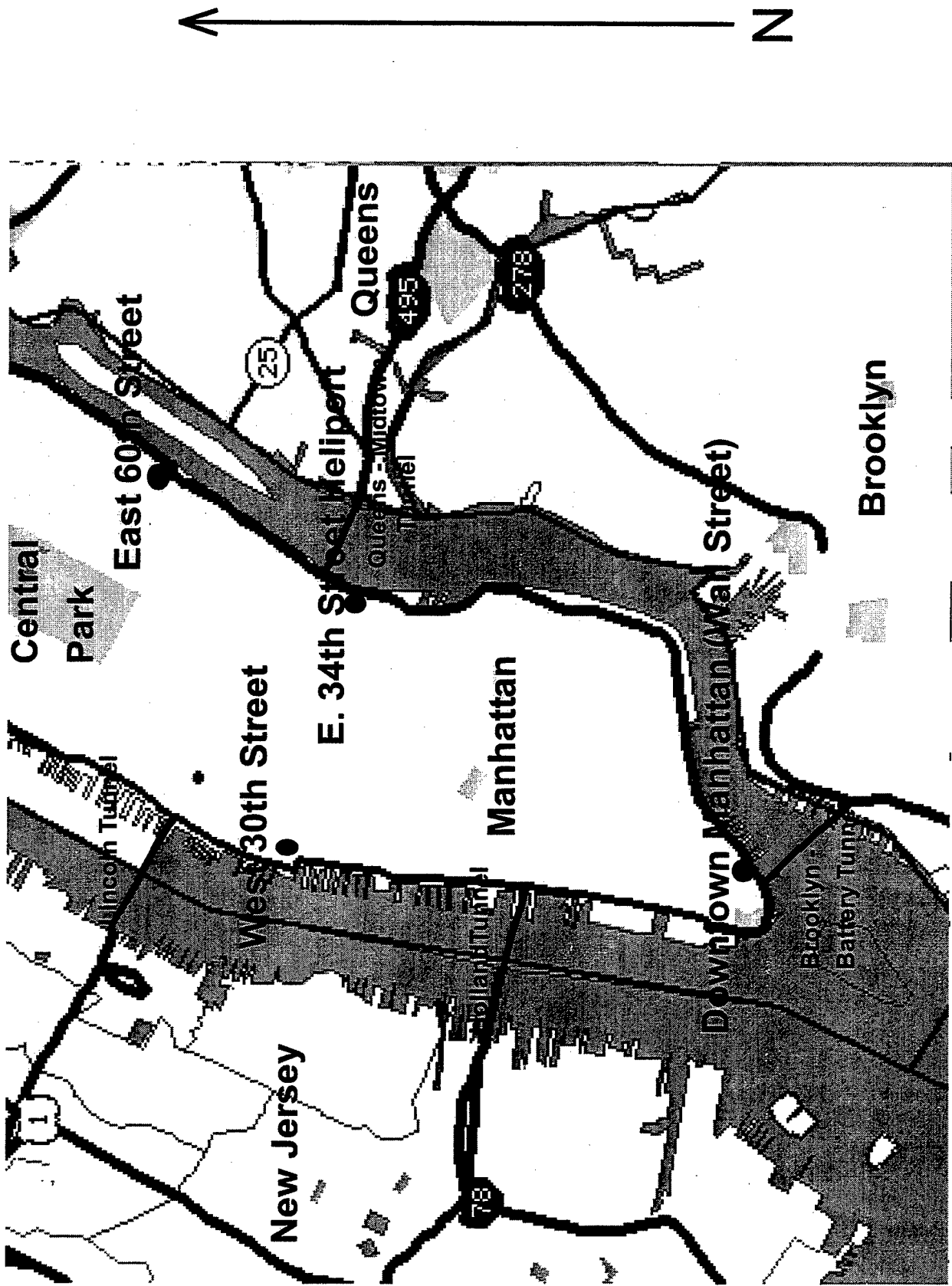


FIGURE 5 LOCATION OF MANHATTAN PUBLIC-USE HELIPORTS

Source: U.S. Census Bureau, Tiger Mapping Service (<http://tiger.census.gov>).



FIGURE 6 THE NEW YORK SKYLINE-MANHATTAN'S MAN-MADE GEOGRAPHY

activity and the general tourist appeal and attraction of the City, have long been among key factors affecting location and function of heliports serving New York City.

The specific location of the E.34th Street Heliport is between the pier-head line of the East River and the north-bound service road of Franklin D. Roosevelt Drive (FDR Drive), just to the south of E.34th Street. It is located about three quarters of a mile east of the Empire State Building at 34th Street and Fifth Avenue. The United Nations (UN) headquarters building is located about one half mile to the north along the East River, while New York University, Bellevue, and the Veteran's Administration Medical Centers are located to the south between 34th and 23rd Streets.

The general area of Manhattan to the west of the heliport is often referred to as the Murray Hill area. Another name used for the area is "Kips Bay," after the person who settled the area in the mid 1600s. The heliport is about 11 miles air-distance from the northwest end of the runways at Kennedy International Airport.

3.1.3 Classification and Function in the Aviation System

The E.34th Street Heliport is classified as a commercial, public-use facility. No prior permission is required to use the heliport. When it opened in 1973, the E.34th Street Heliport became the fourth public-use heliports serving Manhattan. The older Wall Street Heliport (Manhattan

Downtown) originally opened in 1960. However, it was renovated as an FAA prototype heliport between 1983 and 1986 when it was reopened with great fanfare. The operational mix at E.34th includes corporate/executive, charter, and sightseeing. In addition, there are a very small number of medical related flights for the nearby medical centers that do not have their own heliports. Throughout most of the 1980s and up to 1994, scheduled helicopter passenger service was provided between the E.34th Street heliport and the air carrier airports of the region.

In the late 1970s and early 1980s, the prime function of the E.34th Street Heliport evolved into serving as the main point of departure for helicopter sightseeing tours of the world-famous New York City skyline. This was the result of private market choices. However, in recent years, as a matter of public policy by the City of New York, an effort was begun to manage the relative proportions of different types of operations that occur among the four heliports (see sections 3.4.4). The patterns of helicopter activity for the primary missions tend to occur at different times of the day, on different days of the week, and during different times of the year. In order to reduce noise impacts on nearby residential communities, the City has recently attempted to use its various local powers to regulate private market operations and shift certain types of operations among the four heliports.

Although the authority for regulation of airspace belongs to the FAA, the City attempted to use its contract management powers to stipulate the routing of some flights and the frequency of sightseeing operations. The issue of shifting some of the sightseeing functions that have been occurring at E.34th Street, over to the W.30th Street Heliport, as well as to the Downtown Manhattan Heliport (Wall Street), was one of the points of contention in the recent renewal of the special permit for the E.34th Street heliport (see section 3.1.4 and 3.4.4).

3.1.4 Developer and Owner

The land on which the heliport is located is owned by the City of New York. The current responsibility for its management rests with the Economic Development Corporation (EDC) of the City. Among its several missions, EDC oversees and ensures the competitive operation of the city's aviation facilities, including the heliports.

Operations at the heliport began in 1973. The operation of the E.34th Street Heliport itself was leased to a private company to serve as the fixed-base operator (FBO). This was accomplished via a contract arrangement with Island Helicopters Corporation, whose parent company is National Helicopter Corporation of America. The lease was for a 10 year term, with a 10 year renewal option. National Helicopter renewed its lease in 1986. The lease expired in October 1995 and is currently being extended by EDC on a month-to-month basis.

The initial "special permit" to operate the heliport was a five year permit and it expired in 1977. In 1985, as part of a rent dispute with the City of New York, National Helicopters agreed to apply for a renewal of the permit. By early 1993, National had commenced work on an Environmental Impact Statement (EIS) required in connection with its application for the special permit. However, the City was not satisfied with National's progress. Accordingly, in

connection with another rent dispute between the parties, the City - through the EDC - assumed responsibility for completing the EIS. National committed to reimburse the City for its costs.

A new application was filed with the City Planning Commission in June 1995 by the Department of Business Services and the EDC. That application was to allow the continued operation of the E.34th Street Heliport for a 10 year period under the "special permit" provisions of the Zoning Ordinance of the New York City. This application received final approval March 6, 1996 in an amended form prescribing. When the New York City's City Council approved issuance of a special permit imposing several conditions upon future operations (Resolution 1558).

These conditions were as follows:

- Restrict weekday hours of operation to between 8:00 a.m. and 8:00 p.m.,
- a minimum 47 percent reduction in operation,
- Saturday and Sunday tourist operations restricted to between 10:00 a.m. and 6:00 p.m., and ultimately phased out entirely,
- restrict tourist flight from flying over Second Avenue, and north-south sightseeing flights restricted to the East and Hudson rivers,
- prohibit Sikorsky S-58T, or helicopters of similar size from using the heliport, and
- mark helicopters so that the markings would be visible at 1,400 feet.

The City's intent was to reduce the level of helicopter noise in the vicinity of the E.34th Street heliport by restricting it and forcing many of the operations to move to one or more of the other Manhattan heliports.

The EDC incorporated these conditions into a Request for Proposals seeking a new heliport operator (FBO) to operate the E.34th Street Heliport. National Helicopter Corporation of America, the parent company of the current FBO, Island Helicopters, then sought injunctive relief against the City of New York, the City Council, the City Planning Commission, and the EDC, from enforcing Resolution 1558. The plaintiff stated that these conditions would cause National Helicopter to "suffer significant financial harm" that "would result in depleted good will between National and its customers," and that National would lose \$6 million annually and would be forced to layoff 200 workers. Furthermore, the plaintiff stated that Resolution 1558 was passed in violation of the Supremacy Clause of the U.S. Constitution, Art. VI, cl. 2, and in violation of laws of the City of New York. Due to this law suit, all action on the RFP was stayed pending the decision of the court. On January 3, 1997 the request for a permanent injunction was partially granted and partially denied (reference 4). The decision is discussed in section 3.4.4.

3.2 EAST 34TH STREET HELIPORT - Physical Features

3.2.1 Size, Orientation, and Physical Layout

The E.34th Street Heliport is very small. The total land area, exclusive of underwater leasehold property, is about 40,400 square feet, slightly less than 1-acre. Of that total amount, about 26,400 square feet is used for helicopter operations. A land-use layout of the heliport is presented in figure 7.

The TLOFs are located in the operations area on the pier-head along side the East River. The heliport can provide parking for up to seven Jet Ranger (Bell 206) size helicopters, but the actual ramp capacity varies based upon helicopter size. When larger helicopters are used for sightseeing tours, the two northerly aircraft parking spaces are used. The remaining parking areas can accommodate only two smaller Jet-Ranger-sized helicopters. In addition to the TLOFs, there are two other aircraft parking places on the site that can be used if the helicopters are dollied, not taxied, into position. On the street side of the terminal buildings, there are several automobile parking spaces that are used by heliport personnel and delivery vehicles.

3.2.2 On-Site Facilities and Services

Two large mobile-home-type trailer structures serve as the heliport terminal buildings and are located on the west side of the site. The northern temporary building and most of the southern building are located underneath an elevated section of FDR Drive. The highway predates the heliport. The use of the ground space below part of the highway represents an efficient use of the land. However, regulations related to the highway prohibit the placement of permanent structures underneath the highway.

The southern terminal building serves the sightseeing passengers. Inside there is a ticket counter, a general waiting area, some private office space, as well as a gift shop and snack service. Once the passengers' tickets are collected for a particular flight, there is a separate waiting/holding area for them where they view a safety video and receive other instructions prior to going out to the helicopter. In addition, there is a control room in the building that overlooks the operations area of the site. The control room is where communications are maintained with the different helicopters preparing to land or takeoff, as well as those conducting their sight seeing tours nearby. The northern building accommodates passengers that are arriving, departing charter flights, and serves as the main heliport office and pilot's lounge.

The heliport has fuel available but there are no maintenance facilities on site. The heliport has perimeter lighting and flood lights that illuminate the terminal buildings. The heliport has no visual aids but is equipped with a UNICOM.

While the heliport does not provide automobile parking for passengers, there is an adjacent parking lot that holds about 200 automobiles. This space is available for a fee to heliport passengers, as well as the general public.

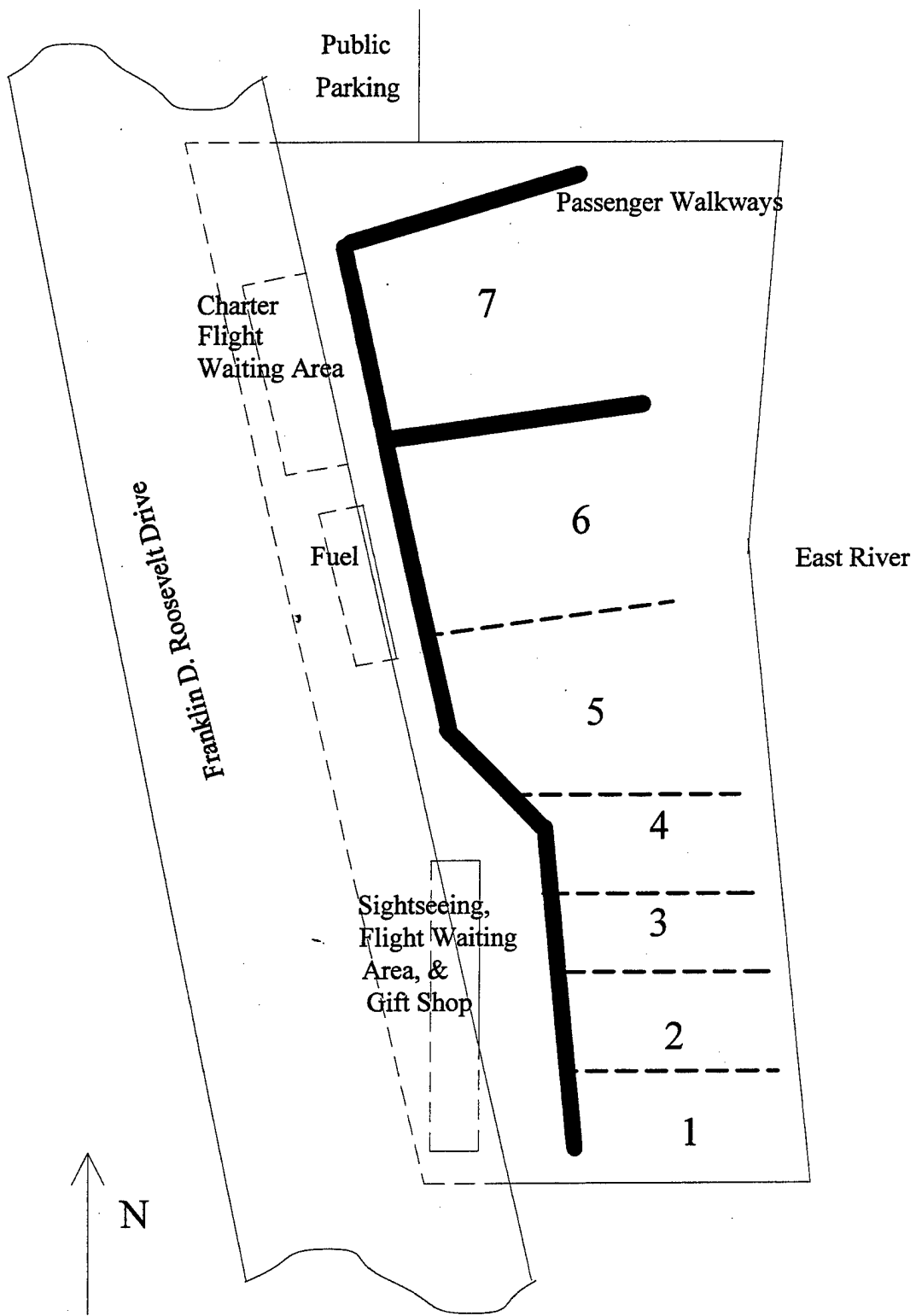


FIGURE 7 SCHEMATIC DIAGRAM OF THE E. 34TH STREET HELIPORT

Charter services that operate from the heliport have a promotional package in conjunction with a restaurant located just to the south of the heliport. The promotion provides for a dinner and sightseeing flight combination.

3.2.3 Acquisition and Construction Costs

Cost figures were not available for this facility.

3.3 EAST 34TH STREET HELIPORT - OPERATIONAL ASPECTS

3.3.1 Market and Service Area

Research on the market area for the New York City heliports is documented in the "Downstate Heliport System Study" (reference 5) conducted in the late 1980s. This research showed that the E.34th Street heliport is a major destination for operations occurring in the region. Almost all of these were flights that originated within the metropolitan area, and many were the sightseeing flights that also originate at E.34th Street.

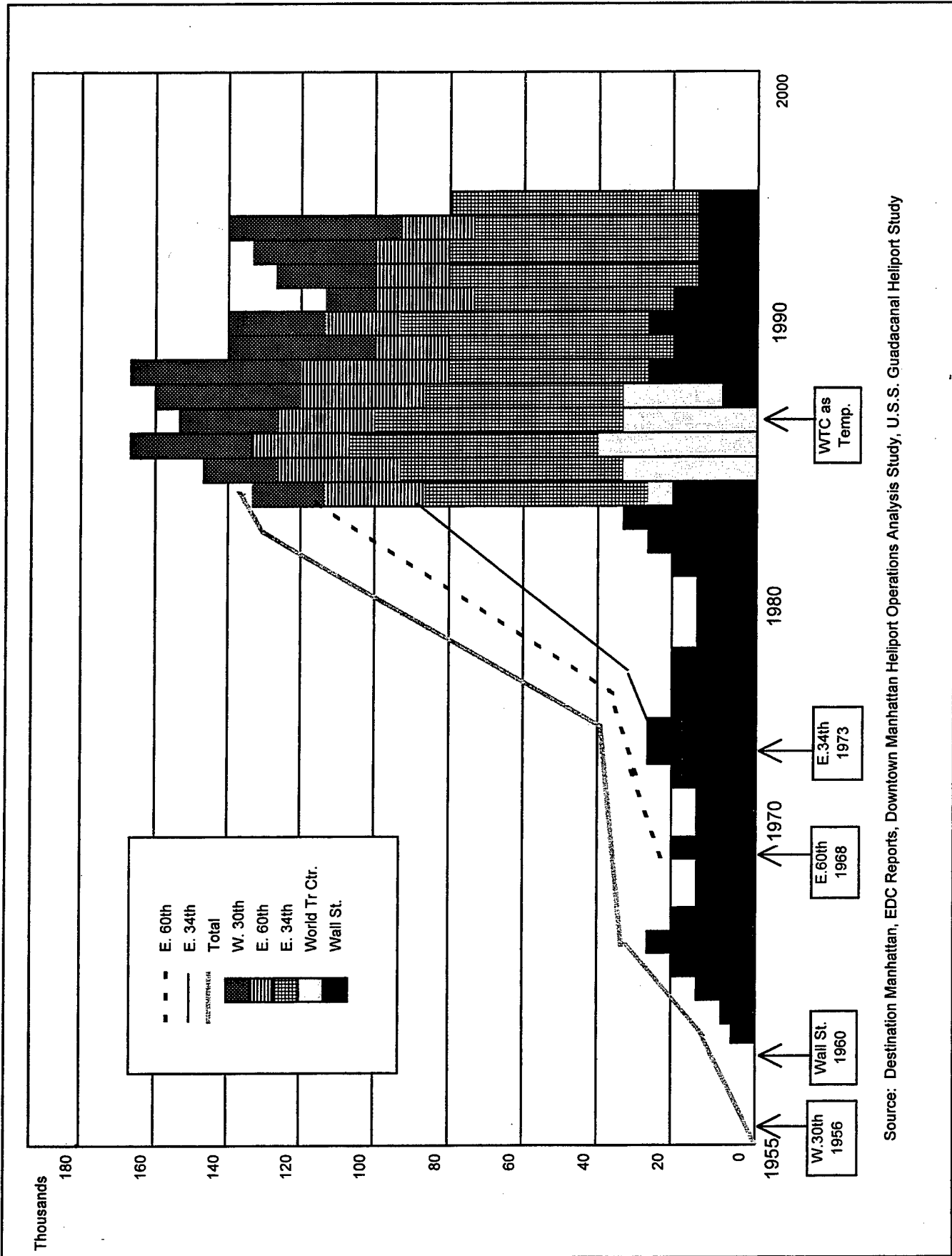
There have been some consistent differences over the years in the amount of relative usage among the four New York City heliports. Figure 8 shows the trend in total annual operations among the four public-use heliports. Available data for the Wall Street Heliport extends back to when it opened in 1960. The available annual operations for the others go back to 1983 and the totals go back to 1977. Where specific data are not available, the three lines shown are approximations of the trends for the different heliports during the times prior to 1984. They tie back to the year of opening for each of the heliports, noted on the x-axis in figure 8.

This measure of heliport activity indicates that until the mid to late 1980s there was significant annual growth in total helicopter operations. That growth appears to have peaked during the late 1980s, declined into the very early 1990s, and seems to have increased moderately in the past few years. These changes, shown in figure 8, probably reflect the:

- general downturn in the economy and the adverse effect that it had on corporate and charter uses of helicopters by major businesses, and
- discontinuation of two shuttle services between Kennedy Airport and the E.34th Street and E.60th Street Heliports, which took place in the late 1980s.

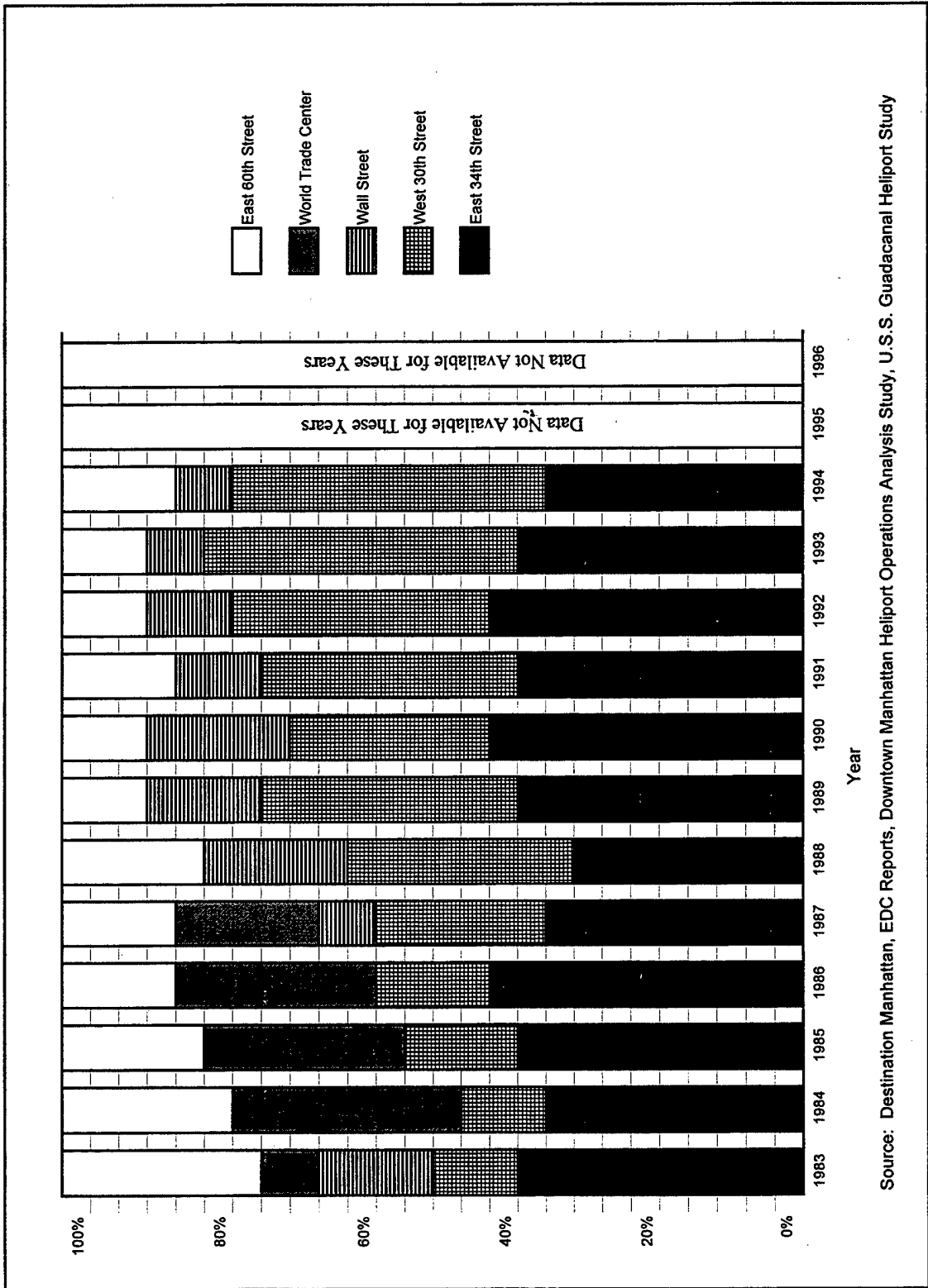
Figure 9 presents the trend in percent share in annual helicopter operations among Manhattan's four public-use heliports using the data for annual operations since 1983 (for each of the heliports). From these data it can be seen that the:

- E.34th Street Heliport has maintained a relatively constant share of operations during this time at about 40 percent, plus or minus a few percentage points;



Source: Destination Manhattan, EDC Reports, Downtown Manhattan Heliport Operations Analysis Study, U.S.S. Guadacanal Heliport Study

FIGURE 8 TREND IN ANNUAL OPERATIONS AMONG MANHATTAN'S PUBLIC-USE HELIPORTS



Source: Destination Manhattan, EDC Reports, Downtown Manhattan Heliport Operations Analysis Study, U.S.S. Guadacanal Heliport Study

FIGURE 9 PERCENT SHARE OF OPERATIONS AMONG MANHATTAN'S PUBLIC-USE HELIPORTS

- W.30th Street Heliport had an increasing share of operations, with about 11 percent in 1983 and increasing to about 32 percent in 1994; and
- E.60th Street and the Downtown Manhattan Heliports both had a declining share of the operations, decreasing to about 30 percent of the total operations in 1994, from a level of about 50 percent of the operations in 1983 and 1984.

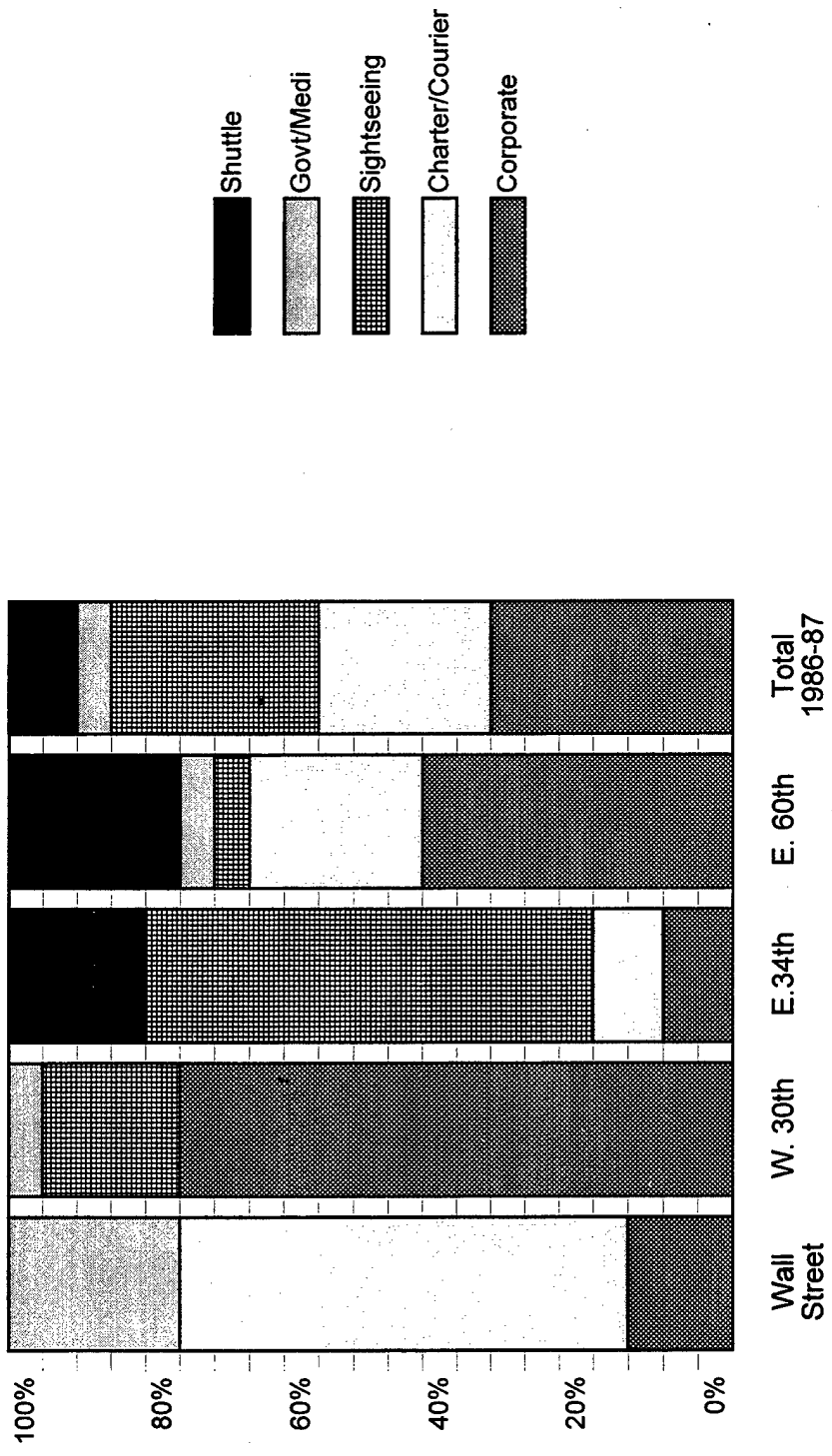
3.3.2 Heliport Facility Users

The local service areas of the four Manhattan heliports do not tend to overlap and relate primarily to those areas that are closest to the nearest heliport. For example, surveys conducted in 1990 for the "E.60th Street Heliport Master Plan" showed that the demand, for corporate/executive and charter flights was concentrated primarily north of 42nd Street, and east of Broadway. By inference, the E.34th Street heliport serves the demand associated with users coming primarily from below 42nd Street and east of the mid-point of the island, which is approximately Sixth Avenue.

Since many of the helicopter users, other than sightseers, are using helicopter transportation to save time, they will use the nearest heliport. This is particularly true of corporate/executive and charter users. Thus, given the differences in the economic activities and land use character of different areas around Manhattan, it would be expected that each of the heliports would tend to serve a unique market mix that reflects the predominant activities within the local service area. These differences tend to result in the following markets.

- Since the Wall Street (Downtown Manhattan Heliport) is located close to the Wall Street Financial District, it provides the services related to the movement of high-valued papers associated with the stock and bond markets.
- The E.60th Street Heliport is closer to the center of activity of the large corporate conglomerates located in the upper Park Avenue area and therefore serves primarily corporate/executive flights.
- The E.34th Street Heliport is closer than the other heliports to the international community associated with the nearby offices of the UN and is also more convenient to tourists who stay near the theater district and hotels. This explains why this heliport became the prime sightseeing, tourist-oriented heliport, particularly for international tourists.

Figures 10 and 11 present the relative percent shares of operations, by the purpose of the operations, or mission, for each of the four public-use heliports. The information is presented for two different time periods, 1986 to 1987, and for 1993. This information, when combined with the earlier trends in figures 8 and 9, indicates that the overall decline in operations during the past decade has resulted in a higher proportion of the helicopter market serving sightseeing purposes and a lower proportion serving corporate and charter uses. It is estimated that in 1993



Public-Use Heliports

Source: Destination Manhattan, EDC Reports

FIGURE 10 PERCENT SHARE OF OPERATIONS BY PURPOSE AMONG MANHATTAN'S HELIPORTS 1986-87

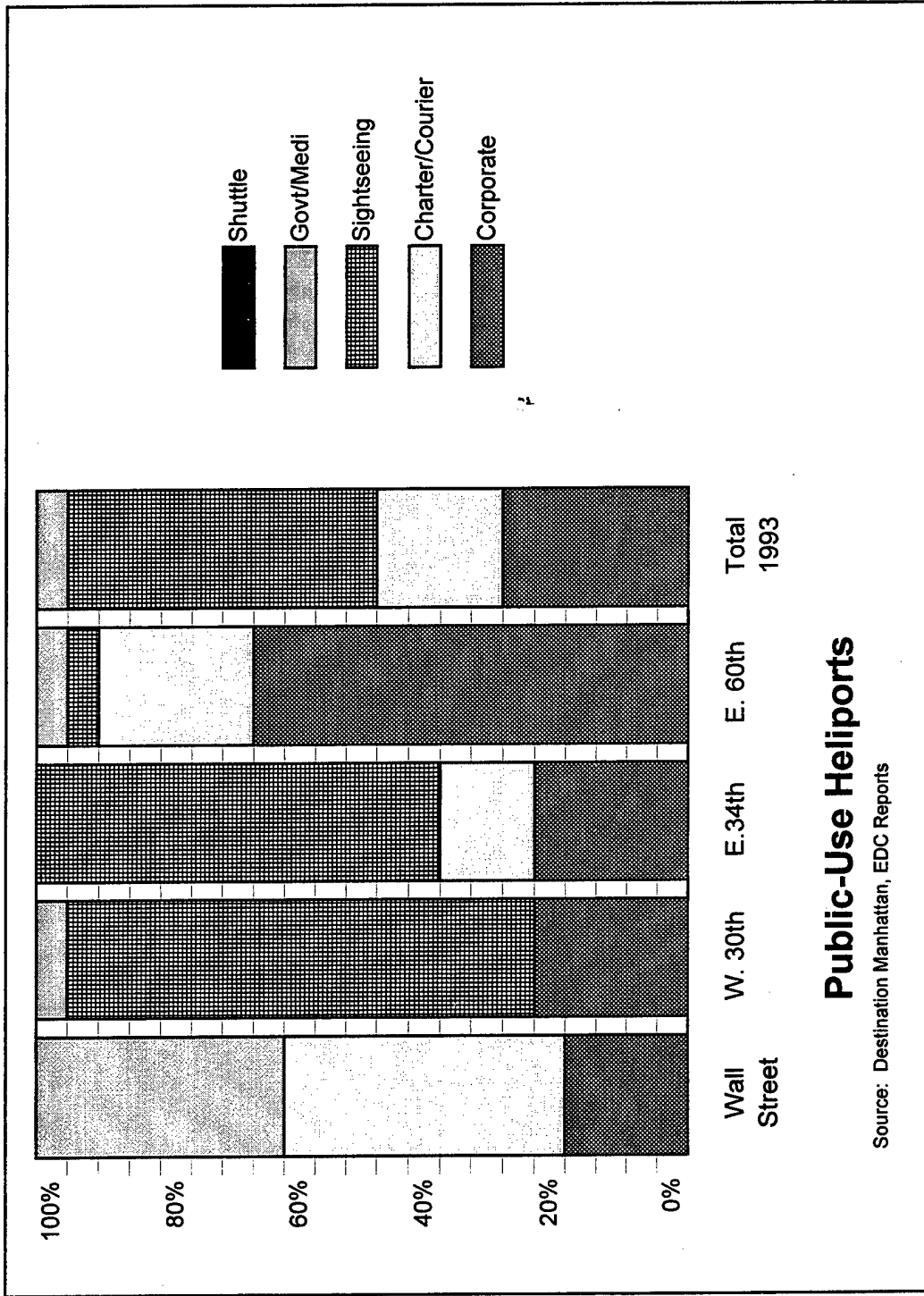


FIGURE 11 PERCENT SHARE OF OPERATIONS BY PURPOSE AMONG MANHATTAN'S HELIPORTS 1993

sightseeing increased to about 47 percent, up from the approximate 27 percent in the 1986 to 1987 period. Corporate use declined from about 33 percent in the 1986 to 1987 period to about 30 percent in 1993. Charter use declined from about 21 percent in 1986 to 1987 to about 16 percent in 1993.

3.3.3 Operational Characteristics of the Facility

The E.34th Street Heliport is open 7 days per week, year round, except for Christmas and New Year's Day. The hours of operations have varied somewhat throughout the years. Before the law suit was settled the heliport operated from 7:00 a.m. to 11:00 p.m. Only emergency operations were allowed between 11:00 p.m. and 7:00 p.m. The sightseeing service advertised hours of operation of 9:00 a.m. to 9:00 p.m. Operators who use the facility beyond the hours set for the sightseeing operations, are charged an extra "late operations" fee. Based on the court decision (section 3.4.4) it can be expected that operations will be restricted to weekdays to between 8:00 a.m. to 8:00 p.m. and on weekends between 10:00 a.m. to 6:00 p.m.

In releasing a request for proposal (RFP) for a new FBO, the EDC intended to restrict operations, and particularly sightseeing operations, at the E.34th Street Heliport. EDC anticipated that the unmet demand for sightseeing tours would result in an increase of such operations at the W.30th Street and the Downtown Manhattan (Wall Street) Heliports.

The "Downstate New York Helicopter System Plan" estimated that the operational capacity of the E.34th Street heliport was about 42 operations per hour given the mix of helicopters using the heliport at the time. A different mix at a different time may mean more or less capacity. If separate approach and departure routes could be established, it might further increase the capacity.

The passengers using E.34th Street board and exit the helicopters when the helicopters are still on the TLOFs. This helps to shorten the turn-around time and allows more operations within a specified period of time. For example, after one of the sightseeing helicopters has landed, the passengers are unloaded and the next group is loaded. Once the passengers are safely inside either the helicopter or the terminal building, and while the pilot of that helicopter is preparing to takeoff, a second helicopter can land. The passengers from those helicopters are not allowed to leave the aircraft until after the first helicopter has departed. This operational routine is then repeated many times over.

3.3.4 Revenue Sources for Financing the Operations

There are several revenue sources that contribute to financing the operation of the E.34th Street Heliport. These sources include:

- Passenger fees for sightseeing,
- merchandise sales,
- snack service,

- charter fees,
- landing fees,
- parking fees, and
- fuel fees.

The helicopters used for sightseeing are owned and operated by the FBO, Island Helicopters. Fees are charged based on the type of tour that is selected. The prices range from \$44 to \$129 per person. In addition, there is revenue from the sale of merchandise, that includes the usual tourist items, such as photographic publications and video tape tours. Island Helicopters also provides charter service from the heliport and the associated fees are a source of revenue.

In addition to the Island's own operations, the heliport is a public-use facility. Island charges various fees to the operators of these helicopters. These include, a landing fee that varies with the size of the helicopter, parking charges for keeping the helicopter on the site beyond a set minimum amount of time provided for in the landing fees, and fuel sales.

3.3.5 Types of Based Rotorcraft

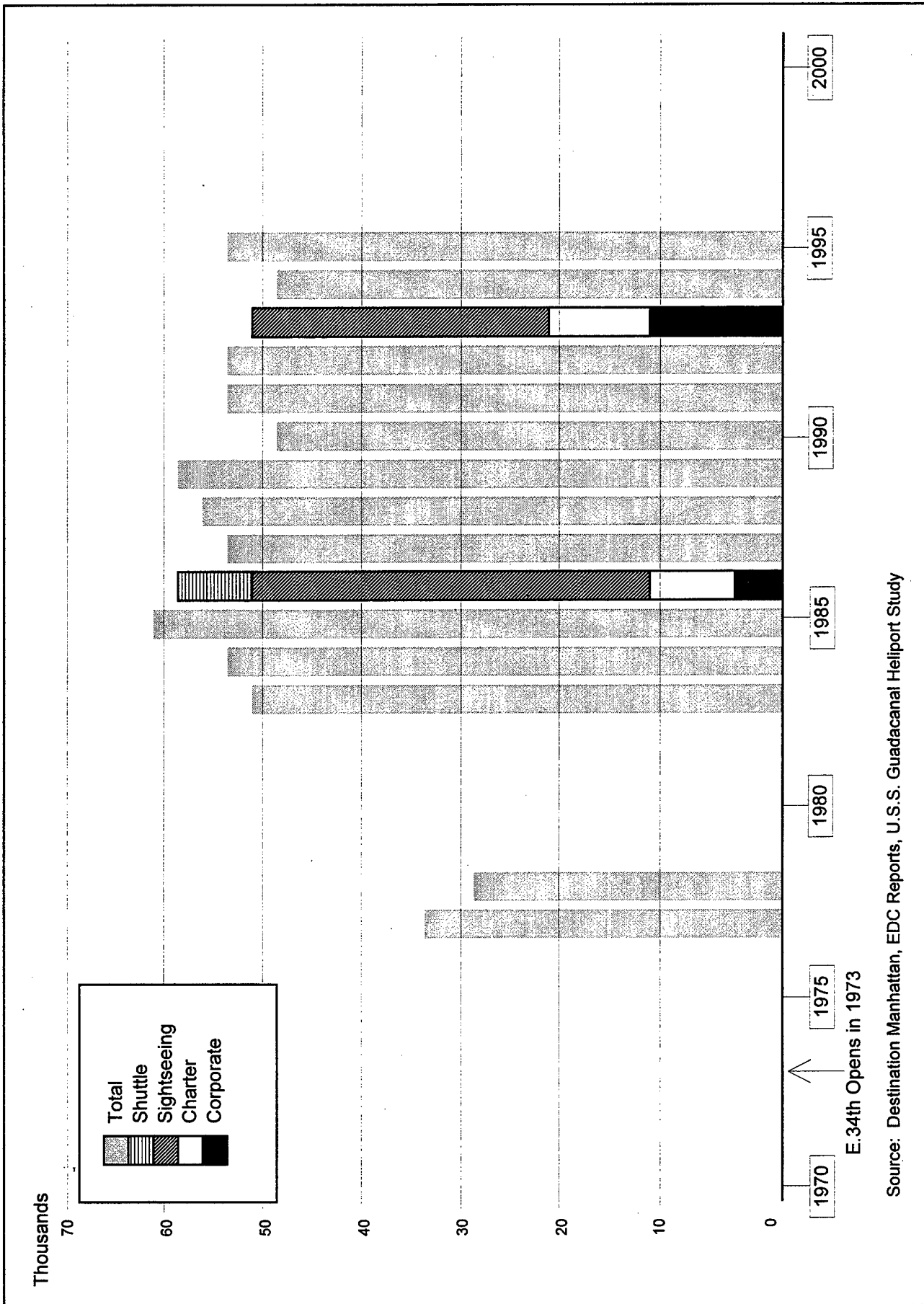
There are no helicopters based at the E.34th Street Heliport. None of the four public-use heliports serving Manhattan have based helicopters, although there is some hangar space at the E.60th Street Heliport. The fleet of helicopters used for sightseeing that fly out of E.34th Street are based at Republic Field on Long Island, at Island Helicopters' facilities. The TLOFs at E.34th Street can accommodate the larger 15-passenger helicopters that are used for some of the sightseeing tours. These helicopters were also used for some of the scheduled service operations that were flown out of E.34th Street during the 1980s.

3.3.6 Activity Levels

As already noted, activity levels at E.34th Street have made it the busiest public-use heliport in the New York Area, in terms of annual operations. It is also now reported to be the most active of any public-use heliport in the world.

As shown in figure 12, there were about 54,000 total annual operations in 1995 at E.34th Street. That has been the approximate level of activity since 1983. In 1985, the activity peaked at 62,230 annual operations. At that time, operations from the Downtown Manhattan Heliport (Wall Street) were temporarily relocated to Battery Park while it was being rebuilt. Some of these operations likely shifted to E.34th Street. It was also near the peak of the business boom that took place nationally during the mid-1980s when corporate/executive operations thrived.

Figure 12 also presents information on the purpose of the operations based upon surveys conducted during 1986 and again in 1993 (while the total number of operations is known in some other years, the mission breakdown information is not known). Survey results indicate that in 1986 about 39,500 of the operations at E.34th Street, or about 65 percent, were sightseeing tours.



Source: Destination Manhattan, EDC Reports, U.S.S. Guadacanal Heliport Study

FIGURE 12 ANNUAL OPERATIONS AT E.34TH STREET HELIPORT BY MISSION (1986 & 1993)

By 1993, the number of sightseeing operations declined somewhat to about 31,400, which represented about 60 percent of the 52,348 total operations that year at E.34th Street.

During the mid-1980s, New York Helicopter, a subsidiary of Island Helicopters, provided 72 daily scheduled flights between E.34th Street and the three major air carrier airports serving the New York area—Kennedy, LaGuardia, and Newark. In 1986 the scheduled services had about 9,100 operations, which was about 15 percent of the heliport's total annual operations. The level of activity for the scheduled services varied from year to year, declining in recent years until it was discontinued in 1994.

3.4 EAST 34TH STREET HELIPORT - RELATIONSHIP TO THE SURROUNDINGS

3.4.1 Access - Airside and Instrument Operations

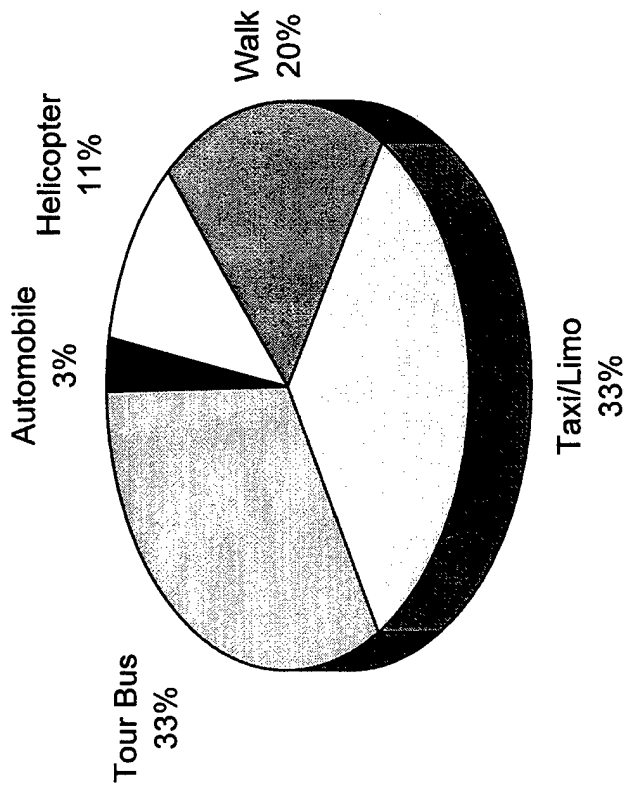
Air access to the E.34th Street Heliport is very good on the approaches from the East River. Air access is not available from the west because it would take helicopters over midtown Manhattan. As noted in "Destination Manhattan: A Study of Heliports, Land Use and Public Impact" (reference 6), according to local regulation under the City Charter, all takeoffs and landings in the city must be made over water. In addition, the Charter states that no helicopter is allowed to operate in the city below an altitude that would preclude an emergency landing into the city's waterways. Furthermore, when over land, the Charter states that helicopters should operate 1,000 feet above the highest obstacle within a horizontal radius of 1,000 feet of the helicopter.

In 1983, due to an increased in helicopter operations in the City, the FAA conducted a review of air traffic conditions along the East River corridor. This was done in cooperation with the City and the State. The resulting report was entitled "Operational Review of the East River Flight Corridor" (reference 7). In 1987, the first FAA Helicopter Route Chart incorporated the main recommendations of reference 7. On this chart, several air routes provide access to the E.34th Street Heliport.

The proximity of the three major airports in the region and their Class B Airspace (formerly terminal control areas (TCAs)) affects helicopter operations at E.34th Street. The portion of the East River Flight Corridor (south of the Brooklyn Bridge to the southern tip of Manhattan) is outside Class B airspace. The part of the corridor north of the Brooklyn Bridge, including the E.34th Street Heliport, is within the control of LaGuardia Airport. There are no instrument procedures available at the heliport. All operations are conducted under VFR.

3.4.2 Access - Landside

Figure 13 presents estimates how passengers obtain access to the E.34th Street Heliport. These estimates are based upon observations made in 1993. Figure 13 shows that about one third of the



Source: EDC Reports

FIGURE 13 MEANS OF ARRIVAL AT THE E.34TH STREET HELIPORT (1993)

heliport users arrive by tour bus, a similar proportion arrive by taxi or limousine, 20 percent walk, 11 percent arrive by helicopter, and 3 percent arrive by private automobile.

This particular pattern of landside access to this heliport is unique because it reflects the local transportation and land use circumstances of Manhattan and the high proportion of sightseeing operations at the heliport. Island Helicopters works in conjunction with Grayline Tours, a world-wide tour bus company, to offer a joint package that includes both a bus and helicopter tour of New York City. Island Helicopters also caters to larger national and international tour groups visiting the city that often arrive in their own chartered bus. Many of the heliport users who arrive by taxi or limousine are tourists who stay at hotels in the mid-town area of Manhattan, a convenient taxicab ride away from the heliport. A significant number of the charter users also arrive by taxi or limousine.

The high percentage of those who reach the heliport by walking reflects the large number of activities within a walking distance of the heliport, and people who used public transit to get to the vicinity of the heliport. Public transit bus service is available on 34th Street, a half block to the north of the heliport. The nearest subway station is located about a half mile away at Park Avenue and 33rd Streets along the Lexington Avenue Line, which further supports the assertion that most users of all four heliports come from the adjacent area (section 3.3.2).

The low percentage of passengers who arrive by automobile in part reflects the lack of on-site parking for heliport users and perhaps more important, the transportation patterns of an extremely urbanized area where automobiles can become an inefficient mode of travel. About 20 curbside parking spaces, along the service road underneath FDR Drive, are used by the employees of the heliport. A commercially operated parking lot open to the general public is immediately adjacent to the north side of the heliport site. This lot has attendant parking that can handle about 200 cars when "stacked" by the attendants. Other commercial automobile parking lots are available within a short walk of the heliport.

3.4.3 Neighboring Land Uses, Zoning, and Economic Base: Compatibility and Obstacles

Within the general vicinity of a third to half-mile radius of the E.34th Street Heliport, the neighboring land uses consist of a mixture that represents a diverse, highly urban neighborhood. The area has numerous high-rise buildings. The surrounding neighborhood is predominantly residential, but has a strong institutional component, as well as some commercial and some industrial sections. The following paragraphs briefly describe the general land uses in the vicinity.

The residential uses consist of two types of buildings. Some newer residential towers are single-use buildings. The second type are mixed-use buildings where residents are located in the upper floors and commercial stores and services in the bottom floor. The predominant building is the second type. Residential densities in this part of New York City are 185 to 220 dwelling units per acre. Such densities are in a sharp contrast to the four dwelling units per acre typically found in suburban settings.

To the south are a number of large residential developments including two 21-story towers in Kips Bay Plaza, the 27-story towers in Henry Phipps Plaza, a 36-story tower on Second Avenue, as well as Peter Cooper Village and Stuyvesant Town. The later two are large, more affordable large residential development projects built several decades ago.

The more recent residential development has occurred in the large residential towers, often as a result of specific zoning changes. There have been about 10 residential buildings constructed in the area since 1977 that ranged from 10 to 50 stories in height. Much of the new development is along First Avenue between 28th and 30th Streets. In 1982, the zoning of property between E.34th and 35th Streets, and First Avenue and the FDR Drive was changed to permit the 35-story Rivergate apartments to be built. This property is one block on the other side of FDR Drive and one block north of the heliport. The block to the immediate north of that was rezoned in 1983 to permit development of Manhattan Place, a 37-story residential building.

Part of the institutional land use consists of three medical centers located in the vicinity of the heliport: New York University Medical Center, Bellevue Hospital Center, and Veteran's Administration Medical Center. The Medical Centers are located immediately to the west and south of the heliport in three superblocks starting at 34th Street on the north, to 23rd Street on the south, from First Avenue on the west, to the FDR Drive and East River in the east.

Another nearby institutional use is the UN complex that opened in 1953. It is located about a half mile to the north of the heliport along the East River. The UN complex helped to establish part of the area's "character" in the 1960s and 70s because it accelerated the trend toward replacement of older factories and low-income tenements with new high-rise residential towers. In addition, several religious institutions are located in the vicinity of the heliport.

Many of the commercial activities are located at ground level in multi-storied, mixed-use buildings where most of the upper levels are residential. That is particularly the case for the older buildings in the area. The commercial uses that are predominantly along First, Second, and Third Avenues are the type of retail and personal services that are supportive of residential neighborhoods. Beyond Third Avenue to the west, the neighborhood begins to change to a business, office, and regional retail area. The Empire State Building and Macy's flagship store are good examples of this area. The area in the vicinity of the heliport has a relatively small amount of office use.

Other land uses in the area consist of transportation, utility, and industrial. Construction of the Queens Midtown Tunnel in the 1940s was another significant land use change in this area. The entrance is between 36th and 37th Streets and Second and Third Avenues. The FDR Drive and viaduct along the waterfront is also a significant transportation feature. The Con Edison 36th Street Power Plant has three 381-foot smoke stacks. Several of the nearby residential high-rise buildings and the UN Headquarters building are also approximately the same height as these smoke stacks.

Because there is such a limited amount of open space and recreational facilities in the vicinity of the E.34th Street Heliport, just the *view* along the East River is considered to be "public open

space" of the area. Part of that is a public esplanade along the bulkhead at the edge of the river. The esplanade starts at 30th Street and extends north from the Water Club Restaurant, wraps around the heliport's western side, and continues north of the heliport along the bulkhead to a park at 36th Street. The part of the esplanade immediately adjacent to the heliport is a deteriorated wooden walkway that is located under the elevated FDR Drive viaduct.

3.4.4 Operator, User, and Public Attitudes Regarding the Heliport Facility

Between mid-1995 and March of 1996, the request by the City's Department of Business Services and the EDC for a new special permit for the heliport was considered and acted upon in accordance with the required processes. There has been considerable contention among the different interests and parties involved in that process resulting in legal action being taken by National Helicopters.

In testimony during the final stage of the special permit approval process, EDC proposed reducing the annual operations at the E.34th Street Heliport by 47 percent from its 1993 levels. That level of activity corresponds to the 1977 operations at the heliport, the year in which the initial special permit expired. Several other conditions were proposed by EDC that would mitigate the impact of the operation of the heliport on the surrounding community (section 3.1.4), while maintaining the important city-wide purpose and function of the heliport. As noted in the testimony at the time:

The most significant of these five amendments is the provision that will enable EDC to determine helicopter sightseeing flight paths for E.34th Street-based operators. ...The City of New York does not have regulatory control over its airspace, yielding this responsibility to FAA. However, through its Management Contract powers, EDC is able to dictate the flight patterns of aircraft based at the Heliport. This is impossible to impose on aircraft not based at the E.34th Street Heliport (in essence, corporate flights). By dictating that all sightseeing flights be over water, EDC has significantly reduced the obtrusiveness of sightseeing flights to Manhattan residents. Because of this action, EDC now believes that sightseeing flights will be the least noticeable type of helicopter operation City-wide. In recognition of the potential benefits of this approach, EDC staff have already begun working with the Port Authority to explore a similar agreement with its sightseeing operator at the W.30th Street and Downtown Manhattan heliports.

This action is proposed with the long-term view of rationalizing helicopter operations within New York City. Helicopter sightseeing, along with other tourist-related economic activity, has grown considerably over the past 10-15 years. While the EDC did not foresee this growth in the late 1960's and early 1970's when Manhattan's heliports were established, EDC's present action at E.34th Street is an attempt to maintain this important tourist-related business at more appropriate facilities. At the same time, heliports are critical to the economic competitiveness of a corporate center such as Midtown Manhattan.

Beyond corporate flights, the Heliport also provides an important public service for police and emergency helicopter operations... The proposed operations reduction represents a balance between the critical role the Heliport plays within New York City's transportation system and the needs of the surrounding community. (*Testimony given to the City Council by Anita Romero, First Executive Vice President, New York City Economic Development Corporation, February 13, 1996.*)

In March 1996, final approval was given by the City Council to the amended request for the special permit. The EDC released an RFP for an FBO at the E.34th Street heliport. The RFP required the FBO to carry out the conditions and terms of the special permit. However, the RFP was stayed as a result of the legal action by National Helicopter Corporation of America to seek preliminary and permanent injunctive relief against the City of New York, the City Council, the City Planning Commission, and the EDC, from enforcing Resolution 1558. The decision is discussed in section 3.5.4.

3.4.5 Government Agency Attitudes and Support

The testimony presented in section 3.4.4 reflects the overall local governmental and agency attitude regarding the E.34th Street Heliport. E.34th Street and the other Manhattan heliports do not have unconditional local government support. In fact, since that decision the EDC has attempted to evict National Helicopters as FBO for alleged non-payment of \$700,000 in rent. National has subsequently sought protection under federal bankruptcy provisions. Mayor Giuliani announced his intentions to close the E.60th Street facility and move the E.60th Street FBO to the E.34th Street Heliport. These decisions are reinforced by the growing number of citizen's groups opposed to helicopter operations due to noise impact.

3.5 EAST 34TH STREET HELIPORT - PAST AND CURRENT PLANNING

3.5.1 Marketing of the Heliport to the Community, Users, and Operators

As noted in the previous sections, the prime function of E.34th Street, has been to serve as the main location for helicopter sightseeing operations. The FBO, along with local and state tourist bureaus and other tourist industry personnel, have done a very good job of marketing this use of the heliport. Island Helicopters' public brochure for the service lists the following items that highlight several tourist needs and concerns:

- Over 25 years experience,
- Over 4 million passengers flown,
- Helicopter Association International (HAI) safety award winner,
- Unobstructed panoramic views,
- Pilot narrated,
- New state-of-the-art aircraft,
- Wide range of helicopter sizes,
- Multi-lingual staff, and
- Open all year!

The EDC completed a feasibility study in 1995, the "U.S.S. Guadalcanal Heliport Feasibility Study" (reference 8), that focused on better serving the helicopter sightseeing tourist market. It evaluated converting and mooring an early 1960s-vintage surplus U.S. Navy helicopter carrier, the U.S.S. Guadalcanal, along the shore of the Hudson River to use its 600-foot by 80-foot flight deck as a public-use heliport serving the sightseeing market. The idea was to complement the major tourist attraction of the U.S.S. Intrepid, an aircraft carrier that serves as an aviation museum that is moored in the Hudson River at W. 46th Street. Although, the plan was determined to be both economically and environmentally feasible, a breakdown of community relations stalled its implementation.

However, this analysis provided much information concerning the overall helicopter sightseeing market. Figures 14 and 15 document the trend and percent share, respectively, in sightseeing passengers per year among Manhattan's public-use heliports. Figures 14 and 15 also show the City's projection of the anticipated short-term effect of the Helicopter Redistribution Plan, if the Courts had allowed it to be implemented. The current sightseeing market of about 200,000 annual passengers is comprised of approximately 50 percent international and 50 percent domestic travelers. The sightseeing companies locally target world-class hotels in the Manhattan area and internationally use marketing representatives in Europe and Japan.

The location of the E.34th Street Heliport near the hotels, theater districts, and other prime tourist attractions of Manhattan was probably a factor in the positive market response to the availability of helicopter sightseeing. The location of the E.34th Street Heliport adjacent to a more residentially-oriented neighborhood probably partially contributed to its early success in sightseeing activity. In general, an intensive people-oriented street activity, such as that in the vicinity of the E.34th Street Heliport, tends to foster an image of personal safety and security. Personal safety is an important concern to tourists in major urban areas such as New York City, particularly for those tourists who are not part of a large tour group.

Because the heliport is located in a residential area, the number of helicopter operations increased because the helicopter users felt it was safe to walk to the heliport. But as the number of sightseeing operations did increase, the number of complaints from the residents also increased. The negative feedback led the responsible public agencies to encourage sightseeing operations at other Manhattan heliports. Thus, it is ironic that the location of the heliport, which was once one of the reasons for its success in serving a major component part of the helicopter sightseeing market, that has now been one of the reasons for attempts to place limits on the frequency of service provided.

Figures 14 and 15 also show that, over the past 7 years, the number of sightseers using the E.34th Street heliport has remained fairly constant and that the growth in helicopter sightseeing has occurred at the W.30th and Downtown Manhattan Heliports. New franchise leases for sightseeing services at these locations were let during that time period and the services were able to capture the overall market growth. Currently about half of the helicopter sightseeing market is served from these two heliports. EDC's study of the overall Manhattan market projects that during the next 20 years this market will grow about two and a half times, to about 500,000 annual passengers.

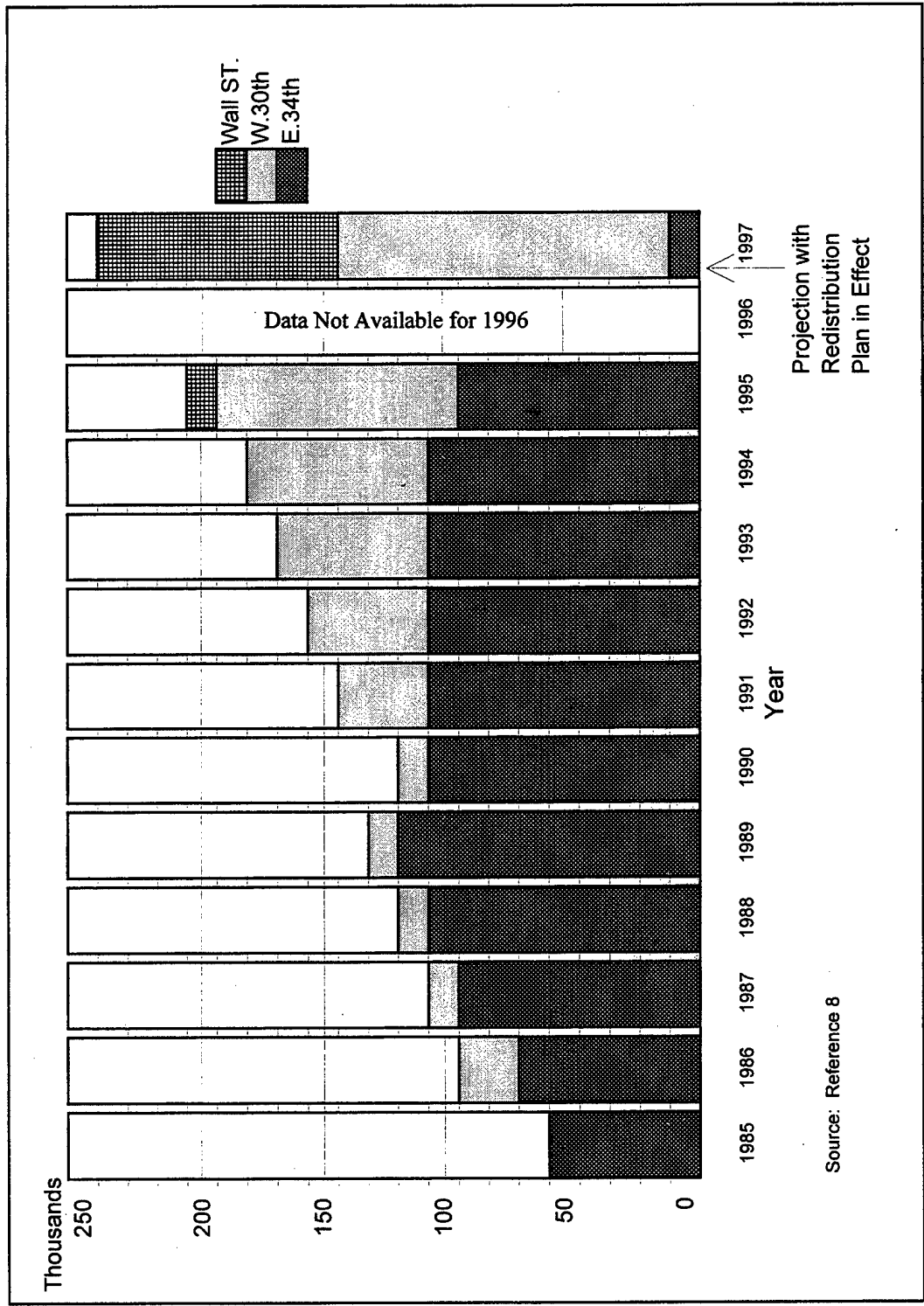


FIGURE 14 TREND IN SIGHTSEEING PASSENGER PER YEAR AT MANHATTAN HELIPORTS

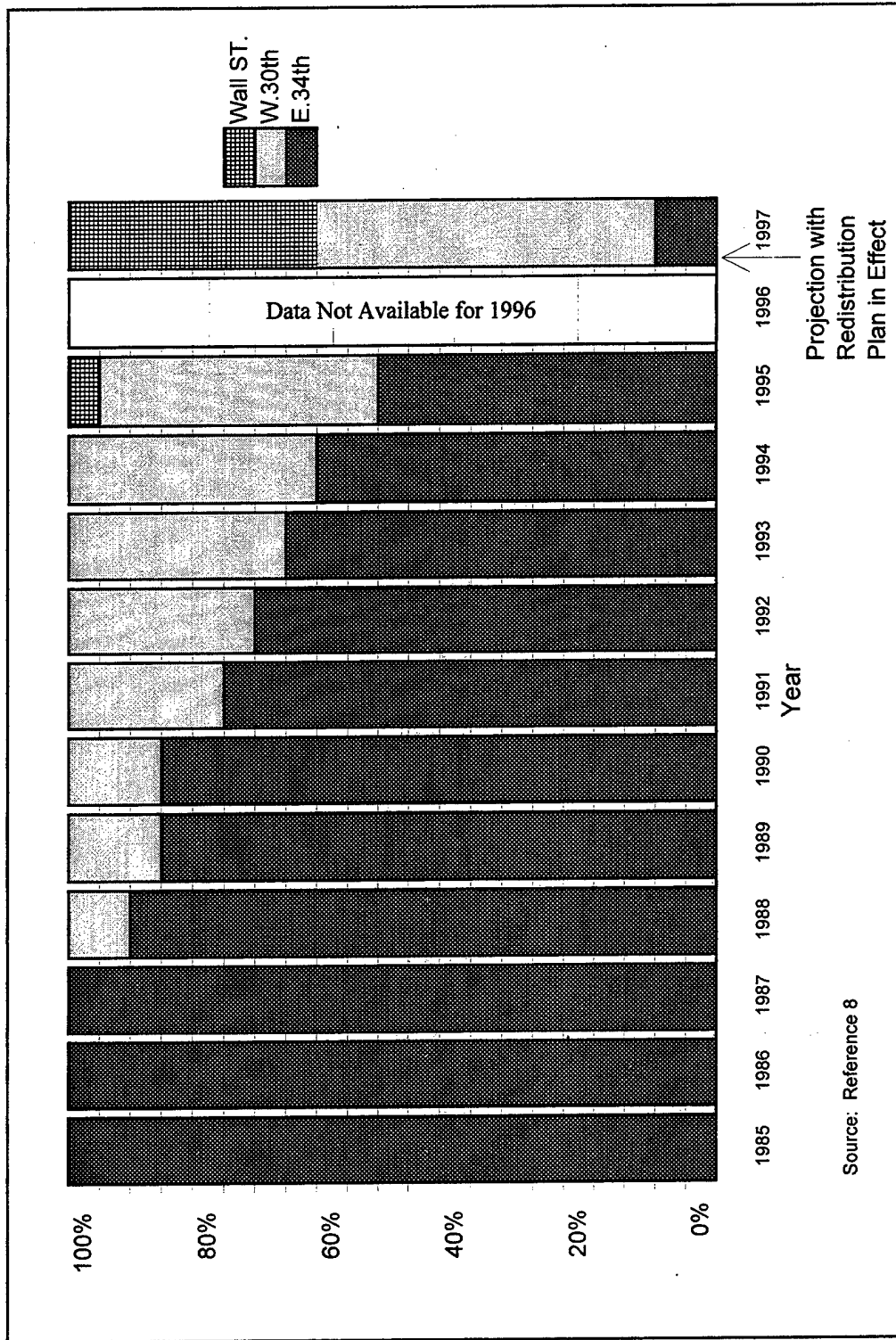


FIGURE 15 PERCENT SHARE IN SIGHTSEEING ACTIVITY AT MANHATTAN'S PUBLIC-USE HELIPORTS

3.5.2 Legal Action by the FBO

National Helicopter concluded that the restrictions of Resolution 1558 would force them into bankruptcy. They sought injunctive relief from the U.S. District Court for the Southern District of New York (see appendix A). National Helicopter argued that Resolution 1558 is preempted by federal law, specifically the Federal Aviation Act, the Noise Control Act, the Airport Noise and Capacity Act, and the Airport and Airways Improvement Act. Although National Helicopter initially applied for a preliminary injunction, the parties agreed that the record before the Court was sufficient to permit a final decision on the merits of the case.

3.5.3 District Court Decision

The court decided on January 3, 1997 that the request for a permanent injunction was partially granted and partially denied (reference 4). The final decision regarding the provisions contained in Resolution 1558, as incorporated into the City's RFP (reference 4), was that the City was permanently enjoined from enforcing:

- Mandatory 47 percent reduction in operations,
- complete elimination of weekend sightseeing operations,
- designation of sightseeing routes,
- exclusion of the Sikorsky S-58T from engaging in sightseeing operations, and
- requirement that all craft operating out of the E.34th Street heliport be marked for identification.

The City was not enjoined from enforcing its:

- 8:00 p.m. to 8:00 a.m. weekday curfew, and
- its 6:00 p.m. to 10:00 a.m. weekend sightseeing curfew.

Although the court has granted the vast majority of National Helicopters' requests with this permanent injunction, the court also clearly spelled out what the City had done incorrectly that caused the judgment against them. Both parties to the suit have appealed the District Court's decision.

3.5.4 Expected Future of the East 34th Street Heliport

The future of the heliport is uncertain. Unlike the Wall Street Heliport, the E.34th Street Heliport is in close proximity to many residential high-rise buildings. Local residents can be expected to continue their efforts to place limits on the heliport operations or to have it closed. On the other hand, the rent paid by the FBO is a significant contribution to the City coffers. In addition, the City recognizes that "heliports are critical to the economic competitiveness of a corporate center such as Midtown Manhattan." Finally, the city recognized that the E.34th Street "Heliport also provides an important public service for police and emergency helicopter operations." Thus, the City has several reasons to keep the facility open.

In late April, New York Mayor Giuliani announced that the City would close the E.60th Street Heliport and transfer its management firm, Johnson Controls, to the E.34th Street. National Helicopters has been evicted from the E.34th Street Heliport. Johnson Controls is now operating both the E.60th Street and the E.34th Street heliports during what may be a transition period. All of this is being done in an election year. Perhaps after the election, the City will issue a formal RFP for a long-term FBO at E.34th Street and take action on the management contract for E.60th Street.

A new heliport has been proposed on the west side of Manhattan. Were such a facility to be constructed, this might be done in concert with actions taken on the E.34th Street and/or the E.60th Street Heliports.

3.6 EAST 34TH STREET HELIPORT - CONCLUSIONS

This E.34th Street Heliport case study provides several lessons concerning planning for heliports, particularly with regard to the relationship of private markets that affect demands for different uses of helicopters and heliports.

A first lesson is the importance, particularly in the larger metropolitan areas, of conducting heliport planning from a system and regional perspective. No other area has such a well developed system of public-use heliports as New York City. These heliports are geographically close and there is a large base of customers who can freely choose which heliport best serves their needs. Consequently, each of the four heliports is affected by the others. Therefore, it is important to consider how each heliport relates to the other heliports in the region.

A second lesson is that the long-term trend of helicopter operations experienced at the Manhattan public-use heliports indicates that the cumulative effect of individual market choices results in local demands for specific types of helicopter missions at specific heliports. At the same time, the basic level of demand for any particular mission is often influenced more by the overall economic conditions. For example, the demand for the corporate/executive mission at the heliports fluctuates generally in accordance with the overall state of the economy. When a business faces economic peril, very often the corporate helicopter service may be the first to go in a cost reduction or avoidance effort. As another example, scheduled commuter services have waxed and waned depending upon subsidy programs, interline fares, and other factors such as convenience of transfers and how direct the flights are for passengers. As a final example, the interest in sightseeing by helicopter has been affected by international tourism constraints or opportunities, which are often affected by the relative values of different currencies.

A third lesson is that market demand for helicopter service can vary in accordance with the effectiveness of marketing, much like the demand for any service or product. This case study has shown that helicopter sightseeing has been marketed to specific target audiences who are likely to be interested in using the service, as well as being in a position to afford the price necessary to supply that service at an acceptable profit. The marketing material has addressed various needs and concerns of the potential customers. In addition, various business relations have been established that support reaching and serving likely customers. This includes working with the

nearby waterside restaurant, cooperative agreements with tour bus operators and hotels, and even marketing to potential customers overseas.

The fourth lesson from this case study is that private citizens can work together in an attempt to use public policies to limit or close a heliport when they find it objectionable. This has occurred on more than one occasion with a heliport is located near a residential neighborhood. The E.34th Street Heliport case study is an example of a creative but somewhat clumsy approach by the City of New York to minimize helicopter noise in a neighborhood that includes a significant residential component. Using governmental contracting powers, the City attempted to reduce helicopter noise in the vicinity of the E.34th Street Heliport by shifting sightseeing operations from one Manhattan heliport to another. As proprietor of the heliport, the City's intent is not unreasonable. The courts have concluded, however, that the majority of the City's various methods were not reasonable, non-arbitrary, and nondiscriminatory. Regardless of the outcome of the court appeal now in process, the City still has a variety of options for pursuing its intent. The final outcome is uncertain.

4.0 GARLAND HELIPLIX, GARLAND, TEXAS

4.1 BACKGROUND AND LOCATION FEATURES - GARLAND HELIPORT

4.1.1 Background

The Garland, Texas heliport or Heliplex, as it is called, originally opened November 4, 1989. It was built because the city of Garland had no aviation facility to attract and serve business and industry. The city recognized that a heliport would be less costly to build and operate than an airport. Unlike the simple straightforward implementation of the Houston CBD Heliport (section 2.0), the Garland Heliplex has a complicated story.

The Garland Heliplex was at first touted in the helicopter industry as a notable example of the type of urban heliport the helicopter industry hoped would be built in many cities. Then it almost disappeared and the industry did not know for sure if it was still open or not. On the brink of extinction several times, so far, it continues to bounce back. At the present time, the Heliplex is doing very well, and can be considered a success.

4.1.2 Heliport Location

The Garland Heliplex is located at 2559 South Jupiter Road, near Grader Street in the corner of a 300-acre industrial park. Figure 16 provides two photographs of the heliport.

4.1.3 Classification and Function in the Aviation System

The Garland Heliplex is a public-use heliport. It is a small part of a slowly growing “unofficial” heliport system in Texas. “Unofficial” because there are a growing number of heliports in Texas, but they do not belong to any one jurisdiction and are not linked with any coordination of effort. Garland is operationally associated with the Dallas Vertiport approximately 12 miles to the southwest because they sometimes have the same customers.

4.1.4 Developer and Owner

The idea to build the heliport came just a few years after the 1983 FAA Prototype Heliport Program where the FAA sponsored four prototype heliports to be examples of model urban facilities (three of the four were completed). One of these was the Indianapolis Downtown Heliport. The heliport, run by the Indianapolis Heliport Corporation (IHC), was very much in the helicopter industry news and publications as a success. When the IHC heard that Garland, Texas planned to build a heliport, they went to Garland and made a proposal to both build and run it.

The IHC had a study performed by a known aviation consulting firm that projected a rosy picture of demand for the heliport, which helped to sell the idea of the heliport to the city council. The city council hired IHC to construct and manage the heliport. IHC then formed the Garland/DFW Heliplex Corporation. A Garland/DFW Heliplex Corporation press release (no date) stated that,

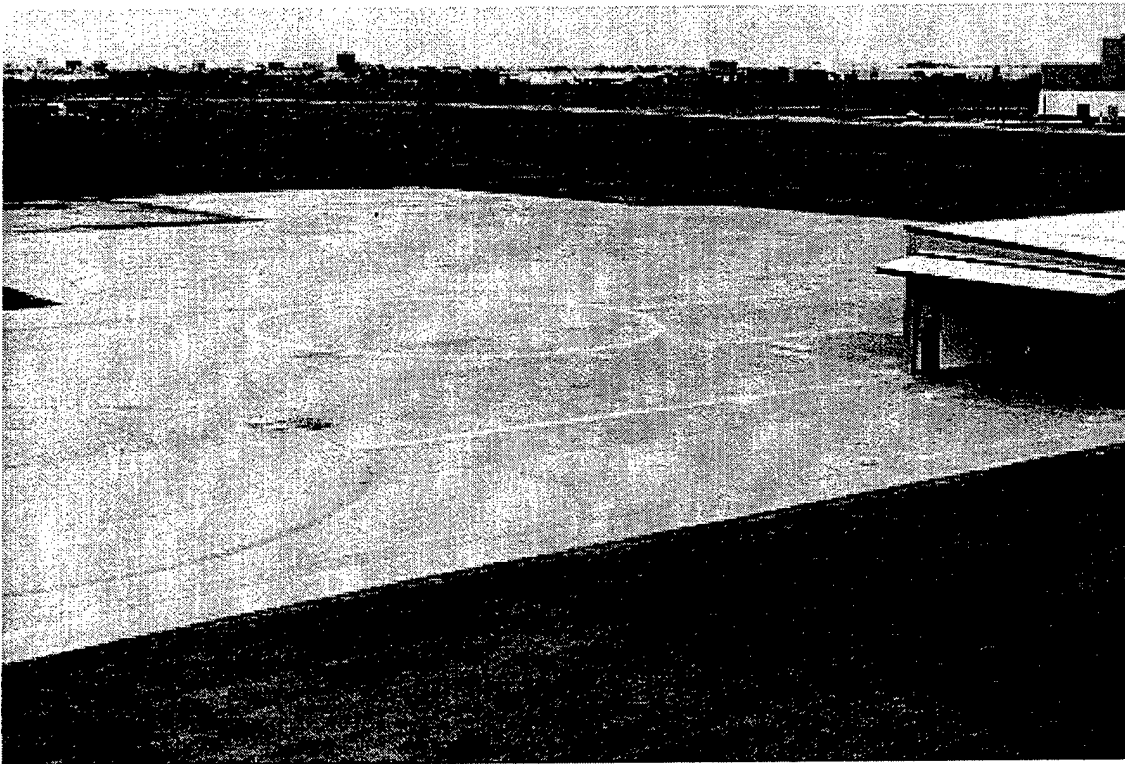
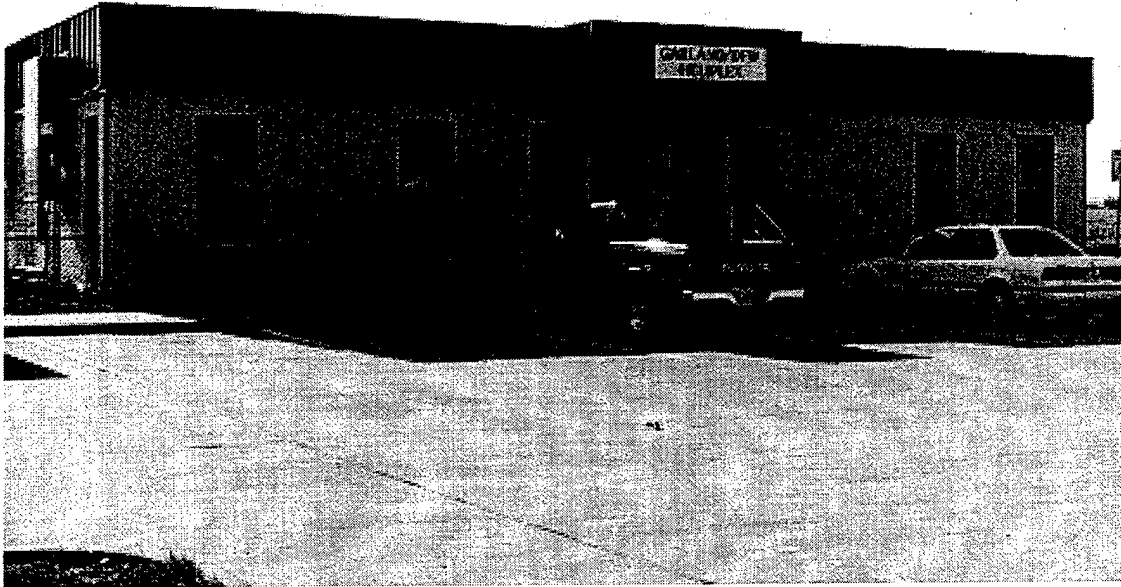


FIGURE 16 THE GARLAND HELIPORT

"The Garland Heliplex will be the first full service public use heliport to be opened since the end of the prototype program" (reference 9). Although most likely unintentional, some people thought the Garland Heliplex was to be an FAA prototype heliport (reference 10). The plan called for the Garland Heliplex to be like the Indianapolis heliport—with facilities and services as described in another Garland/DFW Heliplex Corporation press release of October 18, 1989, "Gasoline, ground transportation, aircraft ramp parking, a 3,000 square-foot terminal, lighting, pilot lounge, conference area, public waiting area and will employ 6 people" (reference 6). Further, "Phase II is scheduled for late 1991 and will provide a three-story terminal building, several storage and maintenance hangers[sic] and an additional 35-50 employees. The Heliplex will be primarily used by helicopter owners, operators and users."

The press release also states what the city expected to receive: "The Indianapolis Heliport pumps \$2.5 to 3 million back into the community annually. We expect that over time we will see similar results." Another article stated that, "For this city of 180,000, the heliport is expected to bring prestige, helping to erase an acquired stereotype, as mentioned in a local newspaper editorial (reference 10), of 'a small, dusty unprogressive town.'" Figure 17 presents a site plan of the heliport's ultimate configuration.

The Garland/DFW Heliplex Corporation, put up a temporary terminal building and had a small fuel farm installed. It was agreed that what was done was high quality work. However, after only 6 months, the anticipated heliport use and the number of helicopter operations did not occur and the Garland/DFW Heliplex Corporation withdrew. The city felt like they had been cheated. It was reported that a city official said, "The project failed because of poor timing, poor planning and the failure of the heliport's original operator to follow through on promises to improve the facility," (reference 12).

The current Garland Heliplex management feels the basic problem was that there were no reasons for people to use the heliport. It is not located in a major city or active high-density commercial area, although it is located in a light industrial area with the normal businesses that support such an area. The IHC had built no hangar, no other facilities, or services. Fuel availability was not important because the operators in the area had their own "favorite" sources of fuel (more likely than not at wholesale prices, or at least on their normal operational route). However, to be completely fair to Garland and the Garland/DFW Heliplex Corporation, the overall economic climate also changed quite significantly.

When the city had another use for the property, they offered to pay the FAA back the Airport Improvement Program (AIP) grant money so that they could close the heliport. (When FAA AIP grant money is received, it is required that the facility it is used for must stay open at least 20 years.) However, the FAA did not want the money back, they wanted to keep the heliport open. In addition, there was a great deal of support from the helicopter industry and aviation interests such as the helicopter emergency medical service (EMS), traffic and news reporting, etc., to keep it open. The Aircraft Owners and Pilots Association (AOPA) was also a staunch supporter of the Garland Heliplex. They told their members, "even if it costs you a few dollars, don't complain that you don't have helicopter landing areas if you won't support this one."

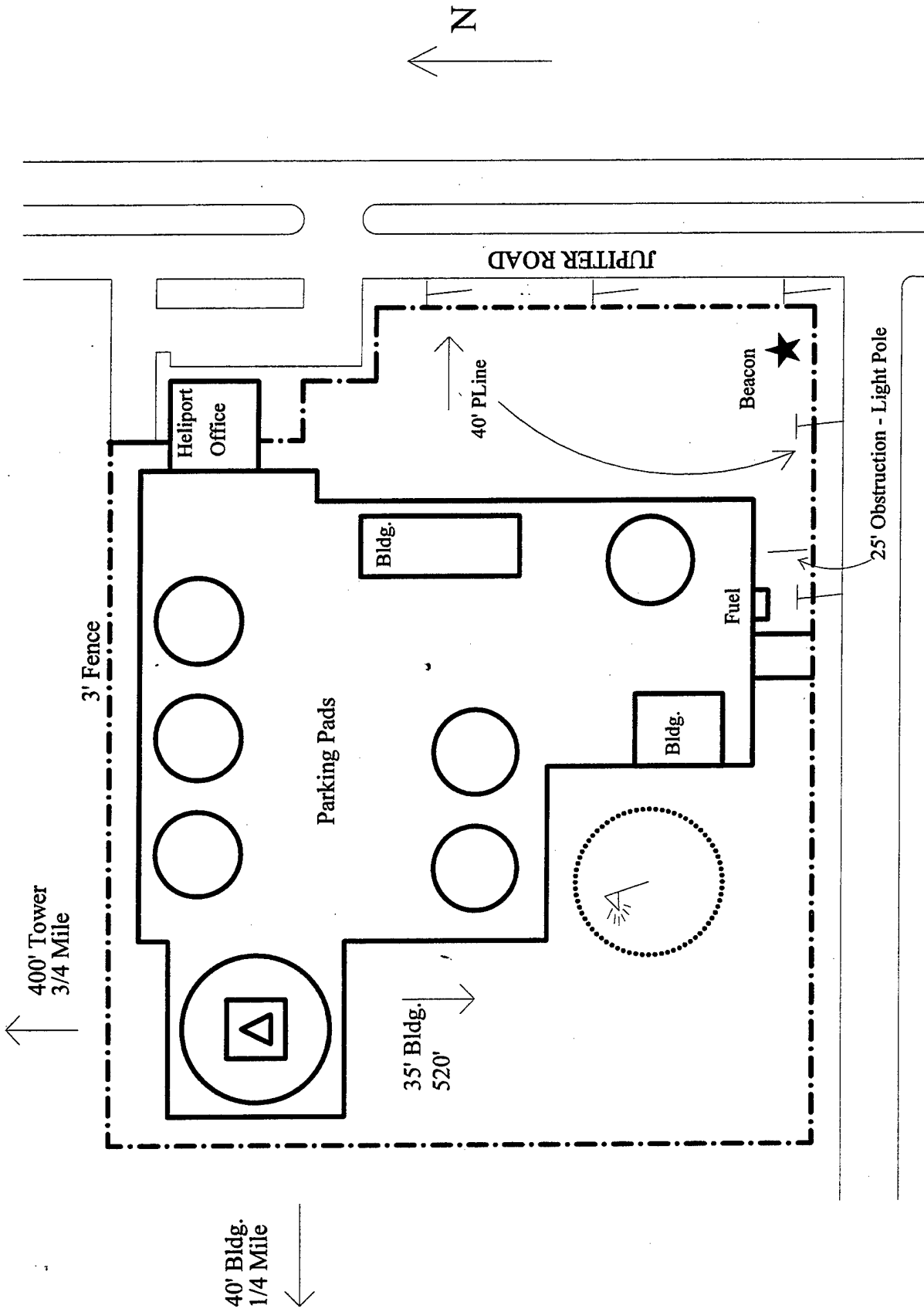


FIGURE 17 ILLUSTRATIVE SITE PLAN

After concluding that they must keep the facility open, the city hired a manager for the Heliplex. He was put under a 2 year contract agreeing to pay him a salary. This appeared to be an advantage because he ran his own helicopter business, called Heli-Tex, Incorporated, and he started a flight school and did manage the heliport for a few years.

However, since the beginning, even when IHC first built and managed the facility, the cost of running the heliport bewildered the city. The benefits originally anticipated never appeared. The cost of running the facility, especially, the manager's salary, was considered too much. It was costing the city about \$40,000 annually to keep it open. Consequently, the city continued to discuss closing the heliport. However, now the city did not want and could not afford to pay back the Federal AIP funds that would have equaled 80 percent of the \$2M construction cost, approximately \$1.5M. Finally the city told the manager that they would no longer pay a salary. Since he had his own business interest, he accepted this decision and continued to manage the heliport to keep his own business open with a lease that covered the basic expenses for the city.

In 1992, SKY Helicopters, Inc., began leasing helicopters to Heli-Tex. When the Heli-Tex manager expressed an interest in getting out of the business, the Sky Helicopters' Owner decided to try running the heliport.

Because the heliport is owned by the city, they are required to advertise for a public bid to run the facility. SKY Helicopters put together a proposal unlike the other proposals. It offered a complete business plan as well as offering the city an increasing percentage as the profit from the facility grows. SKY Helicopters believes that the fact they are first business people with an interest in aviation, not aviation people trying to run a business, will make the difference. They approach the operation as a business. The current heliport manager was hired on her success in running small businesses. At the time she had no aviation background, although she has since received her helicopter rating.

SKY received an 8-year lease. This is unusually short for an aviation FBO lease, but the city had become cautious through its experience. The lease is based on two parts; an increasing fixed-rate portion for property rental, and a revenue-sharing portion tied to Sky's sublease of hangar space, along with fuel flow fees (section 4.2.2). They started in January 1993 with one helicopter (Robinson R22B) and have done well enough that they now have five full-time employees and several part-time instructors.

SKY erected a permanent hangar/service center on the heliport grounds, and pays for all operational expenses associated with running the heliport. They furnished the terminal building, provide liability insurance, fuel trucks, UNICOM equipment, and pay all the minor repairs, and perform yard work around the heliport grounds. The city remains responsible for major repairs to the terminal building (like roof damage) and have been supportive with city services when needed. For example, the city transportation department was able to re-stripe the parking pad areas and TLOF after weather finally took its toll. So far the Heliplex lease is working to everyone's benefit.

4.2 GARLAND HELIPLEX - PHYSICAL FEATURES

4.2.1 Size, Orientation, and Physical Layout

The heliport is located on a 6-acre lot at the corner of a 300-acre industrial park. It has one TLOF, five parking positions, and a separate area for Jet-A refueling with an underground fuel farm. There is also an attractively decorated terminal building that has offices, conference and waiting rooms, a video learning center, and public restroom facilities including showers. A recently constructed hangar/service center provided additional secure storage and office space.

4.2.2 On-Site Facilities and Services

SKY Helicopters received their commercial operators (14 CFR Part 135) certificate as of November 1994, and their flight training certificate (14 CFR Part 141) in July 1996. In addition to the flight school, they do pipeline/powerline patrol, charter, photo, sightseeing, and contract law enforcement work. They provide an on-demand shuttle service between Garland and the surrounding locations including DFW Airport.

SKY established a Robinson Helicopter Company (RHC) factory service center at the heliport and was awarded a dealership for RHC's R44 and R22 helicopters in 1995. In addition, the maintenance facility also services other helicopters including Schweizer and Enstrom.

SKY Helicopters found a way to attract pilots/operators to buy fuel at the Heliplex. It is the only place in the area where "hot refueling" can be done, or refueling while the helicopter is still running.

4.2.3 Acquisition and Construction Costs

The Garland Heliplex cost around \$2M of which approximately \$1.5M was in FAA AIP funding. The money was used basically for the concrete and 1,500 gallon fuel farm.

4.3 GARLAND HELIPLEX - OPERATIONAL ASPECTS

4.3.1 Market and Service Area

The Garland Heliplex serves the entire Dallas/Fort Worth metropolitan area or the Metroplex, as it is called locally. However helicopter operators as far away as Austin and Tyler, Texas also regularly use the facility.

4.3.2 Heliport Facility Users

SKY Helicopters provides charter air taxi services, but its main function is helicopter pilot training. It provides hangar storage for several aircraft, as well as 100LL and Jet-A, and "hot" Jet-A refueling to those who desire it. Services include, flight school, charter, photo, sightseeing, power and pipeline patrol, ENG, contract law enforcement, and infra-red (IR) camera detection.

Helicopter maintenance and inspection facilities are available, and the heliport is a dealer and service center for Robinson Helicopters.

4.3.3 Operational Characteristics of the Facility

The Heliplex is open and staffed 7 days a week from 8:00 a.m. to 6:00 p.m.

4.3.4 Revenue Sources for Financing the Operations

The vast majority of revenue comes from the services discussed in section 4.3.2. There is also a \$39.00 per night fee for hangar storage, however, there are no landing or parking fees.

4.3.5 Types of Based Rotorcraft

There are currently four Robinson R22Bs, one R44 Astro, and one Enstrom helicopter based or hangared at the heliport. The number of helicopters owned and based at the heliport can change at any time because SKY is a dealer and service center for RHC.

4.3.6 Activity Levels

No activity records are kept by the heliport. Due to its location and services, activity patterns vary greatly. Based on current training, commercial, and pleasure operations, the heliport staff estimated a typical day has between 25 to 100 operations.

4.4 GARLAND HELIPLX - RELATIONSHIP TO THE SURROUNDINGS

4.4.1 Access - Airside and Instrument Operations

The Heliplex is strictly VFR and currently has no real need for an instrument approach.

4.4.2 Access - Landside

The Garland Heliplex is located on a major thoroughfare that is flanked by commercial and light industrial businesses. There is ample automobile parking in front of the terminal building.

4.4.3 Neighboring Land Uses, Zoning, and Economic Base: Compatibility and Obstacles

It was initially thought that perhaps the Garland Heliplex did not do well because it was built in an undeveloped location rather than in a downtown area (reference 12). That could have been a contributing factor in the beginning, but in the long run it may provide a good service to the kind of businesses located nearby. Furthermore, the land uses surrounding the heliport do not generate many noise or community complaints. The approaches are currently unobstructed primarily because the 300-acre industrial park is not yet well developed.

4.4.4 Operator, User, and Public Attitudes Regarding the Heliport Facility

The operator is very enthusiastic about the business. The location in a mostly light industrial area that mitigates community problems concerning noise or safety. Except when it gets publicity, most people probably do not remember that the Heliplex even exists.

4.4.5 Government Agency Attitudes and Support

The FAA supported the heliport in that they worked to keep it open. The local government was very supportive when it expected the heliport to provide prestige and revenue to the city. They became disenchanted about the specific situation and the cash flow issues, but they were not adamantly opposed to heliports. As long as it can at least support itself, the city government is expected to support the heliport.

4.5 GARLAND HELIPLX - PAST AND CURRENT PLANNING

4.5.1 Marketing of the Heliport to the Community, Users, and Operators

SKY Helicopters markets the services they provide such as charter, training, fuel, maintenance, etc., but they do not actively market the heliport itself. They advertise in local trade publications and are in contact with other aviation facilities in the area that provide word-of-mouth advertising.

The heliport manager often attends community functions, such as Chamber of Commerce events, that help spread knowledge of the helicopter operator and heliport.

For major events, like the Helicopter Association International (HAI)'s 1996 HeliExpo in Dallas, SKY marketed the heliport's availability and proximity to Dallas to out-of-area operators. McDonnell Douglas Helicopter Company chose to base their flight operations from the Garland Heliplex, and several other value-added re-sellers hangared their equipment at the heliport during the show. There is no major, or national form of advertising.

4.5.2 Expected Future of the Garland HeliPlex Heliport

SKY Helicopters expects the Heliplex to continue to grow; not with any grandiose plans, but just slow and steady. Considering the past, this view is probably a very realistic and agreeable to everyone involved.

4.6 GARLAND HELIPLX - CONCLUSIONS

The significance of this heliport's success is that a sound business approach is now the basis for its operation. The Heliplex is run first as a business. This approach may not be the case with a management strictly focused on the aviation aspect. In many such cases the management likes to fly and does not always understand the requirements of running a small business or the need for marketing. For instance, at the Heliplex the pilots do not like to mow the lawn or clean the

windows, but at the Garland heliport, it's part of the job that needs to be done to stay in business. Aviation facilities are businesses too. Both the heliport manager and SKY owner have business backgrounds, then learned aviation. The city was able to turn the heliport around by allowing a private business to operate the heliport while providing all the essential services demanded from a public facility. The city profits from the long-term tax base enhancement, helicopter owners and operators benefit from the local source of supplies and services, and the community benefits from having the heliport as they had planned.

5.0 ANNAPOLIS HELIPORT, ANNAPOLIS, MARYLAND

5.1 BACKGROUND AND LOCATION FEATURES - ANNAPOLIS HELIPORT

5.1.1 Background

The Annapolis Heliport was constructed as part of the Power Technology Center to specifically attract tenants to the offices. Before it opened, it was well marketed to the helicopter industry as a public-use heliport with excellent access to Annapolis, and a way-point between the cities of the Northeast Corridor, Baltimore, and Washington, D.C. There were great hopes for Annapolis as an example of a strictly privately-funded alternative to large-scale government supported projects as a means to “fill out” the anticipated growing heliport infrastructure. In April 1991, Rotor & Wing International, stated:

Several years ago, the FAA initiated its prototype demonstration heliport plan. The government was going to build heliports in New York City, Indianapolis, New Orleans, and Los Angeles. Only three were built. The Annapolis Heliport, built in less than 16 months, shows the kind of job the private sector can do for the helicopter industry. (Reference 13).

However, the office building did not attract tenants at first, and the heliport did not succeed as hoped. The facility first opened in the summer 1991, but closed in January 1992. It reopened in October 1992 under a new management FBO that aspired towards a wider market. However, business problems and the lack of demand resulted in its closing a second time. By mid-1994 the heliport use had slowly died away, and it is now closed. It is an example of an unsuccessful heliport.

5.1.2 Heliport Location

The Annapolis Heliport is located at the Power Technology Center, an office complex just off the John Hanson Highway (Route 50). Route 50 provides access between Annapolis, the capital of Maryland, and Washington, D.C. A location map is presented in figure 18. The promotional brochure states: the heliport is “...conveniently located at 201 Defense Highway, one mile from the Annapolis Mall and approximately one hundred feet above Route 50 and Interstate (I-) 97.” It is approximately 4 miles due west from downtown Annapolis (reference 14). This general location is a very accessible site to the regional highway system and to the Baltimore, Maryland - Washington, D.C. region.

5.1.3 Classification and Function in the Aviation System

The Annapolis Heliport was a privately-owned and developed public-use heliport. It was marketed as the state of Maryland’s *first* public-use heliport when it reopened on October 1, 1992.

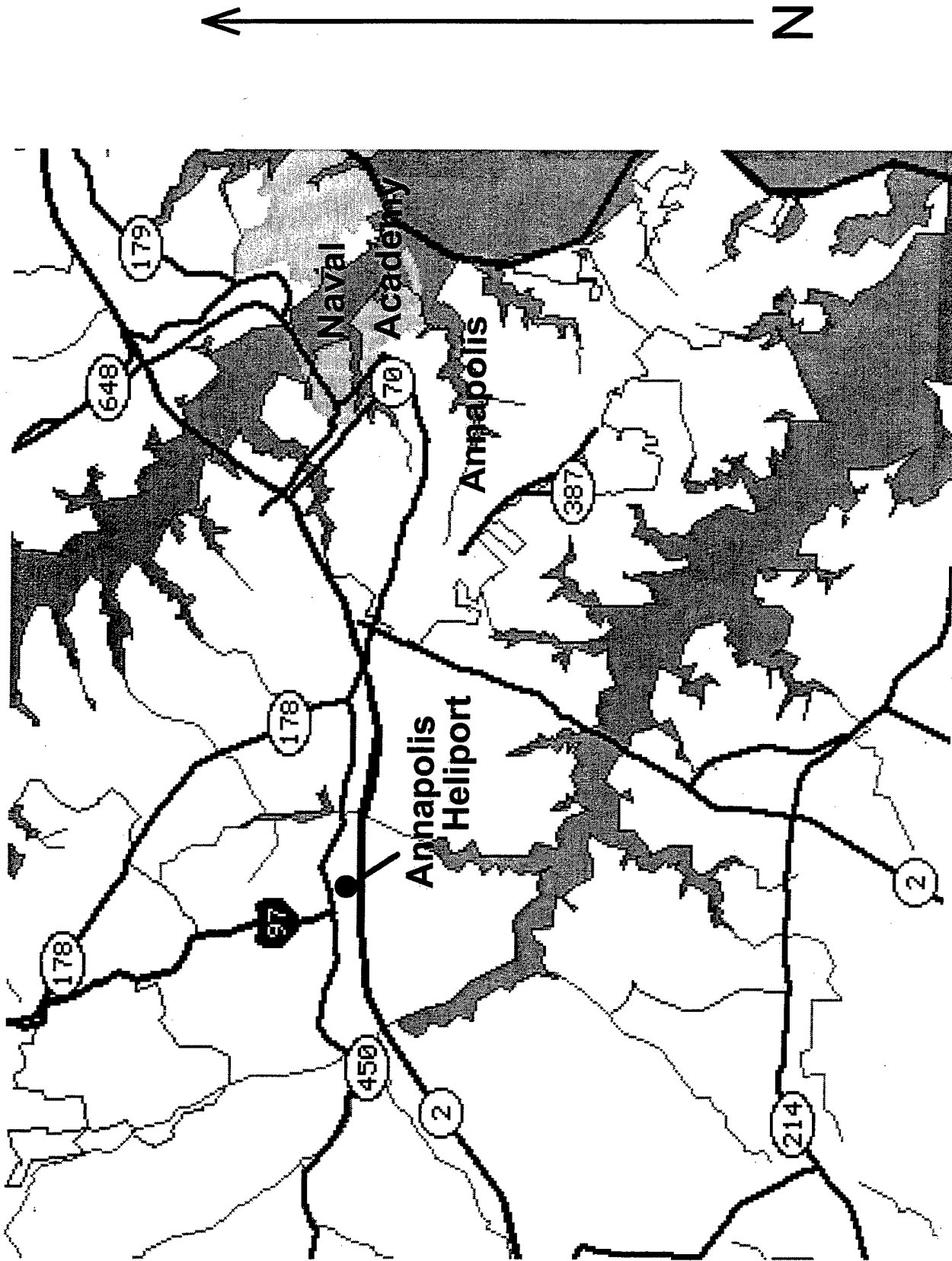


FIGURE 18 LOCATION OF THE ANNAPOLIS HELIPOINT, ANNAPOLIS, MARYLAND

Source: U.S. Census Bureau, Tiger Mapping Service (<http://tiger.census.gov>).

5.1.4 Developer and Owner

The Annapolis Heliport was developed entirely with private funds as a business amenity to attract tenants in the Power Technology Center office complex. The complex is described in its marketing brochure as follows:

Located in a naturally wooded environment, the Power Technology Center seems far removed from urban life. Expansive windows offer views of lush greenery and the Annapolis Reservoir. Eight all-glass projecting bay areas create the ideal setting for conference rooms, while six balconies promote an atmosphere of open space and freedom. Productivity will soar in this exceptional environment offering modern amenities and a creative, stimulating atmosphere.

The brochure goes on to say:

Access to the neighboring areas is further expanded through Anne Arundel County's only dedicated commercial jet heliport, right on the premises. Just a quick walk from the building across an elevated bridge and you're on your way. Commuter and charter services can take you anywhere within 300 miles.

The heliport opened in the summer of 1991 after great helicopter industry fanfare. However, things did not go as planned. The office space did not rent and the heliport was not used. This office project was probably planned in the mid- to late 80s when the office market was still "hot" and just starting to cool off. By the time the building and heliport opened in 1991, the office market was "soft" and "cold." However, problems arose between the heliport management and owners of the property. The heliport was closed in January 1992.

In October 1992, new management took over the heliport. This FBO ultimately intended to start a scheduled helicopter service. In the meantime, they ran a private (14 CFR 91) charter service, even though they were certified for commercial services (14 CFR 135). They added amenities and services and implemented a moderate landing fee (see section 5.2.2).

However, the FBO was not experienced in business. It was thought that the managers of the office complex charged the FBO too much for rent and extra fees that the FBO should not have accepted. Even though the office space was then beginning to rent, the FBO was not able to keep up with the payments due to low demand for the heliport. The FBO knew they were taking a risk in running the heliport, but thought they could expand the market sufficiently to overcome the odds. After months of using their own money to pay the difference between income and expenses, a decision was made by the FBO to cut further losses and the heliport was closed the second time at the end of 1994.

5.2 ANNAPOLIS HELIPORT - PHYSICAL FEATURES

5.2.1 Size, Orientation, and Physical Layout

The TLOF of the heliport is a 75-foot diameter circle. It is a ground-level heliport built to the side of the 70,000 square-foot office building (see section 5.1.4). An artist's conception of the office building-heliport complex is shown in figure 19. The apron of the heliport is large enough to park three Jet Ranger-size aircraft. There was a Visual Approach Slope Indicator (VASI) set at 8.5 degrees and a lighted wind sock.

5.2.2 On-Site Facilities and Services

When the Annapolis Heliport first opened, it was staffed 6 days a week, Monday through Saturday, 7:00 a.m. to 10:00 p.m. Fuel was available from tank trucks. There were plans for a 12,000 gallon above-ground tank but it was never installed because it was decided it was not worth the cost or the time to complete the permitting process. There were also plans for a 3,600 square-foot heated hangar large enough to house five Jet Ranger-size helicopters. Half of the hangar was to be for a maintenance facility, but the heliport closed before this could be accomplished.

The first management planned to use an entire floor of one wing of the building for its offices, to include an operations center and executive suites that would be sub-leased to help support the heliport (reference 13). There was also to be a service counter, pilot's lounge, passenger lounge, and conference rooms. The conference rooms were to be available for rent by the hour and catering was to be offered. There were plans to have a courtesy car available, and car rental and/or limousine services arranged (reference 13). Little of these plans materialized.

The second management, the FBO, operated out of an office-trailer parked at the facility. They initiated a variety of services listed on a heliport "Fact Sheet" that was distributed when the facility reopened. These services are listed in table 2.

TABLE 2 SERVICES PROVIDED BY THE ANNAPOLIS HELIPORT - OCTOBER 1992

Jet A Refueling	Turbine Oil
Daily or Monthly Aircraft Parking (Tie-Down)	Flight Planning
Comfortable Pilot/Passenger Lounge	Complementary Coffee and Snacks
Vending Machines	Deli Sandwich Service
Nearby Hotel Accommodations	Limousine, Rental Car, Taxi Services
Restaurant Reservation Arrangements	Emergency Road Service
Nearby Fire and Police Assistance	Helicopter Charter Flight
Courtesy Phone Available All Hours	

Source: Reference 14.

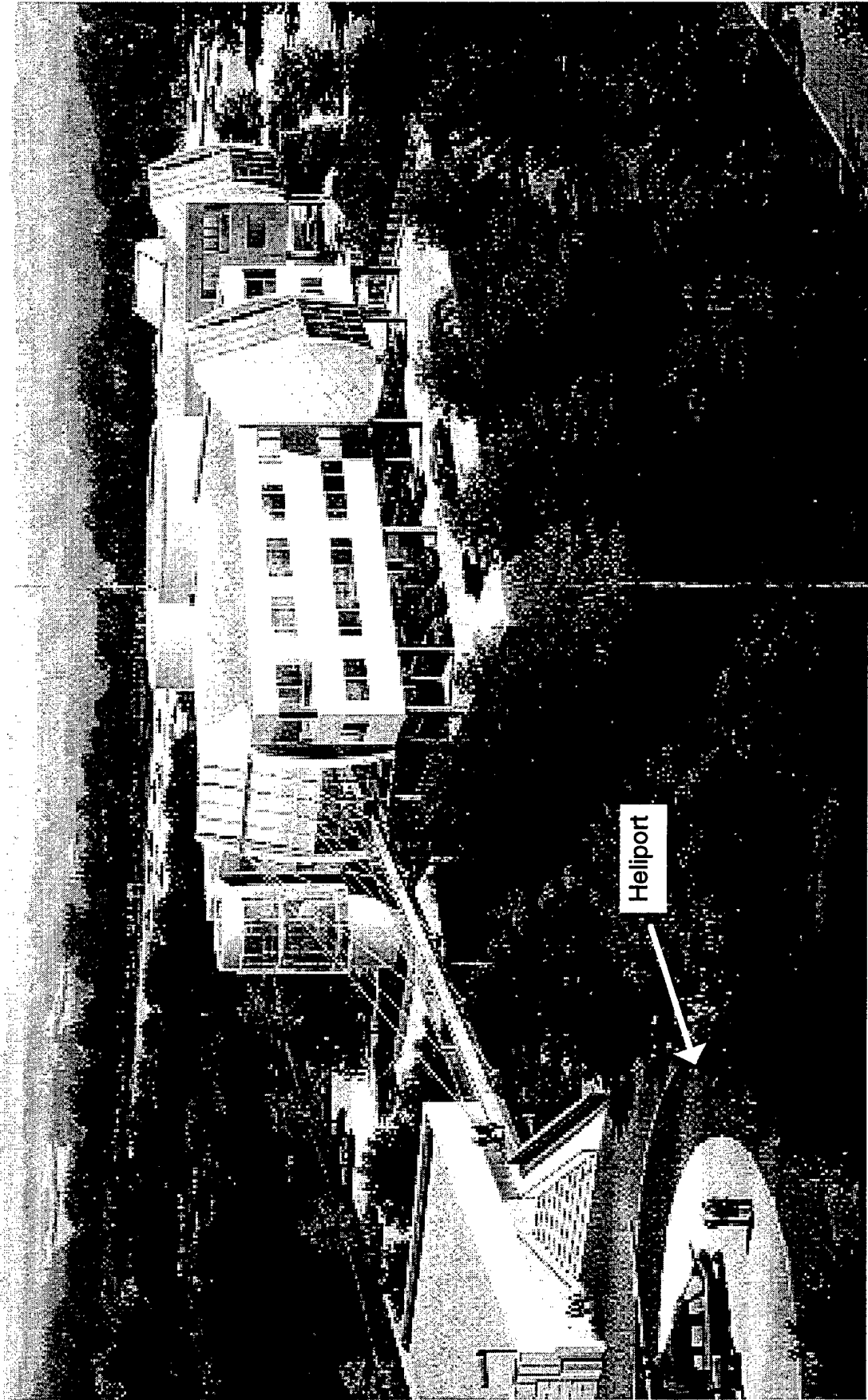


FIGURE 19 ARTIST'S RENDITION OF THE POWER TECHNOLOGY CENTER AND ANNAPOLIS HELIPORT

Although the heliport was accessible 24 hours a day by air, it was only staffed 8:00 a.m. to 6:00 p.m., Monday through Saturday. There was a UNICOM and pilot-controlled lighting system that would stay on for 15 minutes once activated. Aircraft parking was accommodated by tie-downs.

5.2.3 Acquisition and Construction Costs

The figures for acquisition and construction costs were not available.

5.3 ANNAPOLIS HELIPORT - OPERATIONAL ASPECTS

5.3.1 Market and Service Area

The market and service area for the Annapolis Heliport was advertised as being within a 300-mile radius. It was anticipated to be a stopping point for helicopter traffic traveling between Washington, D.C., Baltimore, and the Northeast Corridor cities, particularly from the New York City, Manhattan heliports.

5.3.2 Heliport Facility Users

Even though there was enough initial interest in the Annapolis Heliport that some operators used it before it was officially open, relatively few people ever used it. Ultimately, the military was the most frequent user due to a fuel inter-plane agreement negotiated with the government. Only a few users were the kind hoped for—the corporate/executive traffic from New York. The expected local users, those from the office building and Washington, D.C. also never materialized.

5.3.3 Operational Characteristics of the Facility

There were never enough operations to establish any particular characteristics.

5.3.4 Revenue Sources for Financing the Operations

The main revenue source was from fuel sales. There was a \$7.50 landing fee that included the first 3 hours of aircraft parking. This fee was waived with the purchase of 30 or more gallons of fuel. If an aircraft was parked more than 3 hours, the helicopter operator was charged the \$7.50 landing fee plus \$15.00 per 24-hour period. Monthly aircraft parking was available.

5.3.5 Types of Based Rotorcraft

Originally, there were no helicopters based at the Annapolis Heliport. The FBO, on the other hand, had an Agusta 109 based there that was used for its charter service. The heliport was large enough to comfortably accommodate an S-76-sized aircraft.

5.3.6 Activity Levels

For a while, particularly in the warmer months, there were 10 to 12 operations per week. There were fewer operations in the winter because the facility could only accommodate VFR operations.

5.4 ANNAPOLIS HELIPORT - RELATIONSHIP TO THE SURROUNDINGS

5.4.1 Access - Airside and Instrument Operations

The Annapolis Heliport was strictly a VFR facility. Originally, the approach/departure paths were shown as being northwest over non-residential areas that included the water reservoir and landfill. This route bypassed the very large Class B airspace that encompasses that required for the area's three major airports: Baltimore-Washington International, Washington National Airport, and Washington Dulles International. The heliport, and this route to it, was shown on the Baltimore-Washington FAA helicopter route chart. The new FBO listed the *approach* as "090 to 180 degrees (Primary 150 degrees)" and the *departure* as 270 to 360 degrees (Primary 330 degrees)" (reference 14).

5.4.2 Access - Landside

Landside access to the Annapolis Heliport was off the John Hanson Highway (Route 50). Route 50 is the main access between Washington, D.C. and Annapolis, Maryland. The Power Technology Center is on Defense Highway (see section 5.1.2.).

5.4.3 Neighboring Land Uses, Zoning, and Economic Base: Compatibility and Obstacles

The light industrial zoning in that part of Annapolis allowed the heliport to be built. To assist in ensuring compatibility, the original management held a meeting with the home owners and neighbors from the surrounding office buildings to explain what the heliport was for and how it was to operate. The manager handed out his home phone numbers so that he could be contacted if the heliport caused them problems.

The heliport's economic base was intended to be the tenants of the Power Technology Center offices and the office and conference room rentals. However, as noted, during the time the Annapolis Heliport was first open, there were few, if any, tenants. During the FBO's tenure there were about three to four tenants. Some tenants used several floors of the building, but they had no specific need for the heliport's services.

5.4.4 Operator, User, and Public Attitudes Regarding the Heliport Facility

Both the first management and the FBO tried very hard to make the heliport successful. However, one of biggest problems with the heliport was, that unless you wanted to visit someone in one of the offices, there was really no reason to go there. There was also no particular reason for civilian operators to go out of the way to buy fuel at the facility. The FBO initiated a landing

fee when they reopened it, consequently it was less expensive to land elsewhere. There were no problems with the public during or after construction, and no problems or complaints from the neighbors of the facility.

5.4.5 Government Agency Attitudes and Support

Overall there were no *major* problems with governmental agencies, although a few minor issues did arise. The original manager felt that the city was congenial enough during the construction phase. He was quoted as saying, "I went to the permit section, gave them the plans, and there was no problem," (reference 13). The state licensed it as its first public-use heliport. The county did not want the heliport to store its fuel in above-ground tanks. This problem was solved when the county was asked to help design acceptable fuel tanks. However, the tanks were never installed due to other problems at the heliport (see section 5.2.2). The first management had hoped to involve the city of Annapolis in promoting use of the heliport, but the city declined. The second manager did not feel the city or county was all that supportive, but again there were no major problems.

5.5 ANNAPOLIS HELIPORT - PAST AND CURRENT PLANNING

5.5.1 Marketing of the Heliport to the Community, Users, and Operators

The original manager of the Annapolis Heliport extensively promoted the heliport long before it opened. Artist's representations and diagrams were brought to helicopter industry meetings that would allow such presentations. It was marketed at Mid-Atlantic Helicopter Association (MAHA) meetings (a local area helicopter organization), at the HAI, and at appropriate FAA rotorcraft meetings during every stage of its development. It received full coverage in the helicopter industry press. There was a direct mail campaign to notify the industry (reference 13).

The marketing effort concluded with an elaborate heliport opening party that included food, drinks, and entertainment. The second operator, an FBO, put out press releases to the industry and local press, and also attended local industry functions providing displays and information. Even the meetings with the neighbors in adjacent buildings was marketing (section 5.4.3). First, because it is a good idea to do community work to limit or prevent potential problems with heliport operations, and second, in doing so, they were marketing the heliport to potential users from other nearby businesses by letting them know that the heliport existed. While all these efforts are a good idea for any heliport, it was not enough in this case to establish a successful market for the Annapolis Heliport.

At that time, the city of Annapolis was experiencing a migration of businesses out of the community. The ones that were remaining had no outside connections to bring more commerce into the city. The FBO offered to help by expanding the heliport facility onto the vacant area adjacent to the Power Technology Center complex if the county (Anne Arundel) would help with zoning and construction. This offer was made due to a possible plan to construct a small convention center on nearby property. Extending the heliport closer to the new convention center could have been beneficial to all concerned. However, nothing came of this project.

5.5.2 Expected Future of the Annapolis Heliport

At this time, there are no plans to reopen the heliport.

5.6 ANNAPOLIS HELIPORT - CONCLUSIONS

A study of the Annapolis Heliport offers several insights into the types of activities that can be accomplished in the planning stage in order to raise the success potential of a public-use heliport. One primary factor in the failure of this heliport was that its location and function was not conceived from a regional aviation system plan perspective. Rather, its development came about as a secondary feature of a real estate development venture—the development of a suburban office park. The developer of the office park thought that the addition of a heliport would provide an amenity to the prospective tenants, which in turn, would give the office park a commercial advantage over the competing office locations in the leasing of the office space.

Perhaps if this process had occurred in somewhat of a reverse order the heliport might have achieved continuing success. If the general vicinity of this office park had been identified in a regional heliport system plan as being near a demand center of sufficient size to support a public-use heliport, then appropriate development incentives could have been placed in a local area master plan to encourage an individual property owner, or owners, to provide a public-use heliport as an amenity to the overall community. In such instances, developers are often granted some additional feature, associated with the development, that increases the likelihood of profitability of the development project. Thus, if this location had first been seen and planned for as a good place for a public-use heliport, then perhaps it would more likely have been successful. Alternatively, if the public agencies had then taken a further step and encouraged private development, that too could have increased the likelihood of success.

The Annapolis Heliport is an example of there not being enough “public” in the public-use aspects of the heliport. It is very important to plan and market so that heliport operators can adopt a user, or customer service perspective, and *not* to look at things primarily from the perspective of operator’s needs. The office park developer probably has a very good understanding of the market for office space in the Annapolis, greater Baltimore, and Washington areas. That understanding was to plan, develop, market, lease, and operate this suburban office space in a profitable manner in a highly competitive and volatile market. But, there did not seem to be careful analysis on what real demand there was for a public-use heliport. Such issues need to be understood and accounted for early in heliport planning.

In the Annapolis example, such an approach does not appear to have been sufficiently followed in order to develop a *broad* enough customer base to maintain the operations of the heliport. Rather, although the heliport was actively marketed, it was marketed only to two very narrow segments of potential users—the tenants of the office park, and the helicopter industry as a stop-over for long distance helicopter flights traveling between origins and destinations other than the office park. The first of those market segments was the one most familiar to the original *developer* of the heliport, while the latter was likely most familiar to both heliport managers. Whether owner or operator, or both, heliport and helicopter providers need first to gain an

understanding of the potential market and second, to plan for and seek out a spectrum of appropriate market segments, in order to operate successfully the heliport and helicopter service.

For instance, the original management of the heliport made a tremendous marketing effort directed toward the helicopter industry, and the FBO kept up this effort. However, maybe, this was "preaching to the choir." There is no indication whether a broader market that should have included the following categories was ever investigated:

- more marketing to other office parks and businesses,
- state government in Annapolis,
- Naval Academy, and
- Chesapeake Bay and other big tourist attractions.

Most critically, perhaps these were investigated and the simple fact was that neither these markets, nor any other, existed.

Another possibility may be that if such extended marketing had been successful, a really active heliport would not have been compatible with the goals of the original office complex, as stated in the brochure, "...Located in a naturally wooded environment, the Power Technology Center seems far removed from urban life." To sum up, more early evaluation and planning was needed in order to match reality with expectations.

Last, being able to implement a plan successfully does not necessarily mean that a good plan has been implemented. Sound technical plans, as well as public involvement work (reference 2), are needed for long-term successful operations of heliports. To paraphrase a line from the popular movie of a few years ago, *Field of Dreams*, "the Annapolis Heliport was built, but they did not come." The property developer and the initial FBO were effective and successful in their public involvement efforts in getting the consent of nearby neighbors and in obtaining the approval of governmental regulatory agencies to have a heliport operate at that location. They successfully reached out to the helicopter industry to obtain a sufficient degree of awareness and initial interest of a new destination for pilots to use. They took the necessary and sufficient steps to provide, and initially operate, a public-use heliport. However, it appears there was a lack in the very early planning phase to identify sufficient demand and a specified regional aviation role for this location as a heliport. In other words, this heliport was conceived of as "an amenity to the property development," as a means to an end, rather than as an end in itself. This in itself may have been its critical shortcoming.

However, most likely, it was some combination of all these factors that kept this location from being a long-term successfully operating heliport. In the absence of appropriate regional planning and marketing studies, it is difficult to say whether there would be sufficient demand to reinstate helicopter operations from this heliport.

6.0 BOSTON CITY HELIPORT, BOSTON, MASSACHUSETTS

6.1 BACKGROUND AND LOCATION FEATURES - BOSTON CITY HELIPORT

6.1.1 Background

In 1986 the Boston City Heliport was opened, classified, and licensed by the Massachusetts Aeronautics Commission (MAC) as a commercial, public-use heliport. No prior permission is required to use the heliport. It is located about a mile and a half to the south and east of downtown Boston in an industrial district in an area called South Boston. This location is across the Inner Harbor to the west and south of Logan International Airport. The Boston City Heliport is about a mile and a quarter air-distance from the southwest end of the runways at Logan. The heliport was developed and is still operated as a *privately-owned*, public-use facility. This is rare; most public-use heliports are publicly owned. It was reported that by June 1986 there were 2,000 annual operations. Boston City Heliport can be considered a success.

Massachusetts is one state that registers heliport facilities. MAC is charged with promoting and supporting aviation and airport/heliport development in the Commonwealth. The agency:

- approves and licenses all landing sites, both public and private;
- provides financial and technical support to airports and heliports;
- licenses airport managers; and
- promulgates and enforces regulations covering the operation and maintenance of landing sites in the state.

MAC has licensing and enforcement jurisdiction over all landing sites in the state except Logan International Airport (in Boston) and Hanscom Field, which are owned and operated by the Massachusetts Port Authority (Massport), a separate state agency.

Furthermore, through MAC, the state has sponsored heliport system plan studies. These studies were conducted to find a replacement for another public-use heliport in Boston, the Nashua Street Heliport (reference 15). Phase I of the "Metropolitan Boston Heliport System Plan" (reference 15) was developed under contract to MAC and the Boston Redevelopment Authority (BRA) in 1987. Phases II and III were prepared in 1993 and 1994 respectively (reference 16). These studies provided a comprehensive overview of helicopter activity in Boston, forecasts of demand, facility descriptions of current heliports, and sites for new alternative heliports.

6.1.2 Heliport Location

The Phase I heliport study performed for MAC (reference 15), shows that in late 1986, the year that the Boston City Heliport was opened, there were 29 heliports within the jurisdiction of the Metropolitan Area Planning Council for the Boston Metropolitan Area. The Boston City Heliport is in the area often referred to as South Boston or Fort Point Channel. Its specific location is off C Street, to the south and west of Fargo Street. It is located on the property of

Boston Freight Terminals, Inc. This location means that the Boston City Heliport is situated about a mile and a half from the downtown area of Boston, and about a mile and a quarter air-distance south and west of Logan International Airport. The site is very close to the World Trade Center and Fan Pier/Pier 4.

6.1.3 Classification and Function in the Aviation System

The Boston City Heliport is one of two public-use heliports serving the city. The other heliport is the Nashua Street Heliport located adjacent to the Charles River, on the opposite side of the downtown area from the Boston City Heliport. Specifically, Nashua Street Heliport is located between the Charles River and Nashua Street across from the Suffolk County Jail.

The Nashua Street Heliport was originally established in 1964 by MAC. The heliport was originally constructed as a public-use heliport and was located in an auto parking lot owned by the Massachusetts DPW. It is a ground-level facility that serves business, corporate, medical and governmental users. The facility is centrally located in the West End of Boston, situated almost adjacent to Storrow Drive (with access to Back Bay), the Museum of Science, Beacon Hill (the State House), I-93, the Southeast Expressway, Boston Garden, and Government Center. The heliport provides excellent access to the city's financial district as well as Back Bay, and is very close to Massachusetts General and Spaulding Rehabilitation Hospitals.

The Metropolitan District Commission (MDC) is the owner of the property on which the Nashua Street Heliport is located. The "tenant-at-will" lease that MAC holds with MDC expires in 1996. MDC has indicated to MAC that it eventually wants that property for future development, such as the proposed new Charles River Crossing and Basin Park. That development would require closing the heliport. MAC currently anticipates that, while the present lease with MDC will be extended for another year or two, eventually the Nashua Street Heliport will be closed. In fact, the site of the Boston City Heliport was identified in the "Metropolitan Boston Heliport System Plan," as the preferred location for the functional replacement of the Nashua Street Heliport.

However, to complicate matters, it is now possible that a major development project will be proposed near the Boston City site in South Boston. That project could adversely affect the continuing operation of the heliport and may require its relocation. As presently conceived, the so-called "Megaplex" project would be a combined convention center, hotel, and sports stadium. The Megaplex is formally on-hold, and currently there is uncertainty over the scope, timing, and specific location of this project.

Ironically, the MAC has decided to suspend its study of possible relocation of the Nashua Street Heliport to the site of the Boston City Heliport until a firm decision regarding the Megaplex complex is made. In early November 1995, the Massachusetts legislature decided to table its participation in the whole Megaplex project because of a lack of agreement on the project scope and cost. But, it is possible that the issue may be reopened in a year or two. It is also possible that such a complex would provide a good location and site for a public-use heliport. Such a possibility has been put forth to the developers of the proposed Megaplex project. Their initial

response has been to seriously consider including a relocation of the Boston City Heliport in their program requirements.

6.1.4 Developer and Owner

Although the Boston City Heliport is a public-use facility, it is privately owned by Boston Heliport, Inc. The property on which the heliport is constructed is privately owned as well. The owner is Boston Freight Terminals, Inc., a trucking company that leases the land to the heliport. The 1987 study (reference 15) recommended that the Boston City Heliport ultimately be designated as a private-reliever heliport, and thus be eligible for receiving funding for improvements from the FAA AIP fund. Application has not been made for obtaining such a designation.

6.2 BOSTON CITY HELIPORT - PHYSICAL FEATURES

6.2.1 Size, Orientation, and Physical Layout

The TLOF and FATO of the Boston City Heliport are built on the original concrete floor of a former warehouse that is approximately 4 feet above ground level (AGL) (figure 20). The surface shows signs of aging and weathering and appears to be in need of repair. The area is 70-feet by 160-feet (11,200 square-foot) in size. The designated TLOF and six tie-down/parking positions can accommodate up to six Sikorsky S-76-sized aircraft simultaneously. If needed, there is space for an additional 12 helicopters in an adjacent 45,000 square-foot ground level vehicular parking lot. The parking lot is primarily surfaced with cobblestone.

There is also a 6,000 square-foot maintenance and storage hangar that can accommodate two to four small or medium size helicopters. A converted mobile home is used as a terminal building. It has a waiting room, rest rooms, pilot flight planning room, and administrative offices.

6.2.2 On-Site Facilities and Services

The heliport is open 24 hours a day, but is attended only Monday through Friday from 8 a.m. to 5 p.m. There is lighting for night operations. Jet-A fuel is available from an underground storage tank and is dispensed via a pump and hose. Routine and light maintenance is available, but the facility is not a helicopter manufacturer designated repair station.

There are no on-site ground transportation connections such as taxi stands or rental car outlets. However, arrangements can be made for an incoming helicopter flight to be met by taxi, limousine, or by a van service. These vehicles will take passengers to downtown Boston, or to other places around the metropolitan area.

6.2.3 Acquisition and Construction Costs

No information is available on site acquisition and/or construction costs.

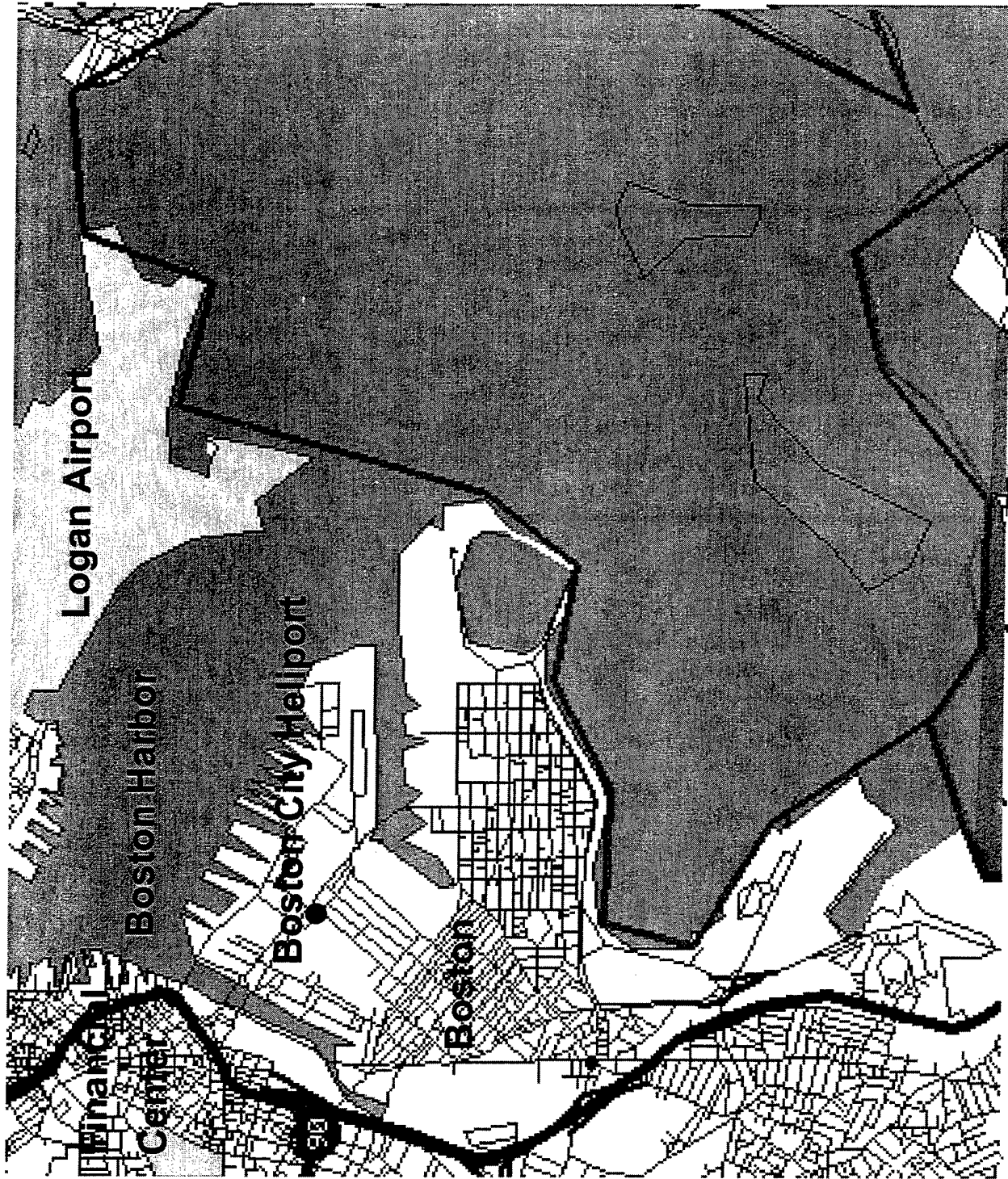


FIGURE 20 LOCATION OF THE BOSTON CITY HELIPORT

Source: U.S. Census Bureau, Tiger Mapping Service (<http://tiger.census.gov>).

6.3 BOSTON CITY HELIPORT - OPERATIONAL ASPECTS

6.3.1 Market and Service Area

Phases II and III of the "Metropolitan Boston Heliport System Plan" (reference 16) noted that the heliport's market area encompasses approximately a 200-mile radius from Boston. New York City, specifically Manhattan, is a popular destination for helicopter operators from the greater Boston area. However, the more common origins or destinations connecting to the Boston City Heliport are individual corporate headquarters, manufacturing plants, local airports, and hospitals in eastern and central Massachusetts and southern New Hampshire.

Boston City Heliport's local service area encompasses all of South Boston, which includes the World Trade Center, South End, Government Center, Prudential Center, the Financial District, and Chinatown. At present, ground access to Logan International Airport from the heliport is via the Callahan or Sumner Tunnels both of which are extremely congested. The Third Harbor Tunnel (also known as the Ted Williams Tunnel) was opened to commercial vehicles (trucks and buses) at the beginning of 1996 and is expected to be open to all traffic by the end of the year. It should provide heliport users with very rapid ground access to Logan since the entrance to the new tunnel is very close. It should be noted that Logan International Airport, which is about 1.25 miles north of the heliport, accommodates about half of all helicopter activity in the Boston area. For a period of time, Digital Equipment Corporation had a gate at Terminal B in the airport to serve its scheduled corporate helicopter operations. That service has since been discontinued.

The Boston City Heliport's service area is limited somewhat by the Nashua Street Heliport. Nashua Street Heliport accommodates traffic going to Back Bay, Kenmore Square, and Cambridge. In addition, Massachusetts General Hospital, and Massachusetts Eye and Ear Clinic are served by Nashua Street Heliport. Other nearby hospitals such as Boston City Hospital and Longwood Medical Center, are served by their own private helipads.

6.3.2 Heliport Facility Users

The large majority of heliport users are associated with corporate, business, and commercial activities, as shown in table 3. The heliport also accommodates ENG, EMS, and utility missions. EMS Boston MedFlight is based at the Boston City Heliport. Table 3 presents a variety of other heliport users listed according to several user classification categories.

6.3.3 Operational Characteristics of the Facility

Boston City Heliport is a day/night VFR facility. It has a UNICOM and the heliport lights are radio controlled by pilots on the UNICOM frequency. The TLOF and parking apron can accommodate helicopters up to a Sikorsky S-76 and United States Coast Guard (USCG) Aerospatiale HH-65 Dolphin. Since Boston City Heliport is situated within Boston Logan Airport's Class B airspace, all arrivals and departures are required to obtain air traffic control (ATC) permission from Boston Approach Control.

TABLE 3 USERS OF THE BOSTON CITY HELIPORT

Use Classification	Users of the Boston City Heliport
Commercial	Boston Helicopters Langwell Helicopters Wiggins Airways
Corporate	American Express AT&T Warner Lambert Bristol Meyers Channel 5 Channel 7 Digital Equipment Corp. IBM Mass Mutual Life Insurance Simplex Tyco Wayfarer Ketch
Government/Police	Mass Aeronautics Comm.
Medical	Boston MedFlight University of Massachusetts Medical Center
Military	U.S. Coast Guard

Source: C. Glass, Heliport Manager, 11/95.

On the ground security fencing is provided around the perimeter. There is ample parking for automobiles since much of the surrounding property is a truck loading and parking area. There are construction cranes in the general vicinity of the heliport, and arriving and departing helicopters overfly construction sites. This results in some dust and debris being blown up by rotorwash.

Since the heliport is not immediately adjacent to residential areas, there are no noise complaints about its operation. The commercial jet aircraft noise from Logan International is significantly louder than any helicopter noise in the area. Furthermore, designated helicopter routes into Boston are generally over the highway network (particularly the Southeast Expressway) which serves as an effective noise buffer. The primary route serving the Boston City Heliport is designated the Quarry Route, which runs from Logan south along the Expressway (I-93 & Route 3). The Bay Route, which runs southeast from Logan over Boston Harbor, is also available but it is used less frequently to access the heliport. MAC and the New England Helicopter Pilots Association (NEHPA) promote a "fly neighborly" program and operations to and from the Boston City Heliport generally do not generate noise or safety complaints.

There appear to be few capacity problems at the Boston City Heliport. Parking spaces on the heliport and those at the adjacent ground level parking area adequately accommodate the expected demand. The availability of excess capacity also works to help the other Nashua Street

Heliport (see section 6.1). Due to the very limited helicopter parking space, lack of terminal facilities, and the unavailability of fuel at Nashua Street Heliport, many helicopters drop off passengers at Nashua Street and fly to the Boston City Heliport where they can buy fuel and park. They then return to Nashua Street to pick up passengers.

6.3.4 Revenue Sources for Financing the Operations

The heliport has a number of revenue sources. These include: a \$40 landing fee (that is waived if fuel is purchased), fuel sales, and maintenance. The landing fee is not charged to EMS operators and state or Federal agencies.

6.3.5 Types of Based Rotorcraft

Four helicopters are based at the heliport, including Boston MedFlight's Aerospatiale AS-365N. (MedFlight's other helicopter, a BK-117, is based at Plymouth Municipal Airport, but flies into Boston City Heliport regularly.) The other three based helicopters are privately owned Robinson R-22s.

6.3.6 Activity Levels

Although no specific traffic counts are made and operations do occur when the heliport is unattended, the manager estimates that there are an average of about 8 flights (16 operations) per day year round at Boston City Heliport. That corresponds to nearly 6,000 operations per year. The activity levels tend to peak in the summer and are lowest during January and February. Most of the activity occurs on weekdays although some weekend flights do take place. This level of activity represents a significant increase over the activity reported for the heliport for 1987, (approximately 2,000 annual operations) about 1 year after it went into service.

According to Phase II and III of the *Metropolitan Boston Heliport System Plan* (reference 16), in 1992 the estimated helicopter activity throughout the City of Boston totaled somewhat more than 20,000 annual operations. Boston City-Heliport accommodated approximately 28 percent of all helicopter activity. Logan International Airport served about 51 percent and Nashua Street 11 percent of all helicopter activity. The remaining activity, about 9 percent, occurred at the Boston General Hospital and other private helipads around the City.

The 1992 metropolitan survey further indicated that about 70 percent of those operations were for corporate and commercial uses, shown in table 4. That activity was found to be generated by 83 active helicopters that fly, some only occasionally, into the City of Boston.

Table 5 presents estimates of helicopter activity at Boston City Heliport applying the same user classifications as table 4 (reference 23). Together, the tables indicate that the Boston City Heliport had more commercial and medical oriented users than the other heliports (Nashua Street and Logan International Airport) which tended to have more corporate users.

TABLE 4 TOTAL HELICOPTER ACTIVITY IN THE CITY OF BOSTON - 1992

Categories of Heliport Use	Annual Operations	Percent of Total Activity
Commercial	3,550	17.1
Corporate	11,180	53.9
Government/Police	1,445	7.0
Medical	4,245	20.4
Training	120	0.6
Military	220	1.1
Total	20,760	100.0

Source: Reference 16.

TABLE 5 HELICOPTER ACTIVITY AT BOSTON CITY HELIPORT - 1992

Categories of Heliport Use	Annual Operations	Percent of Total Activity
Commercial	2,246	38.5
Corporate	1,194	20.5
Government/Police	208	3.6
Medical	2,100	36.0
Training	60	1.0
Military	22	0.4
Total	5,830	100.0

Source: Reference 16.

Forecasts of traffic demand covering the 20 year period between 1992 and 2012 were developed for helicopter activity throughout the City of Boston (reference 16). Those forecasts, shown in table 6, indicate that there is expected to be about a 90 percent increase in helicopter activity for the same six user classification categories given in table 4. In addition, table 6 presents 3 new user classification categories that could more than double the total amount of helicopter activity for the 20-year forecast, and which would result in over 80,000 total annual operations.

If the Nashua Street Heliport closes, then the Boston City Heliport would be expected to capture almost all of its helicopter activity. In that case, the Boston City Heliport would have about 39 percent of total city helicopter activity by the year 2012. That would represent approximately 31,750 annual operations, or about a 5.5 times more activity than was estimated for 1992.

TABLE 6 FORECAST OF TOTAL HELICOPTER ACTIVITY — CITY OF BOSTON - 2012

Categories of Heliport Use	Annual Operations	Percent of Total Activity
Commercial	9,200	11.3
Corporate	19,875	24.4
Government/Police	1,728	2.1
Medical	8,052	9.9
Training	200	0.2
Military	220	0.3
Subtotal	39,275	48.2
Sightseeing	4,000	4.9
Scheduled Helicopter Service	5,635	6.9
Civil Tiltrotor service	32,530	39.9
Total	81,440	100.0

Source: Reference 16.

6.4 BOSTON CITY HELIPORT - RELATIONSHIP TO THE SURROUNDINGS

6.4.1 Access: Airside and Instrument Operations

Air access to the Boston City Heliport is very good. The approach/departure route is clear of obstacles although there are a number of buildings and power lines in the general vicinity of the heliport. There is a tall smokestack directly west of the heliport that is currently unused and is marked with obstruction lights. Also, the new vent building for the Third Harbor Tunnel is about 200 feet AGL and is located less than 1,000 feet from the Boston City Heliport. While the vent is close to the northwest approach to the heliport, it and the smokestack are not considered obstacles.

The Boston Helicopter Route Chart, published by the National Ocean Survey (NOS), identifies a number of access routes into the City of Boston. The Quarry and Bay routes are the closest to the heliport, and there are a number of other routes that feed into these two. Typical en route altitude over downtown is about 1,000 feet above mean sea level (MSL), rising to 1,500 feet MSL south and west of the City. When close to Boston City Heliport, ATC will lower helicopter altitude to avoid interfering with airplane arrivals on runway 4R and 4L at Logan International Airport.

The heliport lies within Boston's Class B airspace, so clearance is required from Boston Approach Control (which has a discrete helicopter frequency) to operate at the heliport. Boston Approach runs a separate controller for helicopters during peak periods (7:30 a.m. to 9:00 a.m.

and 3:00 p.m. to sunset on weekdays). The heliport is only 1.2 miles from the southern boundary of Logan, and lies just to the west of the final approach course to runway 4L. However, ATC tower personnel at Logan can actually see the Boston City Heliport from the tower cab. They have indicated that helicopter traffic to the heliport is not a problem since they can usually keep helicopters at an altitude below fixed-wing aircraft arrivals and departures.

On the other hand, Boston tower controllers cannot actually see the Nashua Street Heliport from the tower cab, but they have good radar coverage of the area. As a consequence, ATC clears helicopter pilots to land at the Nashua Street heliport "at their own risk," a statement that is required when the controller cannot actually see the landing site.

ATC allows helicopter operators to operate using special visual flight rules (SVFR) if they have a letter of agreement with Boston Tower. SVFR minimums allow helicopter operations to be conducted with less than 1 mile visibility and clear of clouds.

Although the Boston City Heliport does not have a published instrument approach, helicopters do use the instrument landing system (ILS) to Runway 4L at Logan, and then break off the approach in order to land at the heliport. The FAA has indicated that it will publish a "Copter Only" approach to Boston City Heliport in the near future that will take advantage of this use of the existing ILS 4L approach at the airport. This approach will be modeled after a similar one at LaGuardia Airport in New York City, and minimums could be as low as 100 feet and 1/4 mile. IFR departures from Boston City Heliport pick up clearances from Boston Approach while on the ground, before their departure. Operators indicate that IFR helicopter arrivals and departures are handled well by ATC.

6.4.2 Access: Landside

Landside access to the Boston City Heliport is very good in terms of the local roadway system. It is served by arterials such as the Southeast Expressway (also know as Route 3 and I-95), as well as Summer Street and Northern Avenue. The local roads serving that part of South Boston are used primarily by commercial vehicles, such as tractor trailers, dump trucks, and delivery vans. Automobile travel time on weekday mornings from the heliport to the center of the Boston's financial district (Post Office Park) is estimated at 7 to 9 minutes. However, the road network throughout downtown Boston, as in the downtown area of most major cities, is generally very congested. That is particularly the case during morning and evening commuting periods. It is reported that currently it can take more than half an hour to drive from the Boston City Heliport to Logan Airport, which is only about 3 miles away by road.

As noted previously, the area in which the Boston City Heliport is located is not served particularly well by public means of transportation, there being no taxi stands, rental cars, or buses immediately available. The proposed South Boston Transitway would be an 8 to 10 minute walk from the heliport. The heliport operator does have van service available, and taxi or limousine services can be arranged when requested.

An important note about ground access is that the city and state are in the midst of two major redevelopment and roadway reconstruction projects. These are the Third Harbor Tunnel, which will serve Logan Airport, and the reconstruction of the Central Artery. The Third Harbor Tunnel is expected to open to all traffic in late 1996 and will provide much faster ground travel to Logan Airport. The tunnel entrance is located very close to the Boston City Heliport.

The Central Artery project is currently one of the largest, on-going public works project in the United States. It involves moving the entire Southeast Expressway, which runs through downtown Boston, so that it is relocated completely underground. That and a number of related development projects will continue under construction at least to the end of this decade.

While the construction for the Third Harbor Tunnel and Central Artery continues for the next several years, it is anticipated that traffic congestion will worsen significantly throughout the City. This may stimulate increased helicopter traffic to avoid the delays in ground traffic. After these projects are completed, ground access and circulation in Boston will be improved, which could decrease demand for helicopter use. Thus the effect of these construction projects would be to initially accelerate the demand for helicopter activity until the end of the decade, and then slow down the annual rate of increase in helicopter activity.

6.4.3 Neighboring Land Uses, Zoning, and Economic Base: Compatibility and Obstacles

The surrounding area is zoned for and developed primarily as, industrial land use. From an overall New England perspective, the South End of Boston is a very important economic component in terms of freight and goods movement and the various intermodal connections that take place in the vicinity. In addition to the two major transportation improvement projects, the Third Harbor Tunnel and Central Artery, there are several circulation or local access improvements recently completed, underway, or planned for this area including:

- Northern Avenue Reconstruction,
- South Boston Truck Bypass Road,
- South Boston Transitway,
- Traffic Signal Computerization, and
- Fargo Street Extension.

As figure 21 illustrates, the adjacent land uses are industrial, with numerous truck loading areas and parking lots. There are also a number of construction sites adjacent to the heliport's parking lot. The current, immediately surrounding land uses are very compatible with the heliport.

The central location of the area in which the Boston City Heliport is located, coupled with the on-going regional and local transportation improvements, is likely to encourage redevelopment of this area. Any such redevelopment is expected to have a land use mix and intensity that differs from the lower intensity industrial uses now in the vicinity of the heliport. For example,

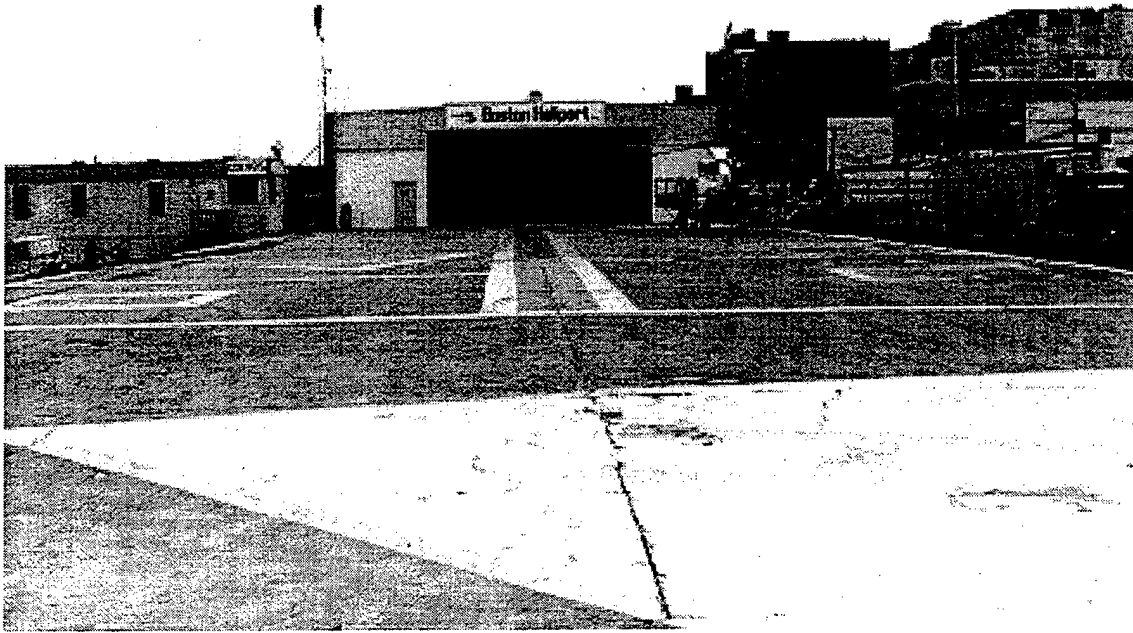


FIGURE 21 THE BOSTON CITY HELIPORT

several significant land development projects, in the planning or development stages in the general vicinity of the Boston City Heliport, are:

- Federal Courthouse,
- South Station Transportation and Biotechnology Center,
- World Trade Center (Phase 2), and
- Megaplex.

The World Trade Center is slated to have a new hotel that is expected to be between 240 and 280 feet AGL. This will be about a quarter to a third of a mile from the heliport and should not be an obstacle. The proposed Megaplex Project, as noted earlier, could directly affect the Boston City Heliport depending upon the particular site selected for that project.

6.4.4 Operator, User, and Public Attitudes Regarding the Heliport Facility

Helicopter users are generally very enthusiastic about the Boston City Heliport because of its location and proximity to downtown. It serves several important districts in the City. Operators have been particularly anxious to use the heliport while major road projects, such as the Third Harbor Tunnel and Central Artery, are under construction.

The Nashua Street Heliport has been under threat of closing for years. Operators are concerned that if it does close, the Boston City Heliport will be the last remaining public-use heliport serving the City. While they can access Logan International Airport, at this point in time, ground access between Logan and downtown Boston is severely congested through the Callahan and Sumner Tunnels.

While helicopter operators find the current facilities and services satisfactory, some concern has been expressed about personal security when leaving the heliport site, particularly at night. This is due to the perceived isolation that accompanies the low level of evening activity typical of industrial land use.

6.4.5 Government Agency Attitude and Support

Massachusetts provides strong support to heliports throughout the state. This is indicated by the fact that the MAC owns and operates the Nashua Street Heliport and has sponsored heliport system plans to identify a replacement when, and if, it is closed. The most recent heliport system plan was completed in 1994. It ranked the Boston City Heliport location as the best site to replace Nashua Street. FAA provided funding for the system plan and supported the recommendation that a publicly-owned, public-use heliport is needed in Boston.

In part because it is a privately-owned facility, the FAA has not given the Boston City Heliport any grants. However, the FAA does show a public-use heliport in Boston included in its National Plan of Integrated Airport Systems (NPIAS), which could be the Boston City Heliport if the Nashua Street Heliport does close and the MAC serves as a sponsor.

The city of Boston recognizes that businesses and public service agencies use the heliport and has also agreed to include the design and construction of a new heliport as part of the proposed Megaplex project. The City has never actively opposed the heliport's operation, particularly since it does not generate any noise complaints. However, heliport management indicated they probably could not get a permit today if they wanted to construct a new heliport. This is because of the increased public reaction against airplane and helicopter noise in the City, particularly concerning noise generated by Logan Airport. The heliport management believes that the City of Boston will not fight a public battle to issue a permit for a new heliport if there is any public controversy about the facility.

6.5 BOSTON CITY HELIPORT - PAST AND CURRENT PLANNING

6.5.1 Marketing of the Heliport to the Community, Users, and Operators

The owners of Boston City Heliport actively market the facility. They advertise in periodicals and newsletters, are active members of HAI, the NEHPA, and the Eastern Region Helicopter Council (ERHC). They also publish brochures describing the heliport and have a very effective program through word-of-mouth advertising by their customers. Furthermore, the owners have taken a proactive approach to the community by being active in local civic organizations. The heliport management is reported as having good relations with the community in which the heliport is located.

6.5.2 Expected Future of the Boston City Heliport

The number of operations has been growing at the Boston City Heliport. The combination of the Central Artery project, the possible closing of the Nashua Street Heliport, along with an overall strong increase in corporate aviation activity statewide, indicates that the short term outlook is very positive. The Boston City Heliport has many other advantages. These include:

- the heliport is conveniently situated to downtown Boston,
- the heliport provides services that operators need and want,
- there is ample parking for helicopters and ground vehicles, and
- the FAA may soon publish an IFR "Copter Only" approach to the heliport.
- the surrounding land uses are compatible with heliport operations,

The primary threat to the continuing operation of the heliport is the proposed Megaplex project. Boston Heliport, Inc., the heliport's owner, has not been willing to make significant capital improvements to the heliport while there is a possibility that a Megaplex heliport would be constructed. There is an indication that the Megaplex project would incorporate a design for a new heliport within the complex if it were built on the site of the Boston City Heliport. However, no plans have been drafted and no schedule identified. The recent tabling of the proposed project by the Massachusetts state legislature provides some short-term security for continued operation.

Other proposed developments that could affect the future of the heliport in South Boston include:

- air vent shafts as part of the Third Harbor Tunnel,
- the new World Trade Center Hotel, and
- an extension of Fargo Street is planned to run along the side of the Boston Freight Terminal property on which the heliport is situated.

It is not anticipated that any of these projects will directly interfere with the operation of the heliport. However, they are indications that the character of the general neighborhood is changing to more intensely developed land uses. That change may eventually impact the heliport.

Phase III of the Boston Heliport System Plan, which was to have identified a specific site and layout plan for the replacement of the Nashua Street Heliport, identified the Boston City Heliport as the third highest ranked site in the analysis. However, the study was completed without a final site recommendation. That was due to the questions surrounding the Megaplex project and the inability of the City of Boston to commit any of the proposed sites for a replacement heliport. When the Megaplex project becomes more clearly defined, and if the City of Boston is willing to make a commitment regarding a site for the heliport, the MAC will probably complete the study and begin the process for the design and construction of a new public-use heliport. These plans could include the option of using the Boston City Heliport site.

6.6 BOSTON CITY HELIPORT - CONCLUSIONS

The Boston City Heliport has many positive characteristics. With the tabling of the Megaplex project by the legislature, the short-term future of the Boston City Heliport appears to be relatively secure. The heliport illustrates some key lessons concerning all urban public-use heliport planning.

Boston City Heliport and Nashua Street Heliport, are successful because they are very well situated to serve the financial district and CBD of Boston. Demand is created for helicopter use by the financial district because of the city's very congested road network.

Land uses adjacent to the Boston City Heliport are primarily industrial. This contributes to the heliport's image as a good neighbor and the heliport operates with very little controversy. A good contrast may be the E.34th Street Heliport in Manhattan which is surrounded by residential areas and hospitals. The E.34th Street Heliport is under constant pressure to close in spite of its excellent safety record and noise abatement program.

The possible closing of the Nashua Street Heliport and the construction of the Central Artery Project are both good news for the Boston City Heliport since they will undoubtedly increase its helicopter activity levels. In addition, the current growing business climate means companies are flying more.

During the discussions concerning the proposed Megaplex, it was very obvious that the current location of the heliport would not prevent, or even be a factor, in deciding where the Megaplex project would be built.

Land-use development in all urban areas is a very dynamic process, and many of the successful public-use heliports (Dallas, Detroit, Portland) are rooftop facilities. It is interesting to note that ground-level facilities are more likely to be in jeopardy. For example, all the New York City heliports (East 60th Street, E.34th Street, W.30th Street, and Wall Street) are ground level facilities. The staffs of the City of New York and the PANYNJ have acknowledged that if any of the heliports were closed, it is unlikely they could be re-opened because of public concerns about noise and safety and the value of the real estate.

In order to achieve long term stability, heliports in general, and ground level facilities in particular, must be situated on property that can be dedicated to long term aviation use (as is the case in Indianapolis, IN and New Orleans, LA). However, the challenge is that heliports are not considered to be the "highest and best use" of property, particularly when competing against large scale development projects in urban areas.

Some significant capital investment will be needed to both maintain and upgrade the Boston City Heliport as demand increases. However, as a privately-owned facility it is more difficult for the owner to obtain FAA and state grants in the first place, and it is much more difficult to comply with FAA and state grant assurances since the assurances require more from the owner than they are usually prepared to provide. (For example, the requirement to keep the facility open for public-use for 20 years after receipt of a grant and that all revenues generated must be spent on the heliport for its operation, maintenance, or development.) In addition, uncertainty concerning the long term plans for the Megaplex, as well as the changing face of South Boston, must be considered before a private company will make large investments in facility development. This is particularly true when the owner cannot receive guarantees from the government that the facility will not be closed or relocated in the future.

A key element of the success of the Boston City Heliport has been the commitment and knowledge of the heliport owner and operator. They obviously know what their customers want and how to provide the necessary services. While the heliport has not been very financially profitable, there have been increasing revenues and numbers of operations. Overall, the heliport seems to be situated to serve the long term needs of Boston area helicopter operators.

7.0 COBO HALL HELIPORT, DETROIT, MICHIGAN

7.1 BACKGROUND AND LOCATION FEATURES - COBO HALL HELIPORT

7.1.1 Background

Cobo Hall Heliport is currently owned by the Detroit City Airport Department. When Cobo Hall and Exhibition Center was built in downtown Detroit by the City in the late 1960s, the developers did a very innovative thing in that a rooftop heliport was designed and built on the parking garage in the original construction. The design of the Center was unique in another way because a significant portion of it was constructed to utilize the air space over State Route 10 and its connection to I-375. The heliport was considered to be the largest public-use heliport in the country at the time that it opened (100 feet wide by 500 feet long). Only the recently opened Dallas Vertiport is a larger rooftop facility.

There is little written documentation concerning the Cobo Hall Heliport. Most of the information presented here has come from site visits and contact with agency staff and members of the Michigan Helicopter Association (MHA).

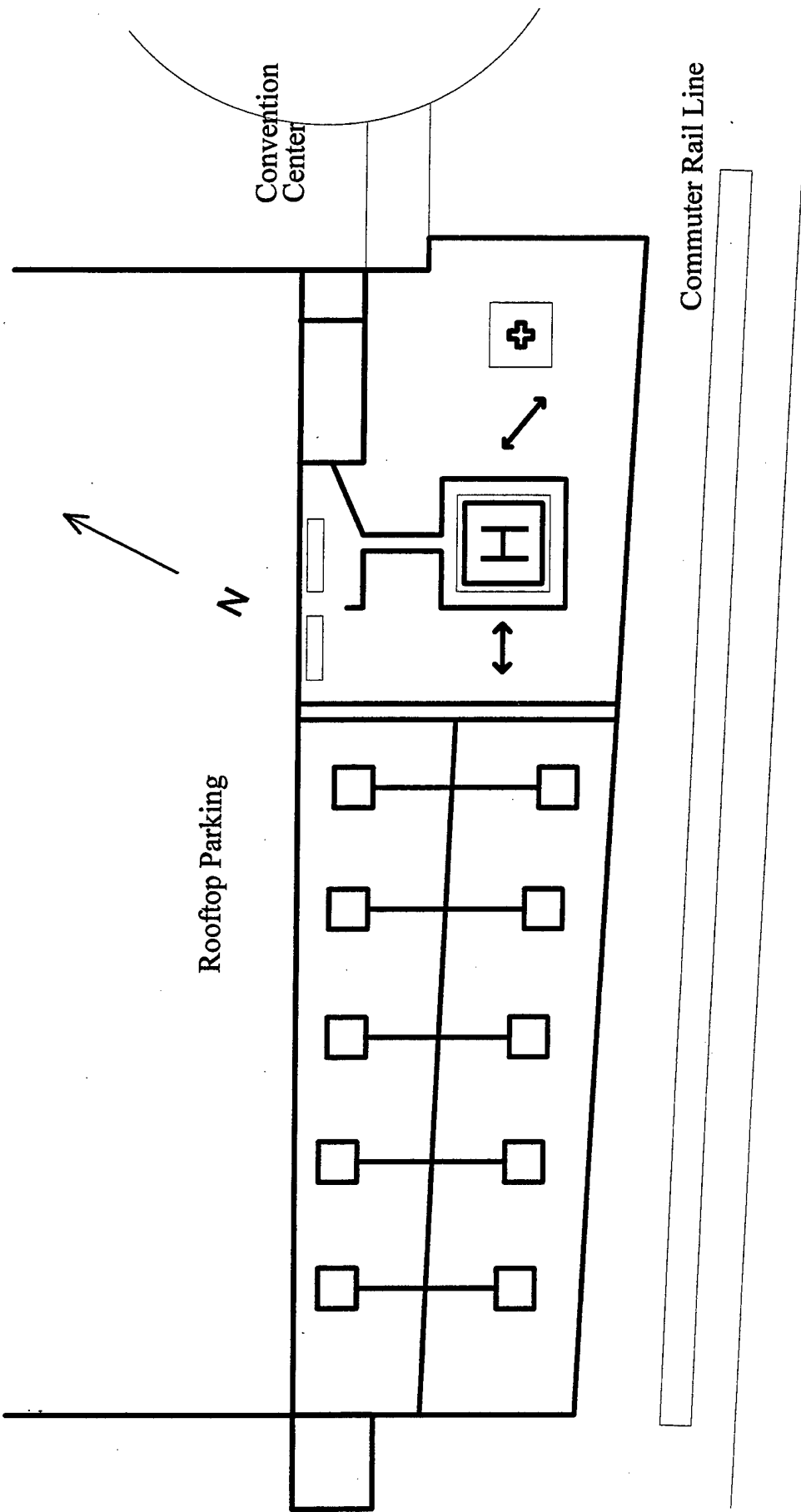
7.1.2 Heliport Location

The Cobo Hall and Exhibition Center is located at 1 Washington Boulevard, Detroit, Michigan. The Exhibition Center and the heliport are situated on the extreme southern part of the property immediately adjacent to the Detroit River, which is also the border between the United States and Canada. In fact, Windsor, Ontario, Canada is located directly across the river. It is situated in very close proximity to Detroit's CBD and is across the expressway from major corporate offices and the City Hall. It is also located near the Renaissance Towers, a very large office and hotel complex that is one of the most prominent landmarks of downtown Detroit. Figures 22 and 23 present a diagram of the heliport and a location map. Figures 24 and 25 present photographs of the facility and the adjacent land use.

7.1.3 Classification and Function in the Aviation System

Cobo Hall Heliport was designated, and served, as a public-use facility from 1970 to 1985. In 1985 it was turned over to the Detroit Police Department. The police did not particularly want it as they already had a heliport, but accepted its management because they were a city agency, knew how to run a heliport, and could provide the best security. The police department implemented a requirement that operators have a minimum of \$1 M of liability insurance and provide 24-hours prior notice to use the facility. It was therefore no longer considered a public-use facility.

The heliport was again turned over to the Airport Department in 1994, but was still not considered public-use. In the fall of 1995, due to a successful national helicopter safety meeting held in 1994 (see section 7.1.4), the heliport was granted a Class A Public-Use designation by the



Detroit River

FIGURE 22 DIAGRAM OF COBO HALL HELIPORT

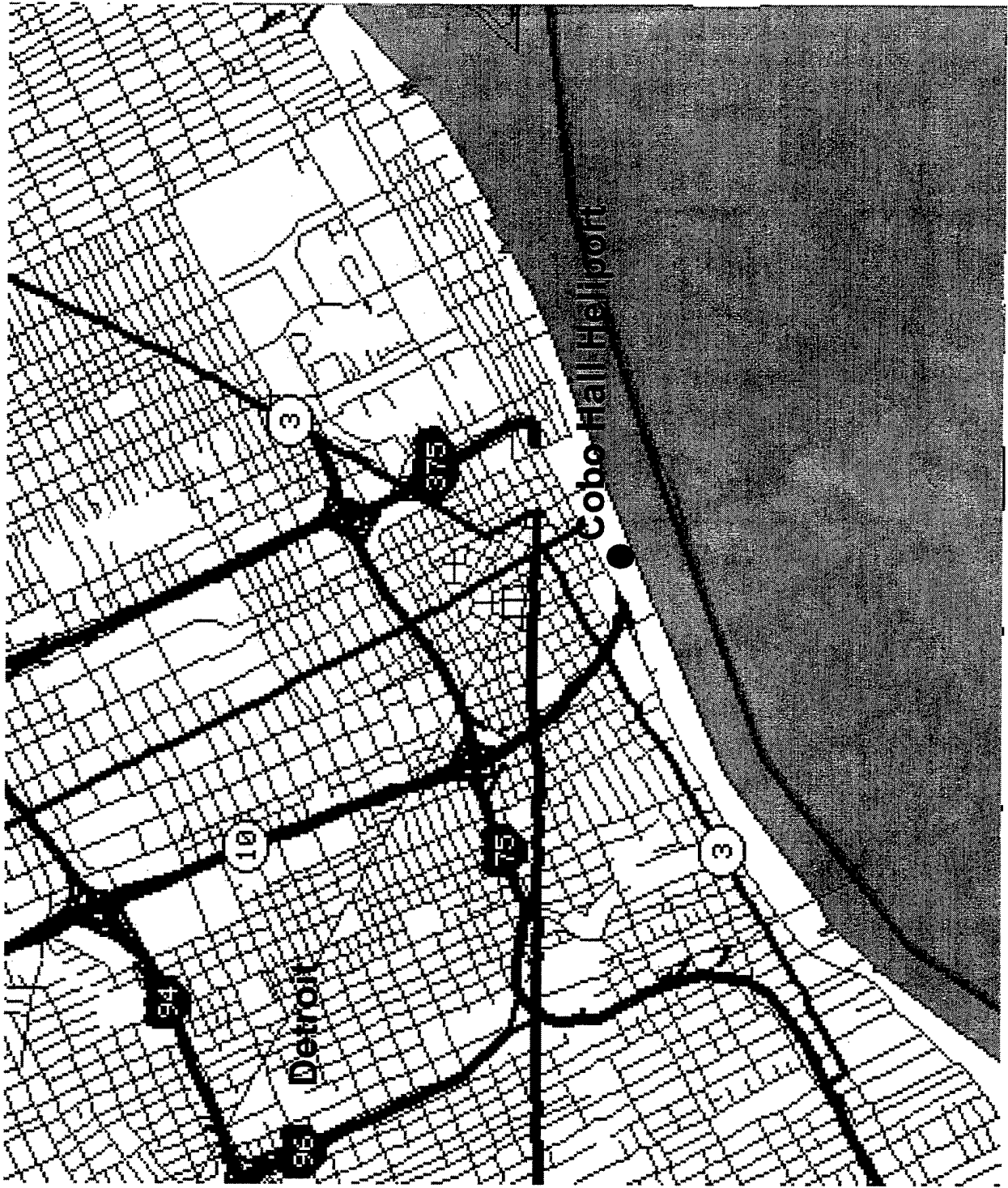


FIGURE 23 LOCATION MAP OF COBO HALL HELIPORT

Source: U.S. Census Bureau, Tiger Mapping Service (<http://tiger.census.gov>).

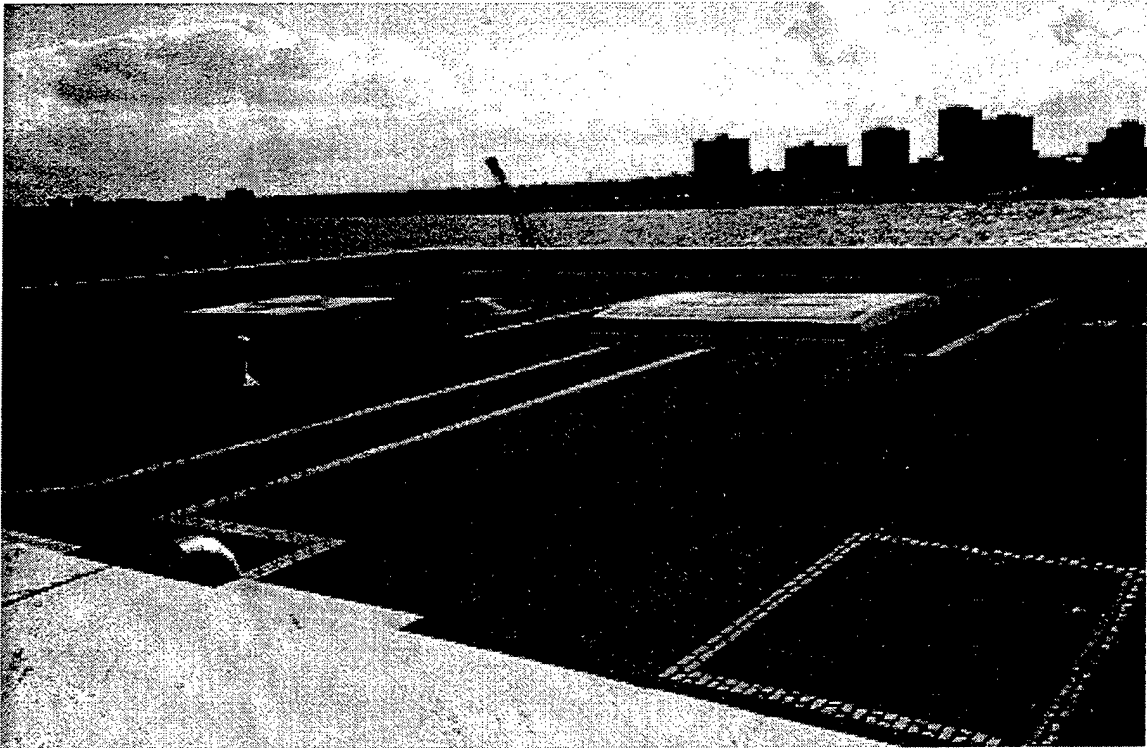
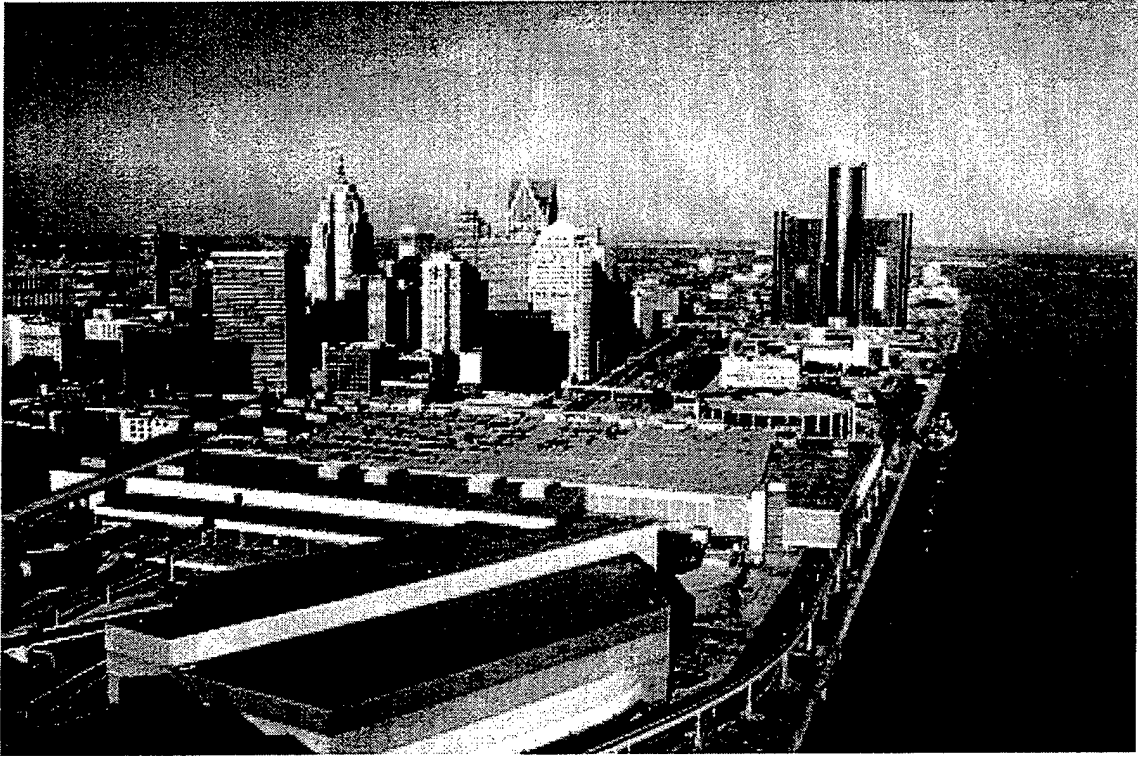


FIGURE 24 COBO HALL HELIPORT ON THE DETROIT RIVER

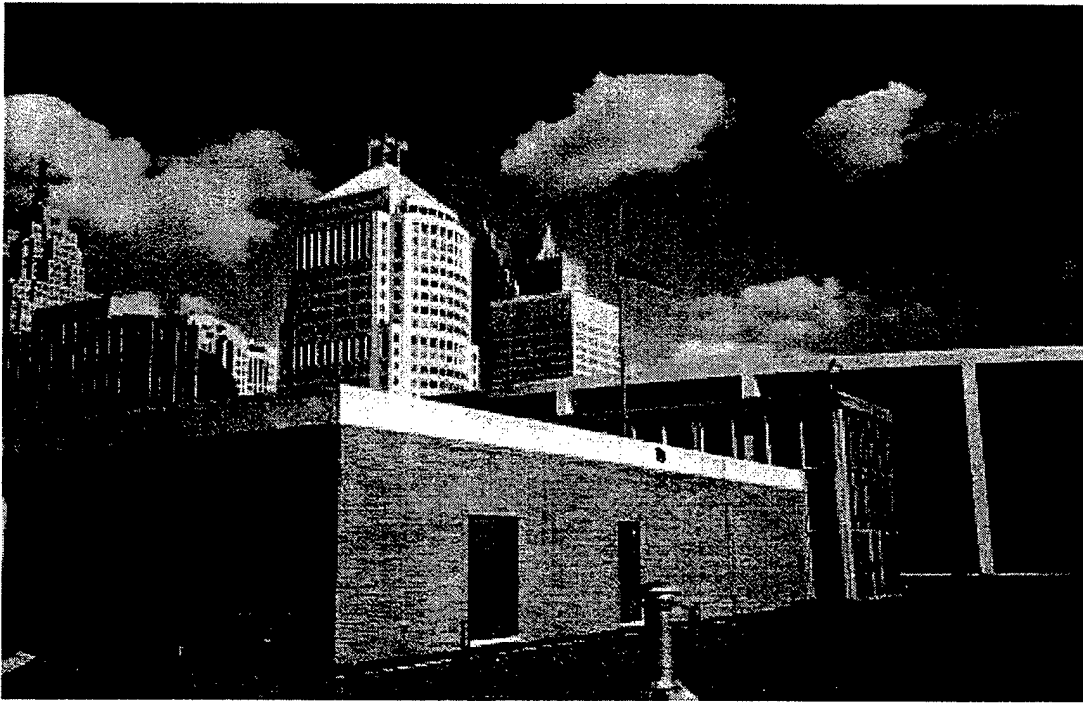


FIGURE 25 VIEWS OF THE COBO HALL HELIPORT

FAA. The Detroit City Airport Department is currently attempting to move forward with plans to rehabilitate the heliport as soon as appropriate funds become available.

The Detroit metropolitan area definitely has the potential to have an active helicopter transportation system. In 1995, it was estimated that there were over 150 helicopters registered in Michigan. In addition, there are several other major metropolitan areas that are all within the heliport's market service area of 200 to 250 miles, including: Chicago, Pittsburgh, Cleveland, Cincinnati, Indianapolis, Milwaukee, Buffalo, and Toronto (section 7.3.1).

7.1.4 Developer and Owner

The entire Hall, Exhibition Center and heliport was built by the City of Detroit as one unit in the late 1960s (see section 7.1.1). It has twice been operated as a public-use heliport. In 1985, the Michigan Department of Transportation (MDOT), Intercity Transportation Planning Division sponsored the "Statewide Heliport Study, Volumes 1-4" (reference 17). The system plan estimated that during 1985 there were 4,449 operations at the heliport, about 80 percent of which were conducted by non-government operators. The plan also projected that there would be 7,502 annual operations by the year 2005 with 14 helicopters based at the heliport. The plan recommended that the Cobo Hall Heliport be reclassified as a transport category heliport which would make it eligible for FAA funding for additional development. Instead, the Mayor of Detroit directed that the heliport be operated by the City Police Department even though the police already had their own heliport. This was reportedly done for several reasons:

- It was felt there was insufficient helicopter traffic to maintain it as an unrestricted public-use facility,
- there were concerns about liability and maintenance, and
- the Mayor and his staff used the heliport occasionally for other purposes due its location on the River.

After the Police Department took over the heliport in 1985, they implemented some operational changes that significantly reduced use of the heliport (section 7.1.3). In addition, the heliport was closed during certain events at the Exhibition Center so that it could be used for non-aviation activities. As a result, helicopter traffic declined significantly after 1985, and so did the actual physical condition of the heliport. Activity became limited to air taxi, EMS operators, and government agencies—in essence only those operators that could afford the cost of the insurance. The surface of the heliport is made of asphalt bricks overlaid on a sand base. By the mid 1990s, weeds and grass had grown up between the bricks, and many of the bricks had begun to disintegrate. In 1994, it was again turned over to the City of Detroit Aviation Department to run, but they did not consider it a public-use facility. The 1985 heliport system plan has not been updated by the State since it was completed.

In October 1994, at Cobo Hall, the MHA, in conjunction with the Association of Air Medical Services' (AAMS) national convention hosted the 17th Annual Midwest Helicopter Safety Seminar. MHA members volunteered their time and effort to repair the heliport, removing

weeds and tall grass and repainting the heliport surface. Paint and materials were donated by the MDOT-Bureau of Aeronautics and the Detroit City Airport Department.

Based on the success of the MHA seminar, the AAMS convention, and the resulting increased use of the heliport, the City Airport Department decided to reopen the Cobo Hall Heliport as a full time public-use facility. They also removed the insurance and prior permission requirements that had been imposed on the users. In 1995, the Cobo Hall Heliport was again designated as a public-use facility.

7.2 COBO HALL HELIPORT - PHYSICAL FEATURES

7.2.1 Size, Orientation, and Physical Layout

The Cobo Hall Heliport operational area is approximately 100 feet wide by 500 feet long, which is 50,000 square feet, or 1.1-acres. The center of the TLOF, where aircraft touchdown, is elevated above the rest of the surface and is the part of the TLOF marked with an "H" for heliport. The heliport shares the roof with a large automobile parking lot. The area containing the TLOF and the 10 designated aircraft parking spaces is about 7 feet lower than the adjacent surface of the auto parking lot. The auto parking area can be used to park more helicopters if required. There is a low parapet wall between the lot and heliport that prevents inadvertent access to the heliport. However, any user of the auto parking lot can lean over the wall to look at the heliport. Operators have voiced concerns about this situation. They would like a fence on the wall to prevent foreign objects from falling or being thrown onto the heliport, and to prevent someone from inadvertently falling off of the wall.

There is a stairwell from the heliport into the Exhibition Center, that also leads to the auto parking lot. Access between the heliport, the Exhibition Center, and parking garage is very convenient, assuming that passengers or pilots have the code for the door lock.

7.2.2 On-Site Facilities and Services

There are no services or fuel available.

7.2.3 Acquisition and Construction Costs

Due to the lack of written documentation, there are no original acquisition or construction costs available.

7.3 COBO HALL HELIPORT - OPERATIONAL ASPECTS

7.3.1 Market and Service Area

The market area for Cobo Hall heliport lies within a 200 mile radius of Detroit. Operators (such as EMS) occasionally fly to Chicago (275 miles), although the more common destinations are Fort Wayne, Flint, Ann Arbor, Kalamazoo, and Lansing. Helicopter cargo activity (primarily

parts supply between various production plants) is rapidly increasing as auto production is expanding. This activity is providing a growing source of business for air taxi operators. None of the "big three" auto-makers operate helicopters. All of their use of helicopter services occurs through chartering.

The heliport's local service area within downtown Detroit is primarily within the CBD. Major banks, corporate headquarters, businesses, hotels, as well as the Exhibition Center itself, are located within a clearly defined central area.

There is a public-use heliport in Dearborn, Michigan at the Hyatt Regency Hotel that serves various companies located south of Detroit. In addition, Detroit Metro and Detroit City Airports both serve helicopter traffic, particularly since both airports have scheduled service. However, Detroit City Airport, which is approximately 5 miles from downtown, is about to lose its airline, (USAir Express has announced it is leaving in the near future).

7.3.2 Heliport Facility Users

At present, the heliport users are primarily 14 CFR Part 135 air taxi operators, traffic reporting helicopters, and occasional EMS and police helicopters. According to various sources, the insurance requirements that were in effect until late 1995 effectively prevented most private owners, flight schools, and others from using the heliport. In addition, the previously imposed 24 hours prior notification requirement also prevented some corporate and air taxi operators from using the heliport.

Air taxi operators who have been using the Cobo Hall Heliport have been picking up and dropping off aerial photographers and news reporters, as well as corporate customers. The University of Michigan Hospital operates a new Bell 230 and has their own rooftop heliport. However, they occasionally use Cobo Hall.

There had been an overall decline in regional helicopter activity due to the recent recession. However, business for air taxi operators has been increasing of late. The last available estimate of users was made in 1985, prior to the policy changes in insurance and prior notice. About 80 percent of the users were non-government at that time.

7.3.3 Operational Characteristics of the Facility

The heliport is open 24 hours a day but is unattended. Flood lights, a lighted windsock, and perimeter lights are radio controlled by the pilot. There are no services or fuel available. It is operated only under VFR. Access to ground level and the Exhibition Center are through doors with a coded lock to which only approved operators have access.

7.3.4 Revenue Sources for Financing the Operations

No landing or parking fees are charged for use of the heliport, and fuel is not sold. The heliport generates no direct revenue for the Exhibition Center or the City.

7.3.5 Types of Based Rotorcraft

There are no helicopters based at the heliport. The TLOF and parking positions are large enough to accommodate a Sikorsky S-76. However, it is also reported that the deteriorating condition of the paving bricks makes it difficult to ground taxi because it adversely affects rolling wheels.

7.3.6 Activity Levels

Because the heliport was a private-use facility for 10 years and is unattended, there are no activity records available. However, operators and airport officials agree that activity in general has been very low due to the insurance and notice restrictions required by the police department. Operators noted that when they do use the heliport, there is typically no one else at the facility. The exception is the recent AAMS convention and safety seminar. It is expected that now that the heliport is public-use, there will be as many as 75 to 100 helicopter landings a month, on the order of 1,000 to 1,500 annual operations. The operators believe it will further stimulate helicopter activity throughout the potential market region (section 7.3.1).

7.4 COBO HALL HELIPORT - RELATIONSHIP TO THE SURROUNDINGS

7.4.1 Access - Airside and Instrument Operations

Cobo Hall Heliport has very good approach and departure routes even though it is in a downtown area. Airside access is via the Detroit River, which runs in a northeast/southwest direction beside the Cobo Hall Exhibition Center. The heliport is on the edge of Detroit City Airport's Class B airspace, so operators will contact the control tower when operating at the heliport if the tower is not too busy with other traffic. Operators report no problems working with ATC in to and out of the heliport. The TLOF is accessible from different directions without overflying the Exhibition Center or other buildings. The MHA polices its members to ensure that pilots operate in a safe and "fly neighborly" manner.

7.4.2 Access - Landside

Landside access is also excellent. Landside access is via road network, local and regional transit service, as well as a people-mover system. The people-mover system is an elevated light rail train that operates in a loop around the downtown area. The fare to ride costs the user only 50 cents per trip. There is a stop adjacent to Cobo Hall, and the entire CBD is within easy walking distance of the other stations along the people-mover system. The tracks run beside, and just below the heliport, between the Cobo Hall building and the Detroit River.

There is very good highway access to the downtown area via I-94 to I-75 and I-375, as well as Route 10. The CBD is largely encompassed by I-75, I-375, Route 10, and the river. Ground access to the primary origins and destinations in the CBD is very convenient. The convention center serves as a destination during a number of trade shows, particularly the annual automobile show.

7.4.3 Neighboring Land Uses, Zoning, and Economic Base: Compatibility and Obstacles

All of the parcels in the vicinity of the heliport appear to have land uses that are compatible with a heliport. There are no adjacent residential land uses. The downtown area surrounding Cobo Hall is primarily commercial land use. In addition, Cobo Hall and Exhibition Center recently completed a major expansion of its facilities without impacting the heliport. There appears to be very little undeveloped real estate adjacent to the Exhibition Center. The only nearby tall structures are the office towers of the CBD and the buildings of the Renaissance Towers. Thus there are no obstacles affecting the Cobo Hall Heliport. Across the river in Windsor, Ontario there are apartment/condominium buildings on the waterfront. They are at least a quarter mile away from the heliport. At that distance the residents of those apartments should not feel impacted by helicopters flying into the heliport.

7.4.4 Operator, User, and Public Attitudes Regarding the Heliport Facility

The heliport's location, on a rooftop adjacent to a river within a CBD, has effectively eliminated complaints about helicopter operations. According to operators and Detroit City Airport staff there have been virtually no noise complaints or concerns raised by the public about the heliport.

In general, helicopter operators are very enthusiastic about the heliport because of its size and location. They feel that it is more than adequate for their needs. They also feel that it serves a very important market. Their present concerns about the heliport include the maintenance of the facility and site security. MHA members recently invested a lot of time and effort to prepare the heliport for the AAMS convention and safety seminar. They now expect the City to keep it in good condition. Users would like to have a fence erected on the wall between the heliport and the parking lot to prevent objects and people from falling onto the heliport.

7.4.5 Government Agency Attitudes and Support

Three government agencies were contacted: Detroit City Airport, the owner and future operator of the heliport; the FAA Airports District Office in Detroit; and the MDOT, Aeronautics Division. All three agencies expressed strong support for the heliport and its operation as a public-use facility.

Detroit City Airport is the owner and has become the heliport operator. Although the heliport will not be manned on a continuous basis, Airport Department staff will be responsible for operation and maintenance. The airport itself is located approximately 5 miles from Cobo Hall. A new administration in City Hall is generally supportive of the heliport as well as the role of the Airport Department as heliport operator. The Airport Department staff have completed the formal process of converting Cobo Hall to a public-use heliport, having met with FAA and MDOT officials, and filed appropriate FAA Forms.

Both the FAA and MDOT staff expressed strong support for Cobo Hall as a public-use heliport. The state provided some materials for the temporary renovation of the heliport for the recent

AAMS convention. They also listed Cobo Hall in the 1995 edition of their airport directory. The state is expected to provide future financial and technical assistance. In late 1995, the FAA designated Cobo Hall Heliport as a public-use heliport. The heliport will now be eligible for FAA capital improvement grants if the Airport Department wishes to apply for the assistance.

Although the Cobo Hall exhibition center staff was not contacted directly, it was noted by various people that the Exhibition Center does not have a strong position regarding the heliport one way or the other. Cobo Hall is owned and operated by the City. The heliport does not interfere with the Center's activities and their only responsibility has been to provide security for the heliport.

7.5 COBO HALL HELIPORT - PAST AND CURRENT PLANNING

7.5.1 Marketing of the Heliport to the Community, Users, and Operators

Between 1985 and the present, no one has marketed the heliport because of the restrictions imposed by the previous owners, the Police Department. It was also difficult to do any marketing because the heliport would be closed periodically by the City for specific occasions.

Until recently, the heliport was not listed in the state's airport directory or the Airport Facility Directory (AFD). It is currently not listed in the AOPA's directory—*Airports USA*. The lack of marketing and information about the heliport is one of the primary reasons traffic levels have been consistently low. The MHA did advertise the heliport for its recent safety seminar and AAMS convention, which in fact generated a lot of helicopter traffic. Now that the heliport is open for public-use by the Detroit City Airport, the heliport will be listed in the appropriate directories.

7.5.2 Expected Future of the Cobo Hall Heliport

The Airport Department is developing plans to completely resurface the heliport deck. They also are planning to provide a new dedicated elevator from the heliport to street level for heliport users. Because the heliport will not be manned on a full-time basis by the City, there will be no on-site record keeping of helicopter activity. There are no plans at present to charge landing or tiedown fees, and fuel will not be stored or pumped. It was proposed by MHA that a sign-in sheet be set up to keep track of activity at the heliport. One operator noted that the public-use heliport could generate as many as 75 to 100 landings per month. Another felt there was sufficient demand to initiate a scheduled shuttle service between the heliport and outlying office parks. Based on the responses from helicopter operators, the MHA, Detroit City Airport, FAA, and MDOT, the Cobo Hall heliport appears to have a relatively secure future as a public-use heliport.

7.6 COBO HALL HELIPORT - CONCLUSIONS

Cobo Hall Heliport is a very good example of two points:

- A rooftop heliport integrated into the design of a building from the conception can be fully compatible with a large public-use convention center, as well as a very safe facility; and
- the mere presence of a heliport, unfortunately, is not sufficient to ensure its success.

Between 1985 and 1995, the heliport was used very infrequently and the lack of City support relegated the heliport to a minor role in the City's transportation system, despite its obvious advantages of size and location. The heliport, in all likelihood, would not have been added to Cobo Hall at a later date if it had not been designed as part of the original building.

It is interesting to note that a number of people commented on the fact that the AAMS convention and MHA safety seminar really focused attention on the Cobo Hall Heliport and its value to the City. AAMS had not previously held its annual convention in Detroit, and its selection of Cobo Hall as its convention site was considered to be a significant event. MHA and MDOT have worked for the conversion of Cobo Hall back to its original public-use status for some time. The change in administration of the City of Detroit appears to have provided the necessary political support for that process to move forward.

The size and location of the Cobo Hall facility makes it an excellent example of a true downtown heliport. It is also evident, just by looking at the heliport, that it was successfully integrated into the Exhibition Center, and that the two facilities complement the operations of each other. Airside and landside access are both excellent and there are no conflicting land uses. The city, state, and FAA are now very supportive of the heliport. The long-term future of Cobo Hall Heliport as a public-use facility now appears to be assured.

8.0 CONCLUSIONS AND RECOMMENDATIONS

This study was undertaken to strengthen the understanding of the success/failure dynamics of actual heliports in order to enhance the effectiveness and accuracy of long range heliport planning. It is believed that it may be possible to transfer elements that constitute a successful heliport (i.e., the nature of success) to other heliports. To accomplish this, the study focused on investigating and evaluating the “cause-effect” relationships between the development and management of six heliports and their degree of success.

The six heliports selected (table 1) were evaluated as to whether they could be considered either a success or failure and what the factors were that lead to that status. The initial criterion for success was the fact that a heliport was in existence and was expected to remain open. However, after evaluating actual circumstances of location, operations, etc., it was determined that real success means that the heliport is:

- open,
- expected to remain open,
- reasonably active,
- linked to the community economically and politically, and
- operating without controversy, public objection, or threat of being closed.

The success of the case study heliports were evaluated and ranked according to these criteria. Table 7 presents the results.

TABLE 7 SUCCESS RANKINGS

Location	Activity Level	Success Standing
Houston CBD Heliport - Houston, Texas	Low	Minimal
E.34th Street Heliport - New York, New York	Very High	At Risk
Garland Heliplex - Garland, Texas	Moderate	Successful
Annapolis Heliport - Annapolis, Maryland	---	Unsuccessful
Boston City Heliport - Boston, Massachusetts	High	Successful
Cobo Hall Heliport - Detroit, Michigan	Low	Minimal

Source: SAIC, 1996.

The dynamics of how these judgments were reached, and how the *nature of success* was determined are discussed in the next section.

8.1 DISCUSSION OF SUCCESS AND FAILURE ELEMENTS

Using the definition of success as described in section 8.0, investigation of the histories of these six heliports determined four main elements that appear to be significant in the success or failure of a heliport. These are:

- local government support,
- good location,
- initial and continuous planning, and
- a business approach to management.

Table 8 correlates these factors and their degree of application to the six heliports. The last column again presents success rating as determined in table 7.

TABLE 8 ELEMENT APPLICATION

ELEMENT/ HELIPORT	Local Government Support	Good Location	Initial and Continuous Planning	Business Methods	Success Standing
Houston CBD	+	+	o	-	Minimal
E.34th Street	+/o*	+	o	+	At Risk
Garland Heliplex	+	o	+	+	Successful
Annapolis	o	-	-	o	Unsuccessful
Boston City	+	+	+	+	Successful
Cobo Hall	-/+**	+	-	o	Minimal

Source: SAIC, 1996.

KEY

- + = very strong application
- o = median application
- = means no application
- * = changing attitudes
- ** = Cobo Hall ranks “-” before 1995 and “+” after 1995

The next few sections explain each element and how it applies to heliports. What is significant is that not all elements were found at every heliport, not all need to be present in order for a heliport to be successful, and in some ways the elements overlap. For instance, local government support (8.1.1) may relate to running the heliport as a business (8.1.4) because a public agency, or an individual in the public agency has the interest to run the heliport with care. However, it appears that the more elements present, the more successful the heliport. These elements are integral in the cause-effect relationship described in section 1.1 between development and management and success.

8.1.1 Local Government Support

The primary conclusion in the original heliport case-study report, “Four Urban Heliport Case Studies,” (reference 1) was:

- that the local government’s acceptance or rejection of the facility appears to be the single most significant factor in determining the success or failure of a heliport.

This means that no matter how successful a heliport is, if the local government wants to do something else with the property on which it is located, they will close the heliport. This study supports that hypothesis. Although in Garland, Texas when the local government wanted to close the heliport and the FAA wanted it to remain open, the FAA's position prevailed. However, the FAA applied more of a public-relations effort supported by pertinent interest groups rather than a fiat to keep the heliport open. If the city of Garland could have afforded to return the AIP Grant money or was very anti-heliport, the heliport more than likely would have been closed.

However, it must be understood that although a heliport is kept open, just being open does not necessarily mean it is a success. Houston is a good example of this, as was Cobo Hall at times during its history. They remain(ed) open because the local aviation department kept them open, but the lack of users signifies a need for something more, such as advertising and better marketing (see section 8.1.4). Coincidentally, both are very well located at convention centers and near the cities' downtown CBD (section 8.1.2).

At New York's E.34th Street, as elsewhere, the support of the local government is just as critical to the continued operation of the heliports. Many of the operators believe that if any one of the Manhattan heliports were to close, reasons would be found to keep it closed. This is because there is an element in the community that does want them closed. Only the significant demand for various missions of helicopter service legitimizes the decision of the local government to support the heliports in the community. In other words, it is not the local government deciding in a vacuum to have a heliport no matter what. Conversely, now that the community groups are organizing against the heliports in Manhattan the local government support is eroding.

The Boston City Heliport is unusual in that it is a privately owned public-use facility. It is being supported by the local government as long as there is nothing better to take its place, as is shown by the uncertainty concerning the long term plans for the Megaplex. This excellent example of a privately-owned and managed public-use heliport provides both advantage and disadvantages. The fact that the heliport is on private property makes it more difficult for the local government to make a unilateral decision to close the facility but, it is also more difficult for the owner to obtain FAA and state grants to improve the facility as demand increases. However, a private company may decide to spend the money to make large investments in facility development if they feel it is warranted.

8.1.2 Location

As the real estate cliché states, "the three most important things are, location, location, location." And, for heliports, as long as it has local government support, location is the most important thing. Too many heliports have failed because of the "Field of Dreams" approach (so named because of the theme of the 1980s movie "Field of Dreams"). Such heliports are built with great anticipation that they will *attract* a lot of activity. The Annapolis Heliport, like many before it, was a "Field of Dreams" heliport "it was built, but they did not come."

The usual reasons given for building a heliport where there is no demand are that the location is:

- the only land available, or
- where potential problems (usually noise or safety) will not cause controversy in the community (i.e., problems for the local officials).

Garland at first appeared as if it could be an example of a successful "Field of Dreams" heliport. However, it is successful because it found a niche market and has slowly been broadening it (section 8.1.4). However, that fact that Garland did find a niche market is not meant to encourage more "Field of Dreams" heliports. Its success is mainly due to positive location features in a light industrial area. Pilot training, their primary service, can usually be performed in this type of urban land use without offending neighbors. To some extent, this use creates its own demand because it becomes known that one can learn to fly at this location. In addition, it is part of the local aviation system with close ties to the Dallas Vertiport and regional airports.

The Boston City Heliport is a positive example of the real estate cliché. Boston City Heliport is located such that it suits the corporate/executive market, in compatible land use so that noise impact is minimal. E.34th Street is built in a very good location in an area where there is extremely good demand.

However, as with most "truths" about heliports, there is another side. A heliport built where there is no demand will not attract demand, conversely an excellent location for a heliport does not ensure success. Both Houston and Detroit's Cobo Hall are examples of this. Both are extremely well located at convention centers and near the downtown CBD, but neither is especially active. Therefore, it can be seen that the *nature of success* embraces more than one element. An element as important as location does not guarantee success.

The location of the Annapolis Heliport may have been fine for a private-use heliport for the convenience of office complex tenants, but it was not the right location for a public-use heliport. In other words, the real deficiency was inadequate early planning.

8.1.3 Initial and Continuous Planning

The following statement concisely sums up the need for early and good planning:

"Being able to successfully implement a plan does not mean that a good plan has been implemented."

The problems with the Annapolis Heliport are more of an example of inadequate early planning than anything else. The reason for insufficient planning appears to have been that the heliport itself was an extension of something else, in this case the office complex, which was the main focus of the project.

One aspect of planning that should be completed early in the planning stage is to develop a good understanding of the local, regional, and/or state aviation/transportation system. The more the transportation system is understood, the more successful the heliport is likely to be. This is because if the transportation system is understood, a heliport can be located where true demand for helicopter transportation exists.

Boston City Heliport, E.34th Street, and Garland are good examples of heliports that considered such aviation/transportation plans. Boston evaluates the heliports in terms of the local aviation system plan. In New York, the situation is dynamic, not static. Traditionally in New York, the government looked at that whole system of heliports in evaluating the needs of any one. Garland perceives itself as part of the aviation system, even in just looking at customer needs. The more successful heliports have better initial and continuing planning.

8.1.4 Business Approach To Management

There are two facets of business-related behavior that appear to make heliports more successful. First, heliports are more successful if they are managed with sound business practices with an eye to the bottom line. Second, heliports are more successful if they are marketed, not just advertised, which means seeking out what the local customers need and want and providing those services, not just advertising services already provided.

8.1.4.1 Business Methods

The Garland case study is an excellent substantiation of the statement that heliports are a business and need to be run as such. Although, the manager previous to SKY Helicopters was dedicated to the aviation aspect of the heliport (he was able to keep the heliport operating), it is most likely that he would not have been able to do so if he had not been paid a salary. SKY Helicopters developed a business plan and followed it. They have increased their business and have been able to pay the city a share of the profits as rent.

Boston is another good example of business acumen. The management has always been committed to what their customers wanted and providing those services. Although, the heliport has not been extremely financially profitable, there have been increasing revenues and numbers of operations.

There is also an added dynamic to running a facility as a business. A private business has an individual who sees the business as his/her vision, not just a person applying sound business practices in a disinterested manner. The owner of the business usually has the interest and drive to run the business with care. This can also be true for publicly-run facilities. There can either be an entire agency or an individual in that agency, who has a vision for the heliport, wants to make the heliport succeed, and is willing to care for it. As stated earlier, Garland and Boston are good examples of privately-managed heliports. Detroit and Houston are examples of heliports that are open due to the interest of the public agency that runs them.

8.1.4.2 Marketing Not Just Advertising

Taking the time and care to market, not just advertise, is a dynamic that is often applied when there is an advocate. It requires one person or authority with a vision for the facility. It means responsiveness to market demands, where the:

- vision is not limited,
- public benefits as well as private benefits are considered (i.e., both operator and user) in keeping the facility going, and
- *advocate* extols both the public and private benefits.

New York, Boston, and Garland are good examples of this. Island Helicopters, the FBO at the E.34th Street Heliport in New York, sought and worked out deals with related tourists industries, such as international tour package, bus tours, hotels, restaurants, etc., and did not just advertise locally.

On the other hand, marketing alone cannot make a heliport successful if other factors such as location and demand are not right. Annapolis is a good example. It is a "Field of Dreams" heliport. There was an extensive marketing effort throughout the local helicopter industry as well as some national coverage, but it was not enough. The demand was just not strong enough at that location.

8.1.5 Indirect Factors

In addition to the four main factors that appear to influence success or failure of a heliport, there are other factors over which a heliport owner or operator has little control. These factors can have a significant influence on the success or failure of a heliport. The Manhattan heliports, and E.34th Street Heliport in particular, provide examples of factors that affect demand for particular helicopter missions. Demand for a particular mission is influenced by the economic conditions of the user of that mission. For example, when companies experience an economic downturn, the corporate helicopter is very often the first to go. Scheduled commuter services often depend on subsidy programs, interline agreements, as well as the convenience of multi-modal transfers and how the flights save time for passengers. Helicopter sightseeing, or tourism, a mission that has been growing in recent years in several locations (not just New York City), is often affected by the relative values of different currencies.

8.2 COMPARISON WITH PREVIOUS CASE STUDIES

Since 1988, the FAA has studied 16 heliports in regard to what makes for success or failure. Ten were studied after the heliport was constructed, and six were studied during the implementation process. It is interesting to see how these conclusions of this 1997 report compare with the two previous studies (references 1 and 2) completed in 1988 and 1995 respectively. The findings are summarized in the following paragraphs.

“Four Urban Heliport Case Studies” (reference 1) and “Heliport/Vertiport Implementation Process - Case Studies,” (reference 2), determined that local government support is the most critical factor in keeping a heliport open. Current case studies indicate that this is still the case. The recent uncertainties experienced by the E.34th Street Heliport only serve to highlight the importance of local government support. The active Manhattan heliports enjoyed the solid support of government entities for a long time. Now E.60th Street may be closed, and E.34th Street is at risk, as local neighborhood groups and associations build their power. It is well known in the helicopter industry that a “tiny minority of people who perceive that their interests will be damaged by a proposed project (or an existing facility) can stop that project” or close a heliport (reference 2). What is different in this study is that in this particular selection of heliports most had, and still have, the support of their local government. Because of this, this report is able to focus more closely on secondary success/failure factors.

It also appears that it is easier to receive approval for additional heliports in an area than it is to get the first one approved. In other words, in a system of heliports, each heliport provides support for the others. Heliport sponsors need to have a very good reason to build the first one. Areas that already have heliports seem to be more tolerant of additional heliports. Positive examples of this are the Boston City Heliport (developed after the Nashua Street facility), Dallas Vertiport (developed after the Garland Heliplex), and all the New York City heliports. Houston and Detroit, although open, must be considered negative examples because they have such low activity. Annapolis is an unsuccessful effort. Perhaps if a Washington, D.C. heliport had been constructed, the two could have reinforced each other. Nashua Street has had much political support. There have been plans by some in Boston to close the facility for at least 10 years and yet it is considered of such value that its operation continues. One of the key public benefits of this Boston heliport is medical transport for Boston General Hospital.

It has long been stated by the helicopter industry, that the media has a negative influence on the community's attitude. This is because helicopters are often brought into a movie or television show only to chase automobiles/people, to kill people, or to be blown up in order to heighten the action. However, the media does also provide positive press for helicopters. They are often shown on television and in movies rescuing, or otherwise helping people. The positive image is there. Perhaps the younger generation will perceive helicopters not only for rescue but as a way of getting things done.

The 1988 study, “Four Urban Heliport Case Studies,” (reference 1) studied the following heliports: Indianapolis Downtown Heliport, Indiana; New Orleans Downtown Heliport, Louisiana, (both FAA Prototype heliports); Nashua Street, Boston, Massachusetts; and Western and Southern Heliport, Cincinnati, Ohio. The Indianapolis Downtown Heliport and Nashua Street Heliport were successful. The New Orleans Downtown Heliport and the Western and Southern Heliport in Cincinnati were unsuccessful. Table 9 presents the *essential* elements and how these heliports were ranked in 1988.

TABLE 9 ESSENTIAL ELEMENTS FROM 1988 STUDY

ESSENTIAL ELEMENTS	HELIPORT			
	Nashua Street Boston	Indianapolis	New Orleans	Cincinnati
Location	+	+	o	+
Demand	+	+	+	+
Local Government Attitude*	-	+	+	o
Public Attitude	o	o	o	o
Financial Backing	+	+	+	o
Integral Planning	+	+	-	o

Source: Reference 1.

KEY

- + = Positive
- = Negative
- o = Neutral/Lack of Interference

* The local level of government is the only one used here because it has the most influence on whether a heliport remains in operation. In states with active heliports, the state governments are usually supportive. This was the case with the four states in this study.

Of the two considered unsuccessful, New Orleans was open (and still is) but supports few operations. The Western and Southern (Cincinnati) heliport had been active, but was closed when the owner of the parking garage on which it was located decided that a larger parking lot would bring in more revenue. In that study, the following six key elements that affected success were evaluated:

- location,
- demand,
- local government attitude,
- public attitude,
- financial backing, and
- integral planning.

Three study elements from this document and "Four Urban Heliport Case Studies" are the same: local government support, location, and planning. Demand, from the 1988 study was examined as part of this document's definition of location, and local government support can be considered as a reflection of "public attitude." The only element not the same as in 1988 was financial backing. Financial backing, in terms of construction and development of a facility was not considered for these studies because it never came up as an issue at these locations. Furthermore, again in terms of construction and development of a facility, it was not a significant success/failure factor at the four 1988 sites either (reference 1).

In both the 1997 case studies and the 1988 case studies, the role of public attitude and local government support do not appear to have been a direct negative factor in many cases. However, this is primarily due to the fact that the heliports selected for study were existing facilities that made it through the local government approval process and were often sited at locations away from sensitive land uses. In other words, most heliports that had public relations problems lost their local government support and are no longer there to be studied. What can happen when the public does decide a heliport is an annoyance is only too evident in what is happening in Manhattan.

The 1995 study, "Heliport/Vertiport Implementation Process - Case Studies," (reference 2), presents how extremely important public attitude can be. It studied six heliports during the implementation process in an effort to help improve the approval rate at that point in a heliport's development. The six heliports studied were: Dallas, Texas; Portland, Oregon; Miami, Florida; Pittsburgh, Pennsylvania; Washington, D.C.; and San Francisco, California. The study focused on the public relations aspect of heliport development concerning how to deal with community and local government relations during the implementation processes. The most extreme example is San Francisco, where the local citizenry played a significant role that ultimately led to banning heliports in San Francisco for the foreseeable future. On the opposite end of the spectrum is Portland, Oregon, which is a very good example of how working with the public can help in locating a heliport so that it *is compatible* with the community.

In reviewing the goal of this document—that is to ascertain the nature of success—it appears to be found in the ability to combine all the four main elements identified: local government support, location, planning, and business approach to management.

After evaluating 16 heliports over 8 years, it is clear that better, more precise tools are required for initial and continuing planning. Recommended practices for dealing with the local government during the approval process can be found in "Heliport/Vertiport Implementation Process - Case Studies" (reference 2). Once a rapport with the local government is established, the most critical element is accurately determining the amount and location of demand and performing continuous planning in order to construct the heliport in the correct location.

Far too many heliports have been "Field of Dreams" heliports that were built in locations not well thought out, but in the "only available site." Besides the essential local government support, heliports must be built in the right location, i.e., where demand exists, if they are to have any chance of real success. Demand can even extend local government support longer than otherwise could be expected, as shown in Boston and perhaps ultimately in Manhattan.

8.3 SUMMARY OF CONCLUSIONS

This effort identified four essential elements of a successful heliport:

- good location: Among the characteristics that make a location good are, demand for rotorcraft services; stable, compatible land use in adjacent areas; and large separation from residential buildings and neighborhoods. ALL of these characteristics are needed to be successful.
- local government support: All high-profile businesses must stay in touch with local government officials. If you don't tell them your own story, they will make decisions based on information from someone else.
- business methods: Operating a heliport or vertiport is a business. A love of aviation can not substitute for good business discipline and practices.
- initial and continuous planning: Change is constant and businesses must make periodic adjustments or they will not survive. This applies to heliports and vertiports both during the planning process and during their years of operation.

Within the airport development community, demand forecasting is a highly developed art. While there has been some good work done on heliport and vertiport demand forecasting, this has been the exception rather than the rule. Research is needed to develop a handbook of methods and techniques for heliport and vertiport demand forecasting.

8.4 RECOMMENDATIONS

The following recommendations are based on the findings of this study. However, this study must be considered a follow-on to the knowledge gained from the two previous studies, "Four Urban Heliport Case Studies" (reference 1) and "Heliport/Vertiport Implementation Process - Case Studies" (reference 2).

1. Over the last dozen years, the FAA has published over a dozen reports dealing with heliport or vertiport planning. These are listed in appendix B. Heliport and vertiport developers are encouraged to become familiar with the contents of these documents and to use this information as applicable during the planning process.
2. During the heliport/vertiport planning process, developers should work to a plan that includes certain decision control points. Based on the progress made at each point, the developer should decide whether the project should be halted, redirected, or proceed as previously planned. Decision control points should be formally included in the planning and development schedule at all key points where project risk assessment is appropriate.

Additional research should be undertaken to develop and validate methods and techniques for forecasting demand at potential heliport and vertiport locations.

APPENDIX A
DISTRICT COURT DECISION: NATIONAL HELICOPTER CORPORATION OF AMERICA-
VERSUS THE CITY OF NEW YORK

1ST CASE of Level 1 printed in FULL format.

NATIONAL HELICOPTER CORPORATION OF AMERICA, Plaintiff, -against- THE CITY OF
NEW YORK, THE COUNCIL OF THE CITY OF NEW YORK, THE CITY PLANNING
COMMISSION OF THE CITY OF NEW YORK, AND THE NEW YORK CITY ECONOMIC
DEVELOPMENT CORPORATION, Defendants.

96 Civ. 3574 (SS)

UNITED STATES DISTRICT COURT FOR THE SOUTHERN DISTRICT OF NEW YORK

1997 U.S. Dist. LEXIS 25

January 3, 1997, Decided

January 6, 1997, FILED

SUBSEQUENT HISTORY: [*1] As Amended January 7, 1997.

DISPOSITION: Plaintiff's request for a permanent injunction granted in part, and denied in part.

COUNSEL: Appearances:

DEWEY BALLANTINE, New York, N.Y. Donald W. Stever, Esq., Janis M. Meyer, Esq., Clarke Bruno, Esq., Attorneys for Plaintiff.

JEFFREY D. FRIEDLANDER, Acting Corporation Counsel of the City of New York, New York, N.Y. Deborah Rand, Esq., Attorney for Defendant.

JUDGES: Sonia Sotomayor, U.S.D.J.

OPINIONBY: Sonia Sotomayor

OPINION: AMENDED OPINION AND ORDER

Plaintiff National Helicopter Corporation of America ("National") brings this action, against the City of New York and various of its subdivisions (the "City"), seeking preliminary and permanent injunctive relief against enforcement of Resolution 1558, a City ordinance setting a variety of restrictions upon the use and operations of the 34th Street Heliport (the "Heliport"). For the reasons to follow, plaintiff's request for a permanent injunction is granted in part, and denied in part.

BACKGROUND

The Heliport, located on the waterfront adjacent to the FDR drive, was constructed on City owned prop-

erty in 1972. (Model Aff. P 3). The Heliport has several parking spaces for helicopters; it [*2] has no permanent terminal building, no hangar, and no maintenance facilities. In 1972, the City obtained a special permit, effective for a period of five years, authorizing the commencement of operations at the Heliport. In 1973, National and the City entered into a lease, with a ten year term, pursuant to which National became the fixed-base operator of the Heliport. (McGann Aff. P 10). Though its original lease term has expired, National continues to use and operate the Heliport, providing commercial sightseeing and commuter flights, as well as a range of other services. (McGann Aff. P 38).

On March 6, 1996, New York City's City Council enacted Resolution 1558 (the "Resolution"), approving the issuance of a special permit imposing several conditions upon future operations at the Heliport. (Model Aff. P 29; McGann Aff. P 81). The measure requires a 47% reduction in operations at the Heliport, restricts hours of operation throughout the week, phases in a ban on weekend operations, mandates flight paths of sightseeing helicopters, imposes marking requirements on helicopters, and prohibits certain types of aircraft from using the Heliport. (Model Aff. PP's 26, 29; McGann Aff. PP's 83, [*3] 84). The City's Economic Development Corporation ("EDC") has since incorporated these conditions into a Request For Proposals ("RFP"), issued on May 6, 1996, seeking a new fixed base operator for the Heliport. n1 (McGann Aff. P 92; Model Aff. P 33).

n1 By agreement among the parties, all action on the RFP has been stayed pending this Court's determination of plaintiff's request for injunctive relief.

According to plaintiff's current president, Peter McGann, National would suffer significant financial harm if the City were to enforce the Resolution, and if the EDC were to proceed with its RFP. Specifically, Mr. McGann anticipates that the required reductions in operations would precipitate "plummeting" revenues for National, and would result in depleted good will between National and its customers, most notably tour operators and travel agents. (McGann Aff. PP's 102, 104, 109). More particularly, plaintiff estimates that revenues would decline by roughly \$ 6 million annually, and that -- shortly after the start [*4] of enforcement -- National would be forced to layoff over half of its approximately 200 employees. (Id. PP's 111, 112). Perhaps most strikingly, Mr. McGann predicts that, if Resolution 1558 is enforced, National "will likely file for bankruptcy." (Id. P 111).

Plaintiff opposes enforcement of Resolution 1558 on the grounds, inter alia, that it was passed in violation of the Supremacy Clause of the United States Constitution, U.S. Const. Art. VI, cl. 2, and in violation of the laws of the City of New York. The City responds that National does not have standing to object to the City's enforcement of Resolution 1558, both because plaintiff is subject to eviction at the City's discretion, and because plaintiff has waived any right to pursue whatever claims it might otherwise have. Furthermore, the City contends that the enactment and enforcement of Resolution 1558 amounts to a valid exercise of its proprietary rights in the Heliport.

Relationship Between The Parties

National's tenancy at the Heliport has been marked by a variety of disputes and agreements between the parties, several of which have a bearing on the issues presently before the Court. In 1982, approximately [*5] nine years after National executed its original ten year lease with the City, the City commenced an action against National claiming that the company was in arrears in its rent. (Model Aff. P 6). The parties settled the matter by a stipulation, dated October 14, 1985. The stipulation included the following provisions: (i) National retroactively exercised its option to renew the lease for a period of ten years, effective October 4, 1983, and (ii) National agreed that it would apply for a special zoning permit for operation of the Heliport, to be issued by the New York City Planning Commission (the "CPC") pursuant to Section 74-66 of the New York City Zoning Resolution. n2 (Model Aff. P 6). In the City's view, the permit was necessary because the original five year permit, obtained by the City in 1972 in connection with the opening of the facility, had expired.

n2 The Zoning Resolution regulates "the location of trades and industries and the location of buildings designated for specific uses within the City of New York." (Model Aff. P 4). Pursuant to Section 74-66, the CPC may regulate "construction, reconstruction or enlargement of heliports." (Stever Aff. Ex. B).

[*6]

In 1989, in settlement of another rent dispute, National and the City entered into another agreement, this one providing for the cessation of all operations at the Heliport, except for emergency flights, between 11:00 p.m. and 7:00 a.m. (Model Aff. P 7; McGann Aff. P 25). Also, National agreed to resume its diligent pursuit of the special permit application process. Conditioned upon National's satisfaction of its monetary obligations under the lease, and its submission of a duly certified permit application, the City granted National an extension of the lease for a period of two years, with termination of the lease extended to October 3, 1995. (Model Aff. P 7; McGann Aff. P 30).

By 1993, National had commenced work on an Environmental Impact Statement ("EIS") required in connection with its application for the special permit. (Model Aff. P 8). However, the City was not satisfied with National's progress. Accordingly, in connection with yet another rent dispute between the parties, the City -- through the EDC -- assumed responsibility for completing the EIS, with National committing to reimburse the City for related costs. (Model Aff. P 8). This April 1, 1993 agreement reiterated [*7] that National's tenancy could continue through October 3, 1995, conditioned upon the company's satisfaction of its obligations under the lease. (Model Aff. P 8; Second McGann Aff. P 9).

Shortly after the parties executed the April 1993 agreement, yet another dispute developed regarding the sufficiency of National's rent payments. (Model Aff. P 9; Second McGann Aff. P 10). On July 2, 1993, the City sent National a Notice of Termination of Agreement and Lease Default. (Model Aff. P 9). National responded by bringing a State Court action to prevent the City from accelerating the payments due, and terminating the lease. (McGann Aff. P 11). A January 10, 1994 stipulation, which simply reaffirmed the terms of the April 1, 1993 agreement, proved inadequate to resolve the dispute. The parties subsequently entered into an August 1994 stipulation, which included a waiver by National of any claims which it could have raised in the 1993 State Court action, as well as any claims relating to the "EDC's acts or omissions" in connection with the special permit application. (Second McGann Aff. P

19).

By June of 1995, it became clear that a special permit would not issue until after the contemplated [*8] and agreed upon October 3, 1995 termination date of National's tenancy at the Heliport. (Second McGann Aff. P 25). Accordingly, the parties negotiated and agreed upon another stipulation -- this one executed on February 13, 1996 -- providing for: (i) National's continued tenancy at the Heliport, on a month-to-month basis, until July 31, 1996; (ii) an immediate issuance of an Order of Ejectment which could be executed and enforced on July 31, 1996, without further notice to National; (iii) an agreement by National not to commence any suit or proceeding or to bring any order to show cause to vacate the judgment of possession or to stay execution thereof; and (iv) an agreement by National to:

. . . waive any and all claims, counterclaims and defenses they may have, including those which were raised or which could have been raised in this action, and Defendants' obligations relating to the Documents with respect to EDC's acts or omissions regarding the EIS (including any modifications), the ULURP application, or any conditions relating to the special permit required under the City's Zoning Resolution for operating the Heliport.

(Model Aff. Ex. F). It is this language, adopted [*9] approximately one month prior to the passage of Resolution 1558, which -- in the City's view -- amounts to a waiver by National of any claims it might have relating to that Resolution.

Adoption Of Section 1558

As the preceding discussion suggests, many of the events bearing upon the relationship between National and the City related also to the regulatory status of the Heliport -- i.e., whether it was operating under a valid special permit. As noted, National continued its operations at the Heliport after the expiration of the special permit secured by the City in 1971, but agreed -- pursuant to the 1985 stipulation between the parties -- to submit an application for renewal of the permit. As part of the stipulation, National assumed responsibility for obtaining the EIS that was required in connection with the application process. Under the 1993 stipulation between the parties, however, the City assumed responsibility, under the auspices of the EDC, for the EIS, with National agreeing to reimburse the City for the related costs.

On June 29, 1995, the EDC and the Department of

Business Services ("DBS"), filed, as co-applicants, an application for a special permit for [*10] the Heliport (the "Application") with the City Planning Commission ("CPC"). (McGann Aff. P 73; Model Aff. P 20). The Application set forth the City's goal of redistributing tourist sightseeing flights from the Heliport to other City heliports and of limiting the number of these flights to achieve a 47% reduction in the total number of helicopter operations at the Heliport. (Model Aff. Ex. K). Submission of the Application triggered the Uniform Land Use Review Procedure ("ULURP") process, which occurs in collection with significant land use decisions. (Model P 11; McGann Aff. P 76).

As part of the ULURP process, the CPC certified the EDC's Application as complete on August 7, 1995. (Model Aff. P 21; McGann Aff. P 77). A draft EIS had been certified complete only days earlier, on August 4, 1995. (Model Aff. P 11). On November 29, 1995, the CPC conducted a public hearing for consideration of the Application and the EIS. (McGann Aff. P 78; Model Aff. P 23). One month later, on or about December 29, 1995, the final EIS relating to the Application was certified as complete. (McGann Aff. P 79; Model Aff. P 11). The EIS ostensibly served to provide empirical support for those conditions contemplated [*11] by the EDC and the CPC in connection with operations at the Heliport. (Model Aff. Ex. G).

The final EIS anticipates and assesses the impact to follow from the 47% reduction in Heliport operations provided for in the EDC's application for a special permit. Large sections of the document are devoted to background information, describing the Heliport, and the extent and nature of its operations over time. The report also details the nature of the surrounding community, both as it exists, and as the City anticipates its development. With respect to noise, the EIS describes significant differences between decibel levels during "peak" hours and on "average." (Model Aff. Ex. G at S-7). Both conditions, it was determined, "result in significant noise impacts." (Id.). With respect to mitigating peak impacts, the EIS explores various alternatives, but concludes that: "there are no economically feasible measures that can be implemented to reduce intrusive peak helicopter flyby noise levels within acceptable levels." (Id. at S-13). The EIS does conclude, however, that the EDC's proposed reductions in operations would result in lower noise levels, both in magnitude and significant impact. [*12] (Id. at S-7).

On January 9, 1996, the CPC issued its decision recommending that the special permit Application be granted, and that a variety of restrictions be imposed upon operations at the Heliport. (McGann Aff. P 80;

Model Aff. P 24). On March 6, 1996, following a public hearing assessing the CPC's conclusions, the City Council enacted Resolution 1558, which adopted certain of the CPC's recommendations, and modified others. (McGann Aff. P 81). The City Council incorporated fully the following conditions recommended by the CPC:

- a. Weekday operations at the Heliport restricted to between 8:00 a.m. and 8:00 p.m.
- b. A minimum 47% reduction in operations at the Heliport.
- c. Tourist flights prohibited from flying over Second Avenue, and north-south sightseeing flights restricted to the East and Hudson rivers.

(McGann Aff. P 83; Model Aff. P 26). The City Council also enacted the following provisions, which modified certain CPC recommendations:

- d. Saturday and Sunday tourist operations restricted to between 10:00 a.m. and 6:00 p.m., and ultimately, to be phased out entirely.
- e. Sikorsky S-58T, or helicopters of a similar size, barred from using the Heliport [*13] for sightseeing operations.
- f. All helicopters using the Heliport to be marked for identification from the ground.

(McGann Aff. P 84; Model Aff. P 29). The restrictions set forth in Resolution 1558 have been incorporated into the RFP issued by the EDC on May 6, 1996. n3 (McGann Aff. PP's 88, 92; Model Aff. PP's 33, 36).

n3 Under the terms of the RFP, only the Heliport base operator is required to satisfy the markings requirement, to fly the established sightseeing routes, and to refrain from using the S-58T or equivalent aircraft. (Model Aff. P 37). The required reduction in operations and the curfew set forth in the Resolution will apply to the base provider and facility users alike.

DISCUSSION

INJUNCTIVE RELIEF

To obtain a preliminary injunction, "the moving party must show (1) irreparable harm, and (2) either (a) a likelihood of success on the merits, or (b) sufficiently serious questions going to the merits and a balance of hardships tipping decidedly toward the party seeking the [*14] injunctive relief." *Covino v. Parrisi*, 967 F.2d 73,

77 (2d Cir. 1992); see also *Richard Feiner & Co., Inc. v. Turner Entertainment Co.*, 98 F.3d 33, 34 (2d Cir. 1996). The standard for a permanent injunction is "essentially the same" as for a preliminary injunction with the exception that the plaintiff must actually succeed as to the merits rather than merely make a showing that such success is likely in a future proceeding. See *Clarkson v. Coughlin*, 898 F. Supp. 1019, 1035 (S.D.N.Y. 1995) (citing *Amoco Production Co. v. Village of Gambell*, 480 U.S. 531, 546 n. 12, 94 L. Ed. 2d 542, 107 S. Ct. 1396 (1993)).

Though plaintiff initially applied for a preliminary injunction in this matter, the parties agreed, at oral argument, that the record before the Court is sufficiently complete to permit a final decision on the merits. (Tr. of October 18, 1996 Oral Argument at 8). Accordingly, this Court exercises its discretion to treat this matter as a trial, and converts plaintiff's application into one for permanent injunctive relief. See Fed. R. Civ. P. 65(a)(2).

I. IRREPARABLE HARM

A. Damage To Business

"Irreparable harm must be shown by the moving party [*15] to be imminent, not remote or speculative and the alleged injury must be one incapable of being fully remedied by monetary damages." *Reuters Ltd. v. United Press Intern., Inc.*, 903 F.2d 904, 907 (2d Cir. 1990) (reversing district court, and granting injunctive relief prohibiting supplier of foreign news photographs from terminating service provided to plaintiff wire service) (citations omitted). A "substantial loss of business," particularly where there is a threat of bankruptcy, constitutes irreparable injury sufficient to satisfy this standard. See *Doran v. Salem Inn, Inc.*, 422 U.S. 922, 932, 45 L. Ed. 2d 648, 95 S. Ct. 2561 (1975); see also *Petereit v. S.B. Thomas, Inc.*, 63 F.3d 1169, 1186 (2d Cir. 1995) ("Major disruption of a business can be as harmful as its termination and thereby constitute irreparable injury."), cert. denied, 134 L. Ed. 2d 520, 116 S. Ct. 1351 (1996). The threat that a business will suffer a significant loss of "good will" -- a matter not easily quantified -- is particularly suited to a claim for injunctive relief. See, e.g., *Reuters*, 903 F.2d at 907-908; see also *Blue Sky Entertainment, Inc. v. Town of Gardiner*, 711 F. Supp. 678, 697 [*16] (N.D.N.Y. 1989) ("monetary damages would be difficult to measure in any related action for loss to business reputation").

According to plaintiff's current president, Peter McGann, the 47% reduction in operations at the Heliport contemplated under Resolution 1558 will cause

National's revenues to "plummet" and will necessitate "dramatic" changes in the Company's operations. (McGann Aff. P102). Moreover, because the Resolution will require National to eliminate certain of its services and all of its operations during certain hours, Mr. McGann anticipates that the City's enforcement of Resolution 1558 will result both in lost revenues to National and in damage to National's reputation and good will with its present and prospective clientele. (Id. PP's 104, 107, 109). In more concrete terms, plaintiff predicts losses of roughly \$ 6 million annually (with expenses exceeding revenues by \$ 3.5 million per year), layoffs of over half of the company's approximately 200 employees, and, ultimately, bankruptcy. (Id. PP's 111, 112).

The City's suggestion that plaintiff's anticipated losses are too speculative to support a claim for injunctive relief is unavailing. As a matter of logic, [*17] it cannot be speculative for plaintiff to predict significant business losses resulting from the enforcement of a resolution which, on its face, mandates a significant reduction in business. Indeed, this is precisely what Resolution 1558 does; the City's express goal in enacting the Resolution is to achieve a 47% reduction in operations at the Heliport by eliminating certain services and by restricting hours of operation. The City's 8:00 p.m. to 8:00 a.m. curfew, the elimination of weekend operations, and the assorted other conditions incorporated into Resolution 1558 and the RFP, can be expected to have their intended effect, and undoubtedly will cause National significant and irreparable injury in its future operations at the Heliport. The relevant case law reinforces this finding; several courts have granted injunctive relief in favor of plaintiff airport users and operators confronted with less severe restrictions upon their operations than those now confronting National. See, e.g., *United States v. State of New York*, 552 F. Supp. 255 (N.D.N.Y. 1982) (enjoining state's enforcement of an 11:00 p.m. to 7:00 a.m. curfew), aff'd, 708 F.2d 92 (2d Cir. 1983); *United States [*18] v. County of Westchester*, 571 F. Supp. 786 (S.D.N.Y. 1983) (enjoining county's enforcement of a 12:00 p.m. to 7:00 a.m. curfew); *San Diego Unified Port District v. Gianturco*, 651 F.2d 1306 (9th Cir. 1981) (enjoining state's effort to expand, by two hours, curfew already adopted and enforced by airport proprietor), cert. denied, 455 U.S. 1000, 71 L. Ed. 2d 866, 102 S. Ct. 1631 (1982).

B. National's Status As A Holdover Tenant

According to the City, plaintiff's predictions concerning the likely impact of Resolution 1558 cannot be credited because those predictions presuppose that National will continue in its status as the fixed base operator at

the Heliport. As defendant argues, this assumes too much; pursuant to the February 1996 agreement executed between the parties, as of July 31, 1996, National has been subject to eviction at the City's discretion. Moreover, the City is now prepared to move forward with an RFP seeking a new fixed base operator for the Heliport. As the City sees it, National cannot demonstrate that Resolution 1558 will impair its operations at the Heliport, because there is no assurance that National is otherwise entitled -- or even likely [*19] -- to continue in its operations at the Heliport.

The City is right that Mr. McGann's initial submission glosses over the tenuous nature of National's status as tenant at the Heliport. The City is guilty of an oversight of its own, however. As plaintiff points out in its Reply Memorandum In Support Of Motion For A Preliminary Injunction (the "Reply"), the City ignores the fact that National's interest in the Heliport extends beyond its status as the fixed base provider. However precarious plaintiff's status as the tenant of the Heliport, National will remain free to operate as a user of the Heliport into the foreseeable future. (Reply at 10). National's use tends to be extensive: National, in its own name, is responsible for 8% of operations at the Heliport, and, in combination with its wholly owned subsidiary, Island, accounts for 84% of operations at the Heliport. (Second McGann Aff. PP's 35, 36). As a regular user of the Heliport, plaintiff will be subject to -- and affected by -- the curfew and the mandatory reduction in operations set forth in Resolution 1558, as incorporated into the RFP.

In his second affidavit submitted in support of plaintiff's Reply Memorandum, Mr. McGann [*20] addresses the extent of the impact that Resolution 1558 would have upon National specifically in its capacity as a user of the Heliport. Even in the event that another company replaces National as the fixed base provider, Mr. McGann predicts that the Resolution will cause National a decline of more than \$ 4 million in gross revenues. n4 (Second McGann Aff. P 46). National has provided the Court with affidavits from a sampling of its customers -- cumulatively responsible for \$ 1.5 million of the company's revenues -- all attesting to their intention to discontinue doing business with National in the event that the Resolution goes into effect. (See Exhibits to Bruno Affidavit). This same brand of evidence -- affidavits from wary customers -- has been deemed persuasive in support of a request for injunctive relief by the Court in *State of New York*, 552 F. Supp. at 261-62 ("There is no requirement in this Circuit that a party wait until near-extinction before moving for a preliminary injunction. The law, like the Constitution, is not a suicide pact."). In view of the proffered evidence, as

well as the applicable case law, the Court is satisfied that Resolution 1558 will cause National [*21] irreparable injury -- at a minimum -- in its capacity as a regular user of the Heliport. *Id.*; see also *County of Westchester, 571 F. Supp. at 788* (granting injunctive relief on behalf of regular users of Westchester County Airport challenging a curfew imposed on operations).

n4 As noted, the case law confirms that when a business is threatened with such significant losses, a monetary award is inadequate and injunctive relief may be warranted. See *Doran, 422 U.S. at 927, 45 L. Ed. 2d 648, 95 S. Ct. 2561*; see also *Petereit, 63 F.3d 1169*. The Eleventh Amendment to the United States Constitution would, in any event, bar plaintiff from obtaining monetary relief, in federal court, against the City. See *United States v. State of New York, 708 F.2d 92 (2d Cir. 1983)*. For this independent reason, then, plaintiff's likely injuries cannot be addressed except through injunctive relief. *Id.*

II. The Merits

A. Waiver

Relying upon the stipulation executed between the parties in February [*22] 1996, defendants argue that plaintiff cannot prevail on its claims because it has waived any rights it might otherwise have to challenge the conditions set forth in the Resolution. The stipulation provides:

Plaintiffs waive any and all claims, counterclaims and defenses they may have, including those which were raised or which could have been raised in this action, and Defendants' obligations relating to the Documents with respect to EDC's acts or omissions regarding the EIS (including any modifications), the ULURP application, or any conditions relating to the special permit required under the City's Zoning Resolution for operating the Heliport.

(Model Aff. Ex. F at 5). According to the City, this provision is "clear": National knowingly waived its right to challenge "any conditions" which might ultimately be incorporated into "the special permit required under the City's Zoning Resolution for operating the Heliport." (Defendants' Memorandum of Law In Opposition to Plaintiff's Motion for a Preliminary Injunction at 9).

To the extent that a party plainly waives its rights to pursue a cause of action, that waiver -- in the absence of exceptional circumstances -- will [*23] be binding in

future proceedings. See *Middle East Banking v. State Street Bank Intern., 821 F.2d 897, 906 (2d Cir. 1987)* (upholding validity of release against claim of unilateral mistake). However, "the meaning and coverage of a release depends on the controversy being settled, and . . . a 'release may not be read to cover matters which the parties did not desire or intend to dispose of.'" *Gettner v. Getty Oil Co., 641 N.Y.S.2d 73, 74 (2d Dept. 1996)* (citations omitted); see also *City of New York v. State of New York, 40 N.Y.2d 659, 389 N.Y.S.2d 332, 340, 357 N.E.2d 988 (1976)*. Moreover, "this intent must be clearly established and cannot be inferred from doubtful or equivocal . . . language, and the burden of proof is on the person claiming the waiver of the right." *East 56th Plaza, Inc. v. Abrams, 91 A.D.2d 1129, 458 N.Y.S.2d 953, 955 (3d Dept. 1983)*. If the waiver in this action is susceptible to more than one interpretation, then, the Court will reject defendants' broader interpretation "absent a clear manifestation of intent." See *Bank of New York v. Amoco Oil Co., 35 F.3d 643, 662 (2d Cir. 1994)*.

"The controversy being settled" by the stipulation was, in [*24] essence, one in a series of rent disputes. *Gettner, 641 N.Y.S.2d at 74*. It was in resolution of an earlier one of these disputes that the EDC assumed responsibility for pursuing the special permit Application process, with National agreeing to reimburse the EDC its costs. As defendant notes, by the time the February 1996 waiver was executed, the CPC had already issued its January resolution approving the EDC's application for a special permit subject to conditions including a 47% reduction in operations at the Heliport, an 8:00 a.m. to 8:00 p.m. curfew, reduced weekend hours, and a ban on tourist flights over Second Avenue. However, as plaintiff notes, Resolution 1558 had not yet been passed, and the ULURP process was ongoing. Thus, while plaintiff may well have been aware of the CPC's recommendations, plaintiff could not have known which, if any, conditions ultimately would be enacted. It is against this backdrop, one involving a rent dispute and an ongoing ULURP process, that the stipulation was executed. When considered in this context, the particular language of the stipulation, and the likely intent of the parties, is most readily discerned, and certain, but not all, of National's [*25] arguments challenging Resolution 1558 and the RFP fail.

1. National's City Law Claims

At a minimum, by the terms of its stipulation, plaintiff accepted that a "special permit" is "required under the City's Zoning Resolution for operating the Heliport," and acquiesced to the process undertaken by the City in connection with securing that permit, ostensibly on

plaintiff's behalf. Specifically, under the terms of the stipulation, National expressly waived any claims challenging the "EDC's acts or omissions" in connection with; (i) the EIS, (ii) the ULURP Application, or (iii) any conditions relating to the special permit. In other words, plaintiff has accepted both the need for a special permit and the procedural requirements for obtaining it, and has agreed to forego any claims challenging the EDC's conduct (i.e., "acts or omissions") in these regards.

By its acceptance of the ULURP process and the EDC's related conduct, National waived its right to pursue its claim that the requirement for a special permit and the manner in which Resolution 1558 was passed were all in violation of City law. It is perfectly understandable that such a waiver would grow out of the circumstances [*26] prompting the stipulation. The City had undertaken the Application process that National had initiated, and clearly sought to avoid any suit by National challenging the legitimacy of that process, the need for a permit, or the adequacy of the City's efforts. In exchange for an extension of the period of its tenancy, National provided this waiver. Because the Resolution was passed pursuant to the exact process outlined and authorized by the express terms of the waiver, National is barred from advancing its current claim that the Application process undertaken by the EDC, culminating in permit approval by the City Council, was illegitimate under City law.

2. National's Constitutional Challenge

While plaintiff's waiver precludes it from challenging the need for a special permit, the Court does not interpret the waiver to bar plaintiff from raising a substantive challenge -- particularly one of constitutional magnitude -- to any conditions ultimately adopted by the City Council in connection with that permit. As already noted, the applicable rules of construction, require that courts apply waivers narrowly. This requirement is heightened with respect to the alleged waiver by [*27] National of its Supremacy Clause challenge. First, the Court is reticent to interpret the language of the stipulation to affect a waiver of a constitutional claim founded in the public's interest in a safe and uniform system of aviation. Cf. *Summit School v. Neugent*, 82 A.D.2d 463, 442 N.Y.S.2d 73, 77 (2d Dept. 1981) (reasoning that even a clear waiver of a "right concerning a matter of public policy" is ineffective). Second, contract language must be especially clear to the extent that it is meant to waive claims not yet available at the time the instrument is executed. See *Schneider v. Revici*, 817 F.2d 987, 993 (2d Cir. 1987) ("Though this language can be interpreted to mean that the patient is agreeing not to bring suit for any consequences that may arise in

the future . . . that interpretation is not compelled."). National's constitutional challenge is such a claim: by the time National agreed to the terms of the stipulation, the ULURP process was well advanced, and presumably susceptible to the City law challenge which, as the Court has determined, National has waived; the process was not yet complete, however, and National could not then have pursued the Supremacy Clause [*28] challenge now before the Court. See *Williamson Cty. Regional Planning Comm'n. v. Hamilton Bank of Johnson City*, 473 U.S. 172, 186, 87 L. Ed. 2d 126, 105 S. Ct. 3108 (1985) (holding that because party seeking relief under the Taking Clause had "not yet obtained a final decision regarding the application of the zoning ordinance . . . to its property . . . [its] claim was not ripe.").

Contrary to the City's contention, the language of the stipulation in no way "compels" the conclusion that National waived its right to challenge, on constitutional grounds, the conditions set forth in the Resolution. The waiver language concerning the "conditions relating to the special permit" does not stand alone; it must be read in conjunction with the language addressing "Defendants' obligations" and the "EDC's acts or omissions." Through the combined operation of these phrases, plaintiff accepted that a special permit might ultimately include certain conditions, and agreed not to pursue any claims assailing the EDC for its "acts or omissions" in connection with recommending or vetting the various possibilities. The stipulation should not be read, however, to include an absolute waiver by plaintiff [*29] of its right to challenge, on a substantive basis, the constitutionality of those conditions finally adopted.

In sum, defendant reads the stipulation too broadly, particularly in light of the imperative that waivers be interpreted narrowly, with any ambiguities resolved in favor of the noninvoking party. While the stipulation bars plaintiff from challenging the need for a special permit -- one which might include certain conditions -- the stipulation does not provide the City with license to enact whatever conditions it desires, constitutional or not. Put differently, plaintiff waived its right to challenge the need for a permit and the legitimacy or adequacy of the process undertaken by the City in connection with obtaining it, but plaintiff did not waive its right to challenge the substance of any permit ultimately secured. Therefore, plaintiff is barred from arguing that a special permit, whatever its provisions, cannot be required consistent with New York law, but plaintiff is entitled to proceed with its claim that the substance of Resolution 1558 improperly intrudes into an area preempted under federal law.

B. Preemption

The Supremacy Clause of the Constitution preempts [*30] state laws that "interfere with or are contrary to laws of Congress." *Chicago & N.W. Transp. Co. v. Kalo Brick & Tile Co.*, 450 U.S. 311, 317, 67 L. Ed. 2d 258, 101 S. Ct. 1124 (1981) (citations omitted). Preemption can arise in any one of three ways. First, "Congress may preempt state law by an express provision." *New York Airlines, Inc. v. Dukes County*, 623 F. Supp. 1435, 1441 (D. Mass. 1985). Second, "field preemption" occurs where "the scheme of federal regulation is 'so pervasive as to make reasonable the inference that Congress left no room for the States to supplement it.'" *Gade v. National Solid Wastes Management Assoc.*, 505 U.S. 88, 98, 120 L. Ed. 2d 73, 112 S. Ct. 2374 (1992) (citations omitted). Finally, "conflict preemption" applies "where state law 'stands as an obstacle to the accomplishment and execution of the full purposes and objectives of Congress.'" *Id.* (citations omitted).

In support of its claim that Resolution 1558 is preempted by federal law, National invokes the Federal Aviation Act ("FAA"), 49 U.S.C. § 40101 et seq., the Noise Control Act ("NCA"), 49 U.S.C. § 44715, et seq., the Airport Noise and Capacity Act ("ANCA"), 49 U.S.C. § [*31] 47521, et seq., and the Airport and Airways Improvement Act ("AAIA"), 49 U.S.C. § 47101, et seq. National refers the Court to language in the FAA by which Congress expressly preempts any state laws which relate to the "price, route, or service of an air carrier." 49 U.S.C. § 41713(b)(1). The remaining statutes are offered in support of a more general claim of implied preemption. That is, plaintiff seeks to demonstrate that there is such overarching federal control in the aviation field that there simply is no room remaining for the City's regulatory involvement.

Defendants accept that Resolution 1558 would be preempted under federal law if it was enacted solely pursuant to the City's police power. Defendants argue, however, that preemption does not apply here because the City enacted Resolution 1558 pursuant to its legitimate interests as the proprietor of the Heliport. The City's position is informed by the Supreme Court's discussion of preemption in *City of Burbank v. Lockheed Air Terminal*, 411 U.S. 624, 36 L. Ed. 2d 547, 93 S. Ct. 1854 (1973). In *Burbank*, the Supreme Court set out the full extent of federal preemption in the aviation field, and suggested the possibility [*32] of the proprietor exception upon which defendants now rely. *Id.*

The Court in *Burbank* held that a curfew, adopted by the City of Burbank, prohibiting flights by jet aircraft between 11:00 p.m. to 7:00 a.m. at the Hollywood-Burbank Airport was unconstitutional, under the Supremacy Clause, because it was preempted

by the FAA and the NCA. Upon examining these enactments, and assessing the regulatory authority allotted to various federal agencies over aviation matters, the Court determined that Congress had asserted its "full control over aircraft noise, pre-empting state and local control." *Id.* at 633. In the Court's view, any local regulation over aircraft operations contravened Congress' plain determination that safety and efficiency in aviation "requires a uniform and exclusive system of federal regulation ..." *Id.* at 639. The Court's pronouncements have since been understood to extend well beyond curfews; indeed, a large variety of restrictions upon aircraft operations -- including many akin to those announced by Resolution 1558 -- have been deemed unconstitutional under the Supremacy Clause. See, e.g., *British Airways Brd. v. Port Authority of New York and New Jersey* [*33] ("*Concorde II*") 564 F.2d 1002 (2d Cir. 1977) (preempting prohibition on airport use by particular aircraft); *United States v. City of Blue Ash*, 487 F. Supp. 135 (S.D. Ohio 1978) (preempting route restrictions), *aff'd*, 621 F.2d 227 (6th Cir. 1980).

The *Burbank* decision, in a footnote, suggested that different logic -- and different results -- might apply with respect to regulations imposed by a city acting in its capacity as an airport proprietor. Declining to consider "what limits, if any, apply to a municipality as a proprietor," the Court identified certain legislative materials suggesting that a municipality, in its capacity as a proprietor, should be granted unspecified leeway in enacting restrictions upon air carriers. *Burbank*, 411 U.S. at 635-36, n. 14. Specifically, in correspondence concerning the enactment of the NCA, the Secretary of Transportation expressed his view that the legislation would not affect the existing rights of "airport owners acting as proprietors [to] deny the use of their airports to aircraft on the basis of noise considerations so long as such exclusion is nondiscriminatory." *Id.* (emphasis supplied by the Court). After *Burbank*, [*34] Congress codified this view with a provision in the FAA providing that municipalities retain their "proprietary powers and rights." See 49 U.S.C. § 41713. Though neither Congress nor the Supreme Court has delineated the precise nature of the "powers and rights" reserved to proprietors, "the rationale for this exception is clear. Because airport proprietors bear monetary liability for excessive aircraft noise under *Griggs v. Allegheny County*, 369 U.S. 84, 7 L. Ed. 2d 585, 82 S. Ct. 531 (1962), fairness dictates that they must also have power to insulate themselves from that liability." *San Diego Unified Port District*, 651 F.2d at 1316-17.

Following *Burbank*, the federal courts have recognized complete federal preemption over the regulation of aircraft and airspace, with a "limited role for local

airport proprietors in regulating noise levels at their airports." See *City and County of San Francisco v. F.A.A.*, 942 F.2d 1391, 1394 (9th Cir. 1991), cert. denied, 503 U.S. 983, 118 L. Ed. 2d 387, 112 S. Ct. 1665 (1992). That "limited role" is one in which municipalities can regulate aircraft operations in a "fair, reasonable, and nondiscriminatory" manner. See British [*35] *Airways Bd. v. Port Authority ("Concord I")*, 558 F.2d 75, 82 (2d Cir. 1977). Thus, the relevant inquiry for the Court is two-fold. First, it is necessary to determine whether the City of New York is the proprietor of the Heliport; if it is not, Resolution 1558 must be struck down as unconstitutional. Next, if the City is the Heliport proprietor, it is necessary to determine whether the conditions set forth in Resolution 1558 nevertheless extend beyond the scope of appropriate proprietary considerations and actions.

1. The City As Proprietor

As noted, the proprietor exception is meant to permit a municipality the flexibility needed to avoid liability in connection with its control over an airport. See *State of New York*, 552 F. Supp. at 264; see also *Blue Sky Entertainment*, 711 F. Supp. at 695 n. 16. In support of its position that the City possesses no such proprietary stake in the Heliport, National relies upon the indemnification provision contained in the original lease between the parties:

Lessor shall be held harmless and Lessor shall not be liable for any damage, injury, or liability that may be sustained by Lessee or any other person whatsoever [*36] or to its goods and chattels from any cause whatsoever, arising from or out of the occupancy, use or operation as a heliport, of the demised property . . .

(McGann Aff. Ex. C at 18). According to National, by so contracting away its potential liability in connection with operations at the Heliport, the City relinquished its interests as the facility's proprietor. In the City's view, this indemnification provision cannot destroy its interest as the proprietor of the Heliport; it is a provision effective only as between the parties, and therefore it does not adequately insulate the City from liability arising from claims brought against it by outsiders to the agreement.

National refers the Court to a pair of decisions which stand for the proposition that a municipality which rids itself of any potential for liability in connection with the operations of an airport thereby surrenders any proprietary right that it might otherwise have to enforce regulations affecting operations at that airport. See *Pirollo v. City of Clearwater*, 711 F.2d 1006 (11th Cir. 1983); *San Diego Unified Port District*, 651 F.2d 1306. In *Pirollo*,

the Eleventh Circuit affirmed a district court ruling [*37] striking down a curfew, and various route restrictions, enacted by the city of Clearwater in connection with operations at a local airport run by the plaintiff pursuant to the terms of a long term lease entered into with the city. In arriving at its holding, the Court expressly declined to pass upon whether the city was the airport proprietor. Instead, referring to the lease entered into between the city and the plaintiff, the Court determined that the city "contracted away its right to impose the desired restrictions." *Pirollo*, 711 F.2d at 1009. Thus, contrary to plaintiff's suggestion, the Court in *Pirollo* did not find that the state was not in fact the airport proprietor because of the indemnification provision, but only that it had failed to reserve for itself, by contract, the right to exercise certain of its proprietary functions.

In *San Diego Unified Port District*, the Ninth Circuit upheld a lower court ruling that California was pre-empted from imposing a curfew restricting operations at an airport operated by the San Diego Unified Port District. Addressing the state's contention that its action was permitted pursuant to the proprietor exception, the Court focused [*38] upon "California's extensive grant of powers to the Port District." *San Diego Unified Port District*, 651 F.2d at 1318. By vesting in the Port District "every earmark of proprietorship," the state legislature effectively "passed any potential aircraft noise liability" to the Port District. *Id.* at 1318-19. Thus, by operation of state law, the Ninth Circuit concluded that California could not be deemed the airport proprietor, and was not entitled to impose any restrictions upon operations at the facility.

In key respects, the situation presently at issue is unlike the situations addressed by the Courts in *Pirollo* and *San Diego Unified Port District*. In *Pirollo*, as noted, the Court never passed upon whether the city was the airport proprietor, but determined instead that -- even if the city was the proprietor -- it had not retained its proprietary rights under the terms of its lease agreement with plaintiff. In this case, however, the lease between the parties expressly provides that National will be "subject to the terms, conditions or requirements of any existing or future license to operate an airport for helicopters . . . at or on the demised premises issued by the [*39] Commissioner or any other Agency of the Federal, State or City Government having jurisdiction." (Model Aff. Ex. B at 4). For present purposes, then, the lease reserved for the City the right to incorporate into a special permit any proprietary conditions upon operations at the Heliport otherwise authorized under law. Thus, unlike in *Pirollo*, to the extent that the City is the Heliport proprietor, the City has reserved its right to enforce regulations in its capacity as such.

n5 Given that the lease between National and the City has expired, and given that the City is prepared to move forward with an RFP, plaintiff's reliance upon the lease is -- in any event -- short sighted. Even if the City had contracted away its proprietary interest in the Heliport, this is a matter which the City could be expected to cure in short order by operation of its RFP, which has the City's desired conditions built in.

In San Diego Unified Port District, where the city was deemed not to be the airport proprietor, the [*40] city did not simply contract away its proprietary interests in the airport, but enacted legislation relieving it of any potential liability relating to operations at the airport. That is, all potential claimants were barred by law from pursuing claims against the city, and were, in essence, directed to the airport operator for the redress of any actionable grievances. Here, however, the indemnification clause is effective, if at all, only as between National and the City. There is no basis for concluding that any party otherwise disposed to sue the City in connection with noise or other Heliport related claims would forego those claims against the City, or be barred from pursuing these claims, because of the indemnification provision between the City and National. In fact, the parties recognized as much when they executed the lease; at the same time it provides for National's indemnification to the City for any claims, the lease also requires that National provide the City with liability insurance -- up to designated, limited amounts -- from which the City can obtain funds to pay any damages award against it. (McGann Aff. Ex. C at 9). Thus, as can be detected on the face of the lease, [*41] there is no basis for supposing that the indemnification provision between the parties is effective to relieve the City of the risk of liability attendant to being the Heliport proprietor.

In short, neither of the cases upon which National relies provides adequate support for its position that the City is not the proprietor of the Heliport. In fact, the situation at hand is most closely analogous to the one scrutinized by the Ninth Circuit in *Alaska Airlines, Inc. v. City of Long Beach*, 951 F.2d 977 (9th Cir. 1991) (striking portions of noise control ordinance on due process grounds). There, the Ninth Circuit assessed a noise control ordinance, passed by the City of Long Beach, limiting the number of flights permitted at the Long Beach Municipal Airport. The ordinance included the following indemnification provision: "Commencement of flight operations at Long Beach airport shall be deemed to constitute an undertaking to indemnify the City of

Long Beach for any judgment for nuisance, noise, inverse condemnation or other damages awarded against the City as a result of flight operations . . ." *Id.* at 982. Reasoning that this language "merely established a right of recovery for [*42] damages actually awarded against the city," the Court determined that the city was the airport proprietor. *Id.* On this same basis, the indemnification provision contained in the lease between National and the City is insufficient to divest the City of its proprietary interests in the Heliport.

National further argues, however, that even if the City is the Heliport proprietor-- as the Court has determined it to be -- the City was not acting in its capacity as such when it enacted Resolution 1558. Instead, as National notes, the City passed the Resolution specifically pursuant to its zoning authority, a quintessential exercise of its police power. This characterization, though accurate so far as it goes, is incomplete; it ignores that the City "may act in both a proprietary and a governmental capacity." See *State of New York*, 552 F. Supp. at 264. It is true that the City Council's adoption of the special permit, pursuant to Section 74-66 of the Zoning Resolution, implicates the City's police power. However, the EDC undertook a proprietary role in matters by acting as the Heliport landlord, by its extensive involvement in the Application process, and by its issuance of an RFP. [*43] See *San Diego Unified Port District*, 651 F.2d at 1317 (identifying such factors as ownership, promotion, and leasing as consistent with municipality's status as proprietor). In short, the imposition of conditions upon operations at the Heliport reflects a multifaceted process, and those conditions were settled upon by a complex entity (i.e., the City with its many subdivisions). It would be inappropriate, if not impossible, to hold the City to having acted in one of its capacities or another, and to rule upon the disputed conditions on that basis. See *State of New York*, 552 F. Supp. at 264. (determining that while the state may have acted, to some extent, for "political and economic reasons," its enactment of an airport curfew should be evaluated under the reasonableness standard governing proprietors). For purposes of applying the proprietor exception, then, it suffices that the City's enactment of Resolution 1558 "was an act of a proprietor." *Id.*

2. The Reasonableness Of The Resolution

The Second Circuit has identified "an extremely limited role" reserved by Congress "for airport proprietors in our system of aviation management." *Concorde II*, 564 F.2d at 1010. Local [*44] airport proprietors such as the City are "vested only with the power to promulgate reasonable, nonarbitrary and non-discriminatory regulations that establish acceptable noise levels for the airport

and its immediate environs." *Concorde I*, 558 F.2d at 84; see also *County of Westchester*, 571 F. Supp. at 797. Moreover, to avoid "even the appearance of whim and caprice" in matters of airport access, the Court must "carefully scrutinize" any conditions imposed by the City in its capacity as proprietor to insure that this reasonableness standard is met. n6 See *Concorde II*, 564 F.2d at 1005, 1011.

n6 The Court's resolution of National's Supremacy Clause claim renders it unnecessary to devote any separate consideration to plaintiff's challenges under the Equal Protection Clause and the Commerce Clause. Under the Equal Protection Clause, the City's regulations are constitutional so long as they are supported by some rational basis. See *City of New Orleans v. Dukes*, 427 U.S. 297, 303, 49 L. Ed. 2d 511, 96 S. Ct. 2513 (1976). As plaintiff's counsel agreed during oral argument on this matter (Tr. of October 18, 1996 Oral Argument at 56), the rational basis test is less rigorous than the "reasonableness" test articulated by the Second Circuit in *Concorde*. See *City & County Of San Francisco v. F.A.A.*, 942 F.2d 1391, 1397 (9th Cir. 1991). Thus, if the regulations are reasonable such that they pass muster under the preemption analysis, they necessarily satisfy the requirements of Equal Protection.

Similar considerations direct the Court in its treatment of National's Commerce Clause challenge. The Resolution violates the Commerce Clause only to the extent that it intrudes upon an area reserved for Congressional control. See *White v. Massachusetts Council of Construction Employers, Inc.*, 460 U.S. 204, 213, 75 L. Ed. 2d 1, 103 S. Ct. 1042 (1983) ("Where state or local government action is specifically authorized by Congress, it is not subject to the Commerce Clause even if it interferes with interstate commerce."). A finding that defendants have acted properly as proprietors amounts to a finding that defendants have acted in a manner approved of by Congress. See *Concorde I*, 558 F.2d at 84 n.2 ("Congress has consciously committed to airport owners the responsibility of determining permissible levels of noise for the facility and its environs."). Therefore, if the City acted appropriately in its capacity as proprietor, it did not violate the Commerce Clause.

[*45]

As the *Concorde* standard has come to be applied in a

variety of factual settings, courts have determined that the proprietor exception cannot be limited strictly to regulations dealing with noise. Municipalities as proprietors are more broadly entitled to "deal with noise and other environmental problems at the local level." See *Western Air Lines v. Port Authority*, 658 F. Supp. 952 (S.D.N.Y. 1986), aff'd, 817 F.2d 222 (2d Cir. 1987). For instance, the municipal owner of an airport is uniquely situated to address such concerns as ground congestion, and must therefore be granted some leeway, under the proprietor exception, in this area. *Id.* However, the rule announced in the *Concorde* decisions strictly limits the leeway to be permitted: any regulations undertaken pursuant to the exception -- whatever the proprietary interest involved -- can be upheld only upon close scrutiny of the underlying rationale, and the factual underpinnings, for the specific measure undertaken.

a) Required Reductions In Operations

Resolution 1558 is not focused upon limiting operations at the Heliport during the busiest times of day, the morning and afternoon rush hours. (Model [*46] Aff. Ex. G at II.B-9). The City has opted instead to set a nighttime curfew, a ban on weekend operations, and a 47% reduction on overall services. As the City explains it, these provisions were not meant to reduce the loudest noise levels at the Heliport, but to reduce cumulative noise levels by restricting total operations at the facility. In support of its selected approach, the City relies upon the decision in *Global International Airways Corp. v. Port Authority Of New York And New Jersey (Global I)*, 727 F.2d 246 (2d Cir. 1984) (rejecting "facial" challenge to regulation dictating the mix of craft -- based upon their noise characteristics -- permitted to operate at airport).

In *Global I*, the Second Circuit held that a municipal proprietor can respond to unacceptably high noise levels at an airport by acting to reduce cumulative noise levels, instead of by controlling "peak" noise levels as measured by individual takeoffs and landings. *Global*, 727 F.2d at 250-51; see also *Santa Monica Airport Association v. City of Santa Monica*, 659 F.2d 100, 104-05 (9th Cir. 1981) (allowing a municipality "flexibility in fashioning its noise regulations."). The Court in *Global* [*47] I had no factual record before it, and left open the question of whether the particular cumulative reduction contemplated by the defendant municipality in that action was formulated or applied in a "reasonable" manner, as required by the *Concorde* decisions. *Id.* at 251. Indeed, in a subsequent opinion, the Second Circuit went to lengths to clarify the narrow scope of its original holding, inviting plaintiffs to develop the factual record to pursue a

claim attacking the defendant municipality's regulations as arbitrary or discriminatory. *Global Intern. Airways v. Port Auth. of New York ("Global II")*, 731 F.2d 127, 129 (2d Cir. 1984). Thus, the Global decisions advance the City's argument, but only to a point: the Second Circuit determined that municipal proprietors are permitted flexibility in addressing noise concerns, so long as they act in a reasonable manner supported by the factual and evidentiary predicate; it remains to be determined whether the circumstances in this case in fact warranted the City's actions. *Global I*, 727 F.2d at 251.

i) the curfew

On at least two occasions, both predating the Second Circuit's ruling in *Global*, district courts [*48] within the Second Circuit enjoined proprietor municipalities from enforcing curfews at local airports. See *County of Westchester*, 571 F. Supp. 786; *State of New York*, 552 F. Supp. 255. In *Westchester*, the Court was troubled primarily by the absence of any studies supporting the county's enactment of the challenged curfew. Indeed, the only two studies undertaken in advance of the enactment noted the absence of any significant noise impact from the airport and predicted that the curfew would result in "an insignificant difference in the cumulative community noise exposure level," and only "a small change in net community noise exposure." *Id.* at 792. Against this backdrop, the Court determined that "the curfew on all night flight operations . . . regardless of accompanying emitted noise [was] an unreasonable, discriminatory and overbroad exercise of power by the County." *Id.* at 797.

Plaintiff relies upon *Westchester* as support for the proposition that curfews are presumptively invalid because they fail to target the loudest aircraft or times of airport operations. This reading of *Westchester*, however, cannot survive the Second Circuit's determination [*49] in *Global* that municipalities can elect to reduce overall noise levels, as opposed to peak noise levels. The better interpretation of *Westchester* -- the interpretation with continued vitality -- is that a proprietor's noise based regulations, of whatever type, must be reasonably formulated to ameliorate identified noise related problems. From this vantage, the *Westchester* holding was certainly correct. Because the county had no evidence either of unacceptable noise levels at its airport -- at night or during the day -- or of substantial benefits flowing from the enforcement of the curfew, the county could not proceed with that curfew.

In contrast to the circumstances confronting the Court in *Westchester*, the EIS in this matter provides ample empirical support for the City's decision to impose a curfew

upon both weekday and weekend Heliport operations. By monitoring noise levels from several nearby receptor sites, it was determined that decibel levels from the Heliport exceeded desired levels, as referenced from various regulatory standards, in a densely populated neighboring community. Specifically, the data reveals "significant noise impacts" associated with the Heliport [*50] during both "peak" and "average" hours of operation. (Model Aff. Ex. G at S-7, III.E). Even when examined on a "single-event basis" (e.g., an individual helicopter arrival, or departure), intrusive noise levels are apparent in connection with Heliport operations. (*Id.* at III.E-21, 23). In view of the considerable noise associated with the Heliport, the Court considers it reasonable for the City to enforce a curfew tailored to preserving relative tranquility during that portion of the day typically reserved for relaxation and for sleep. (*Id.* at III.E-3 (describing accepted regulatory guidelines penalizing noise during usual sleep hours)); see also *Concorde II*, 564 F.2d at 1006 (endorsing noise analysis which "penalized flights scheduled during normal sleeping hours").

National insists that the EIS should be disregarded as support for the curfew because it proceeds upon the mistaken premise that all Heliport operations have historically occurred between 7 a.m. and 7 p.m. n7 The Court is not persuaded, however, by National's argument that the EIS therefore provides no basis for concluding that unrestricted nighttime operations at the facility would generate significant [*51] noise levels. As an initial matter, the City could not be expected to gather data reflecting unrestricted operations occurring between 11 p.m. and 7 a.m.; by agreement between the parties, there have been no operations, aside from emergency flights, during that period since 1989. (McGann Aff. P 25). In any event, there can be no real doubt that unrestricted nighttime and morning operations would create disturbances in the vicinity of the Heliport. After all, a "single-event" is all that is required to give rise to intrusive noise levels. (Model Aff. Ex. G at E-21, E-23). Moreover, plaintiff's president insists that nighttime and early morning flights, even with the present 11 p.m. to 7 a.m. restriction, are not isolated events; National claims to have extensive operations after 7 p.m. and before 8 a.m. (Third McGann Aff. PP's 4,5).

n7 This 7 a.m. to 7 p.m. premise, which National now assails, was utilized in the original drafts of the EIS prepared during that time that National was responsible for the document. (Dec. 12, 1996 Rand Aff. Ex. B at E-19, 22).

[*52]

In sum, the Court believes that it is reasonable for the City to interpolate from existing data, and on the basis of National's own representations, that unrestricted operations during the period designated for the proposed curfew, would impose at least some significant burden upon the community neighboring the Heliport. Moreover, a nighttime and morning hour curfew represents a sensible compromise between National's interests in maintaining a viable business, and the interests of area residents in being free from noise and related annoyances. Therefore, in light of the generally high noise levels associated with the Heliport, and recognizing that it is the City's prerogative to regulate noise without necessarily targeting only the loudest hours of operation, this Court views the City's curfew as a "reasonable, nonarbitrary, and non-discriminatory" exercise of its proprietary rights in connection with operations at the Heliport. See *Concorde I* 558 F.2d at 84.

ii) Mandatory 47% Reduction In Operations

In support of its decision to reduce existing Heliport operations by 47%, the City again relies principally upon its EIS. As already noted, that document confirms that [*53] there are noise problems associated with the Heliport; the facility generates "significant" noise levels during both peak and average hours of operation, and single-events give rise to "intrusive" noise levels, as well. (Model Aff. Ex. G at S-7, III.E-21, 23). The EIS further indicates that a 47% reduction in operations would result in reduced noise levels at the facility, and that other City heliports could absorb any traffic diverted from the Heliport without visiting any significant noise or environmental problems upon neighboring communities. (Id. at S-7, E-23, E-27). The City, however, offers no satisfactory explanation for the scope of its proposed reduction.

The City argues that the near halving of operations at the Heliport is justified as a means of reducing Heliport noise levels by redistributing helicopter traffic to other City controlled facilities in the New York metropolitan area. In support of its position, the City relies upon the decision in *Western Air Lines*, 658 F. Supp. 952. In that action, the Court upheld the Port Authority's decision to revise, from 2000 miles to 1500 miles, an existing "perimeter rule" prohibiting airlines from operating long distance [*54] nonstop routes out of LaGuardia airport. *Id.* at 953. The Port Authority "grandfathered" existing services, permitting continued operations outside of the 1500 mile radius by those airlines already providing such services at the time of the enactment. *Id.* The plaintiff in *Western* was new to the facility, having obtained a slot for operations at LaGuardia only after the new rule became effective, and was simply denied the

opportunity to commence services to a location outside of the designated 1500 mile area. *Id.* at 953-54. The Court allowed the Port Authority to enforce its modified perimeter rule, with the anticipated effect of redistributing area flights to other facilities, specifically on the basis of "careful study" and considerable evidence that ground congestion was likely to impede operations at the airport. *Id.* at 960.

The 47% reduction in operations at the Heliport is more severe than the perimeter rule upheld by the Court in *Western*, and it is not supported by the sort of "careful study" undertaken by the Port Authority in that action. In contrast to the plaintiff in *Western*, who had obtained slots to operate at LaGuardia only after the institution [*55] of the new restrictions, National and other users have been providing services at the Heliport for over twenty years. The Resolution would not merely deny National the opportunity to provide additional services, or even freeze existing levels of service, but would slash current operations at the Heliport nearly in half.

As for the empirical support for the measure, there is no evidence in the record that the 47% reduction set out in the Resolution is in any way calibrated to achieve any particular noise based result. Indeed, the EIS does not evaluate the relative noise levels that could be expected to result from a lesser percentage reduction in operations. With respect to the 47% reduction that the City has settled upon, the EIS reports simply that the provision will result in "peak day conditions producing noise levels smaller in magnitude and with significant impacts for less hours." (Model Aff. Ex. G at III.E-23). In other words, the report verifies -- predictably enough -- that less Heliport activity will mean less Heliport noise. What the report does not do is evaluate the specific impact that a blanket 47% reduction in operations can be expected to have on noise levels during [*56] those hours of operation still permitted under the terms of the Resolution as it now exists. Indeed, the EIS operates on the presumption that the 47% reduction in operations will be achieved by the elimination of weekday sightseeing services -- a proposed limitation not ultimately incorporated into the Resolution. Thus, the EIS assesses the likely consequences of a 47% reduction in services, but does not assess the consequences of the particular 47% reduction now mandated by the Resolution.

With respect to the ability of other area heliports to absorb diverted traffic, the EIS analysis is cursory. Without explanation, the EIS assumes that other City heliports would employ the AStar helicopter to service additional tourist customers, a model "considerably quieter than the S-58T which is currently used for approximately half of the sightseeing operations at the East 34th

Street Heliport." (Model Aff. Ex. G at III.E-26). It is perhaps not surprising, given this most convenient premise, that the EIS concludes that noise levels at the City's other heliports will remain at acceptable levels. It also concerns the Court that the EIS does not account for the fact, as represented by the City [*57] in its RFP, that the future of one of the two heliports designated by the EIS to absorb diverted traffic is "in doubt." (Model Aff. Ex. Q at 3-4). In short, the City does not demonstrate that those operations effected by the 47% reduction in services can be accommodated by other area facilities; they may well be lost completely. This result would "inhibit the accomplishment of legitimate national goals," -- namely, the encouragement of air commerce and the provision of efficient transportation. See *Concorde II*, 564 F.2d at 1011.

The gaps in the City's noise based explanation for the 47% reduction in services highlights the extent to which that particular reduction was not actually devised on the basis of any noise based considerations. Instead, the proposed 47% reduction in services was settled upon based simply upon a calculation of the impact that eliminating all weekday sightseeing flights could be expected to have upon total operations at the facility. (Model Aff. Ex. K, G at II.B-7). The City provides no documented explanation for this initial determination, since abandoned, to eliminate weekday tourist services. Thus, to the extent the City now insists that the reduction [*58] in operations mandated under the Resolution will garner a significant improvement in noise levels at the facility, it is relying upon a post hoc justification for a decision which was conceived on a basis seemingly unrelated to any appropriate proprietary considerations. Thus, even if the proposed reduction in operations resulted in a reduction in noise levels at the Heliport, the Court remains concerned that this measure grew out of considerations unrelated to noise, and perhaps more "parochial" in nature. See *Concorde II*, 564 F.2d at 1011.

In sum, the proposed 47% reduction in Heliport operations raises a difficult question. On the one hand, the evidence demonstrates that there is too much noise at the Heliport, and the EIS confirms that a reduction in services will result in a reduction in noise levels. Of more importance to the Court, however, the near halving of operations at the facility is an especially severe restriction, originally settled upon for seemingly arbitrary reasons, and now defended on an incomplete and imperfect record. For these reasons, the measure cannot be deemed "reasonable, nonarbitrary and non-discriminatory," and the Court cannot permit the City to [*59] proceed with its proposed 47% reduction in Heliport operations. See *Concorde I*, 558 F.2d at 84.

iii) elimination of weekend operations

The City's plan to eliminate weekend operations at the Heliport was not founded upon any scientific analysis of the likely impact of the measure. In fact, the final EIS contemplated the virtual opposite of this approach; it operated upon the presumption that weekday sightseeing operations -- not all weekend operations -- would be eliminated. (Model Aff. Ex. G at S-I). Not surprisingly, then, the final EIS devotes no particular attention to the extent or noise impact of weekend operations, and therefore provides no basis for evaluating the likely impact -- cumulative or otherwise -- of the elimination of weekend services. Moreover, neither the EDC nor the CPC proposed or considered the elimination of weekend services. It was not until the City Council's final review of the Application, the EIS, and the community comments that it reversed course and settled upon the complete elimination of weekend services as a condition to the grant of the special permit. In light of *Concorde*'s concern with the "appearance of whim or caprice," this [*60] Court cannot permit the City to eliminate all weekend operations at the Heliport on the basis of a last minute, and seemingly subjective, determination. See *Concorde II*, 564 F.2d at 1005.

b) Prohibition on Certain Helicopters

The Second Circuit's decisions in the *Concorde* cases are especially informative for purposes of assessing the City's determination to eliminate sightseeing operations by Sikorsky S-58T, and other craft of similar size. The *Concorde* decisions, after all, were addressed specifically to the adequacy of the New York Port Authority's treatment of a particular aircraft -- i.e., Britain's *Concorde* supersonic aircraft. By its repeated delays in granting airport access, and ultimate inaction, the Port Authority effectively excluded the *Concorde* from New York area airports. As finally determined by the Second Circuit in *Concorde II*, these delays were unwarranted in light of the fact that the *Concorde* satisfied the same noise criteria as applied to other craft permitted to operate in the region. See *Concorde II*, 564 F.2d at 1012. Because objective noise criteria provided no satisfactory basis for excluding the *Concorde*, the Court acted [*61] to guard against the possibility that other, impermissible, considerations animated the Port Authority's inaction. The Court lifted the ban on *Concorde* flights. *Id.*

It is fundamental to the *Concorde* decisions, and to basic common sense, that a purported noise regulation cannot bar aircraft "on a basis other than noise." See *County of San Francisco*, 942 F.2d at 1398 (analyzing the Second Circuit's *Concorde* decisions). Such a plain

failure of a regulation to be "fitted" to its ostensible, and permissible, purpose would necessarily run afoul of the requirement that a proprietor's regulations be reasonable and non-discriminatory. It is for this reason that the Court cannot accept the City's decision to eliminate operations by "Sikorsky S-58T helicopters or helicopters of similar or larger size which are devoted to sightseeing operations."

As is apparent on the face of Resolution 1558, the City has targeted the Sikorsky S-58T -- and, potentially, other large craft -- for its size and for the nature of the operations to which it is put. While the evidence indicates that the Sikorsky is a loud craft, it appears that it is not substantially -- if at all -- louder in its operations [*62] than the Agusta A109. (Second Johnson Aff. P 13; Ex. A to Plaintiff's Reply To Defendants' Affidavit Containing Citations To The Record at Tab 36). Moreover, the Resolution language barring craft of "similar size" -- as opposed, for instance, to "craft operating at similar decibel levels" -- belies the extent to which the restriction is actually founded upon "a basis other than noise." See *County of San Francisco*, 942 F.2d at 1398. If a craft is large enough, the Resolution excludes it from the Heliport no matter how quiet its operations. This represents the antithesis of a "nondiscriminatory noise regulation that all aircraft are afforded an equal opportunity to meet." *Concorde II*, 564 F.2d at 1005.

Though an airport proprietor enjoys flexibility in crafting its noise regulations, those regulations must reflect noise based considerations, and they must do so in an "even-handed" manner. See *Concorde II*, 564 F.2d at 1012. To the extent that a restriction is meant to limit the operations of particularly loud craft, then, it is likely more advisable for a proprietor municipality simply to exclude craft unable to meet a particular, reasonable, noise criteria -- perhaps based [*63] on decibel levels -- than to select a particular craft for exclusion. See, e.g., *Arrow Air Inc. v. Port Authority*, 602 F. Supp. 314, 316 (S.D.N.Y. 1985) (upholding prohibition on DC-8 aircraft equipment at New York's John F. Kennedy Airport; the prohibition was based upon federal regulatory standards grouping craft "by noise characteristics"). The relative wisdom of such an approach is fully evident on the facts of this case. Though the EIS demonstrates that the Sikorsky S-58T is a noisy craft, the empirical support for a restriction applying solely to its operations is underwhelming; the S-58T appears no louder -- on most criteria -- than the A109. Thus, with only mixed factual support, the City is left with a restriction which targets a particular make and model of a particular manufacturer's craft, and only when it is put to a particular use. This approach is not "even-handed,"

and it smacks of "whim and caprice." *Id.* at 1005, 1011. Accordingly, it cannot be upheld.

c) Restrictions on Sightseeing Routes

The City's regulation of routes -- specifically, the prohibition against tourist flights using the Second Avenue corridor, and the restriction of north-south [*64] sightseeing flights to the East and Hudson rivers -- must be rejected. The Court in *Concorde I* recognized that safety and efficiency dictate that "exclusive control of airspace management be concentrated at the national level." *Concorde I*, 558 F.2d at 83; see also *Northwest Airlines Inc. v. Minnesota*, 322 U.S. 292, 303, 88 L. Ed. 1283, 64 S. Ct. 950 (1944) (explaining the imperative for a uniform federal aviation system insuring that "planes . . . not wander about the sky like vagrant clouds."). Otherwise, the possibility of "multiple, inconsistent rules," would create the prospect that "the rule applied [would] come literally to depend on which way the wind was blowing." *Id.* at 83. The Second Circuit avoided the risks inherent in such confusion by holding that airport proprietors are "vested only with the power to promulgate reasonable, nonarbitrary and non-discriminatory regulations . . . for the airport and its immediate environs." *Id.* at 84 (emphasis added). *Concorde II* reiterated this important proposition: Congress must have "exclusive" responsibility for regulating "planes in flight"; airport proprietors play no part in this arena, but may exercise [*65] only a limited role in protecting the "local population from airport noise." *Concorde II*, 564 F.2d at 1010. In other words, a proprietor's right to regulate activities at an airport is just that, a right to regulate activities at the airport; it is not a right to regulate in the air.

Simply put, the City has no proper role, as the Heliport proprietor or otherwise, in designating the routes to be flown by aircraft engaged in particular operations.

d) Markings Requirement

The City justifies the proposed markings requirement solely as an enforcement mechanism for the route restrictions just considered and rejected. (Appendix to October 30, 1996 Rand Aff. at 6). There appears to be no independent justification, consistent with appropriate proprietary considerations, for this measure. Moreover, the measure seems not to have been carefully or "reasonably" devised even for its intended, improper, purpose; it is doubtful that the specific requirement as set out in the RFP -- markings visible from 1400 feet in the air -- can even be achieved. (McGann Aff. P 108). For these reasons, the Court strikes down the markings requirement set forth in Resolution 1558.

CONCLUSION [*66]

For the reasons set forth above, the City is permanently enjoined from enforcing the following provisions contained in Resolution 1558, as incorporated into the City's RFP:

- 1) The mandatory 47% reduction in operations
- 2) The complete elimination of weekend sightseeing operations
- 3) The designation of sightseeing routes
- 4) The exclusion of the Sikorsky S-58T from engaging in sightseeing operations, and
- 5) The requirement that all craft operating out of the

Heliport be marked for identification

The City is not enjoined from enforcing its 8 p.m. to 8 a.m. weekday curfew, and its 6 p.m. to 10 a.m. weekend sightseeing curfew. The Clerk of the Court is directed to enter judgment accordingly.

SO ORDERED

Dated: New York, New York
January 7, 1997

Sonia Sotomayor

U.S.D.J.

APPENDIX B - HELIPORT/VERTIPOINT PLANNING BIBLIOGRAPHY

FAA/PM-87/31, Analysis of Heliport System Plans.

(NTIS: AD-A195283) This study analyzed the strengths and weaknesses of four state and four metropolitan heliport system plans. Planning concepts are identified and defined to include:

- a. baseline parameters for evaluating the plans,
- b. identifying the data (and their sources) needed for planning purposes at any jurisdictional level, and
- c. developing criteria for assessing the feasibility and economic viability of proposed heliport facilities.

(The four state plans reviewed were Michigan, New Jersey, Louisiana, and Ohio. The four metropolitan plans reviewed were Pittsburgh, Phoenix, Houston, and Washington, DC.)

FAA/PM-87/32, Four Urban Heliport Case Studies.

(NTIS: AD-A195284) This study developed case histories of four heliports built in the central business districts of major cities. (The heliports studied were the Bank-Whitmore Heliport (Nashua Street Heliport) in Boston, the Indianapolis Downtown Heliport, the New Orleans Downtown Heliport, and the Western and Southern Heliport in Cincinnati.) The effort identified six essential elements of a successful heliport. Consideration of these elements would aid in the prediction of whether a proposed heliport will succeed or fail. These six elements are

- | | |
|-----------------------------|---------------------|
| o location | o public attitude |
| o demand | o financial backing |
| o local government attitude | o integral planning |

FAA/PM-87/33, Heliport System Planning Guidelines.

(NTIS: ADA-199081) This report provides recommendations on the necessary content of a state or metropolitan heliport system plan.

FAA/DS-89/9, Rotorcraft Low Altitude CNS Benefit/Cost Analysis, Rotorcraft Operations Data. (NTIS: AD-A214113) This is the first of a three volume set of documents. The objective of this study was to determine if there is an economic basis for improvement of low altitude instrument flight rules (IFR) services within the National Airspace System (NAS) in order to better support rotorcraft IFR operations. This first report provides background data on the rotorcraft industry as well as forecasts to the year 2007 for the purpose of providing operational data for analyses of long-term benefits and costs. It describes rotorcraft missions, selects those most likely to benefit from increased availability of IFR services, identifies the probability of various ceiling and visibility combinations within selected rotorcraft operating areas, and presents an inventory of rotorcraft activity by mission and location. While this first report does not deal specifically with heliports/vertiports, it contains a wealth of data that heliport/vertiport planners may find of interest.

FAA/DS-89/10, Rotorcraft Low Altitude IFR Benefit/Cost Analysis: Operational Analysis.

(NTIS: AD-A246865) This is the second of a three volume set. This second report defines

operational requirements and constraints for selected rotorcraft missions. A candidate list of 50 sites around the country, selected for their potential to benefit from increased low altitude IFR services, is presented. Radar and communications coverage in those areas are identified. CNS improvements to be provided by implementation of the NAS plan, relevant FAA policies, ATC procedures, and avionics improvements are analyzed for their potential to benefit low altitude rotorcraft IFR operations. Finally, a benefit/cost methodology to determine where the most benefits would accrue from improvements in rotorcraft low altitude IFR services or changes in ATC procedures is presented.

FAA/DS-89/11, Rotorcraft Low Altitude IFR Benefit/Cost Analysis: Methodology and Application. (NTIS: AD-A274241) This is the third of a three volume set. This final report reviews the operational requirements and constraints for specific rotorcraft missions identified in the previous reports in this series. It also reviews all of the alternatives identified for improving rotorcraft operations. The alternatives considered include nonprecision approaches to heliports, additional communications and surveillance equipment, and air traffic control procedural changes. A benefit/cost analysis is conducted for each nonprecision approach, communication, surveillance, and procedural improvement identified. Heliport/vertiport planners may find the information on nonprecision approaches of particular interest. In view of the benefits of nonprecision approaches, planners would be well advised to ensure that the majority of all new landing facilities have the ground area and airspace to support nonprecision operations even if they don't expect to provide such services immediately.

FAA/DS-89/32, Indianapolis Downtown Heliport - Operations Analysis and Marketing History. (NTIS: AD-A222121) This report documents a detailed analysis of the numbers and types of operations at the Indianapolis Downtown Heliport from its opening in 1985 through March 1989. It also discusses the marketing techniques used during the planning and development stages of the heliport as well as the continuing marketing effort used to retain and increase business. By documenting operations at successful heliports, the FAA anticipates that this will provide heliport planners with information that will better enable them to build successful heliports at other locations.

FAA/RD-90/9, Analysis of Rotorcraft Accident Risk Exposure Near Heliports and Airports. (NTIS: AD-A249127) When a heliport is proposed, community objections often focus on the issue of safety and the concern that there is a risk associated with having a heliport as a neighbor. Analysis of accident data shows that heliports are safe neighbors. While people often voice concerns about the possibility of a helicopter accident causing them personal injury or property damage, this document shows that such an event is extremely rare. Heliport proponents may find this document useful as an authoritative reference in responding to community concerns.

At the same time, however, this analysis shows that, during the 1977 - 1986 time period, 34-39 percent of all helicopter accidents occurred at or within one mile of landing sites. Approximately 13-18 percent of all helicopter accidents occurred at or near airports. Approximately 3-5 percent of all helicopter accidents occurred at or near heliports. Approximately 9-18 percent of all helicopter accidents occurred at or near unimproved landing sites. With

approximately 3-8 percent of all helicopter accidents, National Transportation Safety Board records do not specify the nature of the landing site.

Clearly, if the rotorcraft community is to continue to reduce its accident rates, reductions must be achieved in the number of accidents taking place at or near landing sites. Such reductions can be achieved through a combination of actions including training, design, operational procedures, etc. This report focuses on what should be done via changes in landing site design standards and guidelines.

FAA/RD-90/10, Rotorcraft Use in Disaster Relief and Mass Casualty Incidents - Case Studies.

(NTIS: AD-A229401) This report documents rotorcraft involvement in disaster relief efforts and provides a understanding of the general nature of the rotorcraft portion of such operations. A representative series of 18 case studies detailing disaster situations (i.e., natural disasters, high rise fires, airline crashes, etc.) where rotorcraft have been involved in relief and rescue operations are analyzed. Each case addresses the circumstances of the disaster, the extent of rescue and relief efforts, the nature and extent of prior relief planning, the nature of the actual rotorcraft involvement, the number of people assisted through the application of rotorcraft, the types of landing areas used, and the lessons learned and the post-situation analysis. In these 18 cases, rotorcraft transported approximately 3,357 people and helped to save at least 187 lives.

By addressing cases where rotorcraft have provided life saving services to the local community, this report provides a dramatic answer to the question: "Why should we allow a heliport to be built in our neighborhood?"

FAA/RD-90/11, Guidelines For Integrating Helicopter Assets into Emergency Planning.

(NTIS: ADA-241479) In the last four decades, rotorcraft have proven their capability to provide unique assistance in disaster relief operations. Yet both the public and emergency preparedness and disaster relief officials are generally unaware of rotorcraft capabilities and the extensive planning required to enable rotorcraft to assist most effectively. Consequently, they do not take best advantage of the assets (civil and military rotorcraft and the local landing sites) that are available to help deal with a crisis situation.

These guidelines advise how best to integrate rotorcraft into existing disaster relief planning. Advice is given on the inventory of rotorcraft, heliports, participant surveys, rotorcraft dispatch center functions, communications requirements, designation and establishment of landing zones, and plan implementation. This report builds on the case studies contained in report FAA/RD-90/10. Both documents convey the idea that rotorcraft and heliports are valuable community assets, readily available to assist in life saving efforts when needed. (The FAA is currently developing an advisory circular based on this report.)

FAA/RD-91/7, Air Ambulance Helicopter Operational Analysis. (NTIS: ADA-237666) This study discusses flight rules (VFR) weather minimums and describes the local and cross country operational areas for helicopter emergency medical service (EMS) operations across the country. The national average of VFR operational weather minimums for all respondents was determined. Also, an estimate of the percentage of time that each respondent can not fly because of ceiling

and/or visibility below their VFR operating minimums was determined, as was the average percentage of time all responders can not fly.

The coverage areas reported by the operators were plotted on two maps of the United States, one for the local coverage areas and one for the cross country coverage areas. From these maps, the percentage of coverage for the conterminous United States, each FAA region, and each state were determined. The weather data were also averaged over each state and used to determine the percentage of time that coverage is available in areas where EMS/H service is provided.

A recent FAA study (FAA/DS-89/11) found that the helicopter ambulance mission is a source of significant social benefits to the nation in terms of lives saved and reduced medical recovery times. The results of the Air Ambulance Helicopter Operational Analysis provided data which supported analysis of the benefits of rotorcraft in an IFR environment. The EMS helicopter industry continues to experience aggressive growth. While the data of this report is somewhat dated, heliport developers should be familiar with this segment of the industry.

FAA/RD-91/12, New York Downtown Manhattan (Wall Street) Heliport - Operations

Analysis. (NTIS: AD-A243207) This report documents a detailed analysis of the numbers and types of operations at the Downtown Manhattan Heliport (Wall Street). It also discusses the history of the facility since its opening in 1960. By documenting operations at successful heliports, the FAA anticipates that this will provide heliport planners with information that will better enable them to build successful heliports at other locations.

FAA/RD-93/37, Analysis of Vertiport Studies Funded by the Airport Improvement Program (AIP). (NTIS: AD-A283249) In 1988, the FAA funded 13 studies in a program of vertiport feasibility studies. Transport Canada funded a study of their own. This report evaluates these 14 studies and provides an overview of the results.

FAA/ND-96/1, Heliport/Vertiport Implementation Process - Case Studies. (NTIS: AD-A319241) Attempts to build public-use facilities have often failed, primarily at the local government level. On the other hand, a few public-use heliports and vertiports have been built and operated successfully. Why are some heliports approved and built while others are rejected? This study provides some answers to that question and identifies more effective approaches to the public approval processes for vertical flight facilities.

This study analyzes the approval process three ways. First, through the investigation of the nature of the public approval/implementation process that presents two approaches to heliport implementation. One is the Systematic Development of Informed Consent (SDIC) and the second is based on the results of a workshop held with persons experienced with heliport implementation. Next, six case studies of actual heliport approval processes are presented to promote an understanding of critical elements and procedures significant in determining the success or failure of heliport/vertiport projects during the approval process. Case study locations are: Dallas; Portland; Miami; Pittsburgh; Washington, DC; and San Francisco. The final section of this study provides information and offers strategies to assist heliport proposers in counteracting influences that often frustrate the implementation process.

FAA/ND-97/1, Six Heliport Case Studies (NTIS: TBD)

This study developed case histories of six heliports and identified four essential elements of a successful heliport. These four elements are

- o good location
- o local government support
- o business methods
- o initial and continuous planning

Civil Tiltrotor Development Advisory Committee - Report to Congress (NTIS: Vol. 1: AD-A306654; Vol. 2: AD-A306655) This committee focused their attention on a 40-passenger civil tiltrotor and the vertiports that will serve as landing sites. Vertiport planners will find a wealth of information in this report. Heliport planners may be interested in the vertiport demand forecasting work done by Gellman Research Associates and the Volpe National Transportation System Center.

FAA/ND-97/9, Operation Heli-STAR - Summary and Major Findings (NTIS: TBD)

Operation Heli-STAR operated in Atlanta in support of aviation operations during the 1996 Centennial Olympic Games. This effort involved the establishment of 11 heliports in the Atlanta area and the collection research data on issues such as helicopter noise. (This is one of a nine volume set of reports. Several of these reports are likely to be of interest to heliport and vertiport planners.)

FAA/ND-97/16, Operation Heli-STAR - Community Involvement (NTIS: TBD) This report documents efforts to minimize the impact of rotorcraft noise during the 1996 Olympics.

LIST OF ACRONYMS

AAMS	Association of Air Medical Services
AC	Advisory Circular
AFD	Airport Facility Directory
AGL	Above Ground Level
AIP	Airport Improvement Program
AOPA	Aircraft Owners and Pilots Association
ATC	Air Traffic Control
BRA	Boston Redevelopment Authority
CBD	Central Business District
DOT	Department of Transportation
DPW	Department of Public Works
EDC	Economic Development Corporation
EMS	Emergency Medical Service
ENG	Electronic News Gathering
ERHC	Eastern Region Helicopter Council
EPA	Environmental Protection Agency
FAA	Federal Aviation Administration
FATO	Final Approach and Takeoff Area
FBO	Fixed-Base Operator
HAI	Helicopter Association International
I	Interstate
IFR	Instrument Flight Rules
IHC	Indianapolis Heliport Corporation
ILS	Instrument Landing System
IR	Infra-Red
LL	Low Lead (fuel)
MAC	Massachusetts Aeronautics Commission
MAHA	Mid-Atlantic Helicopter Association
Massport	Massachusetts Port Authority
MDC	Metropolitan District Commission
MDOT	Michigan Department of Transportation
MHA	Michigan Helicopter Association
MSL	Mean Sea Level
NEPHA	New England Helicopter Pilots Association
NOAA	National Oceanic Atmospheric Administration
NOS	National Ocean Service
NPIAS	National Plan of Integrated Airport Systems
PANYNJ	Port Authority of New York and New Jersey
RHC	Robinson Helicopter Company
SF	Square Feet
SVFR	Special Visual Flight Rules
TCA	Terminal Control Area (Class B Airspace under new classification system)
TLOF	Touchdown and Liftoff Surface

UN	United Nations
UNICOM	Universal Communication
USCG	United States Coast Guard
VFR	Visual Flight Rules
VASI	Visual Approach Slope Indicator

LIST OF REFERENCES

1. Peisen, Deborah J., and Thompson, Jack, "Four Urban Heliport Case Studies," (DOT/FAA/PM-87/32, DOT/FAA/PP-88/2)), SCT (presently SAIC), 1988.
2. Peisen, Deborah J., Winick, Robert M., Berardo, Stephen V., Ferguson, Samuel, W., "Heliport/Vertiport Implementation Process - Case Studies," (DOT/FAA/ND-96/1), prepared by SAIC for the Federal Aviation Administration, August 1996.
3. "Downtown Public Use Heliport Master Plan and Site Selection Study," prepared by Hoyle, Tanner & Associates, Bedford, New Hampshire, and Quadrant Consultants, Inc., Houston Texas, for the City of Houston, Texas, 1986.
4. "NATIONAL HELICOPTER CORPORATION OF AMERICA, Plaintiff, -against- THE CITY OF NEW YORK, THE COUNCIL OF THE CITY OF NEW YORK, THE CITY PLANNING COMMISSION OF THE CITY OF NEW YORK, AND THE NEW YORK CITY ECONOMIC DEVELOPMENT CORPORATION, Defendants. 96 Civ. 3574 (SS) UNITED STATES DISTRICT COURT OF THE SOUTHERN DISTRICT OF NEW YORK, 1997 U.S. Dist. LEXIS 25, January 3, 1997, Decided, January 6, 1997 FILED.
5. "Downstate New York Helicopter System Plan," prepared by Edwards and Kelcey, Inc., for New York State Department of Transportation and the Port Authority of New York and New Jersey, December 1990.
6. Ransom, Pamela E., and Fife, Barbara J., "Destination Manhattan: A Study of Heliports, Land Use and Public Impact," for Office of the President of the Borough of Manhattan, David N. Dinkins, September 1989.
7. "Operational Review of the East River Flight Corridor," Final Report, prepared by the U.S. Department of Transportation, Federal Aviation Administration, Eastern Region, for the City of New York, Department of Transportation, Final Report, October 1983.
8. "U.S.S. Guadalcanal Heliport Feasibility Study," prepared by Edwards and Kelcey Engineers, Inc., Coopers & Lybrand Consulting L.L.P., Ray A. Syms and Associates, et.al. for New York City Economic Development Corporation, May 1995.
9. Press Release, Garland/DFW Heliplex, "Garland Heliplex Background Information," Indianapolis Heliport Corporation, October 1989.
10. Picerno, James, "Garland's Heliplex: FAA Prototype[sic]," Business Facilities, August 1989.
11. Press Release, Garland/DFW Heliplex, "Garland Heliplex Opens November 4," Indianapolis Heliport Corporation, October 18, 1989.

12. Boehm, Rachel, "Garland to Close Heliport," The Dallas Morning News, August 1991.
13. Kocks, Kathleen, "Annapolis Heliport: Mixing Business With Rotors," Rotor & Wing International, April 1991.
14. Annapolis Heliport Press Release, Stanley Aviation, October 30, 1992.
15. "The Metropolitan Boston Heliport System Plan, Phase I," prepared by Edwards & Kelcey, for the Boston Redevelopment Authority & Massachusetts Aeronautics Commission, 1987.
16. "The Metropolitan Boston Heliport System Plan, Phases II and III," prepared by TRA/Black & Veatch, for the Boston Redevelopment Authority & Massachusetts Aeronautics Commission, 1993 and 1994 respectively.
17. "Statewide Heliport Study, Volumes 1-4," prepared by Edwards & Kelcey for the Michigan Department of Transportation, Intercity Transportation Planning Division, December 1985.
18. Peisen, Deborah J., and Lobosco, Roy, "New York Downtown Manhattan (Wall Street) Heliport - Operations Analysis," prepared by SCT for the Federal Aviation Administration, (Report No. DOT/FAA/RD-91/12), September 1991.
19. Aroesty, Jerome, Rubenson, David, and Gosling, Geoffrey, "Tilt Rotors and the Port Authority of New York and New Jersey Airport System," prepared by RAND for the Port Authority of New York and New Jersey, (Report No. R-3971-PA), 1991.
20. "Feasibility of Manhattan Sites for Civil Tiltrotor Service," prepared by Flight Transportation Associates Inc. and TRA Inc., for the Port Authority of New York and New Jersey, January, (Report No. FTA-TR-474-1), 1992.
21. "Taking Business to New Heights," brochure of the Economic Development Corporation, November 1995.
22. "See New York on Island Helicopter," brochure for Island Helicopter, National Helicopter Corporation of America, April 1995.
23. City Planning Department Staff Report, C-950635 ZSM, for the 34th Street Heliport Special Permit, January 1996.
24. Testimony on the E.34th Street Heliport, New York City Economic Development Corporation, to the City Planning Commission, February 13, 1996.
25. "The Metropolitan Boston Heliport System Plan," prepared by TRA for the Boston Redevelopment Authority & Massachusetts Aeronautics Commission, 1987.