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REGIONAL HELICOPTER SYSTEM PLAN

Report No. One
System Inventory & Forecast of Demand

SUMMARY

MAA → **Maryland Aviation Administration**

COG → **Metropolitan Washington Council of Governments**

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Maryland Aviation Administration

Metropolitan Washington Council of Governments

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SUMMARY

A. INTRODUCTION

Helicopters in the Metropolitan Washington Region and State of Maryland are used on a daily basis to perform a variety of missions by both public and private agencies. In order to document these current helicopter operations, and to determine the ways in which they are affecting the region today, the Metropolitan Washington Council of Governments (MWCOG) and the Maryland Aviation Administration (MAA) and have each undertaken a regional helicopter system plan study. These two studies are being conducted simultaneously in order to share resources and to address many overlapping issues and needs. This report is a summary of the above-mentioned study and will focus only on the helicopter activities in the Metropolitan Washington Region.

The Metropolitan Washington Region includes the District of Columbia and counties in Maryland and Virginia (see region map), creating overlap in jurisdictions with the MAA and Virginia Department of Transportation (VDOT) in terms of heliport development and operations. There are a number of heliports and airports located in COG's region, including Reagan National Airport (DCA) and Dulles International Airport (IAD), two large-hub commercial service airports.

One of the most important issues to be addressed in the Metropolitan Washington System Plan are existing and future helicopter operations in the region, particularly in terms of how they affect residents, employees, and visitors. Washington, D.C. has a large number of outdoor monuments, activities, attractions, and residential neighborhoods that are particularly sensitive to noise.

The public entities that conduct heliport activities in the Metropolitan Washington Region include the military, local police and fire departments, as well as numerous federal agencies responsible for law enforcement, homeland security, and public safety. The private entities that use helicopters

in the region include hospitals, the media (TV stations and newspapers), corporations, commercial operators (charter/air, taxi/flight, training/aerial photography/patrol, etc.), among others.

B. SYSTEM INVENTORY

The growth of civilian helicopters is very similar to the overall growth of general aviation (GA) market. Helicopter deliveries peaked in the late 1970s and then declined in the early 1980s. They peaked again in the early 1990s, and have remained relatively steady since 1992, averaging between 250-350 units per year (source: FAA Statistical Handbook of Aviation).

Landing Sites, Support Facilities and Operators

Helicopters are very flexible in that they can land in virtually any open space, both ground level and rooftop, on unprepared sites, airports, and heliports. Federal regulations require all persons to notify the FAA at least 90 days before any construction, alteration, activation, deactivation, or change to the status or use of a civil or joint-use (civil/military) airport (the term "airport" also means any landing or takeoff area such as airport, heliport, helistop, vertiport, glider port, seaplane base, etc.).

The FAA defines four different types of landing sites for helicopters. *Private-use heliports* are owned by individuals, corporations, and government agencies, which control heliport access. *Public-use general aviation heliports* are normally publicly owned, although they can also be privately owned with controlled access. *Transport heliports,* which are developed to provide the community with a full range of vertical flight services including scheduled service by air carriers (airlines) using helicopters. *Hospital heliports* are typically treated as 'special cases' of private-use facilities by the FAA because they provide a unique public service. Most states require hospitals to have helipads in order to obtain certification as a Level 1 trauma facility. The helipad is normally located in proximity to the hospital emergency room, and can be either rooftop or ground level.

Landing Sites in Metropolitan Washington

The Metropolitan Washington Region currently has 48 active heliports, as well as 14 public-use airports and two military airports that support helicopter operations. The heliports in the region vary by type and use. Medical use landing facilities make up the largest share of heliports with 46% (22 out of 48). Private and corporate heliports make up 25% (12 out of 48), while government and military facilities make up 27% (13 out of 48) of heliport facilities. One public-use heliport is located in the District of Columbia (South Capitol Street), but has been closed to non-military and non-police operations since September 11, 2001. The number of facilities presented in Table 1 is not an exhaustive list of all landing sites.

Table 1. Metropolitan Washington Heliports By Type (2002)

Facility	Private/Corp	Government	Military	Medical	Public Use	Total
Heliport	12	10	3	22	1	48
Airport	0	0	2	0	14	16
Total	12	10	5	22	15	64

Most of the heliports in the Metropolitan Washington Region are private-use facilities and are not available to the public, which is consistent with the high percentage of medical, military, and government-owned facilities. However, private and corporate facilities offer some limited opportunities for public use, and three of the facilities indicate that they would allow public use of their heliport on a prior-permission basis.

With the implementation of the temporary flight restrictions (TFR) since September 11, 2001, almost all corporate, electronic news, aerial filming, and utility helicopter activity has been restricted from operating in the District of Columbia, as well as from using Reagan National Airport. All current civilian helicopter activity over the District (including police and emergency medical services) requires prior permission from FAA and the appropriate security agencies.

Helicopter Operators in Metropolitan Washington

The Metropolitan Washington Region has a wide variety of helicopter operators. The major operators in the region are listed below. Government agencies (the military and various police departments in particular) are the largest helicopter operators in the region. Existing helicopter operators in Metropolitan Washington include:

- CVC Helicopter Inc., Darlington, MD
- Helicopter High
- U.S. Park Police, District of Columbia
- Metropolitan Police Department, South Capital Street Heliport
- HeloAir, Sandston, VA
- US Air Force - 89th Airlift Wing, Andrews AFB
- Anne Arundel County Police, Tipton Airport
- Prince George's County Police Department, Washington Executive Airport
- Bechtel Nevada, Andrews AFB
- Inova Hospital, Fairfax County Hospital
- AOL/Time Warner, Dulles International Airport
- Fairfax County Police Department, Fairfax, VA
- Capital Helicopter, Fairfax Heliport
- Other Government/Military

In addition to the military operations, several police departments base and fly helicopters in the area, including the Metropolitan Police Department, the U.S. Park Police, Fairfax County Police, Prince George's County Police Department, and the Anne Arundel County Police Department.

Existing Based Helicopters and Activity

There is no single source of data for based helicopters or helicopter operations. At towered airports, air traffic control personnel record helicopter operations as general aviation, so there is no database of helicopter activity on a local or statewide level. Owners are required to register their helicopters with the FAA, but registration data only shows the owner's address, and does not include information on where the helicopter is based and operating. Therefore, a survey, phone calls, and meetings were conducted to estimate the number of based helicopters and operations occurring in the Metropolitan Washington Region.

Based Helicopters in Metropolitan Washington

Based on a variety of sources, the number of helicopters operating in the COG region, and their type, are shown in Table 2.

Table 2. Helicopters Based in Metropolitan Washington (2002)

Type of Helicopter	Number	Percent
Total	41	100%
Civilian	21	51%
Military	20	49%
Piston	2	5%
Single Turbine	16	36%
Twin Turbine	23	59%
Total	41	100%

Source: Helicopter Operator Survey, Edwards & Kelcey, Inc., Spring 2002

Existing helicopter operators based within the Metropolitan Washington Region are listed in the previous section. Operator "Helicopter High" is an exception from the list as it is based in Maryland, but should be counted as it does operate in the Metropolitan Washington Region.

Helicopter Activity in Metropolitan Washington

Since there is no single source of rotorcraft activity data available, two resources of data are used to calculate levels of helicopter activity in the Metropolitan Washington Region: FAA's national survey of general aviation pilots and the regional helicopter operator survey.

FAA conducts surveys of general aviation pilots every two years, and the results consistently indicate that helicopters have a high annual utilization rate (hours flown per year), particularly compared to most fixed-wing aircraft. High utilization is consistent with the need to amortize the relatively high cost of operating helicopters, and the survey results also indicate that helicopters conduct a large number of takeoffs and landings (operations) within a limited region/radius of operation. Although helicopters represent 3.3% of the total general aviation fleet, they generate 7.6% of the hours flown.

Estimates of current helicopter activity levels for the Metropolitan Washington Region and the number of based helicopters in the area are shown in Table 3. The high percentage of military helicopters in the COG region makes it difficult to accurately estimate the total level of helicopter activity.

Table 3. Activity by Metropolitan Washington Based Helicopters

	Based Helicopters	Annual Hours Flown	Annual Operations
Piston	2	396	2,376
Single Turbine	16	6,033	36,198
Twin Turbine	23	11,716	70,296
Total	41	18,145	108,870

Source: Helicopter Operator Survey, Edwards & Kelcey, Inc., Spring, 2002

In addition to the operators based in the study area, there are also out-of-state helicopter operators that generate traffic in the study area. Helicopter operators based within 250-300 miles of the study area occasionally fly into the region. A telephone and mail survey of out-of-state operators indicated that the majority of activity conducted by out-of-state operators was for corporate/business purposes, and that their level of activity declined by 20% as a result the restrictions that were imposed after September 11, 2001, including the closing of the South Capitol Street Heliport and the lack of access to Reagan National Airport.

Primary Uses of Helicopters

The Helicopter Association International (HAI) and FAA have identified a variety of civilian helicopter missions, but general classifications were stated in the introduction of this report. A single helicopter operator often serves multiple missions, and both civilian and military helicopters can provide similar services, such as emergency medical and disaster relief. The helicopter operator surveys provided an estimate of the missions flown and is shown in Table 4.

Table 4. Helicopter Missions in Metropolitan Washington

Mission	Percent of Operations
EMS – Trauma Pick-up	5.7%
EMS – Hospital Transfers	10.2%
Airborne Law Enforcement	13.8%
Military/VIP	51.2%
Electronic News Gathering	1.8%
Personal/Recreational	0.4%
Training	6.4%
Corporate/Air Taxi	6.1%
Film/Aerial Photo	2.3%
Utility	0%
Agricultural/Spraying	0%
Wildlife Management	0.2%
Other (pipeline patrol, etc.)	1.9%
Total	100%

Source: Edwards and Kelcey, Inc. Helicopter Operators Survey, 2002

Definition of Catchment Area

Helicopter activity in the Metropolitan Washington Region is generated by two sources of traffic: helicopters based in the study area and helicopters based outside of the region. The catchment area is defined as the geographic boundary of the region that generates the most helicopter activity in the study area, and that boundary is determined by the operating characteristics of helicopters. The catchment area for helicopters operating in Metropolitan Washington lies within a radius of approximately 250 - 300 miles, which encompasses Virginia, West Virginia, Delaware, New Jersey, Pennsylvania, and portions of New York (Figure 1). Air travel beyond 300 miles is conducted predominantly by fixed-wing aircraft, including both airlines and corporate aircraft. The number of active helicopters in the catchment area is shown in Table 5.

Figure 1. Helicopter Catchment Area

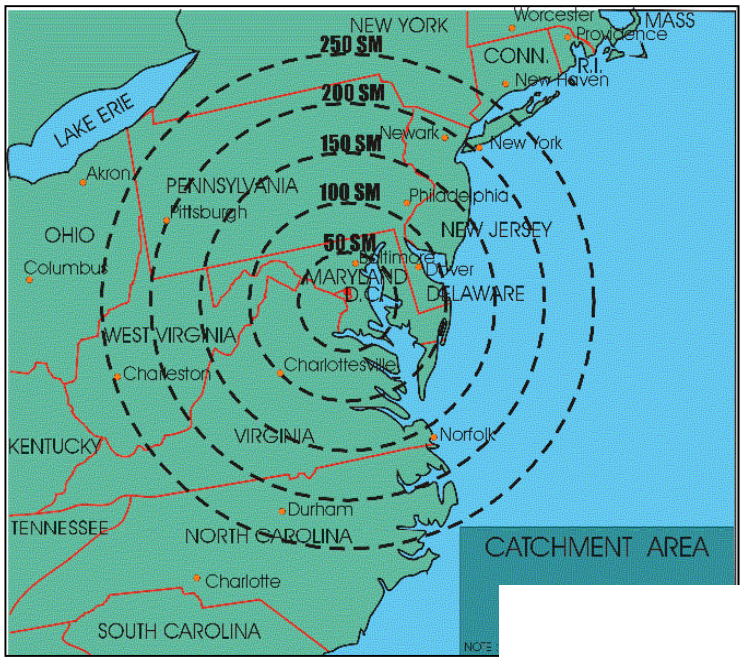


Table 5. Active Helicopters in Catchment Area

Catchment Area	Active Helicopters
Delaware	68
New Jersey	125
New York	201
Pennsylvania	186
West Virginia	35
Virginia (including COG region)	111
Total	*726*

Airspace, Air Traffic Control, and Navigation Aids

The existing airspace structure and Air Traffic Control (ATC) procedures in the Greater Baltimore-Washington area directly impact helicopter activity in the study area. The high volume and diverse mix of airline, general aviation, and military aircraft operations that travel through the Baltimore-Washington area result in a complex and dynamic airspace structure. The airspace is dominated by operations at three major civilian airports, Baltimore/Washington International Airport (BWI), Reagan National Airport (DCA), and Dulles International Airport (IAD), and one military airport, Andrews Air Force Base (ADW). In addition, there are numerous general aviation airports and private heliports in the region as well. The numerous national security, military, and other sensitive sites classified as Special Use Airspace in the region greatly increase the complexity of the

airspace structure. Special use airspace is classified as prohibited and restricted. These areas persist as non-flying zones at all times.

Flight Rules and Weather Conditions

Weather is a significant factor in aircraft operations. Weather conditions determine the flight rules under which aircraft can operate, and can also affect aircraft separation. Aircraft operate under two broad categories: visual flight rules (VFR) and instrument flight rules (IFR). Aircraft operating under VFR navigate by orientation to geographic points and other visual references, although they also use radio navigation aids as well. Almost all helicopter operations (about 99%) in the Baltimore-Washington area are conducted under VFR. The missions flown by many helicopters – such as electronic news gathering, traffic reporting, emergency medical services, law enforcement, and short-haul charter flights – are flown under VFR in order to see events/landmarks on the ground, and also to allow for maximum flexibility. The advent of turbine engines, stability augmentation systems, and more reliable radios in the civilian fleet led rotorcraft manufacturers to certify increasing numbers of helicopters to operate under IFR.

Recent Airspace and Security Changes

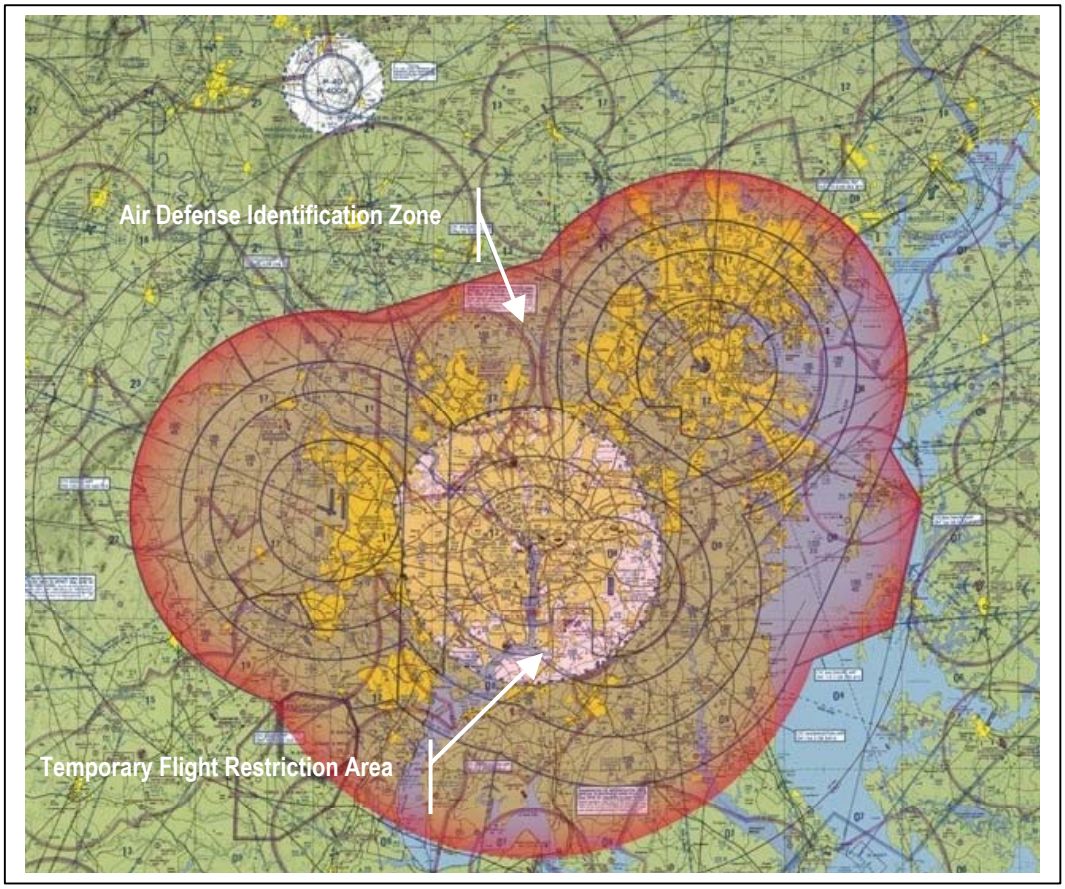
As of early 2003, two significant changes have occurred regarding security procedures and airspace issues over Washington, D.C. First, the U.S. Customs Service has taken a much larger role in overseeing the security of the region's airspace with the implementation of the National Capital Region Coordination Center (NCRCC). The U.S. Customs Service Air and Marine Interdiction Coordination Center (AMICC) in Riverside, CA, is monitoring the airspace over the United States.

The Center was established to "coordinate the anti-terrorism efforts of federal, state and local law enforcement agencies, and facilitate the exchange of crucial information among the various agencies." (source: The Washington Times, January 26, 2003). NCRCC participants include, in addition to the Customs Service, the FAA, TSA, U.S. Secret Service, DoD, U.S. Park Police, FEMA, U.S. Capitol Police, and local law enforcement agencies. The Customs Service Air and Marine Interdiction Division have begun patrols over the District of Columbia using three UH-60 Blackhawk helicopters, as well as three Cessna Citations (C-550) and one Cessna 210 fixed-wing aircraft. The Division's expanded role, and the NCRCC, will remain in place for the foreseeable future.

In addition to the establishment of the NCRCC noted above, the FAA has recently created an air defense identification zone (ADIZ) that essentially covers the footprint of the Washington Tri-Area Class B airspace, along with an extension to the south, that begins at the surface and extends to 18,000 feet MSL over Baltimore and Washington, D.C. (Figure 2). The ADIZ became effective on

Monday, February 10, 2003, and will continue indefinitely. The ADIZ requires pilots to be on active flight plans, use discrete transponder codes, and be in communication with controllers.

Figure 2. Air Defense Identification Zone



Additionally, a temporary flight restriction was established that prohibits aircraft operations, except by military and scheduled air carrier aircraft, within 15 nautical miles of DCA up to an altitude of 18,000 feet MSL (Figure 3). The TFR restricts both IFR and VFR general aviation and charter operations, including helicopters, from operating within this airspace and at DCA.

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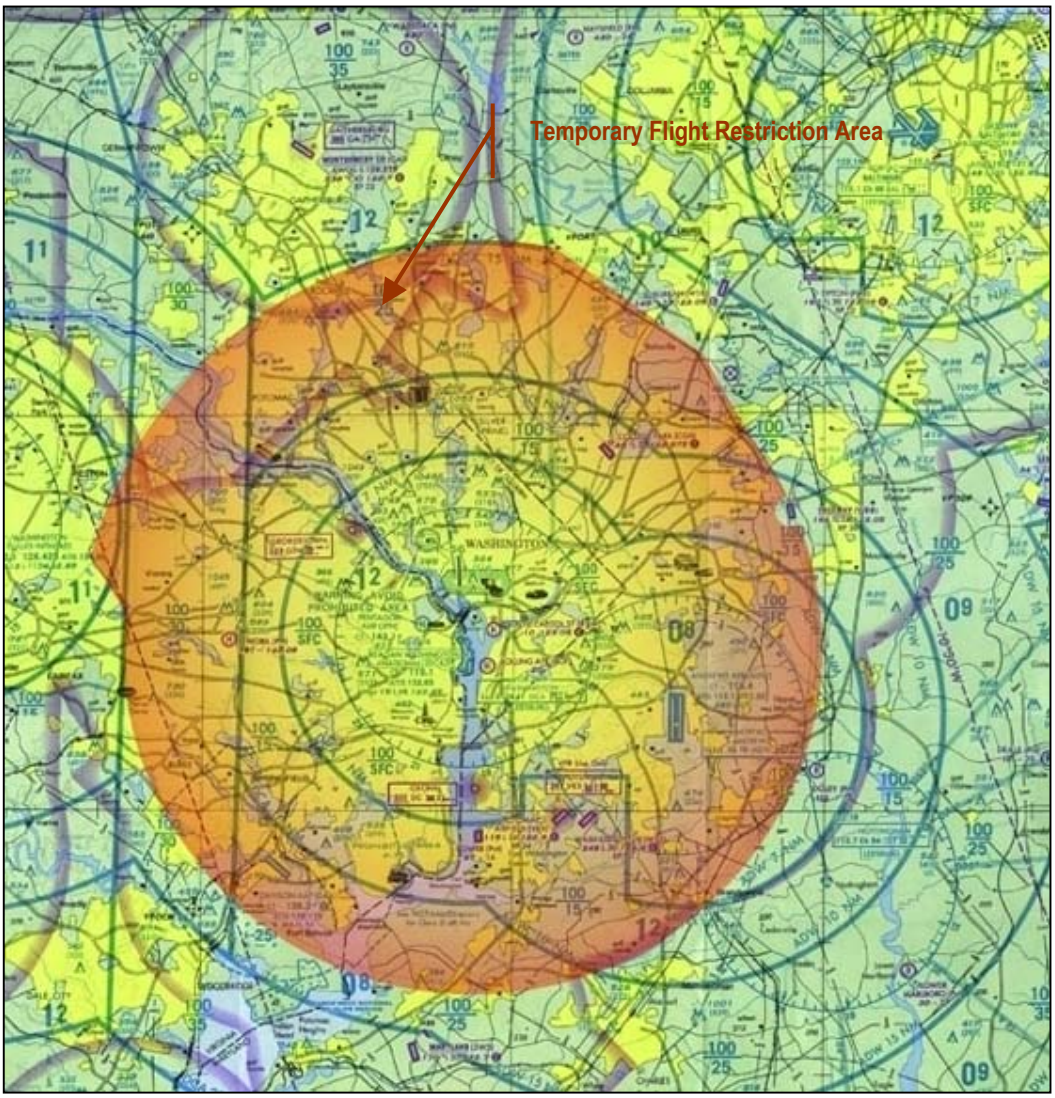
Figure 3. Washington D.C. Temporary Flight Restrictions (TFR) Area



Specialty operations, such as news and traffic reporting, police, and emergency medical services (EMS) are permitted to operate within the TFR-restricted airspace with prior permission from the FAA and ATC. Discussions with helicopter operators indicate that the restrictions are significantly impacting helicopter operations, including those that may be eligible for special permission to operate. Operators have indicated that it is difficult to receive permission, and even when they do there have been instances when not all ATC controllers were aware that they had permission to operate, and were subsequently escorted outside of the airspace due to security procedures.

General aviation aircraft have not been allowed into Reagan National Airport (DCA) since September 11, 2001, and there are no indications that FAA or TSA will lift the restriction in the

foreseeable future. Lack of access to DCA has had a significant impact on corporate aircraft operations in the area, both fixed-wing and helicopter.

Operations at the South Capitol Street Heliport (09W), the only public use heliport in the District of Columbia, were greatly impacted by the post-September 11, 2001 airspace restrictions. The heliport was located approximately one mile south of the Capitol building on the Anacostia River near the South Capitol Street Bridge. The TFR-restricted airspace allowed only police and specialty operations to use the heliport, while general aviation traffic could operate with a waiver from the FAA to enter the TFR-restricted airspace, which were rarely issued. Air Pegasus, the former fixed base operator at the heliport, ceased operations in July 2002 due to a lack of traffic, and the heliport has since closed. Additional changes to the airspace procedures in the Baltimore-Washington area are likely as security procedures are further refined.

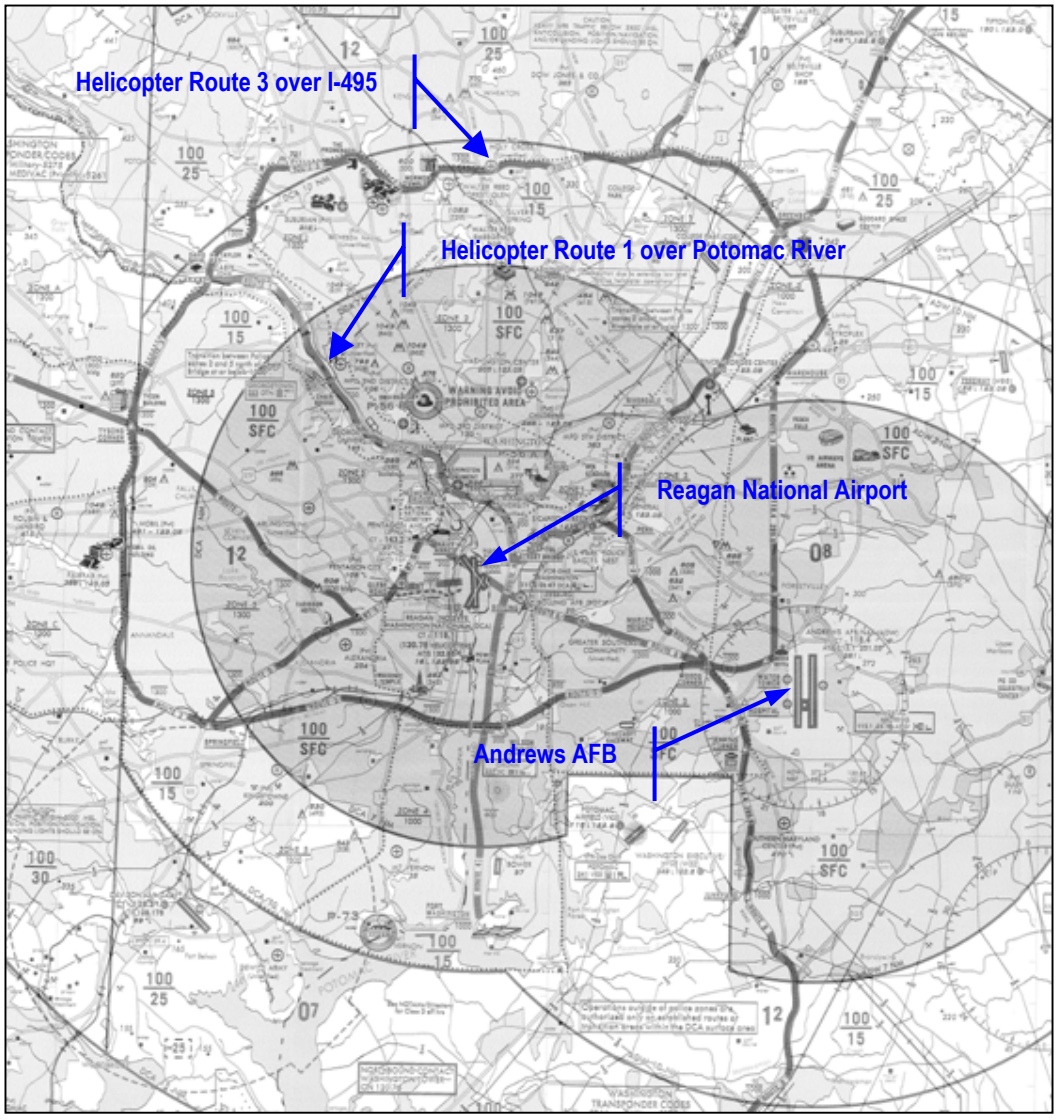
Baltimore-Washington Helicopter Route Chart

The *Baltimore-Washington Helicopter Route Chart*, last published by FAA in January 2000, depicts the major helicopter routes in the metropolitan area (Figure 4). The routes depicted on the chart are intended for VFR operations, and they are typically located over highways and other landmarks such as the Potomac River. These routes provide the operator with convenient navigation points, and also alleviate some of the noise associated with flying over noise-sensitive areas, such as residential developments.

It is important to note that use of the helicopter routes is recommended by FAA, but is not mandatory. Helicopters often need to travel to points not designated on a Helicopter Route Chart, necessitating off-route travel for part, if not all of, a trip. This is especially true for emergency-medical (EMS) and police operations.

The FAA, the Helicopter Association International, and helicopter operators are currently working on a revision to the Baltimore-Washington Helicopter Route Chart. The revised chart will include a depiction of the TFR-restricted airspace.

Figure 4. Current Helicopter Route Chart for Metropolitan Washington



Police Zones

Special Police Zones are used throughout the Baltimore-Washington area to allow police helicopters to patrol an area with minimal interaction with ATC. Police helicopters contact ATC upon entering the zone, and are then permitted to operate freely in the zone up to the zone's maximum altitude. The Baltimore-Washington area is divided into multiple zones. For example, Zone 2 covers most of Northwest and Northeast portions of the District of Columbia, from the surface to an altitude of 1,300 feet MSL. Zone E covers most of downtown Baltimore, from the surface to an altitude of 500 feet MSL.

Helicopter Operations at Primary Airports

Many helicopter flights originate and terminate at public-use airports in the Baltimore-Washington area, including BWI, DCA, and IAD. Due to the unique operating characteristics of helicopters, including the vertical takeoff and landing capabilities, Air Traffic Control Towers (ATCT) have established procedures for managing helicopters in their airspace. Since helicopters operate at lower airspeeds and different flight profiles than fixed-wing aircraft, they are usually assigned to routes away from fixed-wing arrival and departure flows, preventing slow-flying helicopters from delaying faster fixed-wing aircraft.

During poor weather conditions (IMC), helicopters can utilize Special VFR clearances to conduct visual approaches to airports, even when most fixed-wing aircraft are executing Instrument Approach Procedures (IAP). This is due to the low-airspeed and low-altitude capabilities of helicopters. Special VFR allows helicopters to remain out of the flow of fixed-wing aircraft; however, special VFR operations are not permitted at DCA. During very poor weather conditions, IFR-certified helicopters can execute the same IAPs as fixed-wing aircraft, including use of Instrument Landing System (ILS). The impact of IFR helicopter traffic on airport and airspace capacity is relatively minor since there are relatively few helicopter operations conducted under IFR.

Transient helicopter operations that fly in the vicinity of BWI, DCA, and IAD are typically in contact and managed by the local ATCT at each airport. According to ATC, transient helicopter operations are usually assigned to the VFR Helicopter Routes in order to safely and efficiently separate them from fixed-wing aircraft.

Helicopter operations at non-towered airports and heliports generally follow local traffic patterns and procedures. Many helicopter operators, including corporations, civilian users, military, and police, have standing Letters of Agreement (LOAs) with local ATC. The LOAs document typical procedures and routes used by the individual helicopter operators during VFR, SVFR, and IFR. The LOAs allow ATC and helicopter operators to meet mutual requirements for safe flight and efficient operations.

Northeast Corridor IFR Routes

IFR helicopter routes between Washington, D.C., Philadelphia, New York City, and Boston are called Northeast Helicopter Routes, and are in addition to the primary VFR routes shown on the Helicopter Route Chart. According to ATC, the routes are used relatively infrequently, due to the low number of helicopters certified to conduct IFR operations.

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Potomac Airspace Redesign

The Potomac Consolidated Terminal Radar Approach Control (TRACON) Airspace Redesign Project is an on-going FAA effort to more efficiently route IFR aircraft in the Baltimore-Washington area. TRACONs are ATC facilities that have responsibility for the orderly flow of air traffic arriving and departing from major airports. They manage air traffic between the enroute, high-altitude and low-altitude airspace and local ATC airspace. These facilities provide radar vectoring, sequencing, and separation of IFR aircraft. They also provide air traffic service to aircraft operating from smaller airports within the TRACON boundaries, and traffic advisories for VFR aircraft operating in the area. TRACONs use radar to track and guide aircraft, and therefore do not have to be located at an airport.

Airspace/ATC Summary

The airspace structure in the Baltimore-Washington area serves to safely separate and route air traffic from one point to another. The existing airspace procedures are designed primarily to accommodate airline traffic. Accordingly, the procedures are also meant to separate higher altitude fixed-wing IFR traffic from helicopters. Since helicopters nearly always operate under VFR at relatively low-altitudes and use visual landmarks to navigate through the metropolitan area, the system serves the basic needs of ATC and helicopter operators. However, ATC flexibility regarding helicopter routing and altitudes is relatively constrained, especially near major airports during high-demand periods.

Land Use, Zoning Ordinances, & Permitting Procedures

Information concerning regulations and permitting procedures for helicopter landing facilities throughout the Metropolitan Washington Council of Governments (MWCOG) member jurisdictions was collected and analyzed. This information will serve as the basis for the development of policy recommendations to address the future siting of helipads, helistops, heliports and vertiports throughout the region as part of the System Plan, as well as compatible land use planning. The following summary presents an overview of the general land use policies and permitting requirements as well as any issues or concerns of particular jurisdictions concerning helicopter operations.

Overall, the regulation of heliports does not appear to be a concern for most jurisdictions. For the Metropolitan Washington COG member jurisdictions, all but two have some form of regulations related to helicopter landing facilities. For those jurisdictions without any applicable regulations (i.e. the use is not mentioned in the ordinance), permitting procedures can vary. In some jurisdictions the ordinance language clearly states that if a use is not expressly permitted, then it is prohibited. Others are less specific and the procedures for creating a “landing zone” would vary on a case-by-case basis. In some instances, permitting a new use could require an amendment to the zoning ordinance or municipal code. In those jurisdictions that have applicable regulations, most

helicopter-landing facilities are permitted as a Special Exception (SE) or Special Use Permit (SUP), and are used most commonly in industrial and rural residential/agricultural zones.

Several jurisdictions have definitions that distinguish between heliports and helistops. The definitions vary but the distinguishing factors typically deal with private vs. commercial operations, intensity of use, and whether or not support facilities are on site. Most jurisdictions also indicated that they allow emergency helicopter landings as needed but do not specifically address this in their regulations. For these purposes, some jurisdictions have designated landing areas, while others simply utilize large public open spaces such as athletic playing fields. Some jurisdictions also see hospital helipads as "customary and reasonable" uses and do not regulate them separately.

Very few jurisdictions have established heliports or helipads. Those that do are typically associated with police operations, hospitals or with a nearby airport. Some of the larger jurisdictions did express an interest in increasing helicopter commuting regionally between airports and major downtowns. Some of the smaller, rural jurisdictions mentioned that private use by individuals was typical and did not see this as a problem.

Only a handful of formal applications for helipads, heliports or helistops have been filed in recent years. Most of those interviewed did not feel that helicopter operations were a problem or a concern for their respective municipalities, yet over half of the individuals interviewed would like to see the results of this study and any model ordinance language that is developed.

C. FORECASTS OF DEMAND

Forecasting helicopter activity in Metropolitan Washington Region has several inherent limitations. First, the size of the regional helicopter fleet is relatively small compared to any other mode of transportation. Second, the helicopter fleet in the study area serves a wide variety of missions, and therefore does not respond uniformly to changes in the region's economy. Third, although a large proportion of helicopter operations are classified as general aviation aircraft, many helicopter operations are also classified as military and air carrier.

Future demand for helicopter services in the Metropolitan Washington Region will be affected by changes in population, employment, and the region's economic performance. Also, a sharp increase in the price of fuel, or more extensive airspace and airport access restrictions that are difficult to predict could significantly impact future activity. However, the single greatest impact on future helicopter activity in the study region will be the continuation of the flight restrictions over the

District and the lack of access to Reagan National Airport. Also, a number of other factors may also impact future helicopter activity in the area.

Because of the difficulty in predicting future events such as those described above, two forecast scenarios were identified: Status Quo and High Growth. The two scenarios were developed to analyze the impact of possible circumstances on future helicopter activity in the region. They also provide the opportunity to develop "what if" scenarios in terms of future helicopter facility requirements and environmental impacts and mitigation measures. The Status Quo scenario holds the following assumptions:

- The economy will not recover at a fast pace.
- Airspace restrictions will remain in place throughout much of the forecast period.
- GA airports within 15 miles of the Capitol Building and White House will have restricted operational use.
- No new public-use heliports will be constructed in either Maryland or Washington, D.C..
- Insurance rates will continue to increase and availability will continue to decrease.
- Security rules will be enacted that require general aviation to adhere to similar screening procedures that are in place for scheduled commercial service (FAR Part 135 and 139) airports and the airlines.
- The cost of helicopter ownership and operation will continue to increase faster than the overall rate of inflation.

If all or most of these factors remain in place for the next five to ten years, helicopter activity in the region will not increase, and may even decline; particularly missions such as corporate/air taxi, electronic news, flight training, aerial filming, etc. Military activity is not anticipated to decrease in the region. As the majority of missions are flown by public agencies, they are not as sensitive to cost pressures as corporate/air taxi, flight training, and other private operations. As a result, it is not anticipated that there would be a significant decline in helicopter activity (hours flown or operations) even if all of the factors described above were in place. Table 6 presents the forecast of based helicopters and Table 7 presents the helicopter operations forecast in the Metropolitan Washington Region under the Status Quo scenario.

Table 6. Forecast of Based Helicopters in COG Region
Status Quo Scenario

Type	2002	2005	2010	2020
Total Helicopters	41	40	39	39
Piston	2	2	2	2
Single Turbine	16	15	15	15
Twin Turbine	23	23	22	22

Table 7. Forecast of Helicopter Operations in COG Region
Status Quo Scenario

Type	2002	2005	2010	2020
Total Operations	108,870	107,000	106,000	104,300
Piston	2,376	2,100	2,000	1,500
Single Turbine	36,198	35,500	35,000	34,500
Twin Turbine	70,296	69,400	69,000	68,300

In contrast, the High Growth scenario assumes that a number of factors will occur that will stimulate helicopter activity in the region, including:

- Decreasing or eliminating the airspace and airport access restrictions imposed by FAA and TSA, as well as the special procedures required of operations within 15 TFR of the White House.
- No additional restrictions on the development of private heliports or use of unprepared sites for helicopter takeoffs and landings.
- The construction and operation of a public-use heliport in the Baltimore central business district, particularly in the vicinity of the Inner Harbor.
- The operation of a public-use heliport in downtown Washington, D.C.
- Stability in the aviation insurance markets, with modest increases in premiums and availability of insurance to all qualified operators.
- Continued growth of the state's and the region's economy.
- Continued regional highway congestion and recurring delays.

The first two factors stated above would likely have the greatest impact on regional helicopter activity. In case that some or all of the stated factors occur, helicopter activity will increase sparingly. However, different segments of the helicopter market will respond differently to each of the factors. Under the High Growth scenario, the forecast of based helicopters in the Metropolitan Washington Region was projected to increase over the 18-year period (Table 8).

Table 8. Forecast of Based Helicopters in COG Region
High Growth Scenario

Type	2002	2005	2010	2020
Total Helicopters	41	43	46	48
Piston	2	2	3	3
Single Turbine	16	17	18	19
Twin Turbine	23	24	25	26

Since out-of-state operators conduct a small percentage of their operations in the COG region, the net increase in helicopter activity generated by out-of-state operators is felt to be negligible, and was not projected as a separate element. Table 9 depicts the forecast of the helicopter operations in COG Region.

Table 9. Forecast of Helicopter Operations in COG Region
High Growth Scenario

Type	2002	2005	2010	2020
Total Operations	108,870	114,300	120,700	126,100
Piston	2,376	2,400	3,600	3,600
Single Turbine	36,198	38,500	40,700	43,000
Twin Turbine	70,296	73,400	76,400	79,500

The reliability of forecasts in general decreases as they progress further into the future, and long-range forecasts must be considered as an outlook, as opposed to detailed projections. Any number of unforeseen circumstances could significantly impact future helicopter activity in the region.