



January 2021

AIRCRAFT NOISE

Better Information Sharing Could Improve Responses to Washington, D.C. Area Helicopter Noise Concerns



A Century of Non-Partisan Fact-Based Work

GAO@100 Highlights

Highlights of [GAO-21-200](#), a report to congressional requesters

Why GAO Did This Study

Helicopter noise can potentially expose members of the public to a variety of negative effects, ranging from annoyance to more serious medical issues. FAA is responsible for managing navigable U.S. airspace and regulating noise from civil helicopter operations. Residents of the D.C. area have raised concerns about the number of helicopter flights and the resulting noise.

GAO was asked to review issues related to helicopter flights and noise within the D.C. area. Among its objectives, this report examines: (1) what is known about helicopter flights and noise from flights in the D.C. area, and (2) the extent to which FAA and helicopter operators have taken action to address helicopter noise in the D.C. area. GAO reviewed statutes, regulations, policies, and documents on helicopter noise. GAO analyzed (1) available data on helicopter operations and noise in the D.C. area for 2017 through 2019, and (2) FAA's approach to responding to helicopter complaints. GAO also interviewed FAA officials; representatives from 18 D.C. area helicopter operators, selected based on operator type and number of flights; and 10 local communities, selected based on factors including geography and stakeholder recommendations.

What GAO Recommends

GAO recommends that FAA develop a mechanism to exchange helicopter noise information with operators in the D.C. area. FAA agreed with GAO's recommendation.

View [GAO-21-200](#). For more information, contact Heather Krause at (202) 512-2834 or KrauseH@gao.gov.

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What GAO Found

According to Federal Aviation Administration (FAA) data for 2017 through 2019, over 50 helicopter operators conducted approximately 88,000 helicopter flights within 30 miles of Ronald Reagan Washington National Airport (D.C. area), though limited data on noise from these flights exist. According to operators, these flights supported various missions (see table below). While the number of flights has decreased slightly over the 3 years reviewed, it is unknown whether there has been a change in helicopter noise in the area. For example, most stakeholders do not collect noise data, and existing studies of helicopter noise in the area are limited. D.C. area airspace constraints—such as lower maximum altitudes near urban areas—combined with proximity to frequently traveled helicopter routes and operational factors may affect the noise heard by residents.

Federal Aviation Administration (FAA)-Reported Helicopter Flights Conducted in the Washington, D.C. Area by Operator Mission, 2017–2019

Operator mission	Number of flights
Military	32,890 (37.4 percent)
Air medical	18,322 (20.9 percent)
Other aviation activity	13,977 (15.9 percent) ^a
State and local law enforcement	12,861 (14.6 percent)
Federal law enforcement and emergency support	5,497 (6.3 percent)
News	4,298 (4.9 percent)

Source: GAO analysis of FAA data. | GAO-21-200

Note: In this table, we refer to the Washington, D.C. area as including the area within 30 miles of Ronald Reagan Washington National Airport.

^aIncludes 666 flights for which FAA could not identify an operator or mission based on available historical records.

FAA and operators reported taking steps to address public concerns about helicopter noise in the D.C. area. FAA receives and responds to complaints on helicopter noise from the public through its Noise Ombudsman and has recently developed online forms that improve FAA's ability to identify and respond to helicopter noise issues. Operators reported using FAA-recommended practices, such as flying at maximum altitudes and limiting night flights, to address helicopter noise in the D.C. area, but such practices are likely not feasible for operators with military, law enforcement, or air medical evacuation missions.

FAA's and operators' approach to addressing these issues in the D.C. area is impeded because they do not consistently or fully share the information needed to do so. According to nearly all the operators we interviewed, FAA has not communicated with operators about helicopter noise or forwarded complaints to them. Similarly, operators often receive noise complaints from the public—some complaints are not directed to the correct operator—but do not typically share these complaints with FAA. As a result, operators have not consistently responded to residents' inquiries about helicopter noise and activity. By developing a mechanism for FAA and operators to share information, FAA could help improve responses to individual helicopter noise concerns and determine what additional strategies, if any, are needed to further address helicopter noise.

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Abbreviations

FAA	Federal Aviation Administration
Reagan National	Ronald Reagan Washington National Airport

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January 7, 2021

Congressional Requesters

Over 6 million people reside in Washington D.C. and nearby counties in Virginia and Maryland (D.C. area), making it one of the most populated metropolitan areas of the country.¹ Due to Washington, D.C.'s status as the nation's capital, helicopter flights in the area support federal government and national security operation, as well as a wide variety of other activities. Beyond the federal government, the D.C. area includes the headquarters of some of the largest companies in the United States, as well as substantial health care, tourism, and technology sectors. Within the region's airspace—which is controlled by the Federal Aviation Administration (FAA)—helicopter flights help to support the region and its economic activity at the area's 3 large hub airports, 11 regional airports, and 55 heliports.²

As a result, D.C. area residents can be frequently exposed to helicopter noise, which can be annoying and potentially expose the non-flying public to a variety of negative effects. For example, studies have suggested that aircraft noise, including from helicopters, can increase community annoyance, disrupt sleep, adversely affect academic performance of children, and could increase the risk for cardiovascular disease.³ Within the D.C. area, there has been an increased focus in the local media about reported helicopter activity that has disturbed sleeping patterns and caused homes to shake.⁴

We were asked to review issues related to helicopter flights and noise within the D.C. area. This report examines (1) what is known about

¹For the purposes of this report, we refer to the D.C. area as including the area within 30 miles of Ronald Reagan Washington National Airport (Reagan National).

²These heliports do not include military heliports, such as the Pentagon Helipad operated by the Department of Defense.

³M. Basner, C. Clark, A. Hansell, J. I. Hileman, S. Janssen, K. Shepherd, and V. Sparrow, "Aviation Noise Impacts: State of the Science," *Noise & Health*, vol. 19, no. 87 (2017) 41–50.

⁴See, for example: Hannah Natanson, "Like 'Living in a War Zone': Washington-Area Residents Say Increased Helicopter Traffic is Giving Them Nightmares," *Washington Post* (June 23, 2019).

helicopter flights and noise from flights in the D.C. area; (2) the extent to which FAA and helicopter operators have taken action to address helicopter noise in the D.C. area; and (3) stakeholder views on additional strategies to address helicopter noise in the D.C. area.

For each of these objectives, we reviewed statutes, regulations, policies, and guidance documents on helicopter flights and noise in the D.C. area and interviewed FAA officials. We also interviewed officials from a non-generalizable sample of 18 D.C. area helicopter operators. We selected this sample based on FAA data on the number of flights in the D.C. area, a variety of operator missions, recommendations from officials and industry stakeholders, and operator willingness to speak with us.⁵ We interviewed representatives from a non-generalizable sample of 10 local communities, based on geographic diversity, availability, and stakeholder recommendations, to obtain perspectives on these topics.⁶ We also interviewed other stakeholders, including research organizations and national aviation groups. While the information obtained from these interviews is not generalizable to all operators, local D.C. area communities, or other stakeholders, these interviews provided insights into a range of views held by these entities.

In addition, to describe what is known about helicopter operations in the D.C. area, we analyzed FAA data from 2017 through 2019 on helicopter flights in the D.C. area.⁷ To assess the reliability of the data, we reviewed related documentation and interviewed FAA officials, among other things. We determined that the data we used were sufficiently reliable for these purposes. To describe what is known about noise in the D.C. area, we

⁵We initially selected 27 operators using these criteria. Of these 27 operators, 9 could not be reached, told us they had no views to share, or declined to be interviewed. According to FAA data, flights by the 18 operators we interviewed accounted for at least 71 percent of the total flights over the period 2017 through 2019.

⁶In this report, the term 'local communities' includes local governments, community and civic associations, as well as the local metropolitan planning organization. We initially selected 15 local communities to interview based on these criteria; however, 5 could not be reached, told us they had no views to share, or declined to be interviewed.

⁷We did not analyze FAA data on helicopter flights that occurred prior to 2017. FAA officials stated that they made a change to the agency's approach to recording helicopter flight information in July 2016. As part of an effort to capture more information about the number of aircraft flights in the D.C. area, FAA began to collect information on helicopter flights operating under visual flight rules, which it had not recorded specifically as helicopter flights prior to July 2016. As a result, FAA data on helicopter flights from 2017 through 2019 are not comparable to data on flights that occurred before these years.

reviewed available studies on helicopter flights and noise in the D.C. area conducted by federal agencies and local governments. We reviewed FAA information on noise generated by civilian helicopter models, and interviewed three helicopter manufacturers to obtain noise information on military helicopters flown in the D.C. area.

To evaluate the extent to which FAA and helicopter operators have taken action to minimize helicopter noise in the D.C. area, we reviewed FAA policies and guidance on helicopter noise, including FAA's 2019 update to its aircraft noise complaint policy.⁸ We also analyzed FAA's approach to obtaining and responding to helicopter noise complaints and related information and compared its approach to FAA's policy and federal internal control standards for quality information and communicating with external parties.⁹ These standards are designed to provide reasonable assurance that a federal agency's objectives will be achieved. We also reviewed documents and guidance developed by the non-generalizable sample of helicopter operators and reviewed voluntary guidance developed by industry groups to minimize noise.

To describe stakeholder views on additional strategies to address noise in the D.C. area, we interviewed FAA officials, operator officials and local communities, selected as described above. We also reviewed reports on helicopter noise strategies developed by FAA. Additional information on our scope and methodology can be found in appendix I.

We conducted this performance audit from October 2019 to January 2021 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

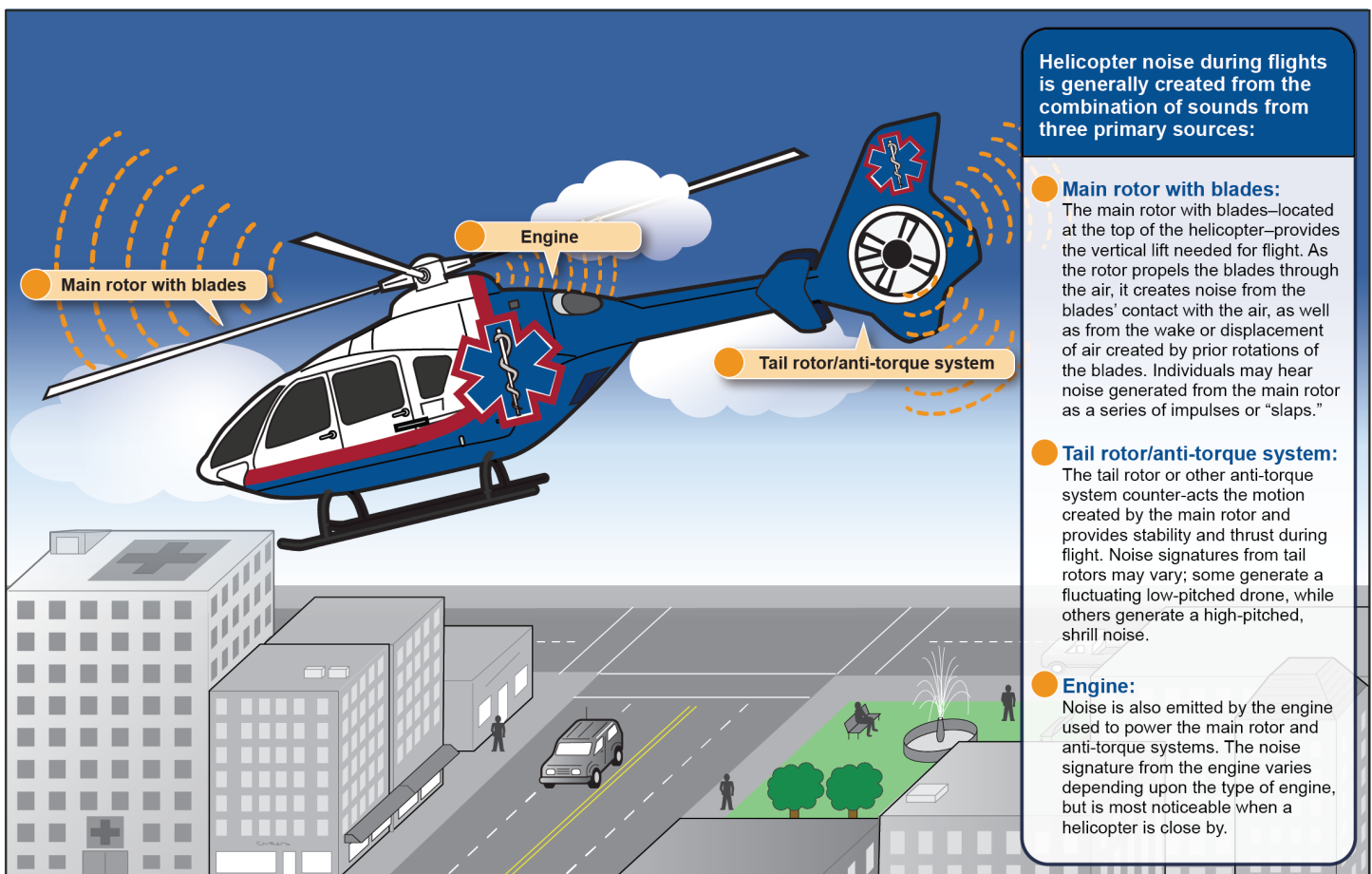
There are three primary sources of helicopter noise: the main rotor with blades located on top of the helicopter, the tail rotor—or another anti-torque system—situated in the rear, and the engine. (See fig.1.) The interaction of these components produces a distinct sound created by the

⁸FAA Policy on Addressing Aircraft Noise Complaints and Inquiries from the Public (December 2019).

⁹GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

helicopter. During flights, the main rotor sound is focused on the helicopter's front and advancing blade side. Tail rotor noise is similarly focused forward and radiates downward, while the engine noise is typically heard once the helicopter is overhead although engine noise can sometimes be heard to the side of the helicopter depending on the model. As a result, the sound of a helicopter—particularly the pulses from the main rotor—can be heard well in advance of the helicopter's flying overhead.

Figure 1: Sources of Helicopter Noise During Flights



Helicopter noise during flights is generally created from the combination of sounds from three primary sources:

- Main rotor with blades:**
 The main rotor with blades—located at the top of the helicopter—provides the vertical lift needed for flight. As the rotor propels the blades through the air, it creates noise from the blades' contact with the air, as well as from the wake or displacement of air created by prior rotations of the blades. Individuals may hear noise generated from the main rotor as a series of impulses or "slaps."
- Tail rotor/anti-torque system:**
 The tail rotor or other anti-torque system counter-acts the motion created by the main rotor and provides stability and thrust during flight. Noise signatures from tail rotors may vary; some generate a fluctuating low-pitched drone, while others generate a high-pitched, shrill noise.
- Engine:**
 Noise is also emitted by the engine used to power the main rotor and anti-torque systems. The noise signature from the engine varies depending upon the type of engine, but is most noticeable when a helicopter is close by.

Source: GAO. | GAO-21-200

The noise that individuals on the ground perceive from helicopter flights depends on the interaction of a number of factors, including the design of

the helicopter, how the helicopter is operated in-flight, and weather conditions during flight.

- **Helicopter design.** The helicopter's design, weight, and other critical components can affect the noise generated from helicopter flights. These components include the number of rotor blades, the rotor speed, and engine type. Their effect on noise can vary depending on their interaction with other factors, including those listed below. For example, helicopter designs that rely on reduced main rotor speed can potentially reduce noise. However, these designs may negatively affect other aspects of the helicopter's design or operation, such as the aircraft's ability to safely conduct high-speed turns.
- **Operational factors.** Pilot operation of helicopters—such as altitude, speed, and maneuvering actions—can affect the amount of noise generated during flights. For example, higher flight altitudes are generally associated with reduced noise exposure on the ground, though, according to FAA, higher flight altitudes may increase noise to the side of the helicopter. Depending on the interplay of other factors, airspeeds above normal cruising speeds may increase a helicopter's noise levels, while slower speeds that occur during descents may result in loud and annoying noise. In addition, the degree and speed of a turn may also affect the amount of noise, with rapid turns made at high angles creating more noise than more gentle maneuvers.
- **Weather conditions.** Wind speed and direction, in combination with previously mentioned factors, can also affect the noise observed from helicopter flights. For example, wind carries sound in the direction toward which it is blowing, and high winds may reduce the exposure to helicopter sound. In addition, warmer air tends to disperse sound because it is generally more turbulent, which reduces helicopter noise. On the other hand, noise can increase in colder weather when the air temperature on the ground is lower than in the air above it. Under these conditions, sound projects more readily toward the ground.

Nationwide, FAA is responsible for regulating noise from civilian helicopters and ensuring compliance with noise standards through its aircraft certification process.¹⁰ Specifically, FAA establishes, through regulations, maximum levels of noise for civilian helicopter models. During the aircraft certification process, FAA requires each civilian helicopter model certificated for airworthiness in the United States to comply with established noise standards. According to FAA, noise

¹⁰See 14 C.F.R. pt. 36, subpt. H.

certification ensures that the latest safe and airworthy noise reduction technology is incorporated into helicopter design. As noise reduction technology matures, FAA works with the international community, through the International Civil Aviation Organization, and considers if FAA's noise standards regulations should be revised. FAA's Office of Environment and Energy develops, recommends, and coordinates national civilian aviation policy relating to aircraft noise, including helicopters. However, FAA stated that it has no authority to directly regulate noise or establish noise certification standards for military helicopter models; rather the Department of Defense is responsible for issuing helicopter noise guidance for its pilots. The Office of Environment and Energy also develops FAA's approach to responding to civilian helicopter noise complaints. According to FAA policy, military representatives are responsible for responding to noise concerns about military aircraft.

FAA also works with a variety of stakeholders, including other government agencies and industry organizations, to address helicopter noise issues throughout the nation's airspace. For example, since 1993, FAA has collaborated with industry to develop and update the "Fly Neighborly" procedures and guidance, a voluntary set of guidelines that identify noise mitigation practices. (See table 1.) In support of the Fly Neighborly guidelines, since 2016, FAA has also worked with industry to provide training to helicopter operators on these practices.¹¹ In addition, FAA conducts research to both understand and mitigate the impacts of helicopter noise on communities. As part of this effort, FAA also works on aviation noise initiatives with the Department of Transportation's Volpe Transportation Center and the National Aeronautics and Space Administration. For example, in 2017 and 2019, these federal entities collaborated to conduct acoustic tests of ten commonly operated helicopter models as part of an effort to collect noise data and develop noise abatement procedures.

¹¹The most recent update of these practices was published in 2007 by Helicopter Association International. See Helicopter Association International, *Fly Neighborly Guide* (Alexandria, VA: 2007).

Table 1: Selected “Fly Neighborly” Noise Mitigation Practices

Flight Characteristic	Examples of Noise Mitigation Practices
Takeoff and landing	<ul style="list-style-type: none">• Minimize rotor and engine operation while on the ground• Descend and ascend steeply near landing areas
Altitudes	<ul style="list-style-type: none">• Fly at highest practical altitude when approaching metropolitan areas• Avoid flying low over populated areas
Routing	<ul style="list-style-type: none">• Fly over major roads, rail lines, or waterways• Vary routes taken for regular flights• Avoid noise sensitive areas, such as hospitals or schools
Speed and maneuvers	<ul style="list-style-type: none">• Avoid rapid and high angled turns• Fly normal cruising speeds or slower over noise sensitive areas

Source: GAO analysis of Helicopter Association International information. | GAO-21-200

FAA manages helicopter activity as part of its management of the navigable airspace in the United States. As part of these responsibilities, FAA provides air traffic control services to aircraft—including military helicopters—operating in the United States except take-offs and landings at certain uncontrolled civilian airports or military bases.¹² In doing so, FAA air traffic controllers direct and manage helicopter operations in controlled airspace—along with other aviation activity—from air traffic control towers at airports and from other FAA facilities. While under air traffic control in the national airspace, all aircraft—including military helicopters—are required to adhere to applicable FAA air traffic regulations, including those regulations that prescribe minimum or maximum altitudes and other operational factors that may affect helicopter noise.¹³

In addition, FAA has established helicopter route structures within some major metropolitan areas to assist with air traffic management.¹⁴ These helicopter route structures include fixed routes generally along major roadways and waterways to guide helicopter operations and ensure

¹²FAA, *Aeronautical Information Publication*, Part 1, Gen 3.3 (Washington, D.C.: Updated July 16, 2020).

¹³In our discussions with Army officials, they noted that FAA does manage military helicopter noise insofar as FAA establishes altitudes and other operational parameters that affect helicopter noise as part of its airspace management responsibilities.

¹⁴In addition to the D.C. area, FAA has established helicopter route structures for Boston, Chicago, Dallas-Fort Worth, Detroit, Houston, Los Angeles, and New York City.

operational safety in complex and high-trafficked airspaces. The route structures also contain patrol zones in populated and residential areas. During flights, helicopter operators must request and receive clearance from the local air traffic control tower to use a specific route or zone. Air traffic controllers may reroute in-flight helicopter traffic from a pre-planned route or zone to ensure safety. According to FAA, air traffic controllers, particularly those who manage operations at an air traffic control tower, determine whether a helicopter route structure is needed in a given area.¹⁵

The airspace surrounding the D.C. area is complex, in part, due to various airspace restrictions that overlap with the use of a helicopter route structure. In the 1980s, FAA established a helicopter route structure that is specific to the D.C. area, which includes 25 fixed routes and patrol zones near each of the area's three large hub airports. These routes parallel interstates, highways, and major rivers—including the Potomac River, which forms portions of the border among Washington, D.C., Maryland, and Virginia.

In addition, FAA has established a series of airspace restrictions that limit the use of helicopters and other aircraft in the D.C. area for national security purposes.¹⁶ First, within a 30-mile radius of Reagan National, FAA established a special flight rules area, where aircraft operators must maintain constant communication with and transmit a unique code to air traffic control while flying in the area. Second, within approximately 15 miles of Reagan National, FAA established a flight restricted zone within the center of the special flight rules area. The flight restricted zone is more highly restricted as FAA prohibits certain activities in this area.¹⁷ In addition to adhering to the requirements of the special flight rules area, civilian helicopter pilots are required to obtain waivers from FAA and the

¹⁵Federal Aviation Administration, Order JO 7210.BB, Facility Operation and Administration (2019).

¹⁶14 C.F.R. Pt. 93, Subpart V.

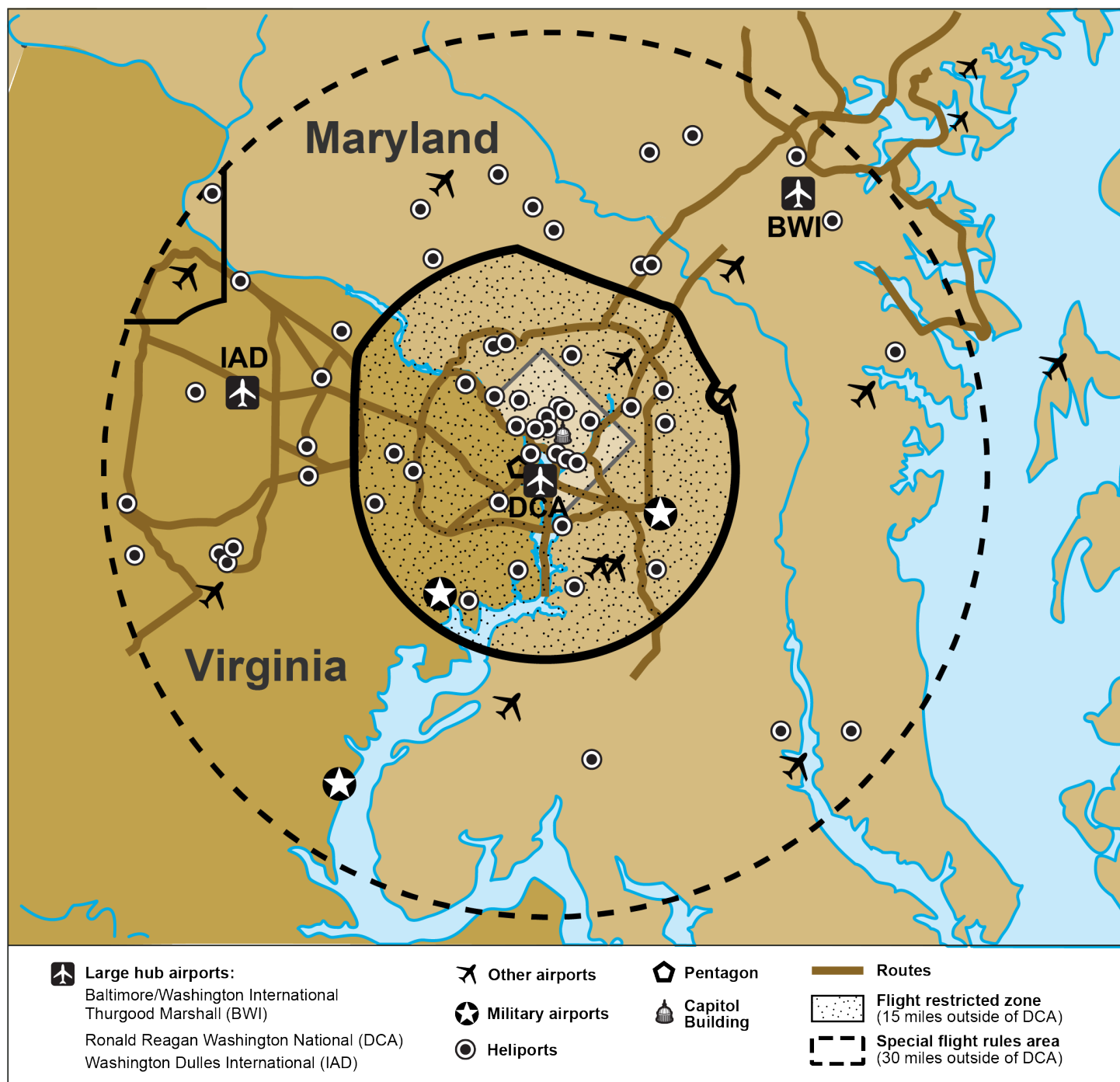
¹⁷14 C.F.R. § 93.341. Operations prohibited within this area include aerobatic flights, practice instrument approaches, glider operations, agriculture/crop dusting, animal population control flight operations, banner towing operations, unmanned aircraft systems, and helicopters operating from a ship or private or corporate yacht.

Transportation Security Administration to fly in the flight restricted zone.¹⁸ Certain pilots must also file a flight plan with air traffic control prior to departure to fly in this area. Third, FAA restricts helicopter operations in the area near the U.S. Capitol, National Mall, and other nearby landmarks.¹⁹ While these restrictions make the D.C. area airspace among the most restricted in the United States, authorized helicopters may arrive and depart from the various heliports and airports located within this airspace. (See fig. 2.)

¹⁸FAA established the restrictions associated with special flight rules area and the flight restricted zone on a temporary basis in 2003, and codified these restrictions through a final rule promulgated in 2008. See Washington, D.C. Metropolitan Area Special Flight Rules Area, 73 Fed. Reg. 76,195 (Dec. 18, 2008) (14 C.F.R. Pt. 93 Subpart V).

¹⁹The restrictions surrounding the area that includes U.S. Capitol and National Mall, defined as Area P-56, were initially established by executive order in the 1930s, and codified into 14 C.F.R. § 73 in 1966. See Designation of Federal Airways, Controlled Airspace and Reporting Points, 31 Fed. Reg. 13,422 (Oct. 18, 1966) (14 C.F.R. § 73).

Figure 2: Selected Washington, D.C. Area Airspace Restrictions and Helicopter Route Structure



Sources: GAO analysis of Federal Aviation Administration information; MapInfo (map). | GAO-21-200

Within the D.C. area airspace, FAA has established maximum altitude limits for helicopters to ensure the safety of helicopters and commercial passenger aircraft, creating further restrictions on helicopter operations. According to FAA policy, helicopters must maintain at least 500 feet of vertical separation from large passenger aircraft while in flight in certain airspace near commercial airports.²⁰ Specifically, in airspace near Reagan National and the Potomac River, FAA further limits the maximum altitudes for helicopters where helicopter routes overlap with commercial passenger airplane operations to ensure the safety of all aircraft. As a result, helicopters in these areas may fly as low as 200 feet above mean sea level. (See fig. 3.) Elsewhere, the helicopter route structure generally establishes maximum altitudes between 1000 and 1300 feet above mean sea level throughout most of the D.C. area. Because FAA's maximum helicopter altitudes are established relative to mean sea level, the maximum posted altitudes relative to objects on the ground may be lower or higher, depending on local geography, buildings, or obstructions.

Figure 3: Low Altitude Helicopter Flight along Potomac River



Source: GAO. | GAO-21-200

²⁰Federal Aviation Administration, JO 7110.65Y, Air Traffic Control (2019).

Many Helicopter Operators Fly in the D.C. Area, but There Are Limited Data on Noise

Federal, State, and Other Helicopter Operators Conduct Flights in the D.C. Area Using FAA's Helicopter Route Structure

Over 50 helicopter operators—including federal, state, and local governments, along with other civilian operators—conduct flights in support of different missions in the complex and restricted D.C. area airspace. These missions generally cover six broad categories, including air medical, federal law enforcement and emergency support, military, news, state and local law enforcement, and other aviation activities. (See table 2.) Operators with some of these missions, such as air medical and state and local police, are common in urban areas nationwide. Others, such as military operators, have responsibilities unique to the D.C. area. For example, Marine Helicopter Squadron One is responsible for transporting the President and Vice President.²¹ FAA's historical data identified 53 operators conducting flights in the D.C. area from 2017 through 2019, and the number of such operators was consistent during this time. However, the number of operators is likely substantially higher as FAA was not able to determine the operator or mission for most of the flights in the D.C. area it classified as other aviation activity using its available historical records.²² FAA officials said that while such identification data were not in FAA's database, FAA air traffic personnel were aware of the information at the time that flights took place.

²¹For additional information on operator missions and helicopters flown to conduct those missions, see appendix II.

²²In addition to these 53 operators, FAA's data identified about 540 unique registration numbers for helicopters conducting other aviation activity in the D.C. area. FAA's data also identified about 200 additional helicopters with unique call signs for which FAA could not determine the operator or mission based on available historical records. FAA officials noted that they could not identify the operator of these aircraft due to the use of opaque ownership structures (such as limited liability corporations) used by owners to register their aircraft using historical data. We have previously reported that the use of such practices limits FAA's oversight of aircraft registrants' eligibility, and recommended FAA collect information on each individual and entity that owns more than 25 percent of a registered aircraft. FAA concurred with the recommendation, and it has not been implemented. See GAO, *Aviation: FAA Needs to Better Prevent, Detect, and Respond to Fraud and Abuse Risks in Aircraft Registration*, [GAO-20-164](#) (Washington, D.C.: Mar. 25, 2020).

Table 2: Missions of Helicopter Operators in the Washington, D.C. Area, 2017 – 2019

Operator types and missions	Examples of operators
Military operators generally use helicopters to transport officials, conduct consequence management operations such as defense support for civil authorities or homeland security, and to train flight crews.	Air Force Army Coast Guard ^a Marine Corps
Several air medical helicopter operators provide services such as rescue flights or hospital-to-hospital transportation of patients.	Air Methods MedStar Washington Hospital Center PHI Health
Other aviation activity operators conduct flights with a variety of purposes, such as tourism or chartered transportation services.	American Helicopters (flight school) Monumental Helicopters (chartered transportation)
State and local law enforcement agencies in D.C. and surrounding areas use helicopters to pursue suspects and for surveillance purposes.	Metropolitan Police Department Prince George's County Police Department Virginia State Police
Several federal law enforcement and emergency support agencies use helicopters to transport agency officials, protect federal parks and monuments, and provide support services for emergency response.	Customs and Border Protection Department of Energy Federal Bureau of Investigation U.S. Park Police
News organizations use helicopters to conduct aerial photography and other newsgathering operations.	Helicopters, Inc. WBAL-TV

Source: GAO analysis of FAA data and operator interviews. | GAO-21-200

Note: In this table, we refer to the Washington D.C. area as including the area within 30 miles of Ronald Reagan Washington National Airport.

^aCoast Guard helicopters operate in support of the Air Force's Operation Noble Eagle mission to secure the airspace in the Washington, D.C. area by intercepting unidentified flights.

To support these missions, helicopter operators conducted about an average of 29,000 helicopter flights per year in the D.C. area from 2017 through 2019. Of the approximately 88,000 total flights during that period, military operators had the greatest share of flights (37 percent), followed by air medical (21 percent). FAA data indicate the number of annual flights in the D.C. area decreased slightly from about 31,000 in 2017 to 29,000 in 2019. Accordingly, flights for most operator missions decreased over that time. (See table 3.)

Table 3: Federal Aviation Administration (FAA)-Reported Flights Conducted in the Washington, D.C. Area by Operator Mission, 2017 – 2019

Operator mission	FAA-reported helicopter flights			Total
	2017	2018	2019	
Military ^a	11,598	10,281	11,011	32,890
Air medical	6,791	5,369	6,162	18,322
Other aviation activity ^b	5,129	4,545	4,303	13,977
State and local law enforcement	4,441	4,181	4,239	12,861
Federal law enforcement and emergency support	2,068	1,775	1,654	5,497
News	1,377	1,443	1,478	4,298
Total	31,404	27,594	28,847	87,845

Source: GAO analysis of FAA data. | GAO-21-200

Note: In this table, we refer to the Washington, D.C. area as including the area within 30 miles of Ronald Reagan Washington National Airport.

^aCoast Guard helicopters support the Air Force's mission under Operation Noble Eagle to secure the airspace in the Washington, D.C. area by intercepting unidentified flights.

^bThis number includes 666 civilian flights by the approximately 200 helicopters for which FAA could not identify an operator or mission using historical data.

Operators we spoke with said most of their helicopter flights in the D.C. area from 2017 through 2019 took place within and immediately around the borders of Washington, D.C. and were conducted outside of evening hours, though the location and timing of individual flights often depended on mission requirements.²³ According to operators, to accomplish their specific mission requirements, operators may conduct flights over residential areas and during evening hours, actions that may result in more community annoyance from helicopter noise.

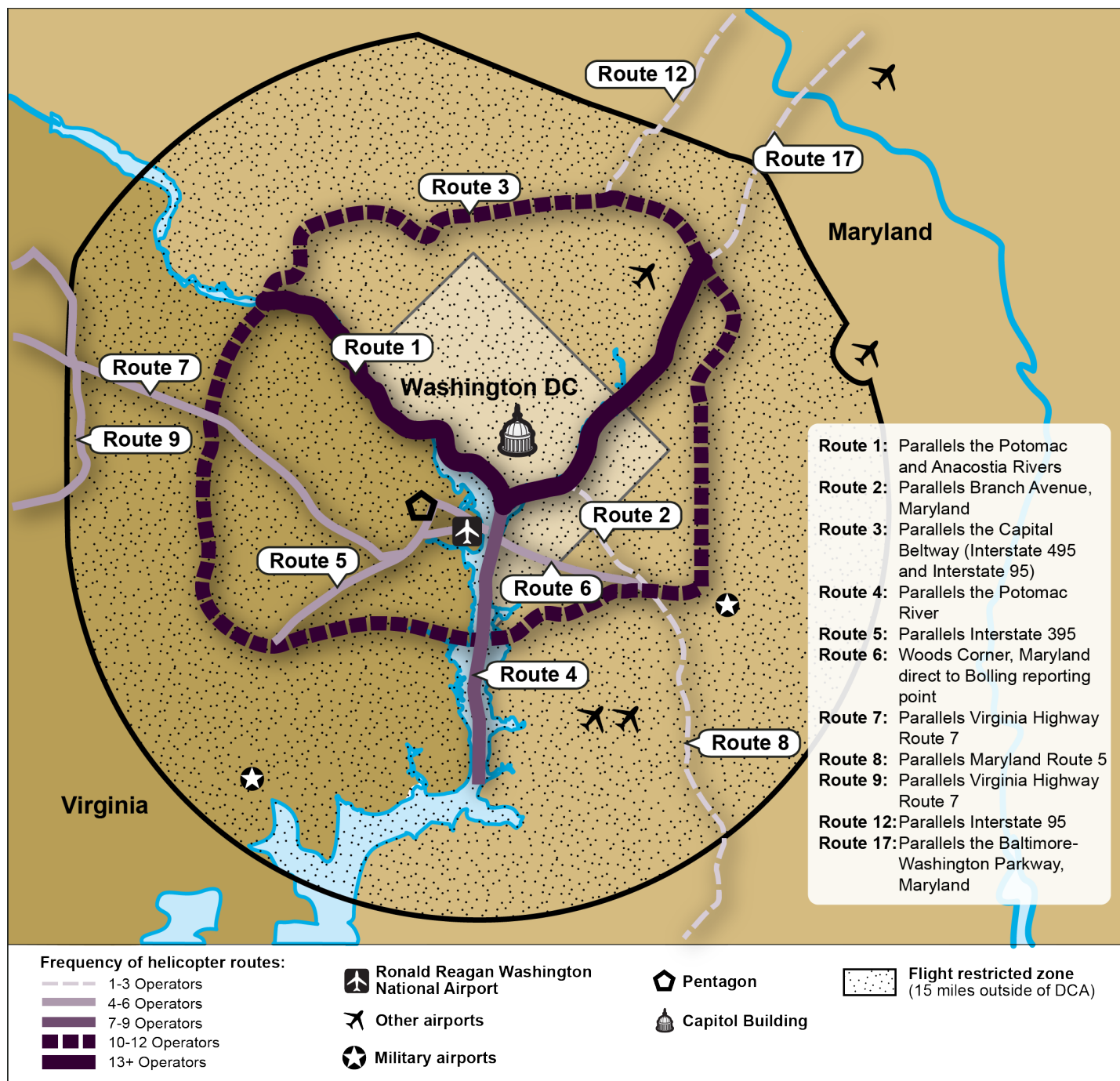
- **Geographic location.** Helicopter traffic is more frequent on helicopter routes and in zones in the D.C. area near the U.S. Capitol building and the urban core of Washington, D.C., and heavier traffic may lead to increased noise heard on the ground in those areas. Operators may use routes for routine operations and zones for time sensitive point-to-point flights. For example, Army officials said their helicopters use routes to transport senior officials, while air medical operators said they use zones to transport patients in critical condition and law enforcement operators told us they use zones when pursuing criminal

²³We refer to "evening hours" as from 10:00 p.m. to 6:00 a.m. Eastern Time. We defined flights as occurring during evening hours if at least one minute of the flight occurred during this time period.

suspects. Specifically, most helicopter operators we interviewed reported following the routes and the zones in the helicopter route structure, and reported using routes and zones near the core of Washington, D.C., and nearby suburban counties, as well as near their helipads or bases, more than those in other parts of the D.C. area. Many of the operators we spoke with reported using routes that parallel the Potomac River and the Capital Beltway (Interstate 495), which surrounds a densely populated area near the Capitol, the Pentagon, and adjacent counties in Virginia and Maryland. (See fig. 4.) Many operators also reported using the zones inside the area bordered by the Capital Beltway as well as the zone immediately south of the Capital Beltway near Davison Army Airfield.²⁴ In some cases, flights from different operator missions may be concentrated in different parts of the D.C. area. For example, according to FAA data, helicopter flights in the “other aviation activity” category in the D.C. area took place mostly outside the flight restricted zone.

²⁴FAA officials told us that they have not used their operations data to analyze the extent to which helicopter operators follow the routes during flights because of the need for operators to use both routes and zones to conduct safe operations, and due to the technical challenges of conducting such an analysis. However, operators told us that if they deviate from an existing route, air traffic controllers at Reagan National will quickly contact them about such a change due to the highly restricted nature of the airspace.

Figure 4: Selected Operators' Reported Use of Washington, D.C. Area Helicopter Routes, 2017 - 2019



Sources: GAO analysis of Federal Aviation Administration and helicopter operator information; MapInfo (map). | GAO-21-200

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- **Flight timing.** Most helicopter flights in the D.C. area were conducted outside of evening hours. However, according to FAA data, operators conducted some portion of about 19,900 flights (23 percent) during evening hours. Specifically, certain missions—including state and local law enforcement, air medical, and news—required a higher percentage of flights during evening hours. According to FAA data, operators with these missions conducted about one-third of their flights during some portion of evening hours. All of the state and local law enforcement and air medical operators we spoke with told us their evening flights were mission critical and, depending on the operator and mission, included unscheduled activities such as law enforcement surveillance flights and emergency medical transportation. For example, Prince George’s County Police Department officials told us 90 percent of their helicopter flights took place during evening hours, including observation, law enforcement support, and surveillance flights. Similarly, representatives from Air Methods, an air medical operator, said about half of their patient transportation and emergency response flights took place during evening hours.

The military operators we spoke to also said they conducted some helicopter flights during evening hours, though most military operators said these flights were for the purposes of developing and maintaining pilot proficiency under evening conditions. According to FAA operations data, approximately 15 percent of military helicopter flights from 2017 through 2019 occurred during some portion of evening hours. Military operators we spoke with generally said they restricted their flights during evening hours, except when necessary to meet requirements to train pilots under evening conditions or when required by regulation. Air Force, Army, Coast Guard, and Marine Corps officials told us they require evening flight training to develop and maintain pilots’ proficiency during evening operations. For example, Coast Guard officials told us that their mission to help secure the D.C. area airspace by intercepting unidentified flights requires training flights during evening hours to simulate real world conditions, including the use of night vision goggles. Additionally, Army National Guard officials told us that their pilots are required by regulation to conduct a certain number of training flights during evening hours in order to be prepared to conduct rescue flights and security services.

Limited Data Exist on Helicopter Noise in the D.C. Area, and It is Unclear Whether the Extent of Helicopter Noise Has Changed

Limited noise data on helicopter flights in the D.C. area are available because most stakeholders do not collect it, partly because studies to measure and map noise from helicopters over a certain area are technically challenging and resource-intensive. FAA officials told us the agency has not collected noise data from helicopter flights in the D.C. area and said FAA does not know whether helicopter noise in the D.C. area has changed. FAA officials stated that the agency does not conduct such studies because airports are better positioned to conduct such studies, which require the coordination of airports with local communities. Similarly, most operators in the D.C. area we spoke with said they do not collect noise data because doing so is not necessary for their missions. For example, Army National Guard officials told us they do not need to study noise from their helicopter flights because they fly in compliance with all FAA guidance and regulations and their mission responsibilities do not include further efforts to study helicopter noise. However, FAA officials noted that FAA regulations and guidance are not exclusively intended to eliminate noise issues, and stated that FAA lacks the authority to impose noise certification requirements on military aircraft.

Department of Transportation officials and a manufacturer we spoke with also told us that noise studies are difficult and resource intensive. For example, according to officials from the Department of Transportation's Volpe National Transportation Systems Center, which conducts noise research on behalf of FAA, such studies are challenging—due to the interplay of myriad factors affecting helicopter noise—and resource intensive to an extent that they are likely impossible for some stakeholders to undertake. Further, officials from Bell Helicopters, a helicopter manufacturer, told us that conducting studies of helicopter noise is technically challenging and requires specific environmental conditions to distinguish helicopter noise from the ambient noise in a given environment.

Some operators and local communities have developed limited, site-specific studies of D.C. area aircraft noise in the last 3 years, but these studies generally did not analyze noise from helicopters separately from noise generated by other aircraft. For example, a 2018 study on flights from Reagan National found there had been a modest increase in aircraft noise in the Georgetown area of D.C. between 2010 and 2016, but did not identify how, if at all, helicopter noise contributed to the overall

increase in aircraft noise.²⁵ In addition, in 2018, the Army published a study that reviewed existing studies on D.C. area helicopter noise conducted by the Armed Forces, including a 2010 Army study at Davison Army Airfield in Virginia and a 2007 Air Force study at Joint Base Andrews in Maryland.²⁶ Both the Davison Army Airfield and Joint Base Andrews studies found that aircraft noise was generally most present along runways and flight tracks for approach and departure, but did not identify to what extent helicopter noise contributed to the overall noise level. Similarly, a 2017 study at Joint Base Andrews in Maryland found aircraft noise was generally most present along runways and flight tracks but generally did not identify the extent to which helicopter operations contributed to the overall noise level.²⁷

Operators and local communities we interviewed disagreed on whether the extent of helicopter noise in the area had changed. Operators generally said that noise from their flights had decreased or stayed the same. In contrast, most local communities affected by helicopter noise we interviewed said helicopter noise had increased. As noted above, limited data exist to determine whether any change has occurred or the magnitude of such a change. Further, the noise that observers experience from helicopter flights depends on a variety of factors outside of the control of the operator or observer, including air temperature and wind speed and direction.

Operators and local communities also generally disagreed on the potential causes of any change in helicopter noise. Specifically, local communities attributed changes in helicopter noise to a variety of factors, including an increase in the number of flights, low flight altitude, helicopters' operating procedures, helicopter transportation of high-

²⁵CSDA Design Group for The Government of the District of Columbia Department of Energy and Environment, *Ronald Reagan Washington National Airport (DCA) Airplane Noise Assessment Final Report* (San Francisco, CA; September 2018). The study compared data from 8 days in 2010 against data from 8 days in 2015-2016 (4 days in 2015 and 4 days in 2016).

²⁶Headquarters, Department of the Army, *Report on the Effects of Military Helicopter Noise on National Capital Region Communities and Individuals* (Washington, D.C.; February 2018); U.S. Army Public Health Command, *Operational Noise Consultation No. 52-EN-ODRM-11* (Aberdeen, MD; September 2010); and Andrews Air Force Base, *Air Installation Compatible Use Zones Study* (Andrews Air Force Base, MD; 2007). Joint Base Andrews was established in October 2009, when Andrews Air Force Base and Naval Air Facility Washington were combined into a single facility.

²⁷U.S. Air Force, *Air Installations Compatible Use Zones Study* (Joint Base Andrews, MD; November 2017).

ranking military personnel, and changes in housing development and population density. However, operators told us they had not changed their helicopter flights or their missions in a way that would increase helicopter noise. Operators also said they had taken steps to mitigate noise, though some operators have mission needs for on-demand services, such as rescue flights, that may limit efforts to reduce helicopter noise consistently. Factors to which local communities attributed changes in helicopter noise include:

- **Number of flights.** Most local communities (7 of 10) we spoke with said they experienced an increase in the number of flights over residential areas to be a source of increased helicopter noise. For example, representatives of the Crystal City Civic Association from Arlington County, Virginia, told us their community experienced noise from increased traffic from Coast Guard helicopters on four helicopter routes that pass over their community. However, almost all operators (17 of 18) we spoke with stated that they did not increase the number of flights in a way that would increase helicopter noise. In addition, all operators (18 of 18) we spoke with stated that they did not change their mission or how they conducted their missions in a way that would increase helicopter noise. Moreover, FAA's data show that the total number of flights, as well as the number of flights for most missions, decreased from 2017 through 2019.
- **Low flight altitudes.** Most local communities (7 of 10) we spoke with told us that helicopter noise resulted from low flying aircraft. For example, representatives of the Fairlington community in Arlington, Virginia and of the town of Cheverly, Maryland said that noise from low flying helicopters created disturbances such as rattling the windows and shaking the walls of houses. A representative of Arlington Ridge, another community in Arlington County, said Arlington Ridge residents regularly observed military helicopters flying 50 to 75 feet above housing in their community, leading to increased helicopter noise. However, almost all operators (16 of 18) told us they fly at the maximum posted altitude when possible, though in some circumstances they may need to fly at lower altitudes. For example, U.S. Park Police officials said they may need to hover at lower altitudes during rescue operations as they lift injured individuals up from the ground. Further, FAA officials told us operators generally operate at the highest posted altitude whenever possible as they fly over land in the Washington, D.C. area.
- **Helicopter operating procedures.** Most of the local communities (6 of 10) said that increases in noise may have resulted from the procedures used by helicopter operators as they conduct their

missions. For example, representatives of the Arlington County, Virginia, communities Aurora Highlands and Arlington Ridge told us they observed a military operator making sudden turns, which they said created higher levels of noise. Representatives of Cheverly, Maryland, said that helicopters at a nearby hospital sometimes ran their engines for 30 to 45 minutes while on the helipad, which they said created bothersome noise in the surrounding area. However, all of the operators we spoke to said they took steps to mitigate noise from their helicopter operations, including avoiding certain procedures in flight whenever possible, avoiding rapid and high-angled turns and minimizing rotor and engine operation while on the ground. Additionally, according to FAA officials, operators in the D.C. area generally apply procedures to reduce noise from their flights and have policies in place to mitigate helicopter noise.

- **Personnel transportation.** Representatives of 2 of the 10 local communities we spoke with said there had been an increase in helicopter noise which they speculated was due to the use of military helicopters to transport senior officials and other personnel. For example, representatives of the Arlington County, Virginia, community of Crystal City said they observed increased noise from military helicopters making frequent flights to and from Reagan National, which they speculated was due to the transportation of officials. However, each of the five military operators we spoke with told us they had not changed their operations in a way that would lead to increased helicopter noise. In addition, the Army, which is responsible for the Pentagon helipad, has taken steps to reduce the number of helicopter flights used to transport personnel. Specifically, in January 2017, the Army issued a policy that restricted the transportation of senior officials from the Pentagon helipad. As a result, the number of helicopter missions transporting personnel to and from the Pentagon helipad decreased from 226 in 2016 to 124 in 2019. FAA officials said they did not have information available on whether military operators' use of helicopters to transport officials had changed.
- **Development and population changes.** Representatives of 2 of the 10 local communities told us that population growth in the Washington, D.C., area could result in more people being affected by helicopter noise. For example, representatives of the Metropolitan Washington Council of Governments said it is possible that helicopter noise has remained consistent in parts of the D.C. area, but significant growth in population and development in the region in the last 10 years could potentially be exposing more people to the noise. Similarly, some operators (4 of 18) speculated that the increased population and development under the helicopter routes and zones

has resulted in more individuals being exposed to helicopter noise that has been constant over time. For example, Army National Guard officials told us that, because new housing had been built near existing airfields and under existing helicopter routes over the last 10 to 20 years, more people may be exposed to noise from helicopters flying on routes that were already in place. Similarly, U.S. Park Police officials said there had been an expansion of new housing and development near their heliport in Southeast Washington, D.C. FAA officials told us it was likely more people were now exposed to existing noise from aircraft flying on existing routes as a result of new housing developments.

FAA and Operators Have Taken Steps to Address Helicopter Noise in the D.C. Area but Do Not Fully Share Information Needed to Respond to Concerns

FAA Has Enhanced its Approach to Addressing Helicopter Noise Concerns but Lacks Information Needed to Consistently Respond to Resident Complaints

In both the D.C. area and throughout the United States, FAA responds to helicopter noise concerns through regional offices connected with its Aviation Noise Ombudsman (Ombudsman).²⁸ The Ombudsman serves as a public liaison for issues about aviation noise questions or complaints. Upon receiving a noise complaint through the Ombudsman, FAA examines whether there was helicopter activity in violation of an order, a regulation, or other relevant provision of federal law. FAA officials stated that the complaints help identify noise sensitive communities and areas. In addition, they noted that complaints are one of many factors used to determine whether additional action, such as changing a helicopter route or procedure and conducting outreach to a community, is needed to address noise concerns. Overall, helicopter noise complaints—both nationally and within the D.C. area—are a small percentage of the noise complaints made to FAA. For example, in 2019, FAA received 29

²⁸The Ombudsman was established by the Federal Aviation Reauthorization Act of 1996. Pub. L. No. 104-264, § 1210, 110 Stat. 3213 (49 U.S.C. § 106(q)).

helicopter noise complaints in the D.C. area, comprising 16 percent of total first-time aviation noise complaints received in the area.²⁹

To register a helicopter noise complaint with FAA, a resident may call, email, or send a letter to the Ombudsman, with the specifics of their noise concern.³⁰ When residents provide information to FAA through these methods, FAA officials manually record the complaint into its internal noise portal, a software program used to manage noise complaints, developed in 2018. Based on the geographical location of the complaint, FAA forwards it to one of its nine regional offices for review by its Regional Administrator. The Regional Administrator coordinates with relevant offices within FAA to develop a response tailored to the circumstance of the individual complaint. In addition, FAA may refer the complaint to the local FAA Flight Standards District Office if the helicopter operations may be endangering persons or property. The Regional Administrator then reviews and transmits the response back to the individual who filed the complaint. According to FAA officials, it may take 1 to 2 months to provide a tailored response to a complaint.

FAA has recently taken steps to enhance the ability of the Ombudsman to respond to and address noise complaints. According to FAA officials, residents who register noise complaints often do not provide enough information to investigate or address the complaints. For example, if a resident does not provide specific information on the time or location of the noise concern in the complaint, it can be difficult for officials to determine which operator created the noise. In September 2020, FAA deployed an online noise portal that prompts a complainant to provide the details to address the complaints, including contact information, street address, and time of incident.³¹ FAA officials stated that they publicized these changes by updating the Ombudsman webpages and stated that they planned to work with local stakeholders to increase awareness of these actions.

²⁹In contrast, according to FAA's 2018 Aircraft Noise Ombudsman Report, 7 percent of first-time aviation noise complaints nationwide were related to helicopters. According to FAA policy, FAA does not respond to the same complaint more than once.

³⁰FAA, *Aviation Noise Ombudsman*, accessed October 14, 2020, https://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/airport_aircraft_noise_issues/noise_ombudsman/

³¹FAA, *FAA Noise Portal*, accessed October 16, 2020, <https://noise.faa.gov/noise/pages/noise.html>.

Furthermore, in 2019, FAA updated its policy for addressing aircraft noise complaints.³² In addition to outlining its approach for enhancing the ability of the Ombudsman to respond to noise concerns, the policy also outlines planned initiatives to improve the public's understanding of aircraft noise issues. For example, the policy outlines that FAA will provide information on its website—on at least an annual basis—concerning the number, type, and general geographic origins of noise complaints and inquiries received by the agency. FAA officials said the agency plans to make this summary information about complaints available to the public in 2021.

As part of its updated noise complaint policy, FAA states that it shares responsibility to address aircraft noise with a number of stakeholders, including operators. In addition, federal standards for internal control state that agencies should obtain and communicate quality information from relevant external sources to achieve its objectives.³³ In this case, FAA should ensure that it is regularly obtaining quality information from helicopter operators and communicating information with them to help it fulfill its responsibility to address aircraft noise.

In keeping with this shared responsibility to address helicopter noise, FAA relies on operators to assist with responding to concerns about helicopter noise. As part of this approach, its website directs residents to contact helicopter operators to address noise issues. FAA officials noted that operators are often more able to respond to a specific noise concern near their airfield or base. Moreover, FAA relies on military operators to address helicopter noise concerns related to the use of military helicopters. For example, while FAA regulations establish altitudes and other operational factors that affect noise for all helicopters in controlled airspace, FAA states that it does not directly have authority over regulating noise from military helicopter flights. Accordingly, FAA's website directs residents to contact the nearby airbase to address any helicopter noise issues.³⁴

³²FAA, *FAA Policy on Addressing Aircraft Noise Complaints and Inquiries from the Public* (December 2019).

³³[GAO-14-704G](#).

³⁴Section 1087 of the Conference Report accompanying the National Defense Authorization Act for Fiscal Year 2021, directs the Secretary of Defense to develop a process to receive, track, and analyze helicopter noise complaints in the D.C. area. See H.R. Rep. No. 116-617, at 1244 (2020) (Conf. Rep).

However, FAA's approach to addressing helicopter noise issues within the D.C. area—including working with operators to address these issues—is impeded because these parties do not share helicopter noise information with each other. Specifically, FAA and operators lack complete information on the complaints about helicopter noise issues in the D.C. area. For example, according to FAA officials, the agency directs residents to contact helicopter operators to resolve complaints because it often lacks the detailed data on flight paths or information on an operator's activity to respond to helicopter complaints. However, most of the operators we interviewed (14 of 18) noted that they lack the data needed to respond to noise complaints unrelated to their own flights. As a result, operators reported that they could provide limited information to residents, such as to confirm that their operations were not the source of the noise complaint. For example, Fairfax County Police Department officials estimated that over 80 percent of noise complaints they received were unrelated to their flights, and thus they were unable to determine the source of the noise that spurred the complaint. In addition, FAA lacks information on the extent of helicopter noise complaints in the D.C. area. While many of the operators we interviewed reported receiving helicopter complaints from the public in 2019, none of these operators said that they had forwarded a complaint to FAA, including those complaints that were not a result of their activity and thus they were unable to take action to address.

FAA and operators lack complete information about helicopters in the D.C. area because there is no mechanism to exchange information between these parties or expectation that such information will be regularly shared. Nearly all of the operators we interviewed stated that they have not communicated with FAA about helicopter noise issues. While FAA and some helicopter operators meet annually—most recently in September 2019—to discuss a variety of operational and security issues in the D.C. area, FAA officials and these operators stated that helicopter noise issues have not been discussed. Similarly, in the absence of such a mechanism, existing efforts to share information have been limited. For example, FAA does not directly forward complaints to the Department of Defense and none of the military operators we interviewed said they had received a complaint from FAA in the last 3 years. Moreover, none of the civilian operators we interviewed stated that FAA had forwarded a helicopter complaint to them in the same time period. Operators also noted that it can be difficult for residents to correctly identify the helicopter operator from the ground, which, in the absence of a mechanism to share information amongst FAA and operators, raises the risk that a resident will contact an operator that will

be unable to address the resident’s noise concerns. However, without a mechanism to exchange information between FAA and operators, FAA will continue to lack a full understanding of the extent and sources of helicopter noise issues in the D.C. area.

Mission Requirements
Determine How Selected
Helicopter Operators
Apply FAA and Industry
Noise Abatement
Practices in the D.C. Area

In the absence of available noise information, operators reported taking steps to minimize helicopter noise during operations in the D.C. area where practicable. (See table 4.) Many of these actions are incorporated into the Fly Neighborly guidance. For example, all helicopter operators we interviewed reported following Fly Neighborly in-flight operating procedures to reduce noise, such as avoiding rapid and high-angle turns, using steeper landing approaches and flying at the maximum altitude where possible. In addition, about half of the operators conducted outreach to the public, such as through public events or press releases, as suggested by the Fly Neighborly guidance. Beyond this guidance, many operators also reported mitigating helicopter noise by following the helicopter route structure, noting that the location of the routes over roadways and waterways help shield residential neighborhoods from helicopter noise. However, according to FAA officials, the route structure was not designed to mitigate helicopter noise but instead was intended to safely manage the helicopter and fixed-wing traffic in the D.C. area airspace.

Table 4: Selected Operator-Identified Actions Used to Address Helicopter Noise in the Washington, D.C. Area

Operator-identified actions to address helicopter noise	Number of operators that reported using action
Adopt Fly Neighborly operational procedures	18/18
Follow helicopter route structure	17/18
Providing training to pilots that includes noise mitigation strategies, such as: Fly Neighborly guidance, avoiding noise-sensitive areas, etc.	13/18
Public engagement	9/18
Limit night and evening flights (10:00 p.m. – 6:00 a.m.)	7/18

Source: GAO analysis of helicopter operator information. | GAO-21-200

Note: In this table, we refer to the Washington, D.C. area as including the area within 30 miles of Ronald Reagan Washington National Airport.

Operators have also collaborated with local communities to address noise concerns in some D.C. area neighborhoods near helipads and military bases. For example, beginning in 2013, residents in the Newington, Virginia community observed increased overflight and helicopter noise for

local residents with the nearby military installation at Davison Army Airfield. Community leaders contacted and worked with the airfield commander to address concerns about helicopter noise from the base. In response to the local community's concerns, over a 2-year period, the Army established an approach at the airfield that avoided flying over a nearby residential neighborhood and issued guidance it required other operators to follow when accessing their landing area at Davison Army Airfield. As a result, both Army officials and Newington representatives said these measures helped to reduce helicopter noise issues in the community. Similarly, officials from MedStar Washington Hospital Center—which uses helicopters to provide emergency medical transportation to and from its two hospitals in the D.C. area—said that they worked with nearby neighborhoods to address helicopter noise from its flights. In response to concerns from local residents about helicopter noise, officials from the MedStar Washington Hospital Center said they established arrival and departure flight paths for its two hospitals in the D.C. area, and that action reduced flights over these neighborhoods. As a result, MedStar Washington Hospital Center officials reported no longer receiving helicopter noise complaints from residents near their hospitals.

However, operators of military, law enforcement, and air medical flights—which make up about 80 percent of helicopter flights in the D.C. area—noted that it is not always feasible to reduce noise based on their mission requirements.

- Military operators have on-demand national security and executive transport missions that require access to the entire airspace in the D.C. area; these missions may prohibit military operators from taking certain actions to reduce noise. These missions sometimes require operations during evening hours. For example, the Marine Corps provides executive transport service, which can occur at any hour of the day or night. Similarly, the nature of the Air Force's mission to defend the D.C. area airspace under Operation Noble Eagle, which includes the Coast Guard, may require flights over populated areas at any time of day, depending upon the threat.³⁵ In addition, some military operators do not share or only share a limited amount of information with the public in advance due to the sensitive nature of their mission. For example, Coast Guard officials said they do not usually inform the public before training or other mission-related

³⁵Operation Noble Eagle is the military's homeland defense mission, originally undertaken in response to the terrorist attacks of September 11, 2001.

operations, but will issue press releases after noteworthy operations to inform the public.

- Law enforcement operators—including federal, state, and local operators—have immediate response missions for emergency, search and rescue, criminal activity, and medical situations where time and access to airspace may limit the ability to apply noise reduction actions. As a result, law enforcement operators told us that they may not be able to adhere to Fly Neighborly procedures due to the need to fly at lower altitudes, hover, fly over residential areas, and fly at night when conducting search and rescue, pursuit, medical assistance transportation, or other operations. For example, Metropolitan Police Department officials stated that they try to employ all Fly Neighborly procedures when not conducting a high priority or emergency mission. However, they noted that during high priority and emergency missions, the use of rapid turns, steeper landing approaches and flying at lower than the maximum altitude are inevitable and often necessary to perform mission critical functions such as tracking suspects, conducting search and rescue missions, and other operations. Law enforcement operators also said they could not limit their night flights for emergency response or search and rescue missions. For example, U.S. Park Police officials noted that most of their patrol missions occur prior to 10:00 p.m. at night, but they may need to conduct flights at all hours to support law enforcement and medevac needs.
- Likewise, the time sensitive missions for air medical operators—which include responding to requests for roadside crash assistance, inter-hospital transfers, and other medical assistance—may limit the feasibility of some actions to reduce helicopter noise. Specifically, air medical operators told us that pilots generally follow Fly Neighborly procedures, but depending on the location of a crash or other emergency medical event, they may be required to land in populated areas and take direct flight paths over residential neighborhoods to reduce the time to get to a hospital. Air medical operators also noted that they could not limit their night flights due to their mission.

Stakeholders Expressed Mixed Views on Additional Strategies to Address Helicopter Noise Including Airspace and Operational Changes

Representatives from local communities we interviewed suggested that FAA and operators could take further action to reduce helicopter noise in the D.C. area. To do so, these representatives suggested a number of potential actions that operators as well as FAA could take. (See table 5.) For operators, local communities suggested relocating helipads and landing areas away from residential areas and investing in quieter technology or newer helicopter models. Local communities also suggested that FAA could raise the altitudes for helicopter operations, modify the route structure to redirect traffic over less populated areas, or establish quiet zones to restrict the use of helicopter operations and reduce noise in their communities. The potential strategies local communities identified to reduce helicopter noise in the D.C. area are broadly consistent with strategies that FAA identified in its 2004 review of urban helicopter noise.³⁶ Similar strategies have also been proposed by local communities in other major metropolitan areas, including Los Angeles and New York City.³⁷

Table 5: Potential Helicopter Noise Strategies Discussed by Selected Washington, D.C. Area Communities

Potential strategy	Examples of strategy implementation
FAA adjustments to helicopter altitudes	<ul style="list-style-type: none">• FAA raises maximum altitude limits• FAA establishes minimum altitude limits
FAA modifications to the helicopter route structure	<ul style="list-style-type: none">• FAA consolidates or reduces the number of helicopter routes, limiting affected residential areas or neighborhoods• FAA increases the number of helicopter routes to disperse helicopter noise
Establishment of “quiet” or restricted zones	<ul style="list-style-type: none">• FAA limits helicopter operations in neighborhoods• Operators voluntarily limit operations over residential areas
Limitations on helicopter hovering	<ul style="list-style-type: none">• FAA establishes limits for hovering
Relocate existing helipads to less populated areas within the Washington, D.C. area	<ul style="list-style-type: none">• Operator relocates landing areas at an airfield, base, or medical facility

³⁶FAA, *Report to Congress: Nonmilitary Helicopter Urban Noise Study*, (Washington, D.C.: Dec. 2004).

³⁷See, e.g., FAA, *Report on Los Angeles Helicopter Noise Initiative* (May 31, 2013) and The New York North Shore Helicopter Route, 77 Fed. Reg. 39,911 (July 6, 2012).

Potential strategy	Examples of strategy implementation
Invest in quieter technology	<ul style="list-style-type: none"> Operator purchases newer helicopter model with quieter classification or invests in other noise reducing technology

Source: GAO analysis of local community information. | GAO-21-200

Note: In this table, we refer to the Washington, D.C. area as including the area within 30 miles of Ronald Reagan Washington National Airport.

We found that a number of factors would affect whether these or other potential strategies would be feasible to implement or effective at addressing noise concern in the D.C. area. Specifically, FAA officials noted that safety and regulatory considerations could affect the implementation of some suggested strategies. Operator officials we interviewed also noted that some of the strategies could affect their mission requirements or increase their operating costs. However, the majority of operators (10 of 18) said that there were limited or no feasible actions FAA could take to change the airspace to further address noise in the D.C. area in part because the airspace is already highly restricted.

- Aircraft safety.** Adoption of some additional strategies discussed by local communities could affect the safety of both helicopters and fixed wing aircraft operations within the D.C. area. FAA officials noted that any changes to the route structure could affect the ability of operators to safely complete their missions and comply with security regulations. These officials also added that the existing minimum and maximum altitudes for helicopters were set to maintain safe separation for helicopters between commercial passenger airplanes and ground structures. According to these officials, an increase in maximum or minimum altitude would require higher altitudes and steeper approaches and descents of commercial passenger aircraft coming into Reagan National, which could reduce safety for all aircraft operating in this airspace. Similarly, about half of the helicopter operators we interviewed noted that changes in altitudes could affect mission safety. For example, Army officials noted that raising the minimum altitude for helicopter routes and zones could present challenges for pilots to safely navigate the airspace during poor weather conditions.
- Regulatory authority.** FAA may lack the authority to implement some potential strategies to address noise in local communities. For example, the agency states that it does not interpret its statutory authority to support the creation of “quiet” or “noise-restricted” areas. More broadly, while FAA provides air traffic control services to military helicopters, it states that it has no authority to directly regulate military

helicopter noise. However, Army officials stated that FAA does manage military helicopter noise because it establishes altitudes and other operational parameters as part of its airspace management responsibilities. These officials stated that because their helicopters adhere to all FAA regulations and policies and remain in contact with air traffic control while in flight, military helicopter noise could be affected by additional strategies to address noise. FAA officials acknowledged that its existing air traffic regulations and policies have some effect on the amount of noise from military helicopters that residents in the D.C. area experience, but stated that FAA does not have the authority to impose noise certification requirements similar to what exists for civilian aircraft on military aircraft.

- **Mission requirements.** Depending on the implementation of these strategies, operators reported potential challenges with some of these strategies that may affect their ability to complete their mission. Specifically, 13 of 18 helicopter operators told us that establishing quiet or restricted zones would negatively affect their mission, with some operators noting they require access to the entire airspace or specific areas to complete their missions. For example, Prince George's County Police Department officials stated that quiet and restricted zones would negatively affect their ability to conduct their missions, because they need to be able to fly wherever their mission dictates. In addition, 9 of 18 operators said that restrictions on hovering would affect their mission. For example, Maryland State Police said that during a medical evacuation, police may need between 10 to 30 minutes to orbit and hoist a patient into the helicopter. Another strategy a majority of operators (10 of 18) said would negatively affect their mission is the relocation of helipad or landing areas. For example, the U.S. Park Police officials stated that relocating their helipad, located along the Anacostia River in Southeast Washington, D.C., would significantly affect their ability to conduct their mission and to ensure they can provide a quick response time within the D.C. area.
- **Operator cost.** Operators also noted that some strategies could reduce noise but would be costly to implement. Specifically, some operators (7 of 18) said that upgrading to newer, quieter helicopter models or investing in quieter technology to reduce helicopter noise may be expensive. For example, Coast Guard officials stated that their current fleet of helicopters is over 30 years old, and as a result, it would not be cost-effective for them to invest in noise reducing technologies. Officials also said that even if the funds were available to upgrade their helicopter noise reduction capabilities, they noted that

existing technology would not noticeably reduce the noise generated by their operations.

Conclusions

Within the D.C. area, noise concerns arise from the high number of helicopter flights, which serve diverse missions in a densely populated but highly restricted airspace. Given this operating environment, in which most helicopter flights are used to conduct military, law enforcement, and medical missions, area residents will likely continue to experience noise to some extent regardless of any actions taken by FAA and operators. While the operating environment and missions in the D.C. area limit the feasibility of some strategies to reduce noise, FAA, along with helicopter operators, has assumed a shared responsibility to respond to noise concerns. However, due to limited sharing of information, FAA and operators each lack key information that would help them more fully respond to helicopter noise concerns in the D.C. area. Though FAA relies on operators to help them respond to noise complaints, operators often lack information on flights other than their own that would allow them to assist FAA in this endeavor. Similarly, FAA lacks information provided by residents to helicopter operators that would help it more fully understand the extent of noise concerns in the area. Furthermore, because residents may not be able to determine which operator is causing the noise, they may direct their complaint to an unrelated operator, with the result that neither FAA nor the operator causing the noise learns of the complaint. However, by developing a mechanism to share helicopter noise information, FAA and helicopter operators would be better positioned to consistently identify, track, and respond to individual noise concerns made by residents. Moreover, such a mechanism would help provide FAA with a broader understanding of the extent of helicopter noise in the D.C. area and help determine what, if any, additional actions are needed to address helicopter noise.

Recommendation for Executive Action

The Administrator of the FAA should direct the Office of Environment and Energy to develop a mechanism to exchange helicopter noise information with operators in the D.C. area. (Recommendation 1)

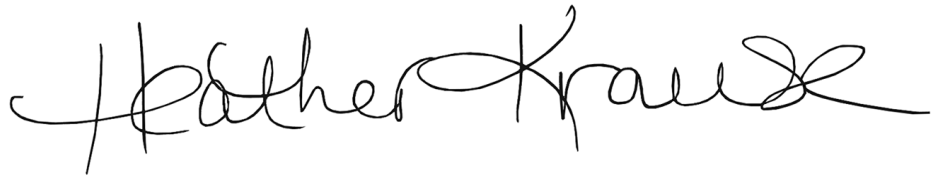
Agency Comments and Our Evaluation

We provided a draft of this report to the departments of Defense, Energy, Homeland Security, the Interior, Justice, and Transportation for their review and comment. The Department of Transportation agreed with our recommendation, noting in its comments that while reducing helicopter noise in the D.C. area will be challenging, improved sharing of helicopter noise information among FAA, helicopter operators, and pilots is necessary. These comments are reproduced in appendix III. In addition,

the Departments of Defense, Homeland Security, and Transportation provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Acting Secretary of Defense, the Secretary of Energy, the Acting Secretary of Homeland Security, the Secretary of the Interior, the Acting Attorney General, the Secretary of Transportation, and other interested parties. In addition, the report is available at no charge on the GAO website at <https://www.gao.gov>.

If you or your staff have any questions about this report, please contact me at (202) 512-2834 or KrauseH@gao.gov. Contact points for our Offices of Congressional Relations and Public Affairs may be found on the last page of this report. GAO staff who made key contributions to this report are listed in appendix IV.

A handwritten signature in black ink, reading "Heather Krause". The signature is fluid and cursive, with the first name "Heather" and last name "Krause" clearly distinguishable.

Heather Krause
Director, Physical Infrastructure Issues

List of Requesters

The Honorable Gerry Connolly
Chairman
Subcommittee on Government Operations
Committee on Oversight and Reform
House of Representatives

The Honorable Donald S. Beyer, Jr.
House of Representatives

The Honorable Anthony G. Brown
House of Representatives

The Honorable Jamie Raskin
House of Representatives

The Honorable David Trone
House of Representatives

The Honorable Eleanor Holmes Norton
House of Representatives

Appendix I: Objectives, Scope, and Methodology

Our objectives were to: (1) describe what is known about helicopter flights and noise from flights in the Washington, D.C. area (D.C. area); (2) evaluate the extent to which the Federal Aviation Administration (FAA) and helicopter operators have taken action to minimize helicopter noise in the D.C. area; and (3) describe stakeholder views on potential strategies to address helicopter noise in the D.C. area.¹

For all objectives, we reviewed statutes, regulations, policies, and guidance, and interviewed FAA officials. To understand how the D.C. area airspace is managed and restricted, we reviewed FAA's Baltimore-Washington helicopter route chart and interviewed Transportation Security Administration officials. Additionally, we interviewed officials from a non-generalizable sample of 18 D.C. area helicopter operators about their operations. To develop an initial pool of operators for this sample, we used the identified operators that had conducted at least 500 or more flights from 2017 – 2019, were identified by the Army's 2018 report on helicopter noise, or were recommended by agency officials and industry stakeholders.² From this initial pool, we then selected operators for a non-generalizable sample to provide perspectives about each of the following missions: military, federal law enforcement and emergency support, state and local law enforcement, medical, news, and other aviation activity and interviewed those operators willing to speak with us.³ These criteria allowed us to obtain insight from a diverse mix of operators, but this information cannot be generalized to all operators.

Additionally, we interviewed representatives from a non-generalizable sample of 10 local communities, including local governments, community and civic associations, and the local metropolitan planning organization, to obtain their perspectives. We selected this sample based on

¹For the purposes of this report, we refer to the D.C. area as including the area within 30 miles of Ronald Reagan Washington National Airport (Reagan National).

²Headquarters, Department of the Army, *Report on the Effects of Military Helicopter Noise on National Capital Region Communities and Individuals* (Washington, D.C.; February 2018).

³We initially selected 27 operators using these criteria. Of these, 9 could not be reached, told us they had no views to share, or declined to be interviewed. These 9 included 1 news operator, Helicopters, Inc., and 8 other aviation activity operators: American Aviation, Spitzer Helicopter, JSC Investment Group, Coshland Aviation, November Alpha, Carolina Mobile Storage, FDS Bell 429, and Touchstone Helicopters. According to FAA data, flights by the 18 operators we interviewed accounted for at least 71 percent of the total flights over the period 2017 through 2019.

geographic diversity, availability and willingness to interview with us, and stakeholder recommendations.⁴ The criteria we used to select local communities for interview allowed us to obtain information from officials representing a diverse mix of communities, but this information cannot be generalized for all communities in the D.C. area. We also interviewed other stakeholders, including research organizations and national industry groups. (See table 6.)

Table 6: Washington, D.C. Area Helicopter Engagement Interviews Conducted

Category	Mission or type	Organization
Local communities	Community and civic associations	Arlington Ridge Civic Association
		Aurora Highlands Civic Association
		Crystal City Civic Association
		Fairlington Citizens Association
		Montgomery County Quiet Skies Coalition
		NewingtonVA.org
	Local government	Arlington County, Virginia
		Cheverly, Maryland
		Government of Washington, D.C.
	Metropolitan planning organization	Metropolitan Washington Council of Governments
Manufacturers	Helicopter Manufacturer	Airbus
		Bell Helicopters
		Sikorsky Aircraft
Operators	Air Medical	Air Methods
		MedStar Washington Hospital Center
		PHI Air Medical
	Federal law enforcement and emergency support	Customs and Border Protection
		Department of Energy
		Federal Bureau of Investigation
		U.S. Park Police
	Military	Air Force
		Army

⁴We initially selected 15 local communities to interview based on these criteria; however, 5 could not be reached, told us they had no views to share, or declined to be interviewed. These 5 included 2 local governments and 3 community and civic associations. The local governments included Montgomery County, MD, and College Park, MD, and the community and civic associations included the D.C. Fair Skies Coalition, the D.C. Federation of Civic Associations, and the Southern Maryland Fair Skies Coalition.

Appendix I: Objectives, Scope, and Methodology

Category	Mission or type	Organization
		Army National Guard
		Coast Guard
		Marine Corps
	Other aviation activity	Monumental Helicopters
	State and local law enforcement	Fairfax County Police Department
		Maryland State Police
		Metropolitan Police Department
		Prince George's County Police Department
		Virginia State Police
Stakeholders	Industry groups	Association of Air Medical Services
		Flight Safety Foundation
		Helicopter Association International
		National Business Aviation Association
	Research organizations	John A. Volpe National Transportation Systems Center
		Kenneth Brentner, Ph.D., and Eric Greenwood Ph.D., Pennsylvania State University

Source: GAO. | GAO-21-200

To describe what is known about helicopter flights and noise from flights in the Washington, D.C., area, we reviewed FAA regulations and policies, and guidance documents on helicopter flights in the D.C. area. We also analyzed data from FAA's Performance Data Analysis and Reporting System on helicopter flights in the D.C. area from 2017 through 2019.⁵ To assess the reliability of the data, we reviewed documentation on the Performance Data Analysis and Reporting System; conducted testing for missing data, outliers, and obvious errors; and interviewed FAA officials. Based on these actions, we determined that the data we used were sufficiently reliable for our purposes. We also reviewed available studies conducted by federal agencies and local government on helicopter flights and noise in the D.C. area, including two studies conducted by the Army,

⁵FAA uses the Performance Data Analysis and Reporting System to collect and analyze data on operations within the national airspace. We did not analyze FAA data on helicopter flights that occurred prior to 2017. FAA officials stated that they made a change to the agency's approach to recording helicopter flight information in July 2016 as part of an effort to capture more information about these flights in the D.C. area. As a result, FAA data on helicopter flights from 2017 through 2019 is not comparable to data on flights that occurred before these years.

two by the Air Force, and one commissioned by the D.C. government.⁶ Further, we reviewed FAA aircraft certification information on noise generated by civilian helicopter models. To obtain information on military helicopters, we interviewed officials from the three helicopter manufacturers associated with the military helicopters used by the military in the D.C. area. Additionally, we asked the samples of 18 operators and 10 local communities about noise from helicopter operations, however the information we gathered from these interviews is not generalizable to all operators or communities in the D.C. area.

To evaluate the extent to which FAA and helicopter operators have taken action to minimize helicopter noise in the D.C. area, we reviewed FAA policies and guidance on helicopter noise, including FAA's 2019 update to its aircraft noise complaint policy.⁷ The information and communication component of internal control—the organization's use of information to communicate within the organization or with related parties—was significant to this objective, along with the related principle that management should externally communicate the necessary quality information to achieve the entity's objectives.⁸ We assessed FAA's external communication of information about helicopter noise complaints by interviewing FAA and operator officials and reviewing helicopter noise complaints. We also reviewed complaints submitted to FAA about helicopter noise in the D.C. area from 2019. Additionally, we reviewed documents and guidance developed by the non-generalizable sample of 18 helicopter operators and reviewed voluntary guidance developed by industry groups to minimize noise, including helicopter noise complaints received by some operators and placed by residents. We also interviewed officials from the non-generalizable sample of 18 D.C. area helicopter

⁶Headquarters, Department of the Army, *Report on the Effects of Military Helicopter Noise on National Capital Region Communities and Individuals* (Washington, D.C.; February 2018); U.S. Army Public Health Command, *Operational Noise Consultation No. 52-EN-0DRM-11* (Aberdeen, MD; September 2010); Andrews Air Force Base, *Air Installation Compatible Use Zone Study* (Andrews Air Force Base, MD; 2007); U.S. Air Force, *Air Installations Compatible Zones Use Study* (Joint Base Andrews, MD; November, 2017); and CSDA Design Group for The Government of the District of Columbia Department of Energy and Environment, *Ronald Reagan Washington National Airport (DCA) Airplane Noise Assessment Final Report* (San Francisco, CA; September 2018).

⁷FAA Policy on Addressing Aircraft Noise Complaints and Inquiries from the Public (December 2019).

⁸GAO, *Standards for Internal Control in the Federal Government*, [GAO-14-704G](#) (Washington, D.C.: September 2014).

operators to obtain information on actions they have taken to address helicopter noise.

To obtain stakeholder views on strategies to address helicopter noise, we interviewed officials from FAA and the non-generalizable sample of 18 D.C. area helicopter operators to obtain information on strategies to minimize the noise associated with helicopter flights and steps operators have taken to do so. We also interviewed representatives from the non-generalizable sample of 10 local communities to obtain perspectives on possible ways to mitigate helicopter noise and whether further action is needed. We gathered information on the actions and potential strategies from these interviews to provide perspectives on the range of actions and strategies available to address helicopter noise; however, this information is not generalizable and does necessarily not reflect all possible strategies. We also reviewed strategies for addressing helicopter noise in other published FAA reports and documents.

We conducted this performance audit from October 2019 to January 2021 in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Appendix II: Information on Selected Missions and Helicopter Models Flown in the D.C. Area, 2017 – 2019

Air Medical

Medical helicopter operators provide services such as rescue flights or hospital-to-hospital transportation of patients in the D.C. area.¹ Operators we interviewed with this mission included Air Methods, MedStar Washington Hospital Center, and PHI Air Medical.

- Air Methods officials said they use helicopters to conduct critical air ambulance flights and transport patients between medical facilities. To conduct these flights, Air Methods uses six helicopters: three Eurocopter EC 135s (see fig. 5); two Eurocopter EC 145s; and one Eurocopter BK117 S-76 from bases in Hagerstown, Maryland and Petersburg and West Point, Virginia.²

Figure 5: Air Methods Helicopter Operated in the Washington, D.C. Area



Eurocopter EC 135

Source: Air Methods. | GAO-21-200

¹In this report, we refer to the D.C. area as including the area within 30 miles of Ronald Reagan Washington National Airport.

²Some helicopter models listed in this appendix were originally manufactured by Eurocopter, which was renamed Airbus Helicopters in 2014. In this report we refer to all of these aircraft as being manufactured by Eurocopter.

- Officials from MedStar Washington Hospital Center said they use medevac helicopters to transport patients who are critically ill or require specialized care at a tertiary hospital like MedStar Washington Hospital Center. It manages a fleet of four Eurocopter EC135 helicopters with three bases located in Maryland: St. Mary's County, Indian Head, and Tipton, Fort Meade. These bases provide support to patients in Maryland, Virginia, West Virginia, Delaware and Pennsylvania.
- According to officials, PHI Air Medical is a large multistate rotorcraft operator that uses helicopters to transport critically ill or injured patients between medical facilities and from emergency scenes to hospitals. PHI Air Medical serves Virginia communities surrounding Fredericksburg, Front Royal, Leesburg, and Manassas, as well as Baltimore, Maryland. To conduct these flights, PHI Air Medical uses two Bell 407 and three Eurocopter EC135 helicopters.

Federal Law Enforcement and Emergency Support

Federal law enforcement and emergency support agencies use helicopters to transport agency officials, provide security for special events, and provide support services for emergency response in the D.C. area. Operators we interviewed with this mission included Customs and Border Protection, the Department of Energy, the Federal Bureau of Investigation, and the U.S. Park Police.

- Customs and Border Protection officials said they use helicopters to conduct missions related to law enforcement actions and security for special events, such as the State of the Union, state funerals, and presidential inaugurations. To conduct these flights, the agency uses various types of helicopters including Eurocopter AS350s based at Manassas Regional Airport in Manassas, Virginia. (See fig. 6.)

Figure 6: Customs and Border Protection Helicopter Operated in the Washington, D.C. Area



Eurocopter AS350

Source: Customs and Border Protection. | GAO-21-200

- Department of Energy officials said they use a helicopter to perform mapping of the ground for radiological threats in support of emergency response services. To conduct these flights, the agency uses a Bell 412 helicopter based at Joint Base Andrews, Maryland. (See fig. 7.)

Figure 7: Department of Energy Helicopter Operated in the Washington, D.C. Area



Bell 412

Source: Department of Energy. | GAO-21-200

- According to officials, the Federal Bureau of Investigation transports officials between its headquarters in Washington, D.C. and the FBI Academy in Quantico, Virginia utilizing its fleet of six Sikorsky UH-60M and three Bell 429 helicopters.
- U.S. Park Police officials said they use helicopters to conduct patrol flights, search and rescue, and emergency response operations. To conduct these flights, the agency uses three helicopters: two Bell 412EPs (see fig. 8) and one Bell 206L3. These helicopters are generally based at the Eagle's Nest facility in Washington, D.C.

Figure 8: U.S. Park Police Helicopter Operated in the Washington, D.C. Area



Bell 412EP

Source: U.S. Park Police. | GAO-21-200

Military

Military operators generally use helicopters to transport officials, conduct air defense and consequence management operations, and train flight crews. Operators we interviewed with this mission included the Air Force, Army, Army National Guard, Coast Guard, and Marine Corps.

- According to Air Force officials, the Air Force's 1st Helicopter Squadron uses helicopters to maintain readiness to conduct air defense operations. To conduct these flights, the Air Force uses 21 Bell UH-1 helicopters stationed at Joint Base Andrews, Maryland. (See fig. 9.)

Figure 9: Air Force Helicopters Operated in the Washington, D.C. Area



Bell UH-1

Source: Air Force. | GAO-21-200

- Army officials said the Army 12th Aviation Battalion uses helicopters to maintain readiness for consequence management missions, such as defense support for civil authorities or homeland security operations, and to provide transportation. To conduct these flights, the Army uses 34 Sikorsky UH-60 helicopters stationed at Davison Army Airfield in Fort Belvoir, Virginia. (See fig. 10.)

Figure 10: Army Helicopter Operated in the Washington, D.C. Area



Sikorsky UH-60

Source: GAO. | GAO-21-200

- Officials from the Aviation Branch of the Army National Guard said they use helicopters to provide support for a variety of missions, including air medical and security operations. To conduct these flights, the Army National Guard uses nine helicopters: three Sikorsky UH-60 Blackhawks and six Eurocopter UH-72s stationed at Davison Army Air Field in Fort Belvoir, Virginia. (See fig. 11.)

Figure 11: Army National Guard Helicopters Operated in the Washington, D.C. Area



Sikorsky UH-60

Source: Army National Guard. | GAO-21-200



Eurocopter UH-72

- Coast Guard officials said they use helicopters to provide air defense support flights for the Air Force's Operation Noble Eagle.³ To conduct these flights, the Coast Guard uses three Eurocopter MH-65D helicopters stationed at Ronald Reagan Washington National Airport. (See fig. 12.)

Figure 12: Coast Guard Helicopter Operated in the Washington, D.C. Area



Eurocopter MH-65D

Source: Coast Guard. | GAO-21-200

- According to Marine Corps officials, Marine Helicopter Squadron One uses helicopters to provide transportation for the President and Vice President and to provide other national security services. To conduct these flights, the Marine Corps uses 33 helicopters and other rotary wing aircraft, including 12 Bell Boeing MV-22s and 11 Sikorsky VH-3D, one Sikorsky UH-3D (not pictured), one Sikorsky UH-60N (not pictured) and eight Sikorsky VH-60Ns stationed at bases including Marine Corps Air Facility Quantico, Virginia; the Pentagon, the White House, the Naval Observatory, and Joint Base Anacostia-Bolling in Washington, D.C. (See fig. 13.)

³Operation Noble Eagle is the military's homeland defense mission, originally undertaken in response to the terrorist attacks of September 11, 2001.

Figure 13: Marine Corps Helicopters and Tiltrotor Aircraft Operated in the Washington, D.C. Area



Bell Boeing MV-22



Sikorsky VH-3D



Sikorsky VH-60N

Source: Marine Corps. | GAO-21-200

Other Aviation Activity

Other aviation operators conduct a variety of activities, such as tourism or chartered transportation services. The operator we interviewed with this mission was Monumental Helicopters.

- According to an official, Monumental Helicopters uses helicopters to provide services including aerial tourism and photography, flight instruction, and chartered transportation flights. To conduct these flights, Monumental uses a Robinson R44 helicopter.

State and Local Law Enforcement

The state and local law enforcement agencies in the D.C. area use helicopters to search for missing persons and for law enforcement observation purposes. Operators we interviewed with this mission included the Fairfax County Police Department, the Maryland State Police, the Metropolitan Police Department, the Prince George's County Police Department, and the Virginia State Police.

- Fairfax County Police Department officials said they use helicopters to support law enforcement operations and conduct medical emergency response flights. To conduct these flights, the Fairfax County Police Department uses two Bell 429 helicopters. (See fig. 14.)

**Figure 14: Fairfax County Police Department Helicopter Operated in the
Washington, D.C. Area**



Bell 429

Source: © Fairfax 1-Keith Dobuler. | GAO-21-200

- According to Maryland State Police officials, the Maryland State Police Aviation Command has a fleet of 10 Leonardo AW139 helicopters, operating from 7 bases throughout Maryland, with a mission including search and rescue, disaster assessment, homeland security, and medical emergency response flights. (See fig. 15.)

Figure 15: Maryland State Police Helicopter Operated in the Washington, D.C. Area



Leonardo AW139

Source: Maryland State Police. | GAO-21-200

- Metropolitan Police Department officials said they use helicopters to conduct search and rescue and law enforcement observation flights, search for missing persons, and provide information on crash scenes and traffic. To conduct these flights, the Metropolitan Police Department uses two Eurocopter AS 350B helicopters. (See fig. 16.)

Figure 16: Metropolitan Police Department Helicopter Operated in the Washington, D.C. Area



Eurocopter AS 350B

Source: Metropolitan Police Department. | GAO-21-200

- Officials from the Prince George's County Police Department said they use helicopters to conduct law enforcement surveillance flights, including in response to incidents such as breaking and entering, robbery, homicide, carjacking, and searching for missing persons. To conduct these flights, the Prince George's County Police Department uses four MD Helicopters MD 520N helicopters. (See fig. 17.)

Figure 17: Prince George's County Police Department Helicopters Operated in the Washington, D.C. Area



MD Helicopters MD 520N

Source: Prince George's County Police Department. | GAO-21-200

- Virginia State Police officials said they use helicopters to provide law enforcement surveillance and support, emergency air medical, search, rescue and executive transportation. To conduct these flights, the Virginia State Police uses seven helicopters, including four Bell 407 helicopters (see fig. 18), two Airbus EC-145 helicopters, and one Bell 412 helicopter.

Figure 18: Virginia State Police Helicopter Operated in the Washington, D.C. Area



Bell 407

Source: Virginia State Police. | GAO-21-200

Appendix III: Comments from the Department of Transportation



**U.S. Department of
Transportation**
Office of the Secretary
of Transportation

Assistant Secretary
for Administration

1200 New Jersey Avenue, SE
Washington, DC 20590

December 7, 2020

Heather Krause
Director, Physical Infrastructure Issues
U.S. Government Accountability Office
441 G Street NW
Washington, DC 20548

Dear Ms. Krause:

Significant reductions in helicopter noise in the National Capital Region (NCR) will be challenging since the majority of operations are military, law enforcement, and medivac service providers. However, the Federal Aviation Administration (FAA) is firmly committed to substantial engagement with communities on all types of aviation noise.

The FAA has established regional community engagement teams, which closely monitor noise issues that impact communities across the US. The agency continually develops noise abatement procedures and assesses their effectiveness, with an eye toward continuous reductions in community noise footprints. Particularly noteworthy is the FAA's Aviation Noise Ombudsman program¹, a web-based portal for the public to submit aviation noise reports.

The FAA works closely with the Helicopter Association International (HAI) to educate operators through the "Fly Neighborly" campaign. "Fly Neighborly" is a noise abatement-training program supported by both the FAA and HAI, which seeks to increase pilot awareness of noise impacts along with the provision of noise abatement procedures.

The FAA agrees with the GAO finding that data sharing improvements between the agency, helicopter operators, and pilots are necessary, and we concur with the GAO recommendation to develop a mechanism to exchange helicopter noise information with helicopter operators in the NCR. We will provide a detailed response to this recommendation within 180 days of the final report's issuance.

We appreciate the opportunity to respond to the GAO draft report. Please contact Madeline Chulumovich, Audit Relations, and Program Improvement, at (202) 366-6512, with any questions or if GAO would like to obtain additional details about these comments.

Sincerely,

A handwritten signature in blue ink, appearing to read "Keith Washington".

Keith Washington
Deputy Assistant Secretary for Administration

¹

https://www.faa.gov/about/office_org/headquarters_offices/apl/noise_emissions/airport_aircraft_noise_issues/noise_ombudsman/

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

Heather Krause (202) 512-2834, or KrauseH@gao.gov

Staff Acknowledgments

In addition to the contact named above, Heather MacLeod (Assistant Director); Matt Voit (Analyst-in-Charge); Camilo Flores; Adam Gomez; Dave Hooper; John Mingus, Jr.; Kristin Petroff; Malika Rice; Kelly Rubin; and Michelle Weathers made key contributions to this report.

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