COMMERCIAL AVIATION

Trends in Air Service to Small Communities

Report to Congressional Addressees

September 2024
GAO-24-106681
United States Government Accountability Office

Accessible Version

GAO Highlights

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Highlights of GAO-24-106681, a report to congressional addressees
September 2024

COMMERCIAL AVIATION

Trends in Air Service to Small Communities

Why GAO Did This Study

Access to air service provides a vital connection to the national transportation system and can be an important driver of economic growth, especially for small communities. Since Congress deregulated the airline industry in 1978, small communities have found it difficult to retain and enhance their air service. Congress created EAS in 1978 and SCASDP in 2000—both under DOT—to help small communities maintain air service.

GAO was asked to review the current state of air service to small communities. This report addresses (1) changes in air service to small communities from 2018 through 2023; (2) factors contributing to changes in air service to small communities, and their effects on federal air service programs; and (3) options to improve air service to small communities.

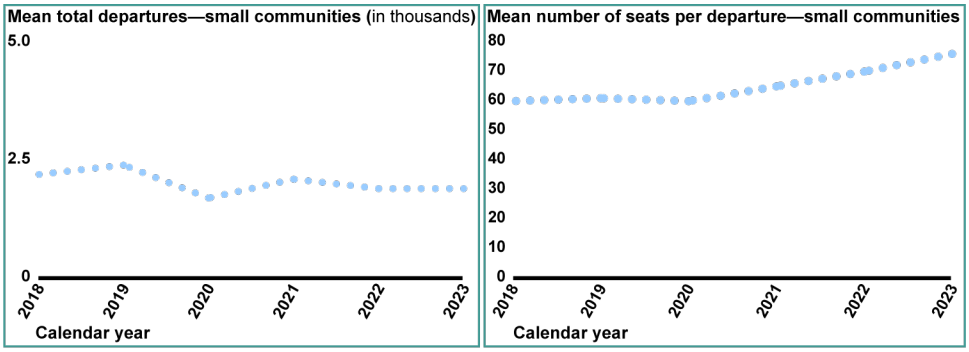
GAO used U.S. Census Bureau data on statistical areas and population to define small communities—in this analysis, the 218 least populous communities in the contiguous U.S. with a commercial airport. GAO also used flight data reported to DOT by airlines to analyze air service to these communities.

GAO conducted semi-structured interviews with a non-generalizable sample of 33 aviation stakeholders, including 16 small airports and five airlines with a range of experiences with EAS and SCASDP, as well as industry associations and academic researchers. GAO also interviewed DOT officials to obtain perspectives on EAS, SCASDP, and other federal policies.

What GAO Found

From 2018 to 2023, small communities in the contiguous U.S. generally experienced a decrease in departing flights, with a steep drop at the onset of the COVID-19 pandemic, but an increase in the average number of seats per departure. About half of the 218 small communities saw modest change in the number of passengers on departures, while others saw more dramatic changes; 8 percent of small communities had a decline of more than 50 percent in passengers on departures, while 14 percent of small communities had an increase of 50 percent or more. Small communities that received air service through the Essential Air Service (EAS) program, which provides subsidies to airlines to serve eligible communities, lost less air service and gained more seats per departure, on average, than non-EAS small communities. On average, small communities' connectivity—a measure of access to the aviation system—decreased slightly, remaining much lower than in large communities.

Mean Total Departures and Mean Number of Seats Per Departure from 218 Small Communities, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Mean Total Departures and Mean Number of Seats Per Departure from 218 Small Communities, 2018–2023

Calendar year	Mean total departures—small communities (in thousands)	Mean number of seats per departure—small communities
2018	2.2	60
2019	2.4	61
2020	1.7	60
2021	2.1	65
2022	1.9	70
2023	1.9	76

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Stakeholders cited pilot and maintenance workforce supply challenges, increased airline operating costs, and travelers choosing to drive to their destination or a larger airport as factors contributing to changes in air service to small communities. Some of these factors also contributed to higher EAS subsidy costs, according to U.S. Department of Transportation (DOT) officials, which increased by approximately 31 percent from 2018 through 2023. Higher airline operating costs (e.g., fuel and labor) also limited the impact of Small Community Air Service Development Program (SCASDP) grants that communities used to incentivize airlines to initiate air service, according to stakeholders.

Options that selected stakeholders and recent studies identified to improve air service to small communities include increasing pilot supply, and addressing higher airline operating costs through electric aircraft or bus service. Stakeholders also identified a range of options to change EAS to support small community air service—such as focusing EAS eligibility on more remote communities or expanding EAS to better ensure small airports do not lose air service—and to modify SCASDP in response to rising airline operating costs.

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Abbreviations

AEAS	Alternate Essential Air Service
ATP	Airline Transport Pilot
Census	U.S. Census Bureau
DOT	Department of Transportation
EAS	Essential Air Service
FAA	Federal Aviation Administration
SCASDP	Small Community Air Service Development Program

U.S. GOVERNMENT ACCOUNTABILITY OFFICE
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September 25, 2024

Congressional Addressees

Access to air service provides a vital connection to the national transportation system and can be an important driver of economic growth, especially for small communities. According to the Federal Aviation Administration (FAA), aviation supports economic output and local economic development, attracts business and tourism, and helps retain jobs that might otherwise be located elsewhere.[1] Since Congress deregulated the airline industry in 1978, small communities have found it difficult to retain and enhance their air service. Congress created the Essential Air Service (EAS) program in 1978 and the Small Community Air Service Development Program (SCASDP) in 2000—both administered by the U.S. Department of Transportation (DOT)—to help small communities maintain air service. The COVID-19 pandemic significantly impacted the aviation industry, contributing to a significant reduction in passenger traffic and financial losses for a variety of aviation businesses and airports.

You asked us to review the current state of air service to small communities and identify measures that Congress and DOT might consider that would help improve it. This report addresses

1. changes in scheduled passenger air service to small communities from 2018 through 2023;
2. factors contributing to changes in air service to small communities, and their effects on federal air service programs; and
3. options to improve air service to small communities.

To identify relevant small communities and the airports that serve them, we used U.S. Census Bureau (Census) data on statistical areas and population to define and separate all communities within the contiguous U.S. into five size groups: small, medium-small, medium, medium-large, and large.[2] Through this process, we identified 218 small communities.[3]

To describe how scheduled passenger air service to small communities changed from 2018 through 2023, we analyzed changes in air service using selected metrics from flight data that U.S. passenger airlines reported to DOT from 2018 through 2023; these were the most recent full-year data available at the time of our analysis.

[1]FAA, *The Economic Impact of Civil Aviation on the U.S. Economy: 2020 State Supplement* (September 2023).

[2]This methodology is consistent with the one used in the DOT Office of Inspector General's May 2020 report. U.S. Department of Transportation Office of Inspector General, *Changes in Airline Service Differ Significantly for Smaller Communities, but Limited Data on Ancillary Fees Hinders Further Analysis*, OST Report No. EC2020036 (Washington, D.C.: May 27, 2020).

[3]The combined populations of communities within each size group represent roughly 20 percent of the population of the contiguous U.S. Beginning with the largest community in the country (New York-Newark, NY-NJ-CT-PA) and proceeding iteratively to the community with the next-highest population, we classified communities as large until the cumulative population of these communities was approximately 20 percent. At this point, we classified the next-largest community as medium-large and similarly proceeded to label the next-largest communities as medium-large until the cumulative population of medium-large and large communities combined was approximately 40 percent. We continued this process to code medium, medium-small, and small communities until all the communities were classified into one of the five size groups. For example, four communities constitute the "large community" group, and 218 communities constitute the "small community" group.

These metrics included mean daily departures per route, mean seats per departure, and mean total onboards (i.e., passengers onboard a plane when it takes off) from a specific community.[4] We supplemented our analyses of community-level changes in air service with similar airport-level analyses, using FAA's categories for airport hub size. See appendix I for more information about these analyses. To assess the reliability of the data, we reviewed the quality control procedures that Census and DOT used. We determined that the data were sufficiently reliable for the purpose of identifying changes in air service to small communities.

To identify factors that contributed to changes in scheduled passenger air service to small communities from 2018 through 2023, and to describe how those factors affected federal air service programs, we reviewed relevant federal laws and documentation related to EAS and SCASDP, including EAS reports and SCASDP grant award orders. We also identified and reviewed 23 publications dating from 2014 to 2023 on issues and programs related to small community air service, including factors contributing to air service loss, the effects of the COVID-19 pandemic, and EAS.

Further, we conducted interviews with a non-generalizable sample of 33 aviation stakeholders. These interviews included semi-structured interviews with representatives of five passenger airlines and 16 small hub, nonhub, or non-primary nonhub airports.[5] Our criteria for selecting airlines and airports included a diversity of airline business models and airport hub sizes, participation in EAS or SCASDP, service to airports in small communities, and geographic distribution. We also interviewed nine other aviation stakeholders: four industry associations, two academic researchers, one aviation consultant, a company that provides airport-linked bus service, and a state department of transportation. In addition, we interviewed DOT officials to obtain their perspectives on EAS, SCASDP, and options to improve air service to small communities. See appendix II for a list of the aviation stakeholders we interviewed.

To describe options that aviation stakeholders and recent studies have identified to improve air service to small communities, we interviewed the non-generalizable sample of aviation stakeholders listed above. We also reviewed and analyzed the literature described above. For additional information about our scope and methodology, see appendix II.

We conducted this performance audit from March 2023 to September 2024 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.

[4]Onboards is the number of paying passengers boarding a plane; this metric differs slightly from enplanements on connecting flights. According to Cirium, the data contractor from which we obtained the flight data, passengers on a one-stop route on the same plane would count as one enplanement, but two onboards. For most passengers, including those on nonstop flights included in our analysis, one enplanement would count as one onboard.

[5]Under statute, large hub airports are defined as those airports that have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports are defined as those airports that have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports are defined as those airports that have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports are defined as those airports that have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are defined as those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

Background

Small Community Air Service

There is no common definition of “small community” in the context of aviation. We have previously reported that small communities are generally served by small airports, which for scheduled passenger air service typically include small hub, nonhub, and non-primary nonhub airports.[6] These airports by definition serve comparatively fewer passengers than medium and large hub airports.[7] Figure 1 shows an example of a small hub airport.

Figure 1: Airport Terminal in Wichita Dwight D. Eisenhower National Airport, Kansas

Source: Wichita Dwight D. Eisenhower National Airport. | GAO-24-106681

Small airports and small communities have experienced declining scheduled passenger air service for several decades. For example, from 2000 through 2018, departures from small and nonhub airports fell 32 percent and 47 percent, respectively, compared to a 7-percent decrease in departures from large hub airports, according to a 2020 National Academies study.[8] In May 2020, the DOT Office of Inspector General reported that from 2005

[6]A May 2020 DOT Office of Inspector General report defines communities by population size. According to the study, smaller airports do not always fall within smaller communities, and the impact of changes in service on passengers may differ if there are alternative airports nearby. See U.S. Department of Transportation Office of Inspector General, *Changes in Airline Service Differ Significantly for Smaller Communities, but Limited Data on Ancillary Fees Hinders Further Analysis*.

[7]For example, communities eligible for SCASDP grants include those served by airports no larger than small hubs.

[8]National Academies of Sciences, Engineering, and Medicine, *Building and Maintaining Air Service Through Incentive Programs* (Washington, D.C.: The National Academies Press, 2020).

to 2017, departures decreased by roughly 12 percent in larger communities, and by 34 percent in smaller communities.[9]

According to our prior work and the 2020 National Academies study, several long-standing factors have contributed to the decrease in air service to small airports in recent decades. These factors include higher jet fuel costs, declining population levels in surrounding communities, a reduction in the number of small regional jets in airline fleets, airline industry consolidation, and regulatory changes to pilot training and certification that have affected the supply of qualified pilots for airlines.[10]

Scheduled Passenger Air Service

Scheduled passenger air service to communities of all sizes can differ—for example, by aircraft size and number of seats—depending on the business model of the airline providing service and on the regulatory framework (14 CFR Part 121 or Part 135) under which the airline is operating. These differences in scheduled passenger service have bearing on how airlines serve small communities.

- When operating under Part 121 rules, larger network airlines typically connect smaller airport "spokes" to larger airports in their hub-and-spoke networks by contracting with regional airlines. Additionally, airlines operating under low-cost and ultra-low-cost business models may provide point-to-point service to smaller airports, including those near leisure destinations.
- Under Part 135 rules, smaller commuter airlines are allowed to provide scheduled air service in piston-powered or turboprop aircraft with nine seats or fewer.[11] Airlines that offer public charter transportation can also operate under Part 135 regulations using aircraft with 30 seats or fewer. A public charter is a type of on-demand operation in which a public charter operator, which is often an indirect air carrier, arranges groups for the charter and contracts with a direct carrier that provides the air service.[12] In some cases, a direct carrier will serve as its own public charter operator and sell its air transportation services directly to the public.

[9]U.S. Department of Transportation Office of Inspector General, *Changes in Airline Service Differ Significantly for Smaller Communities, but Limited Data on Ancillary Fees Hinders Further Analysis*.

[10]See GAO, *National Transportation System: Options and Analytical Tools to Strengthen DOT's Approach to Supporting Communities' Access to the System*, GAO-09-753 (Washington, D.C.: July 2009); *Commercial Aviation: Status of Air Service to Small Communities*, GAO-14-454T (Washington, D.C.: Apr. 30, 2014); *Small Community Air Service Development: Process for Awarding Grants Could Be Improved*, GAO-19-172 (Washington, D.C.: Mar. 26, 2019); and *Commercial Aviation: Effects of Changes to the Essential Air Service Program, and Stakeholders' Views on Benefits, Challenges and Potential Reforms*, GAO-20-74 (Washington, D.C.: Dec. 10, 2019). See also National Academies of Sciences, Engineering, and Medicine*, Building and Maintaining Air Service Through Incentive Programs*.

[11]Commuter operation under 14 CFR Part 135 means any scheduled operation conducted by any person operating one of the following types of aircraft with a frequency of operations of at least five round trips per week on at least one route between two or more points according to the published flight schedules: (1) Airplanes, other than turbojet-powered airplanes, having a maximum passenger-seat configuration of nine seats or fewer, excluding each crewmember seat, and a maximum payload capacity of 7,500 pounds or less; or (2) Rotorcraft. *See* 14 C.F.R. § 110.2.

[12]A direct air carrier is an air carrier that directly engages in the operation of aircraft under a certificate, authorization, permit, or exemption issued by DOT. An indirect air carrier is any person who undertakes to engage indirectly in air transportation operations and who uses for such transportation the services of a direct air carrier. 14 C.F.R. § 380.2.

Federal Air Service Programs

Two key programs provide federal assistance to airlines that serve small communities and to small airports: (1) Essential Air Service and (2) the Small Community Air Service Development Program. These programs can be used to support scheduled passenger air service, improve airports' existing air service, or fund alternatives to scheduled passenger air service.

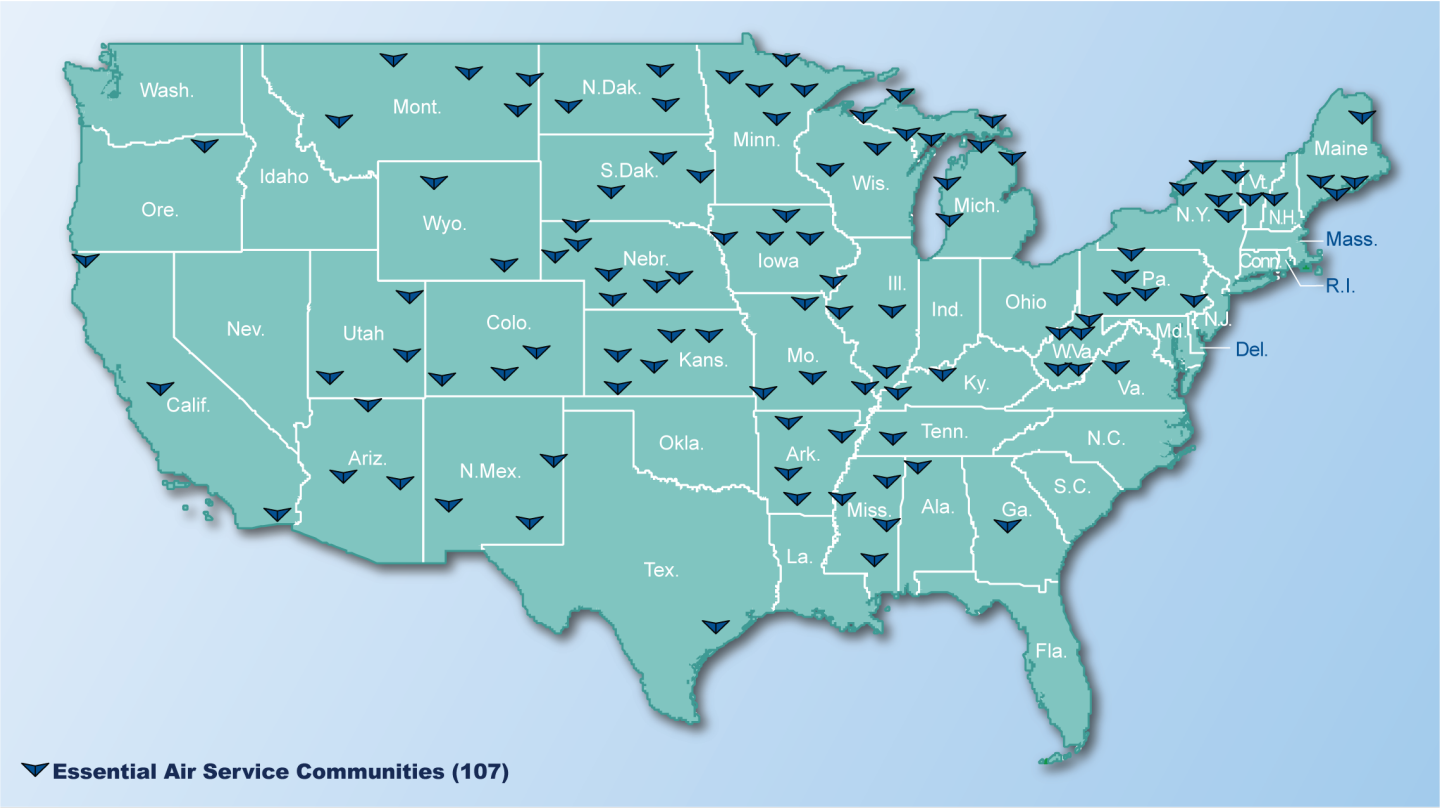
Essential Air Service (EAS)

EAS was established by the Airline Deregulation Act of 1978 and provides federal subsidies to air carriers to serve certain eligible communities. To administer the program, DOT requests proposals from air carriers interested in providing EAS to eligible communities. In their proposals, air carriers are required to fully describe the service they are proposing and the annual amount of subsidy they are requesting. While there are no limits on the amount of subsidy that an air carrier can request in its proposal, a community can become ineligible for EAS if the annual subsidy exceeds a certain amount, as discussed further below. DOT considers the air carriers' proposals based on factors prescribed in statute. DOT then issues a decision designating the successful air carrier and specifying the specific service pattern the air carrier is to provide, as well as the subsidy rate.[13] At the end of each month, air carriers submit claims for the prior month based on the number of flights that they completed, and DOT pays the air carriers directly in arrears on a per-flight-completed basis. As of March 2024 (the most recent data available), 107 communities within the contiguous 48 states were receiving subsidized air service through EAS.[14] (See fig. 2.)

[13]Pursuant to 49 U.S.C. § 41733(c), in selecting an air carrier, DOT must consider: (1) the demonstrated reliability of the applicant air carrier in providing scheduled air service; (2) the contractual, marketing, code-share, or interline arrangements the applicant air carrier has made with a larger air carrier serving the hub airport; (3) the preferences of the actual and potential users of air transportation at the eligible place, including the views of the elected officials representing the users; (4) whether the air carrier has included a plan in its proposal to market its services to the community; and (5) the total compensation proposed by the air carrier for providing scheduled air service.

[14]As of March 2024, 13 of the 107 EAS communities were participating in the Alternate EAS (AEAS) program, an option for EAS-eligible communities. Under AEAS, communities can forgo subsidized EAS for a prescribed amount of time in exchange for a grant to be used for options that may better suit their transportation needs. Options for which grants may be used include more frequent service with smaller aircraft, on-demand air taxi service, scheduled or on-demand surface transportation, or regionalized air service. According to DOT, the 13 communities currently in AEAS are using grant funds to secure public charter air service.

Figure 2: Map of Essential Air Service Communities in the Contiguous U.S. as of March 2024



Source: GAO icons and analysis of Department of Transportation data. | GAO-24-106681

Note: Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS community as a community that had at least one airport receiving EAS service for at least one year from 2018 through 2023.

To be eligible for EAS based on the FAA Reauthorization Act of 2024, a community must[15]

- require a subsidy per passenger of less than $650 during the most recent fiscal year, unless the community is 175 miles or more from the nearest large or medium hub airport or DOT decides to issue a waiver;[16]
- have had a subsidy per passenger of less than $1,000 during the most recent fiscal year regardless of the distance from a large or medium hub airport (lowered to $850 effective October 1, 2026);
- have had an average of 10 or more enplanements (i.e., paying passengers boarding the aircraft) per service day during the most recent fiscal year, unless the community is more than 175 driving miles from the nearest medium or large hub airport or unless DOT is satisfied that any decrease below 10 enplanements is due to a temporary decline in demand;[17] and

[15]For the purposes of this report, we are not considering EAS in Hawaii and Alaska, which have different eligibility requirements. *See* 49 U.S.C. § 41731(c).

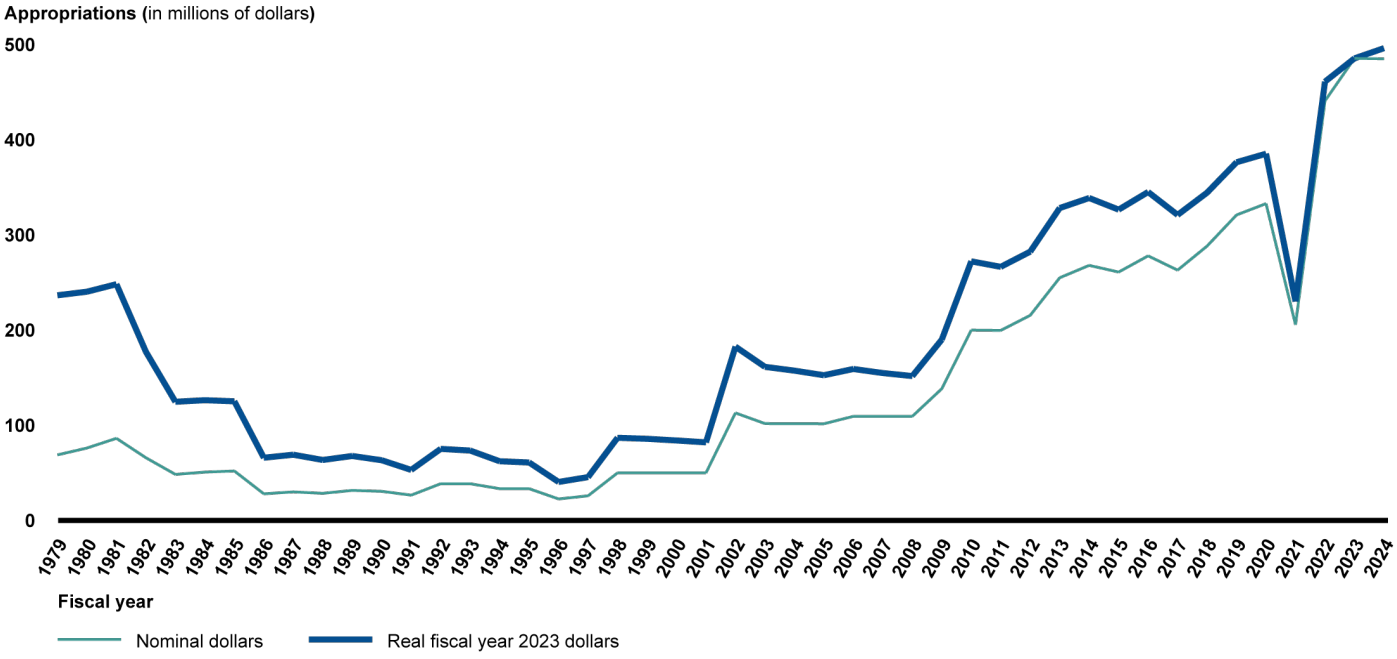
[16]Beginning in fiscal year 2027, DOT may not provide a waiver to any location in more than 2 consecutive fiscal years or in more than 5 fiscal years within 25 consecutive years.

[17]Beginning in fiscal year 2027, DOT may not provide a waiver to any location in more than 2 consecutive fiscal years or in more than 5 fiscal years within 25 consecutive years.

- have received subsidized EAS at any time during the period between September 30, 2010, and September 30, 2011, or been provided a 140-day termination notice by an air carrier, and the Secretary of Transportation required the air carrier to continue such service to the community.

EAS is funded through a combination of appropriations from the Airport and Airway Trust Fund and overflight fees collected by FAA from foreign aircraft traveling over U.S. airspace. In general, appropriations have climbed since 2000, according to data provided by DOT. (See fig. 3.)

Figure 3: Department of Transportation Data on Appropriations for Essential Air Service, Fiscal Years 1979–2024



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 3: Department of Transportation Data on Appropriations for Essential Air Service, Fiscal Years 1979–2024

Fiscal year	Appropriations (real fiscal year millions of 2023 dollars)	Appropriations (nominal millions of dollars)
1979	236.59	68.9
1980	240.36	76.1
1981	248.23	86.3
1982	177.23	65.9
1983	124.71	48.4
1984	126.37	50.8
1985	125.18	52
1986	65.92	28
1987	69.08	30
1988	63.57	28.5
1989	67.75	31.6

Fiscal year	Appropriations (real fiscal year millions of 2023 dollars)	Appropriations (nominal millions of dollars)
1990	63.28	30.6
1991	53.12	26.6
1992	75.2	38.6
1993	73.47	38.6
1994	62.22	33.4
1995	60.92	33.4
1996	40.46	22.6
1997	45.56	25.9
1998	86.87	50
1999	85.8	50
2000	84.05	50
2001	82.07	50
2002	182.6	113
2003	161.41	101.8
2004	157.41	101.7
2005	152.61	101.6
2006	159.15	109.4
2007	154.89	109.4
2008	151.73	109.4
2009	190.02	138.4
2010	272.24	200
2011	266.48	199.7
2012	282.44	215.5
2013	328.23	255
2014	338.79	268
2015	326.58	261
2016	345.1	278
2017	321.04	263
2018	344.41	288.3
2019	376.37	321
2020	385.31	332.9
2021	230.14	205.7
2022	461.05	440.9
2023	485.5	485.5
2024	485.01	496.2

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Notes: Appropriations fell in 2021 because of the decline in overflight fees during the COVID-19 pandemic.

DOT stated that the fiscal year 2024 data it provided are based on full-year post-sequestered projections.

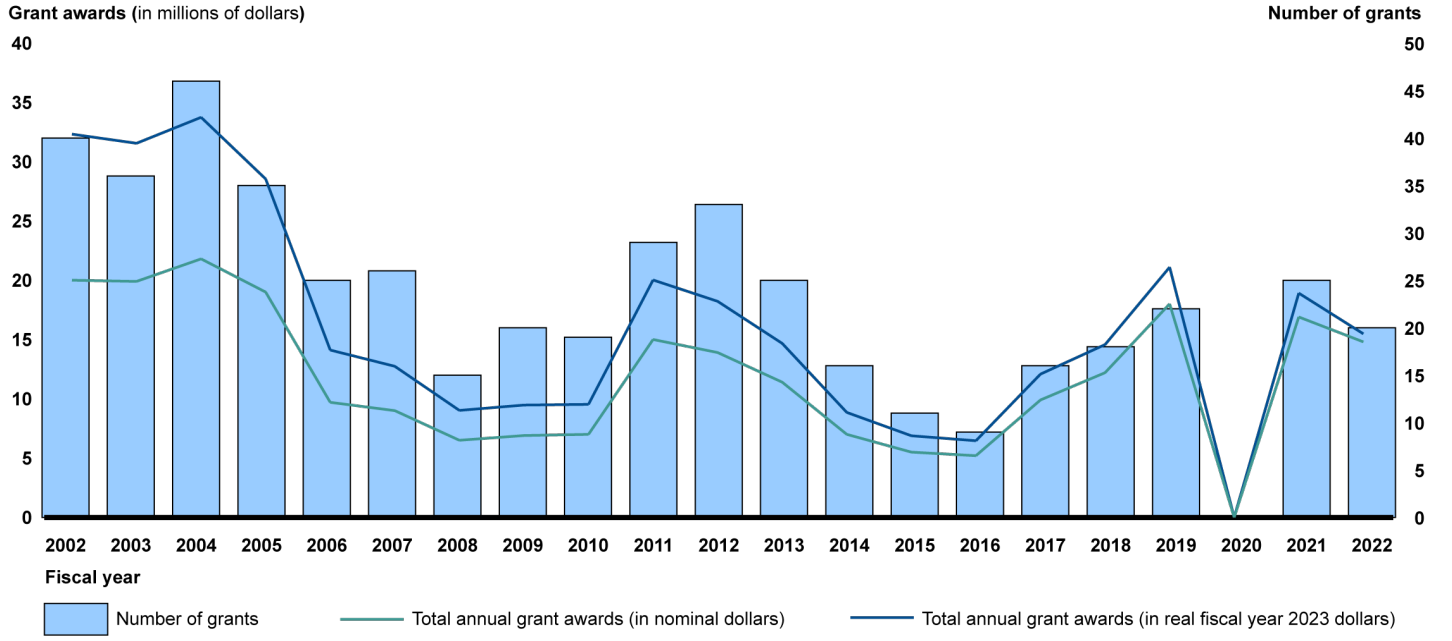
Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS community as a community that had at least one airport receiving EAS service for at least one year from 2018 through 2023.

Small Community Air Service Development Program (SCASDP)

Through SCASDP, which Congress established in 2000, communities can apply for federal discretionary grants to fund strategies to improve their air service and address airfare issues at small airports. DOT's Office of Aviation Analysis administers SCASDP, which is funded in a specified dollar amount from a specific appropriation in FAA's Airport Improvement Program.

DOT is authorized to award SCASDP grants to communities with underserved airports that seek to obtain airline service or to implement other measures, including marketing and promotional efforts, to lower the cost and improve availability of air service. Grantees often use the award to fund a minimum revenue guarantee to attract an airline to begin new nonstop service. Minimum revenue guarantees are designed to limit an airline's risk in initiating air service by guaranteeing the airline will generate a specified amount of revenue from the ticket sales associated with new service. In its most recent SCASDP grant cycle, DOT awarded an average grant of $767,000 to 19 communities to use for minimum revenue guarantees. In most cases, the grantees also used these funds for marketing assistance. See figure 4 for information on the amount and number of SCASDP grants.

Figure 4: Small Community Air Service Development Program (SCASDP) Annual Grant Awards and Number of Grants, Fiscal Years 2002–2022



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 4: Small Community Air Service Development Program (SCASDP) Annual Grant Awards and Number of Grants, Fiscal Years 2002–2022

Fiscal year	Number of grants	Total annual grant awards (in nominal dollars)	Total annual grant awards (in real fiscal year 2023 dollars)
2002	40	20	32.32
2003	36	19.9	31.55
2004	46	21.8	33.74
2005	35	19	28.54
2006	25	9.7	14.11
2007	26	9	12.74
2008	15	6.5	9.02
2009	20	6.9	9.47
2010	19	7	9.53
2011	29	15	20.02
2012	33	13.9	18.22
2013	25	11.4	14.67
2014	16	7	8.85
2015	11	5.5	6.88
2016	9	5.2	6.46
2017	16	9.9	12.08
2018	18	12.2	14.57
2019	22	18	21.1
2020	0	0	0
2021	25	16.9	18.91
2022	20	14.8	15.48

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

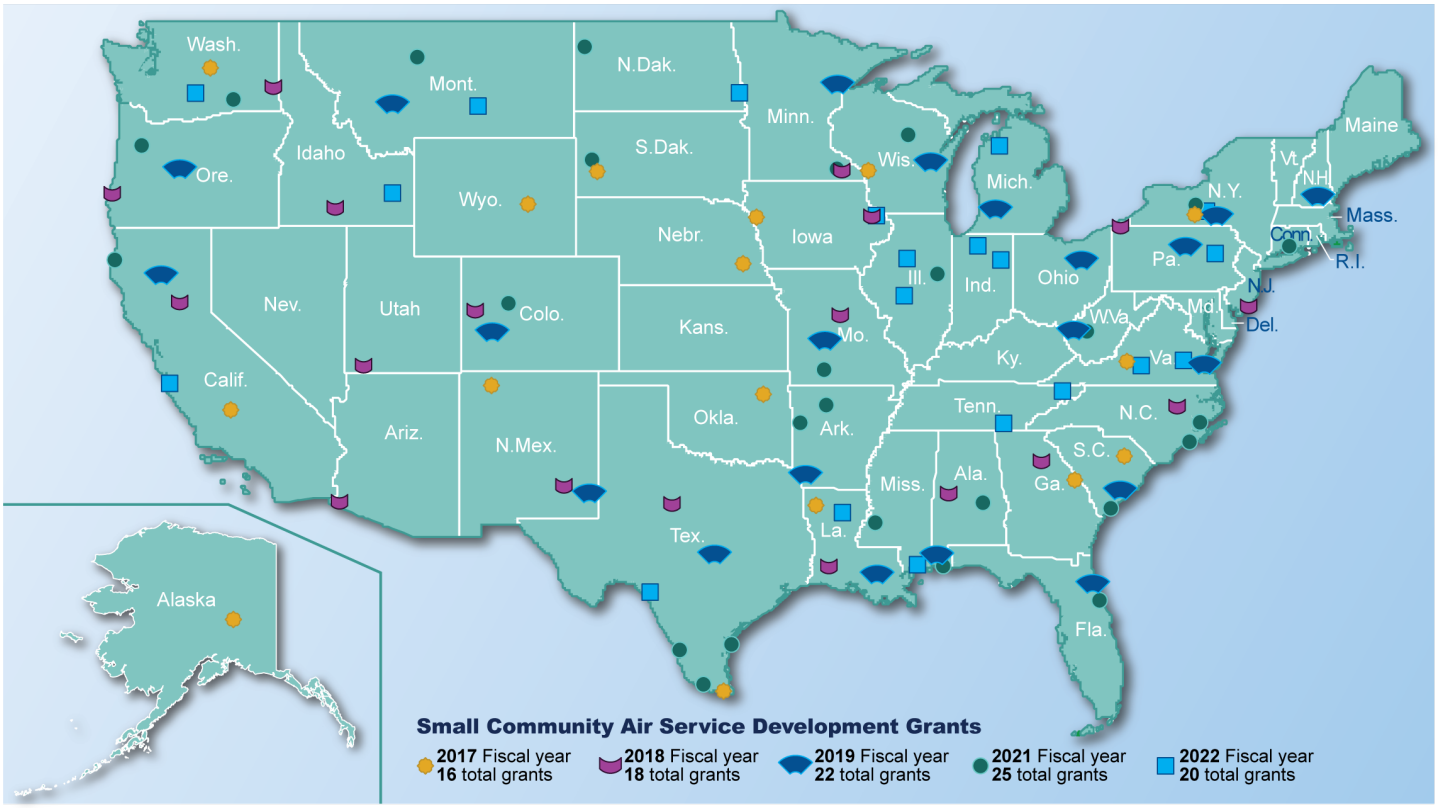
Notes: Through SCASDP, communities can apply for federal discretionary grants to fund strategies to improve their air service and address airfare issues at small airports.

The Department of Transportation (DOT) did not award SCASDP grants for fiscal year 2020. According to DOT officials, DOT instead combined no-year funds provided by Congress in fiscal year 2020 for grant awards in fiscal year 2021.

Eligibility requirements for SCASDP are broader than for EAS and include that the airport serving a community or consortia of communities applying for a grant not be larger than a small hub, and that the airport have insufficient air carrier service or unreasonably high air fares. Additionally, the airport must have characteristics,

such as geographic diversity or unique circumstances, that demonstrate the need for service.[18] See figure 5 for communities that have received SCASDP grants.

Figure 5: Map of Recipients of Grant Awards from the Small Community Air Service Development Program, Fiscal Years 2017–2022



Source: GAO icons and analysis of of Department of Transportation data. Map image; Map Resources. | GAO-24-106681

Note: Through the Small Community Air Service Development Program, communities can apply for federal discretionary grants to fund strategies to improve their air service and address airfare issues at small airports.

Incentives to Attract Air Service and Related FAA Policy

A variety of entities, including airports, state and local governments, and private businesses, may offer airlines financial incentives with the goal of attracting or retaining air service.

Airport incentives. Incentives that airports receiving federal grants can offer to carriers to attract air service are governed by statute and FAA policy, and may include waiving or reducing landing fees and other airport

[18]Other eligibility requirements for SCASDP include: (1) not more than four communities or consortia of communities, or a combination thereof, from the same state may be selected to participate in the program in any fiscal year; (2) no more than 40 communities or consortia of communities, or a combination thereof, may be selected to participate in the program in each year; and (3) no community, consortia of communities, or combination thereof may participate in the program in support of the same project more than once in a 5-year period, unless DOT waives this limitation upon determining that the community or consortia of communities spent little or no money on its previous project or encountered industry or environmental challenges, due to circumstances that were reasonably beyond their control.

fees, as well as offering marketing support or assistance, provided that the marketing focuses on the airport rather than destination marketing.[19] Airports receiving federal grants are prohibited from providing air carriers with subsidies, including any incentives in which the airport transfers airport funds or assets (e.g., fuel) to a carrier, directly or indirectly (e.g., revenue or loan guarantees).[20] According to a 2020 National Academies study, the majority of airports in the U.S. offer fee waivers, marketing assistance, or both, and airport incentives have become a common practice that airlines expect.[21] The study found that, among 382 airports identified by FAA in the 2017 Terminal Area Forecast, 67 percent of small hub and 48 percent of nonhub airports have offered airlines marketing assistance; 75 percent of small hub and 40 percent of nonhub airports have offered fee waivers; and 51 percent of small hub and 20 percent of nonhub airports have offered terminal rent rebates.

Community-level incentives. Communities that are not a party to an Airport Improvement Program grant agreement may offer incentives to attract air service, including minimum revenue guarantees; cash or in-kind resources to support advertising or marketing that promotes airport service and the region as a destination; and travel banks, which are funds to be used by the community to guarantee passengers on a route over a given period. These incentives can be sponsored by state governments, local governments, chambers of commerce, economic development corporations, or other business or governmental organizations. Local and state governments and community organizations not party to an Airport Improvement Program grant agreement can use non-airport funds for incentives that would not be permissible for an airport sponsor, including directing incentives toward a specific carrier and using funds for revenue guarantees.[22]

According to the 2020 National Academies study mentioned above, among the 382 airports identified by FAA in the 2017 Terminal Area Forecast, 46 percent of small hub and 53 percent of nonhub airports offered community incentives that involved community organizations. Local governments were involved in 17 percent of small hub and 26 percent of nonhub airports' community incentives; and state governments were involved in 11 percent of small hub and 5 percent of nonhub airports' community incentives.[23]

Small Communities Lost Departures but Gained More Seats per Departure from 2018 to 2023, with Variation among Communities

From 2018 to 2023, the number of departures from small communities decreased on average, but the mean number of seats per departure increased, according to our analysis of DOT data.[24] About half of small communities saw modest change in the number of passengers on departures. During this time, small

[19]*See* 49 U.S.C. §§ 47107, 47133; FAA Policy Regarding Air Carrier Incentive Program, 88 Fed. Reg. 85344 (Dec. 7, 2023).

[20]*See* 49 U.S.C. §§ 47107, 47133; FAA Policy Regarding Air Carrier Incentive Program, 88 Fed. Reg. 85344 (Dec. 7, 2023).

[21]National Academies of Sciences, Engineering, and Medicine, *Building and Maintaining Air Service Through Incentive Programs*.

[22]SCASDP grants are not airport revenue and may be used for purposes for which airport revenue is prohibited, including direct subsidy of air carrier operations and destination marketing. For airports receiving Airport Improvement Program funding, airport staff can provide technical assistance to non-airport entities regarding air carrier incentive programs that do not use airport revenue as long as the non-airport entity is responsible for decisions on expenditure of the funds.

[23]National Academies of Sciences, Engineering, and Medicine, *Building and Maintaining Air Service Through Incentive Programs*.

[24]For a list of small communities and the airports that serve each of these communities, see appendix III.

communities in the EAS program generally lost less air service and gained more seats per departure than small communities that were not in the EAS program.

Total Departures from Small Communities Decreased, though Each Departure Had More Seats in 2023 than 2018 on Average

On average, small communities had fewer total departures annually and fewer daily departures per route from 2018 to 2023. During this time, airlines served small communities with larger aircraft with more seats.

Total Annual Departures and Daily Departures per Route Decreased on Average

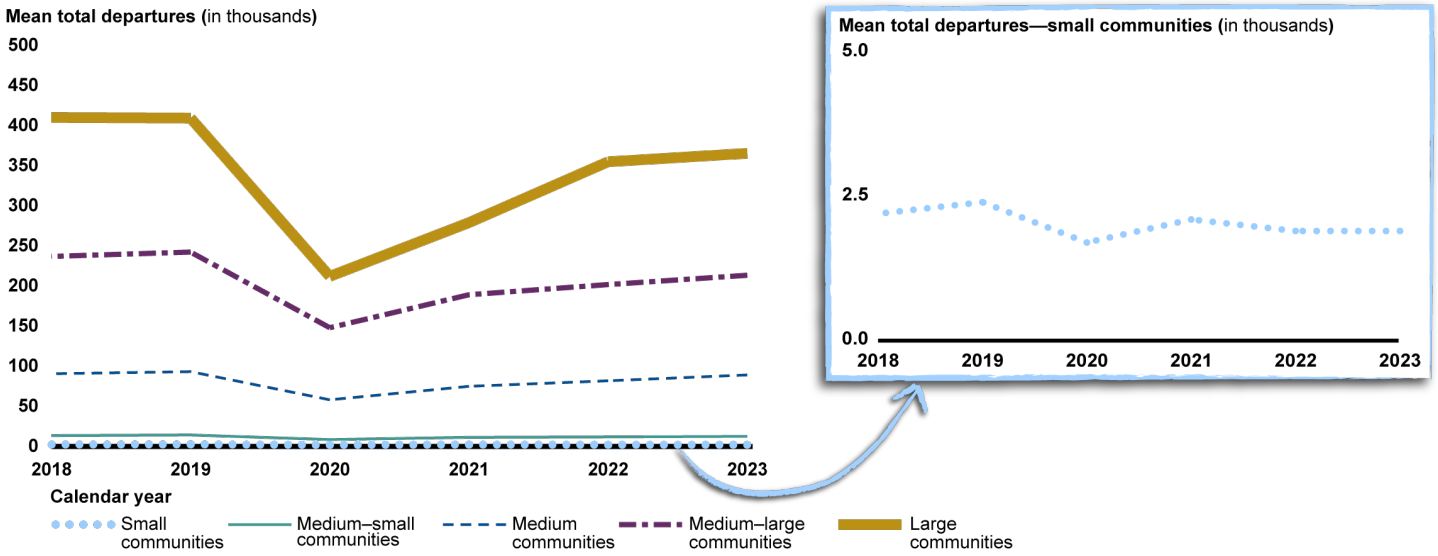
On average, fewer flights departed from the 218 small communities in 2023 than in 2018, measured both in terms of mean total departures (i.e., the mean number of departures across small communities in a year) and mean daily departures per route. While small communities experienced a steep decrease in mean total departures at the onset of the COVID-19 pandemic, larger communities experienced greater decreases from 2019 through 2020.

From 2018 to 2023, mean total departures from small communities decreased by 14 percent, from 2,235 to 1,919 flights.[25] Certain small communities experienced more significant changes than others during this time. For example, of the 218 small communities, 89 experienced a decrease in total departures of 25 percent or less; 25 experienced a decrease in total departures of more than 50 percent; and one lost all scheduled passenger air service.[26] By contrast, 15 small communities experienced an increase in total departures of 50 percent or more, and six of the 15 more than doubled in total departures. Large and medium-large communities experienced smaller decreases in mean total departures—of 11 percent and 10 percent, respectively—but from much higher baselines. For instance, mean total departures from large communities were 410,091 departures in 2018 and 365,368 departures in 2023. (See fig. 6.)

[25]Median total departures from small communities decreased by 26 percent from 2018 to 2023.

[26]In our analysis, Williamsport, PA, was the only small community to completely lose scheduled passenger air service from 2018 through 2023. As of May 2024, air service is scheduled to return to Williamsport via a daily flight to Washington Dulles International Airport.

Figure 6: Mean Total Departures from Communities of All Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 6: Mean Total Departures from Communities of All Sizes, 2018–2023

Calendar year	Small community departing flights	Medium-small community departing flights	Medium community departing flights	Medium-large community departing flights	Large community departing flights
2018	2.2	13.5	90.6	236.9	410.1
2019	2.4	14.2	93.2	242.3	409.4
2020	1.7	8.5	58.1	148	212
2021	2.1	11.3	74.9	189.1	279
2022	1.9	11.8	81.8	201.8	354.9
2023	1.9	12.5	89.1	213.4	365.4

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: We assigned communities into five size groups (small, medium-small, medium, medium-large, and large) based on their population, such that each size group represents roughly 20 percent of the population of the contiguous U.S.

Decreases in mean total departures for all communities were particularly steep from 2019 through 2020, as passenger demand for air travel plummeted at the onset of the COVID-19 pandemic.[27] We found that the extent of decreases in air service in 2020 differed across communities of various sizes; specifically, medium-small, medium, medium-large, and large communities saw steeper decreases in mean total departures than small communities. We found that compared to 2018, mean total departures in 2020 dropped by nearly 50 percent in large communities, and by about 25 percent in small communities. A 2021 study found that, in comparing May 2020 to May 2019, airlines decreased their departures from larger airports by nearly 74

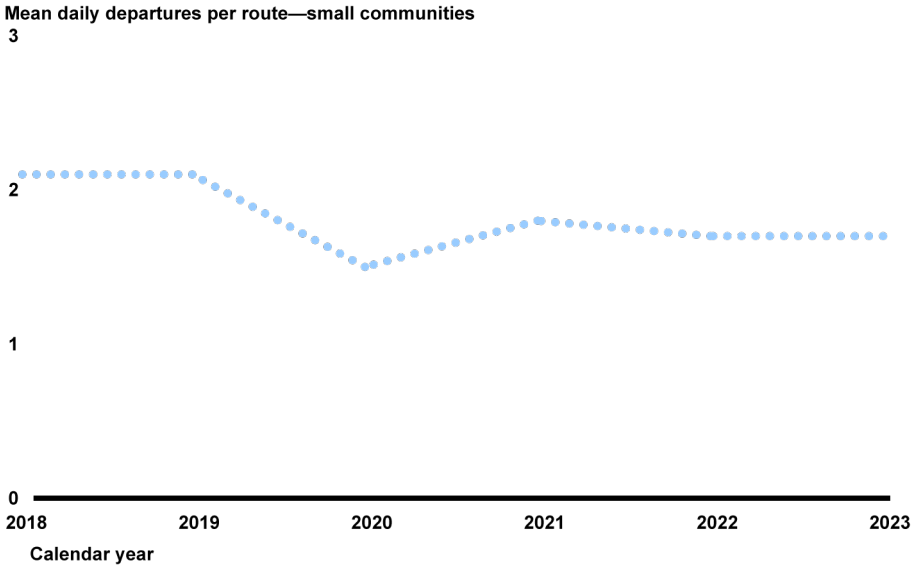
[27]As we reported in 2021, passenger traffic in April 2020 was 96 percent lower than in April 2019 and remained 60 percent below 2019 levels for the rest of 2020. See GAO, *COVID-19 Pandemic: Observations on the Ongoing Recovery of the Aviation Industry*, GAO-22-104429 (Washington, D.C.: Oct. 21, 2021).

percent, and from non-primary nonhub airports (i.e., airports with between 2,500 and 10,000 enplanements per year) by nearly 40 percent.[28]

According to the study, one explanation for the steeper decrease at large airports is the role of the CARES Act minimum service obligations, which prevented certain airports from losing service during specific time periods.[29] The study explained that the number of departures from smaller airports before the COVID-19 pandemic, especially at non-primary nonhub airports, was closer to the minimum service requirements than at large hub airports. Therefore, according to the study, the CARES Act minimum service obligations generally prevented airlines from reducing their operations at smaller airports to the same extent as at larger airports in May 2020.

In line with mean total departures, mean daily departures per route from small communities decreased by 18 percent from 2018 to 2023. (See fig. 7.) During this time, larger communities had smaller decreases in mean daily departures per route. Specifically, mean daily departures per route decreased by 15 percent, 3 percent, 12 percent, and 10 percent in medium-small, medium, medium-large, and large communities, respectively.

Figure 7: Mean Daily Departures per Route from Small Communities, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

[28]Susan Hotle and Stacey Mumbower, "The impact of COVID-19 on domestic U.S. air travel operations and commercial airport service," *Transportation Research Interdisciplinary Perspectives*, vol. 9 (2021), https://doi.org/10.1016/j.trip.2020.100277.

[29]The CARES Act and Consolidated Appropriations Act, 2021 granted DOT the authority to require air carriers receiving payroll support payments under each Act or loans under the CARES Act to maintain scheduled air transportation service, as DOT deems necessary, to any point served by that carrier before March 1, 2020. Pub. L. No. 116-136, §§ 4005, 4114(b), 134 Stat. 281, 477, 499-500 (2020); Pub. L. No. 116-260, § 407, 134 Stat. 1182, 2058-59 (2020).

Accessible Data for Figure 7: Mean Daily Departures per Route from Small Communities, 2018–2023

Calendar year	Mean daily departures per route—small communities
2018	2.1
2019	2.1
2020	1.5
2021	1.8
2022	1.7
2023	1.7

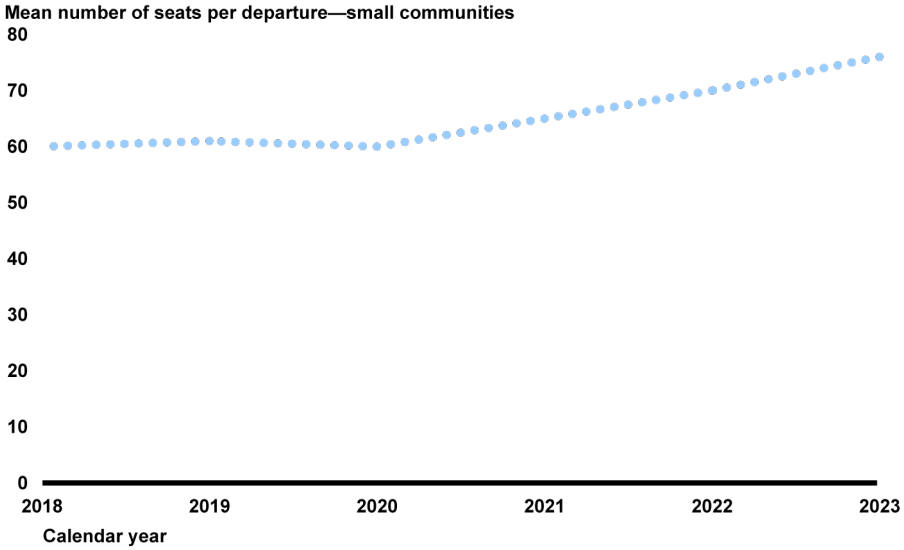
Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: We assigned communities into five size groups (small, medium-small, medium, medium-large, and large) based on their population, such that each size group represents roughly 20 percent of the population of the contiguous U.S.

Flights Generally Had More Seats

On average, flights from small communities offered more seats in 2023 than in 2018, an indication that airlines were using larger aircraft.[30] The mean number of seats per departure from small communities increased 26 percent from 2018 to 2023, from 60 to 76 seats (see fig. 8)—a greater percentage increase than in larger communities, though communities of all sizes experienced double-digit percentage increases.[31]

Figure 8: Mean Number of Seats on Departures from Small Communities, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

[30]We analyzed the mean load factor—a measure of the percentage of seats occupied by passengers—on departures from small communities. We found that the mean load factor at small communities increased from 75 percent in 2018 to 77 percent in 2023.

[31]Medium-small communities had a 19-percent increase in mean number of seats per departure, while medium, medium-large, and large communities had increases of 15 percent, 12 percent, and 11 percent, respectively.

Accessible Data for Figure 8: Mean Number of Seats on Departures from Small Communities, 2018–2023

Calendar year	Mean number of seats per departure—small communities
2018	60
2019	61
2020	60
2021	65
2022	70
2023	76

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: We assigned communities into five size groups (small, medium-small, medium, medium-large, and large) based on their population, such that each size group represents roughly 20 percent of the population of the contiguous U.S.

While the mean number of seats per departure from small communities increased, about half of small communities saw modest change in total seats in 2023, compared to 2018. Specifically, 117 small communities (54 percent) experienced modest change (i.e., an increase or decrease of 25 percent or less) in total seats. For these communities, the decrease in departures may have been offset by an increase in mean seats per departure. The extent of changes in the total seats on departing flights also varied among small communities. Six percent of small communities experienced a decrease in total seats of more than 50 percent, while 13 percent of small communities experienced an increase of 50 percent or more.

Representatives we interviewed from three of seven EAS airports and six of nine non-EAS airports told us that from 2018 through 2023, airlines deployed larger aircraft to serve their communities.[32] "Upgauging"—that is, increasing capacity by replacing smaller planes with larger ones—is a long-standing trend in air service across community sizes. A 2020 National Academies study found that from 2000 through 2018, the mean number of seats increased from 80 to 98 on aircraft serving small hub airports, and from 40 to 57 on aircraft serving nonhub airports.[33]

As airlines have shifted to using larger aircraft to serve small communities, they have begun to remove from their fleets the smaller aircraft (50 seats or fewer) that have traditionally served these communities.[34] For example, in March 2024, American Airlines announced that it expects to retire all of its single-class, 50-seat aircraft by the end of the decade, and that it will continue to serve small- and medium-sized markets with larger regional jets. Representatives of an airline industry association told us that 50-seat or smaller aircraft are no longer economical for airlines given higher labor and fuel costs, and there are no suitable next-generation aircraft available of that size. Similarly, a 2019 study noted that the small aircraft that have historically served small communities tend to have higher per-passenger operating costs.[35]

[32]For purposes of this report, we use the term "EAS airport" to mean an airport receiving EAS service.

[33]National Academies of Sciences, Engineering, and Medicine, *Building and Maintaining Air Service Through Incentive Programs*.

[34]According to DOT officials, the trend of airlines removing smaller aircraft from their fleets may not hold true for the EAS program, which has seen an increase over the last decade in communities served by SkyWest and Contour Airlines, which largely operate 50-seat or smaller aircraft.

[35]Stephanie Atallah and Susan L. Hotle, "Assessment of Contributing Factors to Air Service Loss in Small Communities," *Transportation Research Record*, vol. 2673 (2019).

About Half of Small Communities Saw Modest Change in the Number of Passengers on Flights

While the mean number of passengers on flights from small communities increased somewhat, the experiences of small communities varied. Mean total onboards across small communities increased 11 percent from 2018 to 2023.[36] This change, while similar to increases experienced by medium-small and medium communities, occurred from a comparatively low baseline—from 102,241 onboards on average in 2018 to 113,291 in 2023. By contrast, airports in large communities had about 40.2 million onboards on average in 2018, and 39.4 million onboards in 2023.

However, the changes that small communities experienced varied. About half of small communities saw modest overall change in the number of passengers on flights from 2018 to 2023. Specifically, 115 small communities (53 percent) experienced modest change (i.e., an increase or decrease of 25 percent or less) in mean total onboards. Certain small communities experienced significant changes in onboards during this time. Eight percent of small communities experienced a decrease in mean total onboards of greater than 50 percent, while 14 percent experienced an increase of 50 percent or more.[37] Two communities lost more than 70 percent of their onboards, and 19 small communities increased onboards by 75 percent or more.

Connectivity Decreased Slightly

On average, small communities' connectivity—a measure of a passenger's degree of access to the aviation system—decreased slightly from 2018 to 2023. The connectivity index is a function of the frequency of available scheduled flights, the quantity and quality of nonstop destinations serviced, and the quantity and quality of connecting destinations.[38] Connectivity is much lower in small communities than in large communities.

Mean connectivity for small communities decreased 8 percent from 2018 to 2023, from an index score of 5.1 to 4.7, as shown in figure 9.[39] Other community sizes also experienced decreases in mean connectivity index score. For comparison, large communities' mean connectivity index score decreased from 441 to 402, a 9-percent decrease.

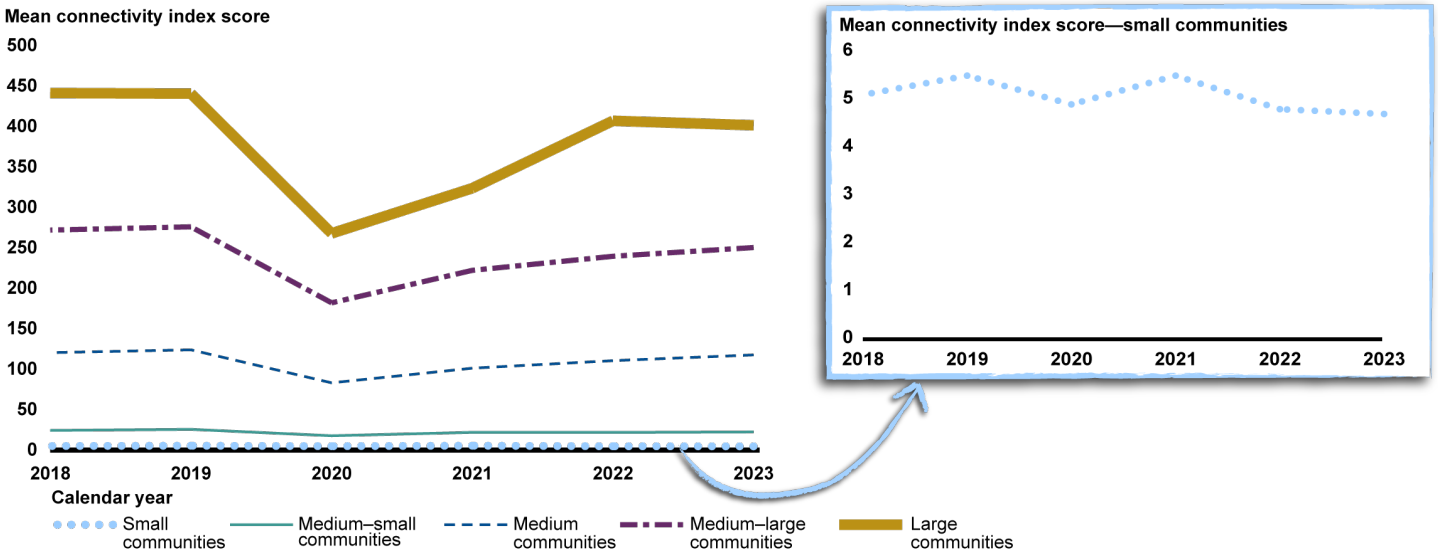
[36]Median total onboards across small communities decreased by 24 percent from 2018 to 2023, suggesting there are communities with very large increases in total onboards that were driving the increase in mean. Mean total onboards in small communities decreased significantly during the COVID-19 pandemic—by 48 percent from 2018 to 2020. This decrease is smaller than in communities of other sizes; decreases in these communities ranged from a 54-percent drop in mean total onboards across medium communities to a 64-percent drop across large communities.

[37]According to DOT officials, increased onboards at some small communities are related to shifts in workplace and residence due to the pandemic, as many people left larger municipalities and relocated to smaller ones.

[38]We analyzed the connectivity index introduced by Wittman and Swelbar at the airport level and expanded in the DOT Office of Inspector General's May 2020 report to the community level. Michael Wittman and William Swelbar, "Modeling Changes in Connectivity at U.S. Airports: A Small Community Perspective," Report No. ICAT-2013-05 (June 2013); and U.S. Department of Transportation Office of Inspector General, *Changes in Airline Service Differ Significantly for Smaller Communities, but Limited Data on Ancillary Fees Hinders Further Analysis*. We analyzed the trend of the number of nonstop destinations from departures from small communities. We found that the mean number of nonstop destinations increased from 2.9 to 3.0. We also analyzed the number of carriers serving small communities. We found that on average, 2.5 carriers served small communities in 2018, compared to 2.1 carriers in 2023.

[39]The median connectivity index score for small communities decreased 6 percent from 2018 to 2023.

Figure 9: Mean Connectivity to the Aviation System by Community Size, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 9: Mean Connectivity to the Aviation System by Community Size, 2018–2023

Calendar year	Mean connectivity index score - small communities	Mean connectivity index score - medium-small communities	Mean connectivity index score - medium communities	Mean connectivity index score - medium-large communities	Mean connectivity index score - large communities
2018	5.1	24.4	120.5	272	441.3
2019	5.5	25.7	124	276	440.6
2020	4.9	17.8	83.2	182.1	267.9
2021	5.5	22	101.3	222.2	323.7
2022	4.8	21.9	110.6	239.6	407
2023	4.7	22.5	117.7	250.4	401.5

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Notes: The connectivity index is a function of the frequency of available scheduled flights, the quantity and quality of nonstop destinations served, and the quantity and quality of connecting destinations.

We assigned communities into five size groups (small, medium-small, medium, medium-large, and large) based on their population, such that each size group represents roughly 20 percent of the population of the contiguous U.S.

EAS Small Communities Lost Less Air Service and Gained More Seats per Departure than Non-EAS Small Communities on Average

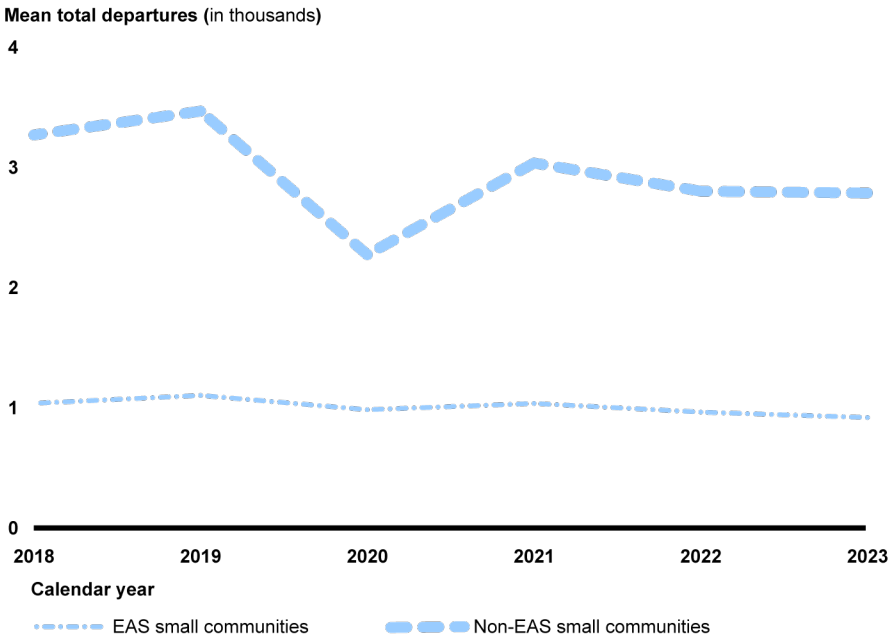
Small communities in the EAS program had smaller decreases in mean total departures from 2018 to 2023 than small communities that were not eligible for EAS subsidies, even though EAS communities have smaller populations than other small communities on average.[40] EAS communities had a greater increase in mean

[40]We defined an EAS community as a community that had at least one airport receiving EAS service for at least one year from 2018 through 2023.

seats per departure over this period than non-EAS small communities as some EAS communities shifted from service with eight-to-nine-seat turboprop aircraft to service from larger aircraft with 30 or more seats. Small communities in the EAS program experienced a small decrease in mean connectivity index score, as did non-EAS small communities.

Total departures and other service reductions. From 2018 to 2023, mean total departures fell slightly less in EAS than in non-EAS small communities—12 percent on average versus 15 percent on average, respectively—albeit from a lower baseline. On average, EAS communities have far fewer total departures than non-EAS small communities. For example, in 2023, EAS communities had 896 departures on average, while non-EAS small communities had 2,786 departures on average. Compared to 2018, mean total departures from EAS communities decreased less than in non-EAS small communities in 2020, at the onset of the pandemic—5 percent versus 30 percent, respectively. (See fig. 10.) DOT's EAS orders specify the number of flights an EAS airport needs to sustain to stay in the program, which protected EAS communities from losing air service during the pandemic.

Figure 10: Mean Total Departures from Essential Air Service (EAS) versus Non-EAS Small Communities, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 10: Mean Total Departures from Essential Air Service (EAS) versus Non-EAS Small Communities, 2018–2023

Calendar year	Mean total departures (in thousands) - EAS small communities	Mean total departures (in thousands) - Non-EAS small communities
2018	1.014	3.269
2019	1.08	3.467
2020	0.961	2.273
2021	1.013	3.035

Calendar year	Mean total departures (in thousands) - EAS small communities	Mean total departures (in thousands) - Non-EAS small communities
2022	0.941	2.801
2023	0.896	2.786

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Notes: We assigned communities into five size groups (small, medium-small, medium, medium-large, and large) based on their population, such that each size group represents roughly 20 percent of the population of the contiguous U.S.

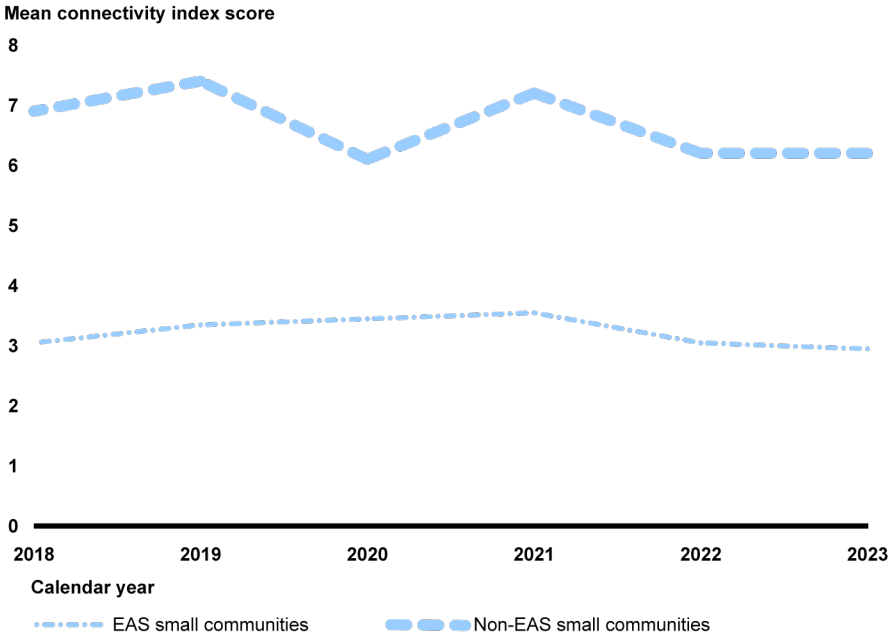
Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS community as a community that had at least one airport receiving EAS service for at least one year from 2018 through 2023.

Representatives we interviewed from seven EAS and nine non-EAS airports identified other types of service reductions they experienced, which varied to some extent depending on whether the airport was in the EAS program. Representatives of the seven EAS airports told us they experienced fewer daily departures, more flight cancellations, turnover in airlines serving EAS contracts, or the introduction of tag flights—in which an airline makes a stop in one EAS community before continuing to a second EAS community. Representatives of the nine non-EAS airports told us they experienced fewer flights, loss of nonstop destinations, reduction in the number of flights offered, or airlines eliminating service to their airport.

Number of seats per departure. From 2018 to 2023, the mean number of seats per departure from EAS small communities increased by 34 percent, compared to an increase of 26 percent on flights from non-EAS small communities. The mean number of seats on a flight from an EAS small community in 2023 was 45, compared to a mean of 84 seats on flights from non-EAS small communities. EAS small communities saw a larger increase in mean seats per departure over this period compared to non-EAS small communities, as some EAS communities shifted from service from eight-to-nine-seat turboprop aircraft to service from larger aircraft with 30 or more seats.

Connectivity to aviation system. From 2018 to 2023, the mean connectivity index score of EAS small communities decreased 4 percent, from 3.0 to 2.9, while the mean connectivity index score of non-EAS small communities decreased 10 percent, from 6.9 to 6.2. Connectivity at EAS communities was not affected by the onset of the COVID-19 pandemic; the mean connectivity index score of these communities increased from 3.0 in 2018 to 3.4 in 2020. However, the mean connectivity index score of non-EAS small communities decreased by 11 percent from 2018 to 2020. (See fig. 11.)

Figure 11: Mean Connectivity to Aviation System of Essential Air Service (EAS) versus Non-EAS Small Communities, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 11: Mean Connectivity to Aviation System of Essential Air Service (EAS) versus Non-EAS Small Communities, 2018–2023

Calendar year	Mean connectivity index score - EAS small communities	Mean connectivity index score - Non-EAS small communities
2018	3	6.9
2019	3.3	7.4
2020	3.4	6.1
2021	3.5	7.2
2022	3	6.2
2023	2.9	6.2

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Notes: The connectivity index is a function of the frequency of available scheduled flights, the quantity and quality of nonstop destinations served, and the quantity and quality of connecting destinations.

We assigned communities into five size groups (small, medium-small, medium, medium-large, and large) based on their population, such that each size group represents roughly 20 percent of the population of the contiguous U.S.

Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS community as a community that had at least one airport receiving EAS service for at least one year from 2018 through 2023.

Market Factors Affected Both Air Service to Small Communities and Federal Air Service Programs

Workforce Supply, Increased Airline Operating Costs, and Travelers Choosing to Drive Affected Air Service, according to Stakeholders

Pilot Supply

A shortage of pilots affected air service to small communities from 2018 through 2023, according to representatives of most of the airlines (four of five) and airports (15 of 16) we interviewed, as well as two airline industry associations, a state department of transportation, and an aviation consultant. Stakeholders' concerns about pilot supply echo findings from our prior work.

Specifically, we have previously reported on aviation industry concerns that there is an insufficient supply of qualified pilots to support current and future demand from U.S. regional and mainline airlines.[41] In 2023, we reported that challenges to increasing pilot supply identified by aviation industry stakeholders included the cost of pilot education; the requirement that an individual complete 1,500 flight hours to be eligible to be hired as a first officer; infrastructure constraints at flight schools; and fewer former military pilots.[42]

The industry response to the sudden drop in demand for air travel caused by the COVID-19 pandemic also affected pilot supply. We reported in 2021 that airlines took actions to manage labor costs in 2020 during the trough in air travel demand, including offering pilots early retirement.[43] When air travel rebounded in 2021, larger airlines filled their pilot vacancies by hiring pilots from regional airlines, which exacerbated regional airlines' pre-pandemic pilot shortages, according to FAA's *FY 2024-2044 FAA Aerospace Forecast*.[44]

Regional airlines were especially affected by a shortage of captains, a result of mainline airline hiring, according to representatives of an airline industry association and the regional airline we interviewed. Representatives of an industry association told us that an insufficient supply of captains limits the number of aircraft airlines can operate, because first officers must be paired with captains in the cockpit. The captain shortage also makes it challenging for regional airlines to develop their less experienced first officers.

We reported last year that certain regional airlines have responded to pilot shortages by substantially increasing pilot pay and offering bonuses.[45] For example, Mesa Airlines announced in August 2022 that it would begin offering starting wages of $100 an hour for first-year first officers, and $150 an hour for first-year captains—increases of 118 percent and 172 percent, respectively. In September 2022, SkyWest Airlines

[41]See GAO, *Aviation Workforce: Current and Future Availability of Airline Pilots*, GAO-14-232 (Washington, D.C.: Feb. 28, 2014); GAO-20-74; and *Aviation Workforce: Current and Future Availability of Airline Pilots and Aircraft Mechanics*, GAO-23-105571 (Washington, D.C.: May 17, 2023).

[42]GAO-23-105571.

[43]GAO-22-104429.

[44]Federal Aviation Administration, *FY 2024-2044 FAA Aerospace Forecast* (2024).

[45]GAO-23-105571.

increased first-year pay for first officers from $46 to $90 per flight hour, and for first-year captains of two types of regional jet (Canadair Regional Jet and Embraer 175) from $76 and $81 per flight hour, respectively, to $140 per flight hour, according to its 2022 annual report. Additionally, airlines have responded to pilot shortages by recruiting foreign pilots, establishing their own flight schools, and pursuing greater regulatory and operational flexibilities related to pilot flight hours.

Pilot hiring at larger airlines—which were primarily drawing on pilots from regional airlines to replace pilots who took early retirement during the pandemic—slowed in 2024. However, pilot shortages at regional airlines are likely to persist through 2025 due to the time required for pilot training and recruitment, according to FAA's *FY 2024-2044 FAA Aerospace Forecast*.[46]

Aviation Maintenance Worker Supply

Airlines are also facing shortages of aviation maintenance workers, including aircraft mechanics and aviation maintenance technicians, according to representatives of three of five airlines, two of 16 airports, and a state department of transportation we interviewed. According to representatives of one airline, shortages among these workers have affected the airline's ability to operate its fleet of aircraft. Representatives from a state department of transportation told us that maintenance worker shortages have also increased regional airline operating costs through increased pay in contracts. Although stakeholders we interviewed noted the effects of a maintenance worker shortage on air service to small communities, we have found it to be a factor that has broadly affected the aviation industry. We reported last year that aviation businesses, including airlines and repair stations, have experienced challenges hiring and retaining enough mechanics, which has contributed to backlogs in work and delays in maintenance activities.[47]

Increased Regional Airline Operating Costs

The rising costs of labor, fuel, and fleet maintenance have increased the operating costs for all airlines and made air service to small communities less economically feasible, contributing to reductions in air service, according to representatives of one of the airports, two airlines, an airline industry association, an aviation consultant, and a state department of transportation we interviewed. In real 2023 dollars, operating costs for eight regional airlines increased from an average of almost $12 per available seat mile in 2018 to $16 in 2023, according to DOT data.[48] According to FAA's *FY 2024-2044 FAA Aerospace Forecast*, the higher pilot salaries and bonuses offered by some airlines have increased financial pressures and may lead to consolidation in the regional airline industry.

Travelers Choosing to Drive

According to our prior work, another long-standing challenge for small communities occurs when residents that live close to a smaller airport drive to their destination or to a larger airport, which is sometimes referred to as

[46]Federal Aviation Administration, *FY 2024-2044 FAA Aerospace Forecast* (2024).

[47]GAO-23-105571.

[48]Cost per available seat mile is a measure of unit cost in the airline industry.

"passenger leakage."[49] Representatives of all the airports we interviewed told us they had experienced at least a small level of passenger leakage, which most attributed to factors including direct service, lower fares, larger aircraft, better connectivity, and more frequent flights at other airports. According to representatives of an airline industry association and to a 2019 study, residents of small communities are often willing to drive or take a bus to a larger airport to take advantage of the fares offered by ultra-low-cost carriers and nonstop service.[50] According to a 2021 study that used data on travel itineraries in the Midwest from 2013 through 2018, most passengers are willing to travel up to 80 miles from their local small- or medium-sized airports to access a large hub substitute airport.[51]

Increased Airline Operating Costs and Other Factors Affected Federal Air Service Programs

Higher Essential Air Service Subsidy Costs

Increased airline operating costs, among other factors, contributed to higher EAS subsidy costs from 2018 through 2023, according to our interviews with DOT officials. During this time frame, total EAS subsidies for communities in the contiguous U.S. increased from approximately $349 million to $456 million per year in real 2023 dollars—a 31-percent increase, according to our analysis of DOT's EAS reports.[52] The average subsidy per community increased 33 percent over that time frame, from about $3.2 million to $4.3 million in real 2023 dollars.[53] Certain communities saw larger increases. According to DOT's EAS reports, subsidy costs increased by at least 100 percent for nine EAS communities.[54] (See fig. 12.)

[49]We reported in 2009 that factors contributing to passenger leakage, specifically for EAS airports, include higher fares on average for EAS flights than comparable non-EAS flights, the growth of low-cost carriers creating alternatives to EAS service, better service at larger airports than at EAS airports, difficulties making connections at the hub airports EAS airlines serve, and problems with EAS service reliability. GAO-09-753.

[50]Stephanie Atallah and Susan L. Hotle, "Assessment of Contributing Factors to Air Service Loss in Small Communities."

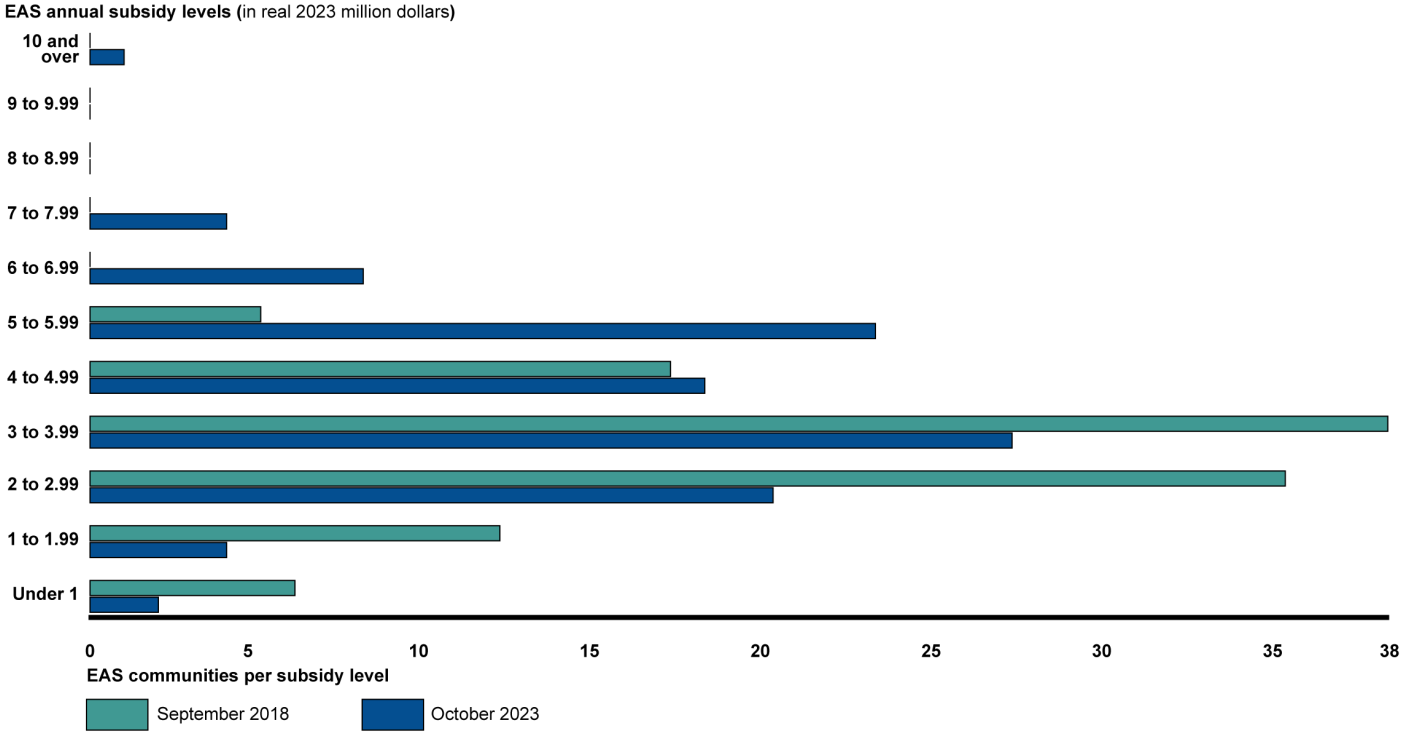
[51]Kaleab Woldeyohannes Yirgu, Amy M. Kim, and Megan S. Ryerson, "Long-Distance Airport Substitution and Air Market Leakage: Empirical Investigations in the U.S. Midwest," *Transportation Research Record*, vol. 2675 (2021).

[52]In nominal dollars, total EAS subsidies increased from approximately $292 million in 2018 to $456 million in 2023.

[53]In nominal dollars, the average EAS subsidy increased from approximately $2.7 million in 2018 to $4.3 million in 2023.

[54]The characteristics of an individual community's EAS service may change over time, including changes in the airline and type of aircraft serving the community, changes in the number of roundtrip flights offered, and changes in the larger airport to which an airline is providing service.

Figure 12: Comparison of Essential Air Service (EAS) Subsidies, September 2018 and October 2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 12: Comparison of Essential Air Service (EAS) Subsidies, September 2018 and October 2023

EAS annual subsidy levels (in real 2023 million dollars)	EAS communities per subsidy level – September 2018	EAS communities per subsidy level – October 2023
10 and over	0	1
9 to 9.99	0	0
8 to 8.99	0	0
7 to 7.99	0	4
6 to 6.99	0	8
5 to 5.99	5	23
4 to 4.99	17	18
3 to 3.99	38	27
2 to 2.99	35	20
1 to 1.99	12	4
Under 1	6	2

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS community as a community that had at least one airport receiving EAS service for at least one year from 2018 through 2023.

DOT officials told us that factors contributing to the increase in EAS subsidy costs included higher aviation labor and fuel costs, inflation, and an increase in the use of regional jets—which consume more fuel than smaller turboprop aircraft—to serve EAS communities. According to DOT's EAS reports, 70 communities were

served by regional jets or larger aircraft (30 seats or more) in October 2023, compared to 56 in September 2018.

Changes in How Airlines Served Essential Air Service Communities

The way airlines served EAS communities also changed from 2018 through 2023, reflected in an increase in the number of communities served by public charter operators as well as in the number of communities participating in the Alternate EAS (AEAS) program, according to our analysis of DOT's EAS reports and interviews with airline representatives.[55]

Public charter operators. More EAS communities were served by public charter operators in 2023 (20) than in 2018 (eight), according to DOT officials and our analysis of DOT's EAS reports.[56] One public charter operator—Contour Airlines—serves these 20 communities. In June 2022, SkyWest Charter, a subsidiary of SkyWest, Inc., filed an application with DOT for commuter authority under 14 CFR Part 298 to provide public charter service to 25 underserved communities and markets, 21 of which are EAS communities; SkyWest Charter proposed flights that it would arrange under the Part 380 public charter regulations.[57] As of September 2024, SkyWest Charter's application remains under DOT review.

Public charter operations under Part 135 must be conducted on airplanes with 30 seats or fewer. To meet this requirement, representatives of Contour Airlines told us they have removed 20 seats from 50-seat aircraft. (See fig. 13.) As described earlier, airlines that offer public charter transportation using aircraft with 30 seats or fewer are allowed to operate under Part 135 rather than Part 121. According to representatives of Contour Airlines, operating under Part 135 enables them to hire from a larger pool of pilots than would be available if they were operating under Part 121. Under Part 121, captains and first officers must hold an Airline Transport Pilot (ATP) certificate, which requires a minimum of 1,500 hours of flight time. In contrast, under Part 135, captains must hold an ATP certificate, but first officers do not have to meet the 1,500-hour requirement.[58]

[55]As of March 2024, 13 of the 107 EAS communities were participating in the AEAS program, an option for EAS-eligible communities. Under AEAS, communities can forgo subsidized EAS for a prescribed amount of time in exchange for a grant to be used for options that may better suit their transportation needs. Options for which grants may be used include more frequent service with smaller aircraft, on-demand air taxi service, scheduled or on-demand surface transportation, or regionalized air service. According to DOT, the 13 communities currently in the AEAS program are using grant funds to secure public charter air service.

[56]Airlines that offer public charter transportation can operate under Part 135 regulations using aircraft with 30 seats or fewer. A public charter is a type of on-demand operation in which a public charter operator, which is often an indirect air carrier, arranges groups for the charter and contracts with a direct carrier that provides the air service. In some cases, a direct carrier will serve as its own public charter operator and sell its air transportation services directly to the public.

[57]Part 298 establishes classifications of air carriers known as "air taxi operators" and "commuter air carriers," provides certain exemptions to them, specifies procedures by which such air carriers may obtain authority to conduct operations, and establishes rules applicable to their operations in interstate or foreign air transportation. 14 C.F.R. § 298.1. Part 380 prescribes regulations applicable to public charter air transportation of passengers in interstate or foreign air transportation. 14 C.F.R. § 380.1.

[58]In response to a statutory requirement, in July 2013, FAA began requiring all commercial airline first officers to have an ATP certificate, which requires 1,500 hours of flight experience. Pilots with fewer than 1,500 hours can obtain a "restricted-privileges" ATP certificate (R-ATP), under which specific academic training courses or military experience can reduce the hours of total flight time required to fly certain operations. FAA made this change following the 2009 Colgan Air Inc. crash in New York, and subsequent legislation that required FAA to modify, among other things, first officer qualifications. The Airline Safety and Federal Aviation Administration Extension Act, Pub. L. 111–216, §§ 216-217, 124 Stat. 2348, 2366-68 (2010).

Figure 13: 30-Seat Aircraft Used by Contour Airlines

Source: contourairlines.com. | GAO-24-106681

FAA is considering a regulatory change that would require carriers offering public charters to operate under Part 121 or fly smaller aircraft with nine or fewer seats under Part 135 commuter rules. In its August 2023 notice of intent to initiate a rulemaking, FAA stated that recent high-volume public charter operations conducted under Part 135 rules appear to be "essentially indistinguishable" from flights conducted by air carriers under Part 121, and that the size and scope of these operations have grown significantly. FAA further stated that while it has adjusted its oversight of these increased operations, it is considering whether a regulatory change may be appropriate to ensure their safety.[59]

Pilot and other aviation labor unions, as well as certain airlines, stated in their public comments that they would support the regulatory change. The Air Line Pilots Association said that the exception for part 380 public charter operators is a loophole that allows airlines to avoid some safety-related rules. In their public comments, opponents of FAA's proposal, including business and general aviation organizations, pointed to an absence of evidence that public charter operations conducted under Part 135 are less safe than other flights. They expressed concerns that eliminating public charter operations under Part 135 could create barriers to entry into the market for new-entrant airlines and result in reduced air service to small communities.

Alternate EAS (AEAS). More EAS communities participated in AEAS in 2023 (11) than in 2018 (eight). According to DOT, all of the communities participating in AEAS in 2018 and 2023 were receiving public charter service. The AEAS program allows communities to forgo subsidized EAS air service for a prescribed amount of time in exchange for a grant to be used for options that may better suit their transportation needs. For example, AEAS communities may use the grant to assist air carriers that will use smaller equipment to provide air service, air carriers that will provide on-demand air taxi service, or a person who will provide scheduled or on-

[59]On June 17, 2024, FAA announced that it intends to issue a notice of proposed rulemaking expeditiously. Furthermore, FAA announced that it intends to convene a Safety Risk Management Panel to assess the feasibility of a new operating authority for scheduled part 135 operations in 10-to-30-seat aircraft, in order to expand air service to small and rural communities.

demand surface transportation, or to pay for other transportation or related services that the Secretary of Transportation may permit.[60]

DOT officials told us that factors contributing to growth in AEAS participation included a lack of airline proposals under traditional EAS that satisfied communities, as well as communities' desire for air service from regional jets rather than from the smaller turboprop aircraft that often serve EAS communities. Representatives of one EAS airport currently in the AEAS program said that compared to traditional EAS, the AEAS program enabled the community to secure a longer contract with an airline for service; offer a better travel experience for customers in 30-seat aircraft, compared to their prior turboprop service; and have more control over the air service and greater ability to communicate with the airline.

The airport representatives noted that one drawback of AEAS is that communities must expend time and effort to comply with federal grant requirements, because DOT provides grant funds directly to communities rather than to airlines, as in traditional EAS.[61] Representatives of two other EAS airports told us they were considering switching from EAS to AEAS, but one cited concerns about the additional responsibility to manage the grant with the airline.

Limited Effectiveness of Small Community Air Service Development Program Grants

Higher airline operating costs have also affected SCASDP by limiting the impact of grants that communities use for minimum revenue guarantees, according to airport and airline representatives we interviewed. Specifically, SCASDP grants have become insufficient to fund the larger minimum revenue guarantees that airlines seek to initiate air service, according to representatives of three of the nine non-EAS airports we interviewed. According to DOT officials, airlines' expectations for minimum revenue guarantees have grown from $500,000 to $800,000 before the pandemic, to $1.5 to $2 million in early 2024. As discussed earlier, the average SCASDP grant award for a minimum revenue guarantee in DOT's most recent grant cycle was $767,000. Representatives of three airlines similarly told us that current SCASDP grant amounts intended to fund minimum revenue guarantees cover less of the cost of serving small communities than in the past. Further, representatives of one airline told us that the airline has had difficulty making SCASDP-funded minimum revenue guarantees work financially with nine-seat aircraft.

Selected Stakeholders and Recent Studies Identified Various Options to Improve Air Service to Small Communities

Aviation stakeholders we interviewed and recent studies we reviewed identified a number of options to improve air service to small communities. Our interviews with aviation stakeholders occurred before the FAA Reauthorization Act of 2024 was enacted; therefore, we acknowledge in this section where changes were made by the act. We have reported on many of these options in our prior work, as discussed below.

[60] 49 U.S.C. § 41745.

[61] *See* 2 C.F.R. Part 200.

Options to Increase Pilot Supply

Aviation stakeholders we interviewed identified the following options that Congress and DOT could consider to increase pilot supply. Airline pilot unions generally oppose these options and disagree that airlines face a pilot shortage, maintaining that the supply of qualified pilots has been sufficient to meet demand.

Revise the 1,500 flight-hour requirement. As discussed above, under Part 121, captains and first officers must have 1,500 hours of flight experience to hold an ATP certificate. Representatives we interviewed from eight of 16 airports, two of five airlines, and a state department of transportation, as well as an aviation consultant, told us that the 1,500 flight-hour training requirement continues to affect the availability of pilots for regional airlines, and consequently their ability to serve small communities. Stakeholders identified a range of options related to the law that would require congressional action, including the following:

- Representatives of two airports favored eliminating the 1,500 flight-hour training requirement entirely.
- Representatives of four airports and a state department of transportation told us that Congress should allow alternative ways for pilots to accumulate training hours. Such alternatives could include accumulating training hours through flight simulators or a "credit for complexity" program, through which pilots would receive more credit hours toward the 1,500 as they progress to flying more complex aircraft.
- Representatives of three airports said that the number of required training hours should be reduced.

Congress did not amend the 1,500 flight-hour training requirement for Part 121 pilots in the recently enacted FAA Reauthorization Act of 2024.[62]

Raise the mandatory retirement age for Part 121 pilots to 67. Under statute, Part 121 pilots are subject to a mandatory retirement age of 65.[63] Representatives of three of the airports and an airline industry association we spoke with stated that they supported raising the mandatory retirement age for Part 121 pilots from 65 to 67 to increase the supply of pilots. A representative of one airport told us that pilots near retirement are the most experienced pilots and a key resource to transfer knowledge to less experienced pilots. FAA has cautioned Congress against a change without first conducting appropriate research to measure any risk and identify potential mitigations. Aviation labor groups have opposed raising the mandatory retirement age. Additionally, International Civil Aviation Organization standards restrict flying international routes to pilots under the age of 65.[64] Congress did not raise the retirement age for Part 121 U.S. airline pilots in the FAA Reauthorization Act of 2024.[65]

Allow public charter operators to continue to operate under Part 135. A regulatory change under consideration by FAA could require carriers currently operating public charter flights with 30-seat aircraft under

[62]FAA Reauthorization Act of 2024, Pub. L. No. 118-63 (2024).

[63]49 U.S.C. § 44729. As discussed above, when operating under Part 121 rules, larger network airlines typically connect smaller airport "spokes" to larger airports in their hub-and-spoke networks by contracting with regional airlines. Additionally, airlines operating under low-cost and ultra-low-cost business models may provide point-to-point service to smaller airports, including those near leisure destinations.

[64]The International Civil Aviation Organization adopts standards and recommended practices in accordance with Article 37 of the Convention on International Civil Aviation (Chicago Convention) in order for all contracting states (including the U.S.) to have the highest practicable degree of uniformity in regulations, standards, and procedures in relation to air navigation and transportation.

[65]FAA Reauthorization Act of 2024, Pub. L. No. 118-63 (2024).

Part 135 rules to operate under Part 121 rules, which may increase airline operating costs. For example, airlines may have increased labor costs because, under Part 121, first officers, in addition to captains, must hold ATP certificates, which requires a minimum of 1,500 hours of flight time. Alternatively, the proposed regulatory change could require certain carriers to fly smaller aircraft with no more than nine seats under Part 135, which EAS communities often view less favorably than regional jet service.

Representatives of one airport, three airlines, and an airline industry association stated that allowing air carriers to operate public charters under Part 135 helps airlines address the pilot shortage by expanding the pool of pilots that are available to be hired, including those that have fewer than 1,500 flight hours or that are over age 65. Representatives of one non-EAS airport currently served by a public charter operator told us they are concerned that they and other small airports could lose all air service if FAA prohibits public charters from operating under Part 135. DOT Office of Aviation Analysis officials told us that such a change could affect 20 EAS communities in the contiguous U.S. Specifically, according to DOT officials, the 11 AEAS communities (all of which are served by Contour Airlines, a public charter operator) would have to revise their grant agreements, and the nine EAS communities served by public charter operators would have to move to either Part 121 service or Part 135 commuter service with aircraft with no more than nine seats.[66]

Options to Address Higher Airline Operating Costs

Aviation stakeholders we interviewed and recent studies identified electric aircraft and bus service as options to address the challenge to small community air service posed by higher airline operating costs.

Electric aircraft. Aircraft with new propulsion technologies such as hybrid-electric batteries have the potential to lower operating costs for airlines, according to three publications we reviewed.[67] For example, according to a 2022 National Academies study, electrically powered aircraft might minimize the variable costs associated with aviation operations by reducing maintenance requirements, increasing energy efficiency, and lowering energy costs.[68] We have previously reported that Regional Air Mobility—an application of Advanced Air Mobility—would use electric aircraft, with or without automation, to carry up to 19 passengers to adjoining regions and cities and could open up new regional corridors.[69] See figure 14 for an example of an electric or hybrid-electric aircraft.

[66]Nine communities are receiving EAS as public charter flights in accordance with 14 C.F.R. Part 380, due to those communities receiving waivers from DOT of the requirement in 49 U.S.C. § 41732(a) that basic EAS is scheduled air transportation.

[67]See National Academies of Sciences, Engineering, and Medicine, *Preparing Your Airport for Electric Aircraft and Hydrogen Technologies* (Washington, D.C.: The National Academies Press, 2022); National Aeronautics and Space Administration, *Regional Air Mobility: Leveraging Our National Investments to Energize the American Travel Experience* (Hampton, VA: April 2021); and McKinsey & Company, *Short-haul flying redefined: The promise of regional air mobility* (May 2023).

[68]National Academies of Sciences, Engineering, and Medicine, *Preparing Your Airport for Electric Aircraft and Hydrogen Technologies*.

[69]GAO, *Transforming Aviation: Congress Should Clarify Certain Tax Exemptions for Advanced Air Mobility*, GAO-23-105188 (Washington, D.C.: Nov. 30, 2022). Advanced Air Mobility means a transportation system that transports people and property by air between two points in the United States using aircraft with advanced technologies, including electric aircraft or electric vertical take-off and landing aircraft, in both controlled and uncontrolled airspace. Advanced Air Mobility Coordination and Leadership Act, Pub. L. No. 117-203, § 2, 136 Stat. 2227, 2229 (2022).

Figure 14: Rendering of a Cessna Grand Caravan with Electric or Hybrid-Electric Powertrain

Source: Surf Air Mobility. | GAO-24-106681

DOT officials told us that they do not expect Regional Air Mobility to provide a comprehensive solution for air service to small communities in the near term. However, officials told us electric and hybrid-electric aircraft have the potential to improve air service at communities that are eligible for EAS or SCASDP. According to DOT officials, some hybrid-electric aircraft can fly up to 300 miles before charging, providing a longer range; fully electric aircraft have utility over shorter distances, such as trips of up to 40 miles.

Representatives we spoke with from 10 of 16 airports, one of five airlines, three industry associations, and a state department of transportation, as well as an academic researcher, also told us they did not view aircraft with alternative propulsion technologies as a viable near-term option to provide air service for small communities, although some told us these technologies may provide a solution over the long term. The stakeholders cited the cost and feasibility of installing charging infrastructure; the need for FAA regulatory approval of such aircraft; and other challenges, such as consumer preference for larger aircraft, uncertainty regarding the flying range for electric aircraft, and limited pilot supply. We reported on similar challenges in 2022 and 2023.[70]

However, representatives of five of the 16 airports, three of five airlines, and an aviation consultant were supportive of using these new aviation technologies. Representatives of one of the airports and three airlines we spoke with told us they had invested in electric aircraft or associated infrastructure. Specifically, a representative of an EAS airport told us that their surrounding county had invested heavily in emerging technologies such as charging stations for electric aircraft. A representative of one commuter airline told us they believed hybrid electric aircraft would have an advantage over fully electric aircraft in the near term, because fully electric aircraft would require battery charging on both ends of a round trip, and not all airports would have the required electric infrastructure. They told us the airline expects hybrid-electric aircraft to provide savings in both maintenance and fuel.

Some airlines have taken steps to incorporate electric aircraft. For example, in July 2023, Surf Air Mobility, a regional air mobility provider, acquired Southern Airways Express, a commuter airline that serves several EAS

[70]See GAO, *Transforming Aviation: Stakeholders Identified Issues to Address for 'Advanced Air Mobility,'* GAO-22-105020 (Washington, D.C.: May 9, 2022); GAO-23-105188; and *Airport Infrastructure: Selected Airports' Efforts to Enhance Electrical Resilience*, GAO-23-105203 (Washington, D.C.: Aug. 29, 2023).

communities, and intends to deploy fully electric and hybrid-electric powertrains to upgrade existing fleets. Also, United Airlines has a contract with the aircraft manufacturer Heart Aerospace to purchase 30-seat electric aircraft to provide regional service with plans for the aircraft to be introduced in 2028.

In the FAA Reauthorization Act of 2024, Congress authorized FAA to establish an electric aircraft infrastructure pilot program until October 1, 2028. This pilot program would allow up to 10 airports to use grant funds to acquire equipment and construct or modify the infrastructure necessary to support the operations of electric aircraft.[71]

Bus service. We have previously reported that a multimodal approach—including bus service to larger airports—is an alternative to providing scheduled passenger air service to small communities.[72] According to representatives of one airline, bus service has the potential to reduce operating costs. While bus travel to a larger airport can take longer than air travel, bus service may make sense as an alternative to air service for communities near a hub airport, according to a representative we interviewed from one airline.

The Landline Company currently provides short-haul bus service from certain smaller airports to large hub airports in a manner that substitutes for a connecting flight offered by a regional airline. Using Landline, travelers can purchase a seat on a bus through an airline's reservation and booking system and—in limited circumstances—have airside-to-airside connectivity (i.e., clear airport security at Atlantic City or Lehigh Valley International Airports, board a motorcoach to Philadelphia International Airport, and board their flight without having to clear security a second time). Landline representatives we spoke with cited advantages of their bus service, including lower cost and greater frequency of service than air travel; environmental benefits; and freedom from the supply constraints, such as a limited supply of pilots, currently affecting the aviation industry.

Stakeholders had mixed views on the feasibility of using bus service as an alternative to air service. Representatives of three of 16 airports, four of five airlines, and one airline industry association, as well as two academic researchers and one consultant, told us they were supportive of bus service. However, representatives we spoke with from the other 13 airports and one airline told us they were skeptical, citing obstacles including the length of time of the bus trips and the community's preference for traveling by car or airplane. They also said airports could be resistant to this option because bus passengers do not count toward the minimum of 10,000 annual passenger enplanements that airports must maintain to qualify for $1.3 million in federal funding from the Airport Improvement Program. Representatives of one airport and one airline said counting bus travelers toward enplanements for Airport Improvement Program funding would encourage airports to allow bus service.

Options for Modifying Essential Air Service

Aviation stakeholders had varying views on options to modify EAS to support small community air service. These options include reducing EAS, such that it focuses on more remote communities, or expanding EAS to ensure small airports do not lose air service. In the following sections, while discussing the options, we highlight if Congress made any relevant amendments in the FAA Reauthorization Act of 2024.

[71]FAA Reauthorization Act of 2024, Pub. L. No. 118-63, § 745 (2024).

[72]GAO-09-753.

Reduce Essential Air Service

Aviation stakeholders we interviewed identified options that could reduce the cost of EAS by focusing assistance on more remote communities in the lower 48 states. These options would require statutory changes, which, for the most part, were not included in the FAA Reauthorization Act of 2024. Options include:

Modify EAS distance requirements. We have previously reported that increasing the required highway distance between EAS-eligible communities and the nearest qualifying hub airport would help target EAS service to more remote communities.[73] Prior to the enactment of the FAA Reauthorization Act of 2024, to be eligible for EAS, communities had to be located more than 70 miles from the nearest large or medium hub airport. In our current work, representatives of two airports and an industry association, as well as an academic researcher and consultant, told us that Congress could extend the distance communities must be located from medium and large hub airports beyond 70 miles to be eligible for EAS. A representative of one airport told us that 70 miles is insufficient, as travelers can simply drive to a larger airport. According to one airport director we interviewed, the 70-mile requirement reflects the fact that EAS was created before the interstate highway system was completed; the director suggested that Congress increase the distance requirement to 100 miles or set a required travel time duration. According to an aviation consultant we interviewed, 71 of the 107 EAS communities in the lower 48 states have access to an alternative airport within a 2-hour drive.

Alternatively, representatives of four of the nine non-EAS airports and one academic researcher told us that Congress could add small hub airports to the group of qualifying hub airports from which communities must be 70 miles apart to be eligible for EAS. Those representatives viewed small hub airports as good alternatives for travelers and believed that communities within 70 miles of a small hub airport should not be considered remote. Representatives of the non-EAS airports were also concerned about the market distortions created by nearby EAS airports. For example, one airport director said that in some parts of the country, EAS airports are close enough to small non-EAS airports that their subsidized airfares draw travelers away from the small non-EAS airports they might otherwise use.

A 2023 study found that the costs of maintaining subsidized service at all EAS-eligible communities are considerably greater than the benefits residents derive.[74] For example, in aggregate, community members value subsidized commercial air service from their local airport at $16 million per year, compared to an annual cost of over $290 million, according to the study. Additionally, the study found that residents of most EAS communities rarely choose to fly on EAS-subsidized flights from their local airport, and that many EAS residents choose to drive several hours to a larger airport. The study concluded that including distance to small hub airports in addition to medium and large hubs when determining EAS eligibility and increasing the minimum allowable distance to a hub beyond 70 miles would help target communities that face relatively more significant barriers to commercial air travel.

[73]GAO-09-753.

[74]Austin J. Drukker, “How Essential is Essential Air Service? The Value of Airport Access for Remote Communities” (paper presented at the 21st annual International Industrial Organization Conference, Washington, D.C., April 2023). The paper’s analysis is limited in that it only considers leisure travel. According to stakeholders we interviewed, EAS plays an important role in attracting and retaining businesses and in boosting the local economy. Additionally, the benefits of EAS to communities may be greater than the benefits that individual residents derive. We reported in 2019 that most of the studies we reviewed found a correlation between aviation activity and economic development. Specifically, several of the findings indicated that greater aviation activity in a region was correlated with some increase in the growth in population, employment, or per capita incomes. GAO-20-74.

In the FAA Reauthorization Act of 2024, Congress repealed the 70-mile requirement for EAS eligibility; however, Congress established a new requirement in which communities generally must have a subsidy of less than $650 during the most recent fiscal year for locations that are less than 175 miles from the nearest large or medium hub airport.

Eliminate waivers. Representatives of two of 16 airports told us that communities that do not meet certain eligibility requirements should not be able to receive waivers from DOT to maintain their eligibility. The FAA Reauthorization Act of 2024 limits DOT's ability to grant waivers for certain eligibility requirements. Beginning in fiscal year 2027, DOT may not grant waivers of the 10-enplanements-per-service-day requirement, or of the $650 subsidy-per-passenger cap for communities located less than 175 miles from the nearest large or medium hub airport to any location in more than 2 consecutive fiscal years, or in more than 5 fiscal years within 25 consecutive years.

Require communities to provide matching funds. Representatives of two of 16 airports, one industry association, and a state department of transportation told us that Congress should require communities to provide a local match to the EAS subsidy. If Congress required communities to provide a local match, this could reduce the federal contribution and incentivize communities to make their air service as successful as possible, such that they may be able to exit the program. According to one airport director, without a match, communities have a limited stake in the success of their air service. Representatives of a state department of transportation told us that their state requires large community matches as part of their state aviation programs. However, representatives of two of 16 airports and one airline told us that communities would be unable to afford the match, and that they were opposed to such a requirement.[75] Congress did not include a cost-share requirement for EAS communities in the FAA Reauthorization Act of 2024.

Redirect EAS funding to other federal or state aviation programs. According to an aviation consultant we interviewed, although some isolated communities benefit from EAS, many markets no longer need the program because the interstate highway system now provides a sufficient alternative. According to the consultant, the assistance provided to these communities would be better invested in safety, pilot training, and workforce retention.

Representatives of a state department of transportation said that one way to make EAS more efficient would be to allow states to distribute funds for the EAS program, akin to a block grant. States receiving EAS money could then distribute the funds in a manner they deem most appropriate for their local airports and the service they need.

Require DOT to consider the cost of the EAS subsidy. A representative of one airline and one academic researcher told us that Congress should require DOT to consider the cost of the subsidy when awarding contracts and to award low bidders. The FAA Reauthorization Act of 2024 includes a provision requiring DOT to consider the total compensation proposed by the air carrier for providing air service when selecting a carrier

[75]EAS has previously included cost share requirements, which prohibited DOT from entering into an EAS contract with a community located less than 40 miles from the nearest small hub airport without negotiating a local cost share with the community. This requirement was repealed in the Consolidated Appropriations Act, 2021, Pub. L. No. 116-260, 134 Stat. 1182 (2020). According to DOT officials, two of the affected communities struggled to comply with the cost share requirement.

to provide EAS.[76] According to information that DOT provided, although DOT was not previously required to consider cost, DOT has considered the relative subsidy requirements of the various options when selecting an EAS carrier since the inception of the program. Furthermore, prior to the FAA Reauthorization Act of 2024, DOT was authorized by Congress to consider the relative subsidy requirements of applicant air carriers.[77]

Expand Essential Air Service

Other aviation stakeholders identified options for Congress that would increase EAS spending to expand EAS's scope or maintain current levels of service. Congress recently authorized increased funding levels for the EAS program from fiscal year 2024 through fiscal year 2028, up from $155 million in fiscal year 2018 to $348.5 million in fiscal year 2024.[78]

Representatives of all seven EAS airports we interviewed told us that EAS was critical to their ability to maintain scheduled passenger air service. They said the program increased their communities' economic development and access to medical and emergency services. For example, a representative of one nonhub EAS airport told us that their air service connects the region to emergency medical care and treatment and boosts the state's tourism industry, and that loss of funding would lead to residents leaving the area.

Options to expand EAS include the following:

Loosen EAS requirements. Representatives of five airports and three airlines told us that Congress should loosen EAS requirements or otherwise expand EAS to assist airlines and make more airports or ground transportation companies eligible for EAS subsidies. For example, representatives of two of 16 airports and three of five airlines supported raising the cap on the per-passenger subsidy, which was $200 prior to the FAA Reauthorization Act of 2024, unless the community was more than 210 miles from the nearest large or medium hub airport or unless DOT issued a waiver. A representative of one airline told us that the current cap is pricing airlines out of participating in EAS.

We have reported previously that stakeholders recommended changing the subsidy cap, such as by indexing the cap to inflation or increasing the cap temporarily to allow a carrier more flexibility to develop a market for new service in a community.[79] We reported that carriers told us they should be permitted to request additional funds from DOT during the course of a contract, and representatives of one airline echoed this point in our current work. The FAA Reauthorization Act of 2024 raised the per-passenger subsidy cap to $650 for locations

[76]Pursuant to 49 U.S.C. § 41733(c), in selecting an air carrier, DOT must consider: (1) the demonstrated reliability of the applicant air carrier in providing scheduled air service; (2) the contractual, marketing, code-share, or interline arrangements the applicant air carrier has made with a larger air carrier serving the hub airport; (3) the preferences of the actual and potential users of air transportation at the eligible place, including the views of the elected officials representing the users; (4) whether the air carrier has included a plan in its proposal to market its services to the community; and (5) the total compensation proposed by the air carrier for providing scheduled air service.

[77]*See, e.g.*, The Consolidated Appropriations Act, 2023, Pub. L. No. 117-328, 136 Stat. 4459, 5098-99 (2022) (authorizing DOT "in determining between or among carriers competing to provide service to a community" to "consider the relative subsidy requirements of the carriers").

[78]FAA Reauthorization Act of 2024, Pub. L. No. 118-63, § 566 (2024). The Act authorizes $340 million for fiscal year 2025, $342 million for fiscal years 2026 and 2027, and $350 million for fiscal year 2028.

[79]GAO-20-74.

that are less than 175 miles from the nearest large or medium hub airport, unless DOT waives the requirement based on a temporary decline in demand.

Allow previously eligible communities to regain EAS eligibility. In our prior work, communities and airports suggested the option of allowing previously eligible communities to regain eligibility, but we noted that this would likely result in increased program costs.[80] In our current work, representatives of a non-EAS airport and a state department of transportation said that Congress should allow communities that are no longer eligible for EAS to re-enter the program. The FAA Reauthorization Act of 2024 does not modify the program to allow ineligible communities not in Alaska to re-enter.[81]

Other notable amendments in the FAA Reauthorization Act of 2024 include a provision that allows DOT to incorporate contract termination penalties or conditions on compensation into an EAS contract with an air carrier to take effect in the event an air carrier provides notice that it is ending, suspending, or reducing EAS. The FAA Reauthorization Act of 2024 also contains a provision that allows a community to submit to DOT a petition expressing no confidence in the air carrier providing EAS and requesting a review by DOT of the carrier's operational performance and compliance with its service obligations.

Options for Modifying the Small Community Air Service Development Program

Aviation stakeholders identified a range of options for modifying SCASDP in response to rising airline operating costs. SCASDP awards federal discretionary grants to eligible communities to fund strategies, such as minimum revenue guarantees, to improve their air service and address airfare issues. Options to modify SCASDP including the following:

Increase funding. Representatives of four of the nine non-EAS airports, three of five airlines, and a state department of transportation told us that Congress should increase funding for SCASDP, which was $10 million per year.[82] Congress recently authorized $15 million annually from fiscal years 2024 through 2028 for this program.[83] According to DOT officials, airlines' expectations for minimum revenue guarantees have grown, and representatives of three airlines told us that current grant amounts are insufficient to attract sustained air service. A representative of one airline told us that the amount they request communities provide as minimum revenue guarantees has doubled post-pandemic because of the uncertain operating environment and increase in labor costs, particularly pilot salaries.

Concentrate funding. A representative of a non-EAS airport said that DOT should allocate SCASDP funding to fewer grantees each cycle, in grant amounts of $2 to $3 million, to provide the minimum revenue guarantees that are more likely to attract airline interest. DOT officials told us that they have advised communities to

[80]GAO-20-74.

[81]See FAA Reauthorization Act of 2024, Pub. L. No. 118-63, § 564 (2024) (requiring DOT to review all domestic points in Alaska that were determined to be ineligible for EAS a result of being unpopulated due to destruction during the 1964 earthquake and its resultant tidal wave to determine whether such points have been resettled or relocated and should be designated as eligible places for EAS).

[82]Small communities that receive EAS service are not eligible for SCASDP funds.

[83]FAA Reauthorization Act of 2024, Pub. L. No. 118-63, § 562(3)(B) (2024).

request the level of funding they believe is necessary to accomplish the goals of the proposed grant, and to ensure that each application addresses why the higher level of funding would be necessary.

Allow more flexibility in how grants may be used. Representatives at three of the nine non-EAS airports told us that they would like more flexibility in how SCASDP grants may be used if their circumstances change, such as if an airline is no longer interested in starting service at the airport. Representatives of four of five non-EAS airports we interviewed that were awarded SCASDP grants in the period of 2018 through 2022 said that they had difficulty using the awards to attract air service. For example, one airport director said that after receiving the SCASDP award, the airport lost five nonstop destinations due to the pandemic and was unable to use the award for its initial purpose.

According to DOT officials, DOT has some flexibility, limited by statute, to modify SCASDP grants, if DOT is satisfied that the modification is consistent with the larger purpose of the project.[84] Further, DOT has the authority to waive the "same-project" limitation, which prior to the FAA reauthorization prohibited communities from participating in the program in support of the same project more than once in a 10-year period. DOT may waive this limitation if it determines that the community or consortium spent little or no money on its previous project or encountered industry or environmental challenges due to circumstances that were beyond its control, including the pandemic.[85] The FAA Reauthorization Act of 2024 reduces the same-project limitation from 10 years to 5 years.[86] However, DOT advised that it would not have the authority to allow for additional flexibilities beyond those authorized by statute and grant regulations.[87]

Shift program focus away from minimum revenue guarantees for air service. Representatives of one airport, one airline, and an industry association, as well as an aviation consultant, said that SCASDP is not effective in increasing air service in the long term, and that the grants should be limited or redirected to purposes other than minimum revenue guarantees. For example, one airport director suggested that SCASDP funds would be more effective if used for capital improvements at airports. Another stakeholder suggested that SCASDP funds would be more effective if used for community economic development, such as attracting small aerospace businesses to use an airport's airfield, which would increase jobs for the community and contribute to economic growth.

We and others have found that SCASDP grants have had a mixed record of success in attracting air service. In 2019, we reported that half of the 66 grantees that received awards for fiscal years 2010 through 2014 were successful in achieving their goals during the award period, and that just over a third sustained their results for at least 24 months after the award period had ended.[88] Additionally, a 2014 article calculated that of the 115 grantees from 2006 through 2011 that requested funds to attract new service or achieve other outcomes, fewer

[84]Under the SCASDP program, DOT is authorized to "amend the scope of a grant agreement at the request of the community or consortium and any participating air carrier, and may limit the scope of a grant agreement to only the elements using grant assistance or to only the elements achieved, if the Secretary determines that the amendment is reasonably consistent with the original purpose of the project or the community's current air service needs." 49 U.S.C. § 41743(e)(1).

[85]49 U.S.C. § 41743(c)(4)(B)-(C).

[86]FAA Reauthorization Act of 2024, Pub. L. No. 118-63, § 562 (2024).

[87]*See* 2 C.F.R. Part 200 (establishing uniform administrative requirements, cost principles, and audit requirements for Federal awards to non-Federal entities).

[88]GAO-19-172.

than half were ultimately successful in meeting the goals of their proposal within 28 months of accepting the grant.[89]

Options for Modifying Airport Incentives and Passenger Facility Charges

Aviation stakeholders identified options for modifying FAA policy on airport incentives and passenger facility charges to support small community air service.

Airport incentives. Representatives of two non-EAS airports we interviewed supported loosening restrictions on the use of airport revenue, which are set by statute and FAA policy.[90] FAA policy is based upon applicable statutes that restrict the use of airport revenues and require FAA to obtain certain assurances from airports as a condition of receiving Airport Improvement Program grants.[91] A representative of one non-EAS airport said that loosening these restrictions could help airports attract air service. For example, the representative told us they would like to waive ground-handling costs to mitigate an airline's risk in starting service, which FAA's policy prohibits. In its policy regarding air carrier incentive programs, FAA states that permitting waivers of charges for ground handling would cross a line into subsidies prohibited by the requirements for the use of airport revenue.[92]

Passenger facility charges. These charges are federally authorized fees paid by passengers at the time of ticket purchase to help pay for capital development at commercial service airports. Representatives of two non-EAS airports supported increasing the current $4.50-per-flight-segment cap on passenger facility charges. One airport director proposed raising the passenger facility charge to $9 and indexing it to inflation. According to the director, the charge has not changed in more than 20 years and increasing it would provide airports with a more consistent revenue stream. We have previously reported that although an increase in the passenger facility charge would largely flow to large and medium hub airports, smaller airports could also benefit.[93] Airlines have opposed increasing the cap on passenger facility charges, citing higher travel costs and the potential for reduced passenger demand.

[89]Michael D. Wittman, "Public Funding of Airport Incentives in the United States: The Efficacy of the Small Community Air Service Development Grant Program," *Transport Policy*, vol. 35 (September 2014).

[90]*See* 49 U.S.C. §§ 47107, 47133; FAA Policy Regarding Air Carrier Incentive Program, 88 Fed. Reg. 85344 (Dec. 7, 2023). Incentives that airports may offer to carriers to attract air service may include waiving or reducing landing fees and other airport fees, as well as marketing support or assistance, provided that the marketing focuses on the airport rather than destination marketing.

[91]See 49 U.S.C. §§ 47107, 47133.

[92]In December 2023, FAA finalized a policy statement that updates FAA policy regarding incentives offered by airport sponsors to air carriers for improved air service. The updated policy statement, which supersedes the 2010 Air Carrier Incentive Program Guidebook, includes general principles to assess whether an airport sponsor's air carrier incentive program complies with FAA grant assurances, as well as guidance on the permissibility and implementation of various aspects of an air carrier incentive program.

[93]GAO, *Commercial Aviation: Raising Passenger Facility Charges Would Increase Airport Funding, but Other Effects Less Certain*, GAO-15-107 (Washington, D.C.: Dec. 11, 2014).

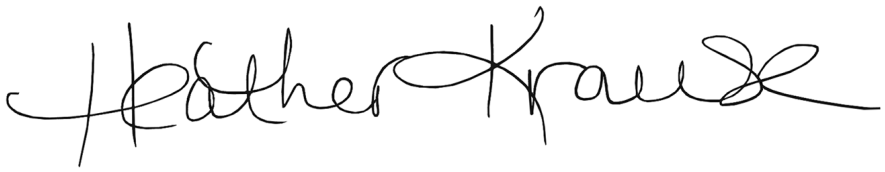
Agency Comments

We provided a draft of this report to DOT for review and comment. DOT provided technical comments, which we incorporated as appropriate.

We are sending copies of this report to the appropriate congressional committees, the Secretary of Transportation, and other interested parties. In addition, the report is available at no charge on the GAO website at http://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.



Heather Krause
Managing Director, Physical Infrastructure

List of Addressees

The Honorable Brian Schatz
Chair
The Honorable Cindy Hyde-Smith
Ranking Member
Subcommittee on Transportation, Housing and Urban Development, and Related Agencies
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United States Senate

The Honorable Rick Larsen
Ranking Member
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The Honorable Garret Graves
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Appendix I: Analysis of Changes to Scheduled Passenger Service by Airport Hub Size, 2018 through 2023

In addition to analyzing changes in scheduled passenger service at the community level, we analyzed changes at the airport level, because some stakeholders view the size of the community and the size of the airport interchangeably. We grouped airports into five categories following the statutory categorization: large hub, medium hub, small hub, nonhub, and non-primary nonhub.[1] We examined trends in air service levels from 2018 through 2023 using the following metrics: mean total departures, mean daily departures per route, mean total onboards, mean total seats, mean number of seats per departure, mean load factors, mean number of carriers, mean number of nonstop destinations, and mean connectivity index score.

Mean Total Departures

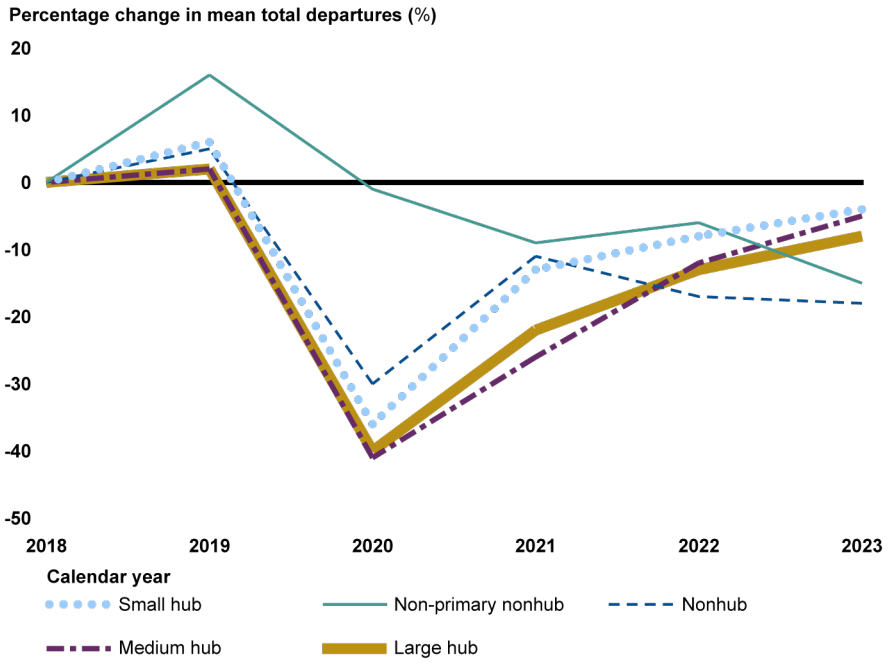
Nonhub airports experienced an 18 percent decrease in mean total departures from 2018 to 2023.[2] This was the largest decrease among airport sizes in our sample; the next-largest decrease was 15 percent for non-primary nonhub airports. Small hub, medium hub, and large hub airports all experienced a decrease in mean total departures of between 4 and 8 percent over the same time period.[3] (See fig. 15.)

[1]Under statute, large hub airports are defined as those airports that have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports are defined as those airports that have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports are defined as those airports that have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports are defined as those airports that have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are defined as those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

[2]For simplicity, in this appendix we only present the mean of air service level metrics. For some metrics, median can differ significantly from the mean, because some airports saw very large changes in service levels from 2018 to 2023, which affects the mean. Accordingly, service levels at individual airports can differ greatly from the mean.

[3]In 2023, large hub airports had 154,135 departures on average, while medium hubs, small hubs, nonhubs, and non-primary nonhubs had 45,238, 13,255, 2,004, and 809 departures on average, respectively.

Figure 15: Percentage Change from 2018 in Mean Total Departures from Airports of Different Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 15: Percentage Change from 2018 in Mean Total Departures from Airports of Different Sizes, 2018–2023

Percentage change in mean total departures (%)

Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2018	0	0	0	0	0
2019	6	16	5	2	2
2020	-36	-1	-30	-41	-40
2021	-13	-9	-11	-26	-22
2022	-8	-6	-17	-12	-13
2023	-4	-15	-18	-5	-8

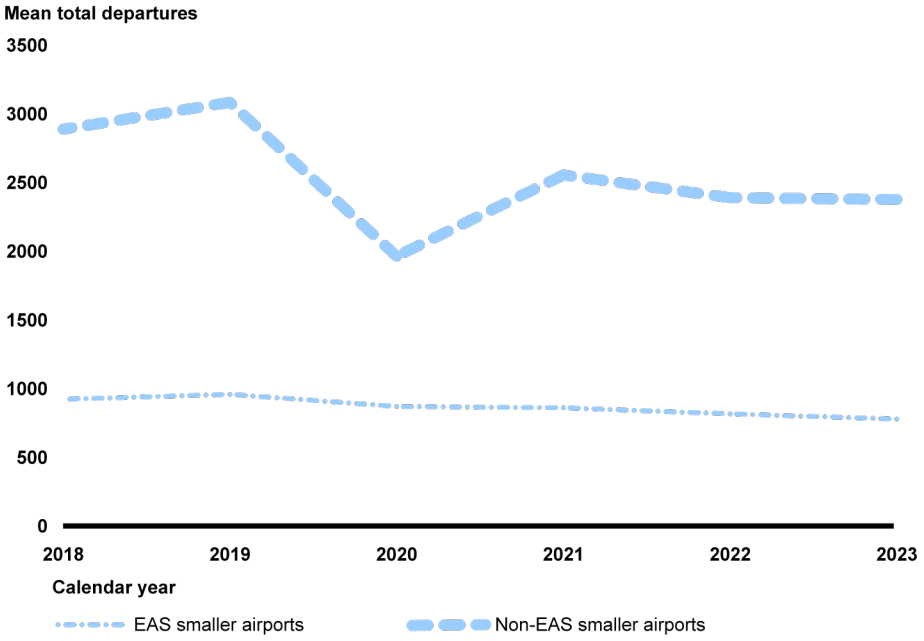
Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Under statute, large hub airports have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

Smaller airports in the Essential Air Service (EAS) program experienced a 16-percent decrease in mean total departures from 2018 to 2023.[4] Non-EAS smaller airports experienced an 18-percent decrease in mean total departures over the same time period. Non-EAS smaller airports average more than twice as many departures annually as EAS smaller airports. (See fig. 16.)

[4]In this appendix, smaller airports refer to nonhub and non-primary nonhub airports.

Figure 16: Mean Total Departures from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 16: Mean Total Departures from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023

Mean total departures

Calendar year	Essential Air Service (EAS) smaller community departing flights	Non-EAS smaller community departing flights
2018	902	2887
2019	938	3083
2020	850	1963
2021	840	2554
2022	796	2389
2023	758	2376

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

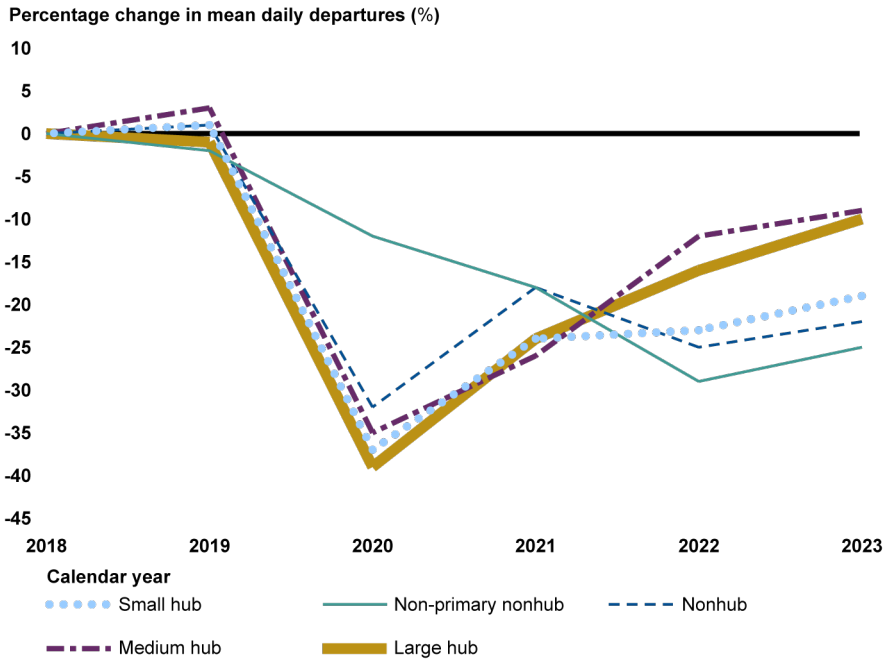
Note: Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS airport as an airport that received EAS subsidies for at least one year from 2018 through 2023.

Mean Daily Departures per Route

All airport sizes experienced a double-digit decrease in mean daily departures per route from 2018 to 2023, except for medium hubs, which had a 9-percent decrease. Non-primary nonhub airports experienced the greatest decrease (25 percent), closely followed by nonhub airports (22-percent decrease) and small hub

airports (19-percent decrease). Large hub airports experienced a smaller decrease of 10 percent.[5] (See fig. 17.)

Figure 17: Percentage Change from 2018 in Mean Daily Departures per Route from Airports of Different Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 17: Percentage Change from 2018 in Mean Daily Departures per Route from Airports of Different Sizes, 2018–2023

Percentage change in mean daily departures (%)

Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2018	0	0	0	0	0
2019	1	-2	1	3	-1
2020	-37	-12	-32	-35	-39
2021	-24	-18	-18	-26	-24
2022	-23	-29	-25	-12	-16
2023	-19	-25	-22	-9	-10

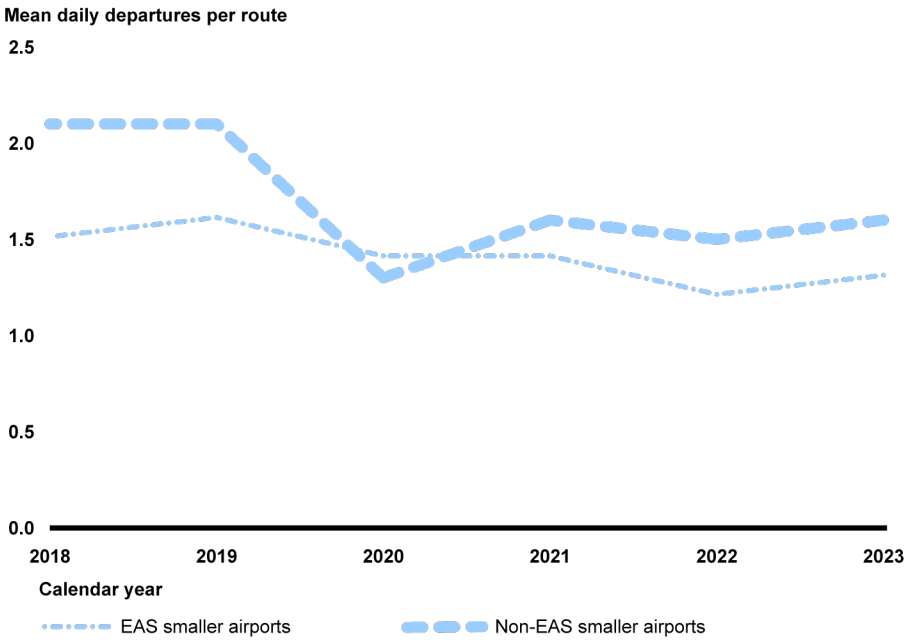
Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Under statute, large hub airports have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

[5]In 2023, large and medium hub airports had four and three mean daily departures per route, respectively. Small hub, nonhub, and non-primary nonhub airports had one to two mean daily departures per route.

From 2018 to 2023, non-EAS smaller airports experienced a decrease of 24 percent in mean daily departures per route, while EAS smaller airports saw a smaller decrease of 15 percent. (See fig. 18.)

Figure 18: Mean Daily Departures per Route from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 18: Mean Daily Departures per Route from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023

Mean daily departures per route

Calendar year	Essential Air Service (EAS) smaller community departing flights	Non-EAS smaller community departing flights
2018	1.5	2.1
2019	1.6	2.1
2020	1.4	1.3
2021	1.4	1.6
2022	1.2	1.5
2023	1.3	1.6

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

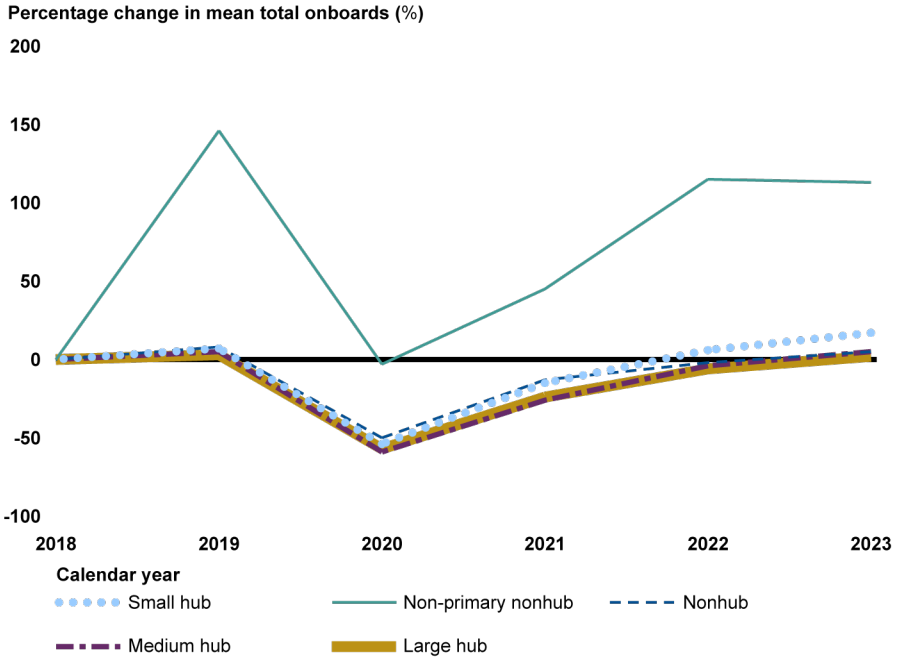
Note: Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS airport as an airport that received EAS subsidies for at least one year from 2018 through 2023.

Mean Total Onboards

All airport sizes experienced an increase in mean total onboards (i.e., passengers onboard a plane when it takes off) from 2018 to 2023. By far the largest increase was at non-primary nonhub airports, which had 113

percent more total onboards on average in 2023 than in 2018.[6] Small hub airports experienced a 17-percent increase in mean total onboards compared to a 5-percent increase at both nonhub and medium hub airports, and a 2-percent increase at large hub airports.[7] (See fig. 19.)

Figure 19: Percentage Change from 2018 in Mean Total Onboards from Airports of Different Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 19: Percentage Change from 2018 in Mean Total Onboards from Airports of Different Sizes, 2018–2023

Percentage change in mean total onboards (%)

Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2018	0	0	0	0	0
2019	7	146	8	5	3
2020	-54	-3	-50	-59	-57
2021	-15	45	-13	-26	-24
2022	6	115	-2	-4	-6
2023	17	113	5	5	2

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Under statute, large hub airports have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports have 0.05 to 0.25 percent of the annual U.S. commercial enplanements.

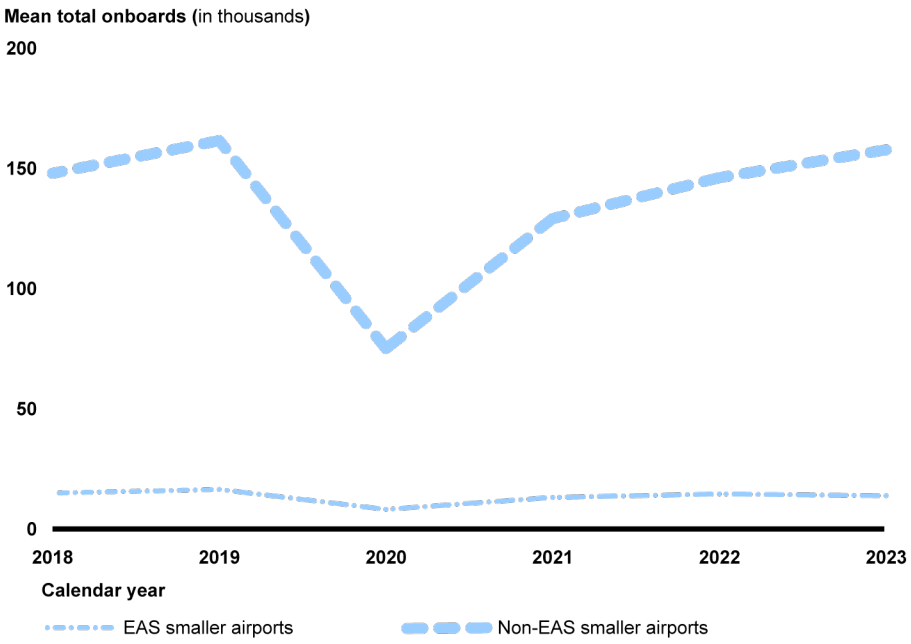
[6]This increase could be explained by Seattle Paine Field International Airport (PAE), which did not launch commercial air service until March 2019.

[7]In 2023, large hub airports had about 18.1 million total onboards on average, while medium hubs, small hubs, nonhubs, and non-primary nonhubs had about 5.1 million, 1.3 million, 0.1 million, and 12,061 onboards on average, respectively.

Nonhub primary airports have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

From 2018 to 2023, EAS smaller airports experienced an 8-percent decrease in mean total onboards, compared to a 7-percent increase for non-EAS smaller airports. (See fig. 20.)

Figure 20: Mean Total Onboards from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 20: Mean Total Onboards from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023

Mean total onboards (in thousands)

Calendar year	Essential Air Service (EAS) smaller community departing flights	Non-EAS smaller community departing flights
2018	13.8	147.9
2019	15.3	161.5
2020	7	75
2021	12	129.1
2022	13.4	146.1
2023	12.7	157.7

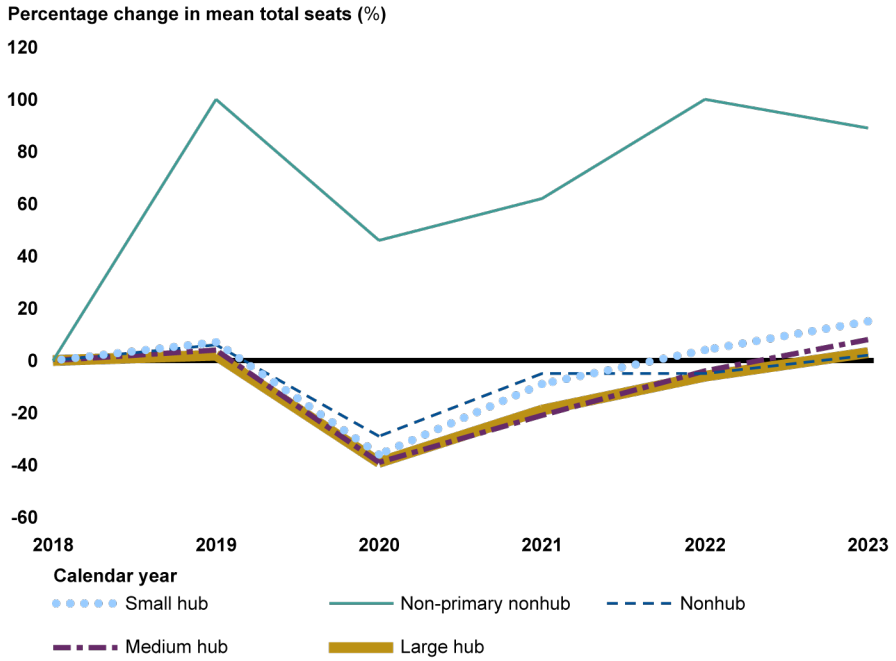
Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS airport as an airport that received EAS subsidies for at least one year from 2018 through 2023.

Mean Total Seats

All airport sizes have experienced an increase in mean total seats since 2018. By far the largest increase (89 percent) was on flights from non-primary nonhub airports.[8] On average, the total number of seats on flights from small hub airports increased by 15 percent over that time period, while the total number of seats on flights from airports of other sizes had single-digit increases.[9] (See fig. 21.)

Figure 21: Percentage Change from 2018 in Mean Total Seats on Departures from Airports of Different Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 21: Percentage Change from 2018 in Mean Total Seats on Departures from Airports of Different Sizes, 2018–2023

Percentage change in mean total seats (%)

Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2018	0	0	0	0	0
2019	7	100	6	4	2
2020	-36	46	-29	-39	-39
2021	-9	62	-5	-21	-19
2022	4	100	-5	-4	-6

[8]This increase could be explained by Seattle Paine Field International Airport (PAE), which did not launch commercial air service until March 2019.

[9]In 2023, large hub airports had about 22 million total seats on average, while medium hubs, small hubs, nonhubs, and non-primary nonhubs had about 6.5 million, 1.6 million, 0.1 million, and 21,000 total seats on average, respectively.

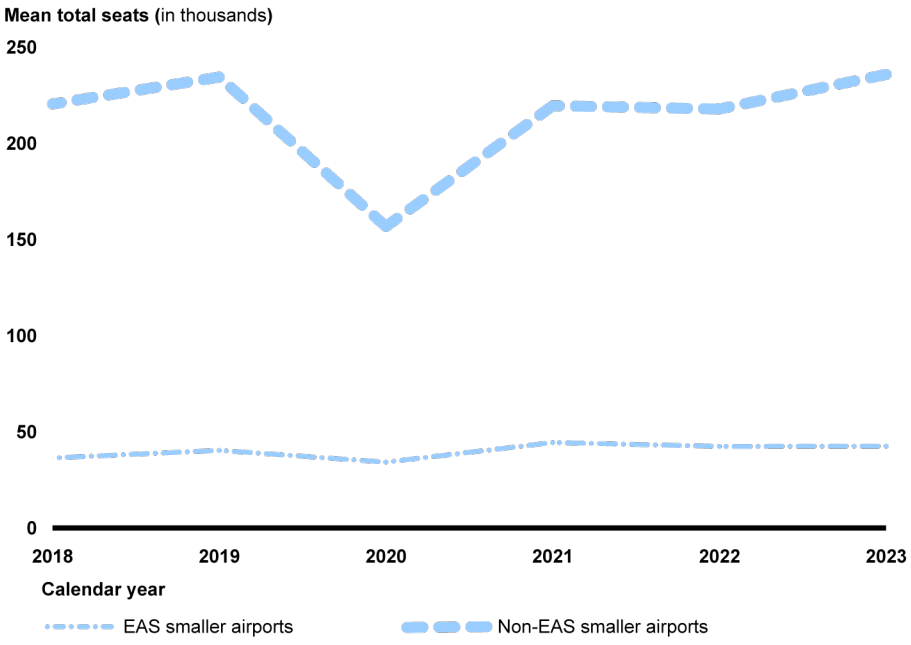
Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2023	15	89	2	8	3

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Under statute, large hub airports have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

From 2018 to 2023, EAS smaller airports experienced a 1-percent decrease in mean total seats, while non-EAS smaller airports experienced a 3-percent increase. (See fig. 22.)

Figure 22: Mean Total Seats on Departures from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 22: Mean Total Seats on Departures from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023

Mean total seats (in thousands)

Calendar year	Essential Air Service (EAS) smaller community departing flights	Non-EAS smaller community departing flights
2018	35	220.4
2019	38.9	234.4
2020	32.8	156.7
2021	43	219.5
2022	41	217.8
2023	41.1	235.8

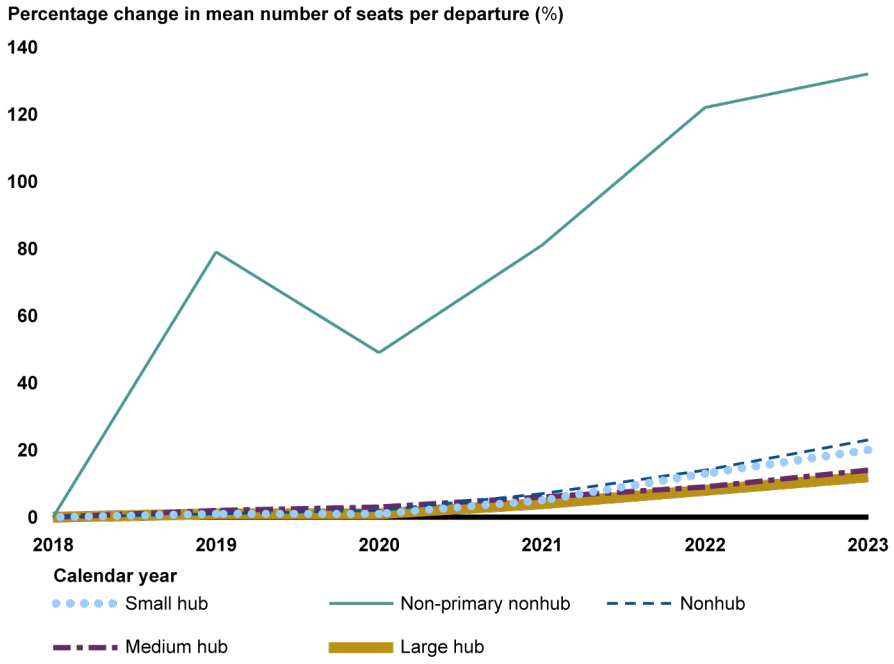
Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS airport as an airport that received EAS subsidies for at least one year from 2018 through 2023.

Mean Number of Seats per Departure

All airport sizes experienced at least a double-digit increase in mean number of seats per departure from 2018 to 2023. Non-primary nonhub airports saw by far the largest increase (132 percent) in mean number of seats per departure, from 11 seats in 2018 to 26 seats in 2023. All other airport sizes experienced increases between 12 and 23 percent.[10] (See fig. 23.)

Figure 23: Percentage Change from 2018 in Mean Number of Seats on Departures from Airports of Different Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 23: Percentage Change from 2018 in Mean Number of Seats on Departures from Airports of Different Sizes, 2018–2023

Percentage change in mean number of seats per departure (%)

Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2018	0	0	0	0	0
2019	1	79	1	2	1
2020	1	49	2	3	1
2021	5	81	7	6	4
2022	13	122	14	9	8

[10]In 2023, large and medium hub airports had 143 and 144 seats per departure on average, respectively, while small hubs, nonhubs, and non-primary nonhubs had 117, 77, and 26 seats per departure on average, respectively.

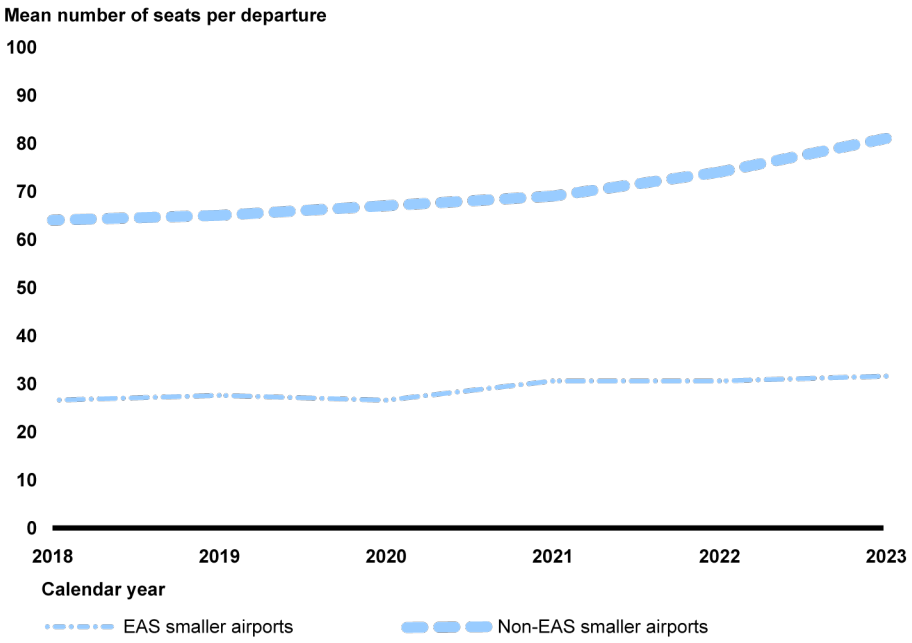
Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2023	20	132	23	14	12

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Under statute, large hub airports have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

EAS smaller airports experienced an increase in mean number of seats per departure of 19 percent, from 26 to 31 seats. Non-EAS smaller airports experienced an increase in mean number of seats per departure of 25 percent, from 64 to 81 seats. (See fig. 24.)

Figure 24: Mean Number of Seats on Departures from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 24: Mean Number of Seats on Departures from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023

Mean number of seats per departure

Calendar year	Essential Air Service (EAS) smaller community departing flights	Non-EAS smaller community departing flights
2018	26	64
2019	27	65
2020	26	67
2021	30	69
2022	30	74
2023	31	81

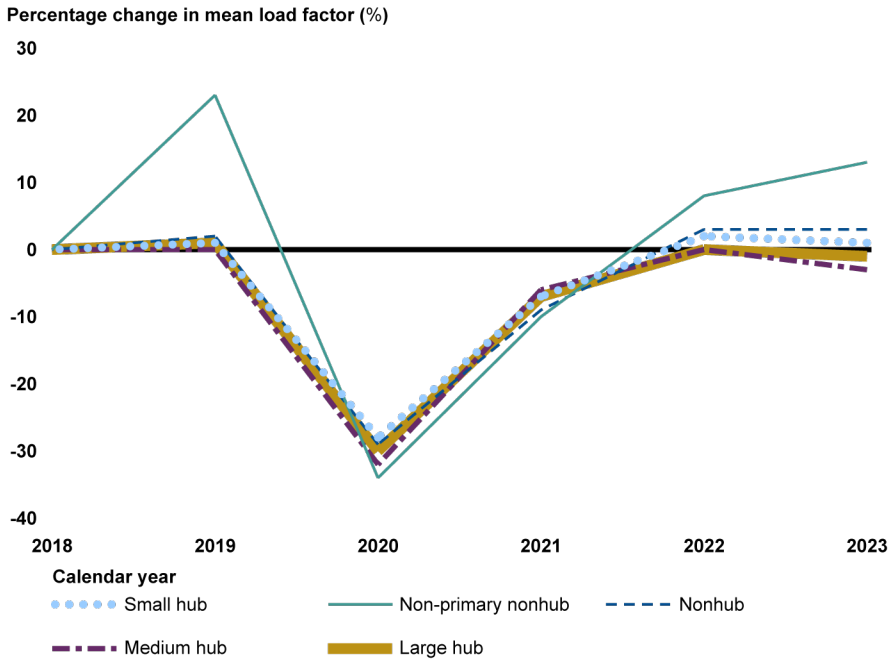
Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS airport as an airport that received EAS subsidies for at least one year from 2018 through 2023.

Mean Load Factor

Non-primary nonhub airports experienced an increase in mean load factor—a measure of the percentage of seats occupied by passengers—of 13 percent from 2018 to 2023. All other airport sizes had small changes, ranging from a decrease of 3 percent to an increase of 3 percent.[11] (See fig. 25.)

Figure 25: Percentage Change from 2018 in Mean Load Factor at Airports of Different Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 25: Percentage Change from 2018 in Mean Load Factor at Airports of Different Sizes, 2018–2023

Percentage change in mean load factor (%)

Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2018	0	0	0	0	0
2019	1	23	2	0	1
2020	-28	-34	-29	-32	-30
2021	-7	-10	-9	-6	-7
2022	2	8	3	0	0

[11]In 2023, large and small hub airports had mean load factors of 82 percent and 81 percent, respectively. The mean load factors for medium hubs, nonhubs and non-primary nonhubs were 78 percent, 79 percent, and 57 percent, respectively.

Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2023	1	13	3	-3	-1

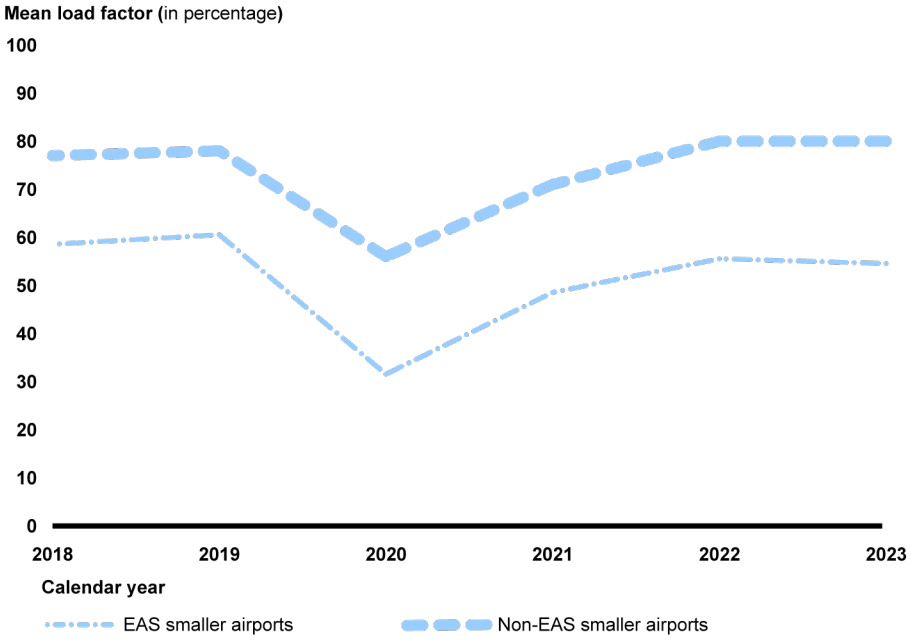
Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Notes: Load factor is a measure of the percentage of seats occupied by passengers.

Under statute, large hub airports have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

EAS smaller airports experienced a decrease in mean load factor of 7 percent from 2018 to 2023, from a mean load factor of 58 percent in 2018 to 54 percent in 2023. Non-EAS smaller airports experienced an increase in mean load factor of 3 percent during that period. (See fig. 26.)

Figure 26: Mean Load Factor at Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 26: Mean Load Factor at Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023

Mean load factor (in percentage)

Calendar year	Essential Air Service (EAS) smaller community departing flights	Non-EAS smaller community departing flights
2018	58	77
2019	60	78
2020	31	56
2021	48	71
2022	55	80
2023	54	80

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

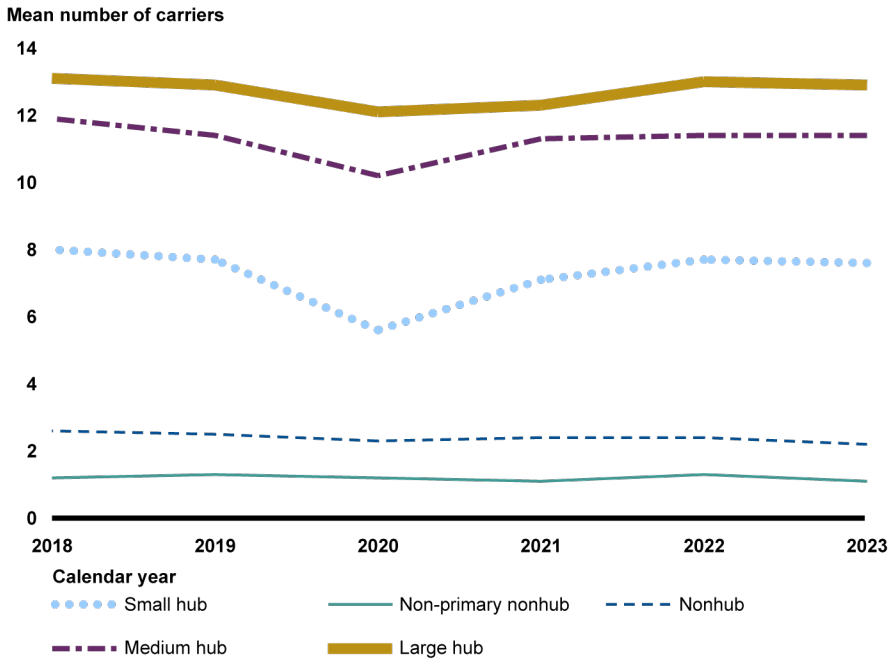
Notes: Load factor is a measure of the percentage of seats occupied by passengers.

Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS airport as an airport that received EAS subsidies for at least one year from 2018 through 2023.

Mean Number of Carriers

All airport sizes experienced a decrease in the mean number of carriers from 2018 to 2023. Nonhub airports experienced the largest decrease (15 percent), followed by non-primary nonhub airports (11 percent). Small, medium, and large hub airports experienced single-digit decreases in the mean number of carriers. (See fig. 27.)

Figure 27: Mean Number of Carriers at Airports of Different Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 27: Mean Number of Carriers at Airports of Different Sizes, 2018–2023

Mean number of carriers

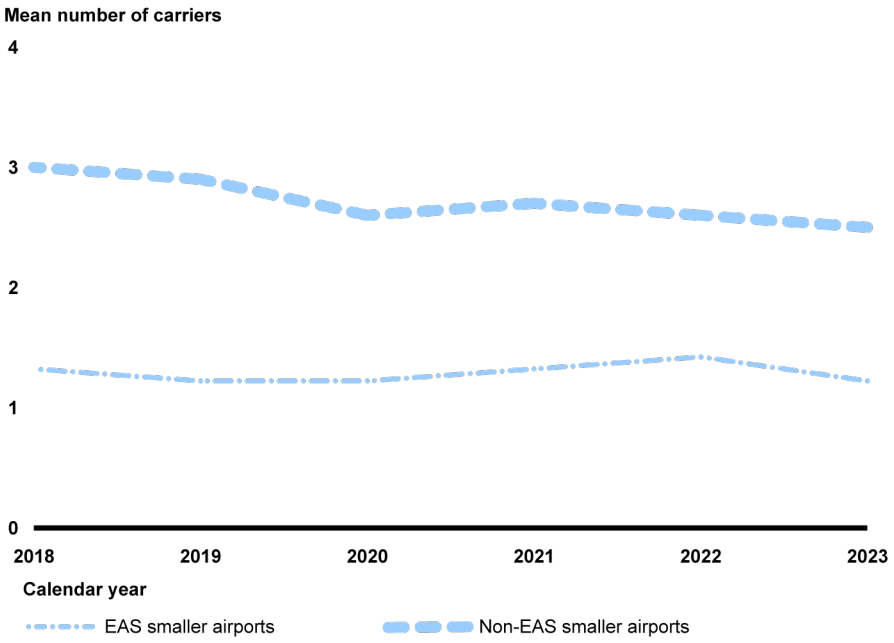
Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2018	8	1.2	2.6	11.9	13.1
2019	7.7	1.3	2.5	11.4	12.9
2020	5.6	1.2	2.3	10.2	12.1
2021	7.1	1.1	2.4	11.3	12.3
2022	7.7	1.3	2.4	11.4	13
2023	7.6	1.1	2.2	11.4	12.9

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Under statute, large hub airports have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

Both EAS smaller airports and non-EAS smaller airports experienced small decreases in the mean number of carriers from 2018 to 2023. EAS smaller airports have less than half the number of carriers as non-EAS smaller airports on average. (See fig. 28.)

Figure 28: Mean Number of Carriers at Essential Air Service (EAS) Airports versus Non-EAS Smaller Airports, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 28: Mean Number of Carriers at Essential Air Service (EAS) Airports versus Non-EAS Smaller Airports, 2018–2023

Mean number of carriers

Calendar year	Essential Air Service (EAS) smaller community departing flights	Non-EAS smaller community departing flights
2018	1.3	3
2019	1.2	2.9
2020	1.2	2.6
2021	1.3	2.7
2022	1.4	2.6
2023	1.2	2.5

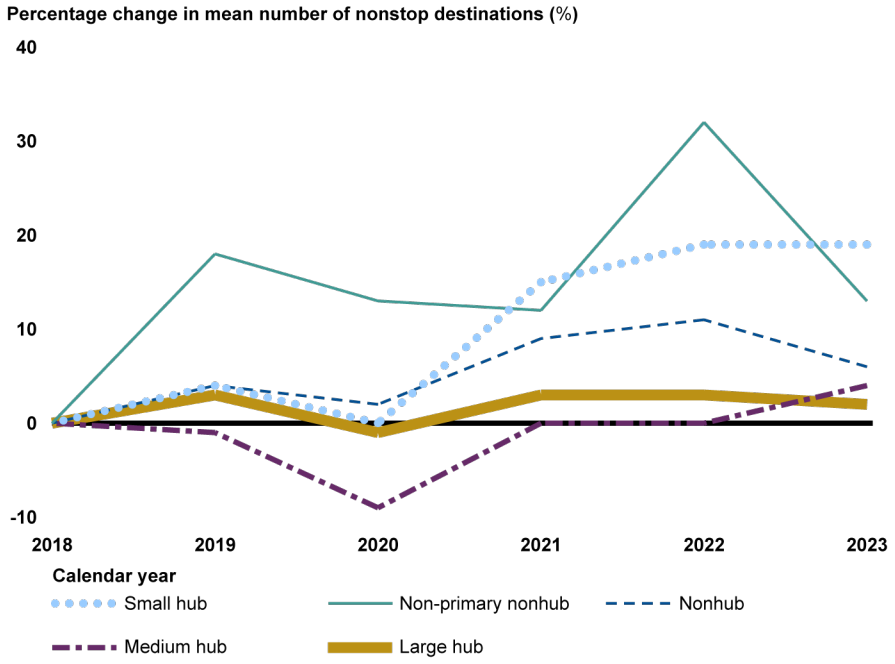
Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS airport as an airport that received EAS subsidies for at least one year from 2018 through 2023.

Mean Number of Nonstop Destinations

Airports of all sizes experienced an increase in the mean number of nonstop destinations from 2018 to 2023. The largest increase was for small hub airports, with a 19-percent increase on average. Non-primary nonhub airports increased by 13 percent, and nonhub airports increased by 6 percent. (See fig. 29.)

Figure 29: Percentage Change from 2018 in Mean Number of Nonstop Destinations from Airports of Different Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 29: Percentage Change from 2018 in Mean Number of Nonstop Destinations from Airports of Different Sizes, 2018–2023

Percentage change in mean number of nonstop destinations (%)

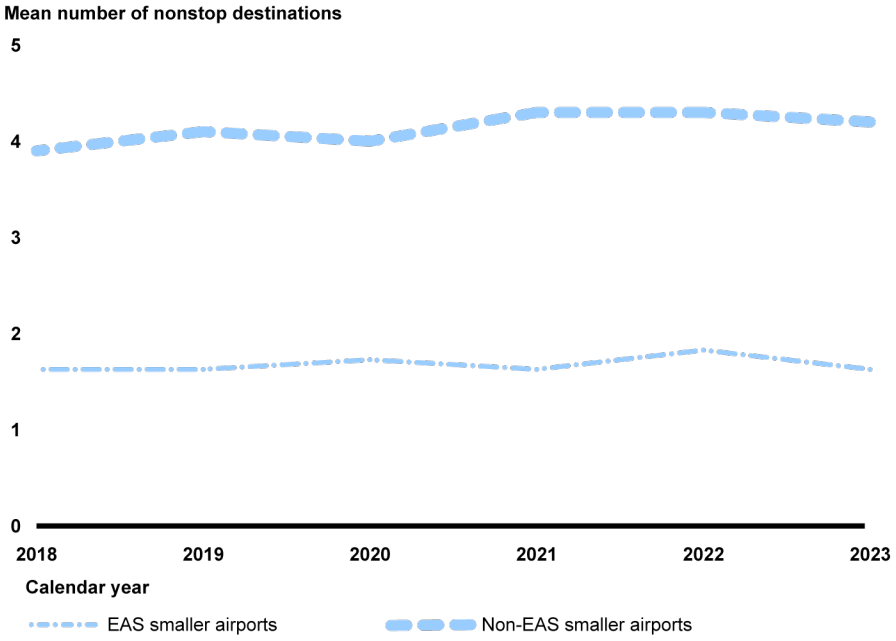
Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2018	0	0	0	0	0
2019	4	18	4	-1	3
2020	0	13	2	-9	-1
2021	15	12	9	0	3
2022	19	32	11	0	3
2023	19	13	6	4	2

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Note: Under statute, large hub airports have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

The mean number of nonstop destinations for EAS smaller airports remained the same from 2018 to 2023, while the mean number of nonstop destinations for non-EAS smaller airports increased from 3.9 in 2018 to 4.2 in 2023. EAS smaller airports have less than half the number of nonstop destinations than non-EAS smaller airports on average.[12] (See fig. 30.)

Figure 30: Mean Number of Nonstop Destinations from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 30: Mean Number of Nonstop Destinations from Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023

Mean number of nonstop destinations

Calendar year	Essential Air Service (EAS) smaller community departing flights	Non-EAS smaller community departing flights
2018	1.6	3.9
2019	1.6	4.1
2020	1.7	4
2021	1.6	4.3
2022	1.8	4.3
2023	1.6	4.2

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

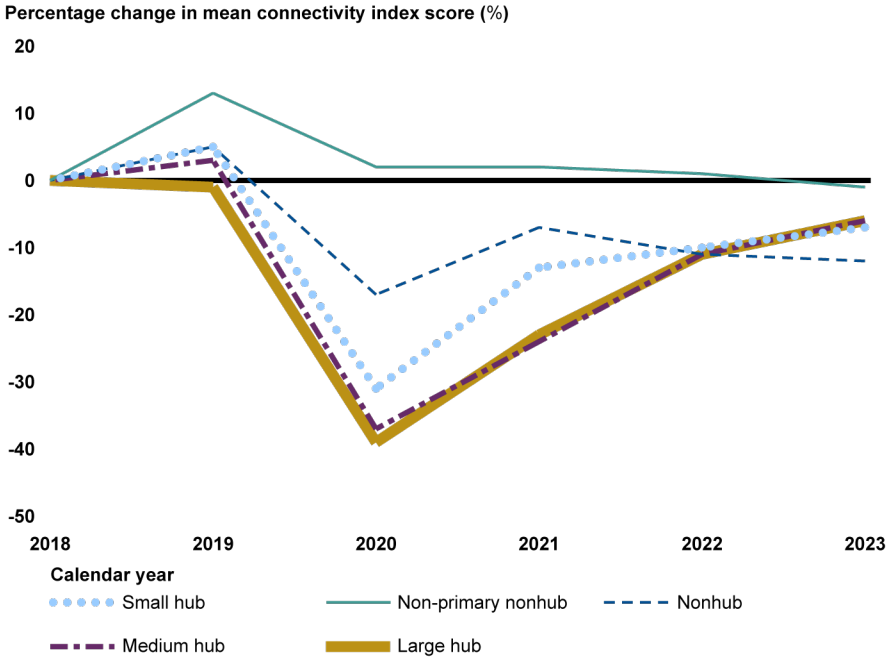
Note: Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS airport as an airport that received EAS subsidies for at least one year from 2018 through 2023.

[12]In 2023, large hub airports had 96 nonstop destinations on average, while medium hubs, small hubs, nonhubs, and non-primary nonhubs had 41, 21, four, and two nonstop destinations on average, respectively.

Mean Connectivity Index Score

From 2018 to 2023, all airport sizes experienced a decrease in mean connectivity index score—a measure of a passenger's degree of access to the aviation system. Nonhub airports had the largest decrease (12 percent), and small, medium, and large hub airports had similar decreases of 7 percent, 6 percent, and 6 percent, respectively. Non-primary nonhub airports experienced a 1-percent decrease in mean connectivity index score.[13] (See fig. 31.)

Figure 31: Percentage Change from 2018 in Mean Connectivity Index Score of Airports of Different Sizes, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 31: Percentage Change from 2018 in Mean Connectivity Index Score of Airports of Different Sizes, 2018–2023

Percentage change in mean connectivity index score (%)

Calendar year	Small hub	Non-primary nonhub	Nonhub	Medium hub	Large hub
2018	0	0	0	0	0
2019	5	13	5	3	-1
2020	-31	2	-17	-37	-39
2021	-13	2	-7	-24	-23
2022	-10	1	-11	-11	-11
2023	-7	-1	-12	-6	-6

[13]In 2023, large hub airports had a connectivity index score of 259 on average, while medium hubs, small hubs, nonhubs, and non-primary nonhubs had connectivity index scores of 105, 37, 9, and 6 on average, respectively.

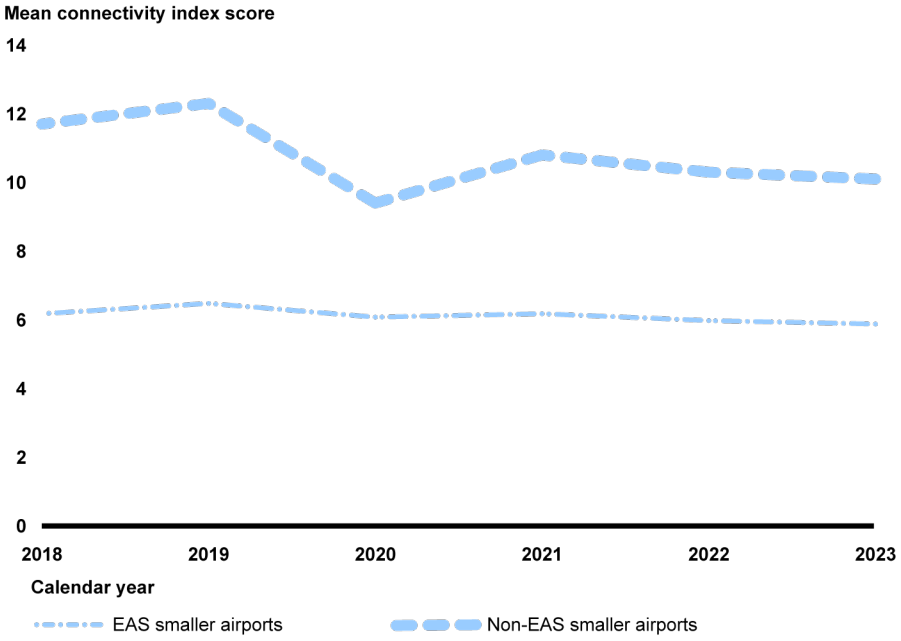
Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Notes: The connectivity index is a function of the frequency of available scheduled flights, the quantity and quality of nonstop destinations served, and the quantity and quality of connecting destinations.

Under statute, large hub airports have 1 percent or more of the annual U.S. commercial enplanements. Medium hub airports have 0.25 to 1.0 percent of the annual U.S. commercial enplanements. Small hub airports have 0.05 to 0.25 percent of the annual U.S. commercial enplanements. Nonhub primary airports have less than 0.05 percent but more than 10,000 of the annual U.S. commercial enplanements. And non-primary nonhub airports are those airports that have scheduled passenger service and between 2,500 and 10,000 annual enplanements.

From 2018 to 2023, EAS smaller airports had a 4-percent decrease and non-EAS smaller airports had a 13-percent decrease in mean connectivity index score. (See fig. 32.)[14]

Figure 32: Mean Connectivity Index Score of Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023



Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Accessible Data for Figure 32: Mean Connectivity Index Score of Essential Air Service (EAS) versus Non-EAS Smaller Airports, 2018–2023

Mean connectivity index score

Calendar year	Essential Air Service (EAS) smaller community departing flights	Non-EAS smaller community departing flights
2018	6.1	11.7
2019	6.4	12.3
2020	6	9.4
2021	6.1	10.8
2022	5.9	10.3
2023	5.8	10.1

[14]In 2023, large hub airports had a mean connectivity index score of 259, while medium hubs, small hubs, nonhubs, and non-primary nonhubs had scores of 105, 37, 9, and 6, respectively.

Source: GAO analysis of Department of Transportation data. I GAO-24-106681

Notes: The connectivity index is a function of the frequency of available scheduled flights, the quantity and quality of nonstop destinations served, and the quantity and quality of connecting destinations.

Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities. We defined an EAS airport as an airport that received EAS subsidies for at least one year from 2018 through 2023.

Appendix II: Objectives, Scope, and Methodology

This report addresses (1) changes in scheduled passenger air service to small communities from 2018 through 2023; (2) factors contributing to changes in air service, and their effects on federal air service programs; and (3) options to improve air service to small communities.

Objective 1

Community-Level Analysis

To describe how scheduled passenger air service to small communities changed from 2018 through 2023, we analyzed data from the Department of Transportation (DOT) that track changes in air service. We started with 2018 because previous publications covered the trend of air service in small communities prior to 2018.[1] We conducted our analysis at both the community and airport levels; the results of the airport-level analysis are presented in appendix I.

For the community-level analysis, following the approach used in a 2020 DOT Office of Inspector General report, we used U.S. Census Bureau's (Census) data on statistical areas and population within the contiguous U.S. to define and separate communities into five size groups: small, medium-small, medium, medium-large, and large.[2] We chose to assign as equal a proportion of the entire population of the U.S. to each size group; the combined populations of communities within each of these size groups thus represents roughly 20 percent of the population of the contiguous U.S. By construction, the entire population of the contiguous U.S. was accounted for in one of the size groups.

Beginning with the largest community in the country (New York-Newark, NY-NJ-CT-PA), and proceeding iteratively to the community with the next-highest population, we classified communities as large until the cumulative population of these communities was approximately 20 percent. At this point, we classified the next-largest community as medium-large, and similarly proceeded to label the next-largest communities as medium-large until the cumulative population of medium-large and large communities combined was approximately 40 percent. We continued this process to code medium, medium-small, and small communities, until all the communities were classified into one of the five groups. See table 1 for examples of communities of different sizes, and the number of communities with at least one commercial airport in each size group.

[1]For example, see National Academies of Sciences, Engineering, and Medicine, *Building and Maintaining Air Service Through Incentive Programs* (Washington, D.C.: The National Academies Press, 2020); and Michael Wittman and William Swelbar, "Trends and Market Forces Shaping Small Community Air Service in the United States," Report No. ICAT-2013-02 (May 2013).

[2]U.S. Department of Transportation Office of Inspector General, *Changes in Airline Service Differ Significantly for Smaller Communities, but Limited Data on Ancillary Fees Hinders Further Analysis*, OST Report No. EC2020036 (Washington, D.C.: May 27, 2020).

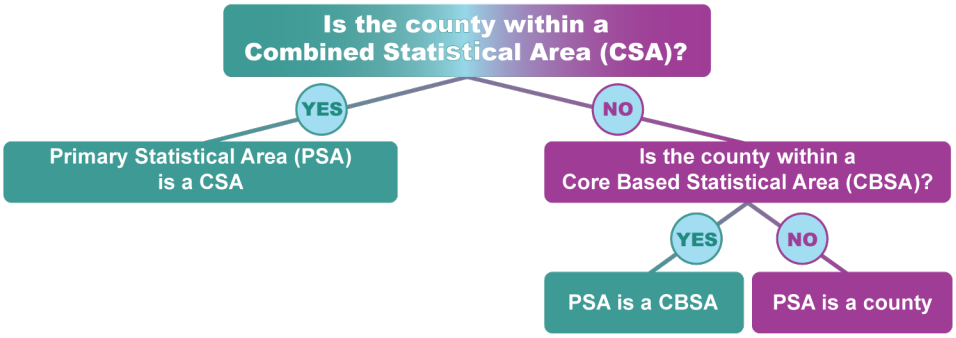
Table 1: Examples of Communities of Different Sizes, and Number of Communities with at Least One Commercial Airport

Community size	Example of community	Population of example community	Number of communities within size group with at least one commercial airport
Large	Los Angeles-Long Beach, CA	18,563,976	4
Medium-large	Houston-The Woodlands, TX	7,333,457	10
Medium	Charlotte-Concord, NC-SC	2,830,938	24
Medium-small	Baton Rouge, LA	869,755	73
Small	Ithaca-Cortland, NY	149,310	218

Source: GAO analysis of U.S. Census Bureau and Federal Aviation Administration data. | GAO-24-106681

We used Primary Statistical Areas (PSA) to define communities and mapped airports to the PSAs in which they were located using the Federal Aviation Administration's (FAA) airport facility data.[3] PSAs (i.e., communities) are defined based on two Census definitions: Core Based Statistical Areas (CBSA) and Combined Statistical Areas (CSA). CBSAs represent a county or set of counties with at least one urbanized area or cluster with a population of at least 10,000, plus adjacent counties with significant social and economic integration with the core county based on commuting ties.[4] CSAs are a higher level of aggregation that consist of two or more CBSAs that have a significant employment interchange. If a county does not have a commercial airport and does not fall into a CBSA or a CSA, the county is not included in the analysis. Figure 33 illustrates the process of assigning counties to their PSAs.

Figure 33: Process of Assigning Counties to Primary Statistical Areas (PSA)



Source: GAO and Department of Transportation Office of Inspector General. | GAO-24-106681

We present the community-level analysis in this report because smaller airports do not always fall within small communities, and travelers may factor in air service at alternative airports nearby when making purchasing decisions. Therefore, in our analysis, a county close to a larger urbanized area with significant social and economic ties is not considered a small community.[5] As explained in the 2020 DOT Office of Inspector General

[3]On the basis of how we defined PSAs, each airport can only serve one PSA.

[4]The term "counties" is used here to refer to counties or county-equivalents. CBSAs may correspond to either a Metropolitan Statistical Area or a Micropolitan Statistical Area.

[5]For example, Hagerstown Regional Airport in Hagerstown, MD, serves the Washington-Baltimore-Arlington, DC-MD-VA-WV-PA community, along with Baltimore/Washington International Thurgood Marshall Airport (BWI) in Anne Arundel County, Maryland; Ronald Reagan Washington National Airport (DCA) in Arlington County, Virginia; and Washington Dulles International Airport (IAD) in Fairfax County, Virginia.

report, defining communities in this manner enabled us to cover all airports in the contiguous U.S. that generally aligned with airports' catchment areas, without specific assessments of individual airports.[6]

Airport-Level Analysis

In addition to conducting analysis at the community level, we conducted analysis at the airport level, because some stakeholders view the size of the community and the size of the airport interchangeably. We identified all the commercial airports in the contiguous U.S. and grouped the airports into the following five categories, following the statutory categorization:[7]

- Large Hub: Has 1 percent or more of annual U.S. commercial enplanements.
- Medium Hub: Has 0.25 to 1.0 percent of annual U.S. commercial enplanements.
- Small Hub: Has 0.05 to 0.25 percent of annual U.S. commercial enplanements.
- Nonhub: Has less than 0.05 percent of, but more than 10,000, annual U.S. commercial enplanements.
- Non-primary Commercial Service, Nonhub (non-primary nonhub): Has scheduled passenger service and between 2,500 and 10,000 annual enplanements.

Data Sources

We used a variety of data in our analysis (see table 2). For the data sources identified below, we reviewed related documentation and correspondence with DOT and Census officials and representatives of Cirium, a private data contractor housing various aviation data on its platform. We also conducted electronic data testing for missing data and obvious errors. We determined these data were sufficiently reliable for the purpose identified in the "uses" column of table 2.[8]

Table 2: Description of Data Used for Analysis of Air Service

Data	Source	Description	Use
2018–2023 T-100 domestic segment data[a]	Department of Transportation (DOT), Bureau of Transportation Statistics. Data downloaded from Cirium, a private data contractor housing various aviation data on its platform.	Domestic nonstop segment data reported by carriers, including carrier, origin, destination, departures performed, available seats, passengers onboard, etc.	Used to track trends in level of air service, as measured by various metrics.
2023 airport facility data	DOT/Federal Aviation Administration (FAA)	Information on the location of each airport, in addition to the county and state each airport is in.	Used with U.S. Census Bureau's Primary Statistical Areas (PSA) boundary data to map each airport into its PSA.[b]

[6]U.S. Department of Transportation Office of Inspector General, *Changes in Airline Service Differ Significantly for Smaller Communities, but Limited Data on Ancillary Fees Hinders Further Analysis*.

[7]A commercial service airport is a publicly owned airport with at least 2,500 annual enplanements and scheduled air carrier service.

[8]Note that for all the data sources listed in table 2, we used the most recent data available at the time of the analysis, except for Census's CBSA/CSA/County delineation data. The latest CBSA/CSA/County delineation file includes data from July 2023. However, we decided to use the March 2020 file, because it matches the 2018–2022 American Community Survey data better.

Data	Source	Description	Use
2018–2022 airport hub category data	DOT/FAA	FAA groups airports into five categories based on passenger boarding data.	Used to assign each airport to its size group and to calculate the weight associated with each airport size category used in the calculation of connectivity index.
2018–2023 Essential Air Service (EAS) reports[c]	DOT	Information on each EAS contract, including the origin airport code.	Used to define EAS airports and communities with an EAS subsidy over our period of analysis.
March 2020 Core Based Statistical Areas (CBSA)/Combined Statistical Areas (CSA)/county delineation data[d]	U.S. Census Bureau	For each county or county equivalent, lists its CBSA or CSA, if applicable, as defined by the Office of Management and Budget in March 2020.	Used with airport facility data to map each airport to its PSA.
American Community Survey 5-year estimates from 2018 through 2022	U.S. Census Bureau	Population estimates at the county, CBSA, and CSA level.	Used to assign communities in different size categories.

Source: GAO's analysis of DOT, FAA, and U.S. Census Bureau data. | GAO-24-106681

Note: The various data sources are used to track the trend of scheduled passenger air service to small communities from 2018 through 2023.

[a]According to DOT officials, DOT periodically revises historical T-100 data after carriers resubmit their data. The T-100 data used in our analysis were downloaded in March 2024. We verified that for the years 2018 through 2022, results derived from data downloaded in March 2024 were similar to results derived from data downloaded in June 2023. Therefore, any revisions were minor and did not affect the findings in our report.

[b]PSAs are used to define communities.

[c]Essential Air Service (EAS) provides federal subsidies to air carriers to serve certain eligible communities.

[d]CBSAs represent a county or set of counties with at least one urbanized area or cluster with a population of at least 10,000, plus adjacent counties with significant social and economic integration with the core county based on commuting ties. CSAs are a higher level of aggregation that consists of two or more CBSAs that have a significant employment interchange.

Data Preparation

We downloaded the T-100 domestic segment data from Cirium, whose database reports monthly air carrier traffic information from certified U.S. air carriers. The data include the origin and destination of flights, operating carrier, number of departures scheduled and performed, passengers, and seats. In addition to operating carriers, Cirium includes the associated marketing carriers reported in the schedule data. If there is no match, the operating carrier is left as is. Specifically, if the operator flies the route for a single marketer, then all the operating flights are attributed to that operator/marketer pairing. However, in rare circumstances, if the operator flies the same route for two different marketers, the number of flights between the two marketers are split based on percentage of flights in the schedule data.[9]

We prepared the T-100 data with a few additional filters and restrictions. We restricted the data by dropping flights with either an origin or destination outside the contiguous U.S. Additionally, we retained flights that represent scheduled passenger service and dropped observations with zero departures performed, zero available seats, and zero passengers transported, which are potentially erroneous. For observations with load

[9]After examining the data, we noticed that in some instances, Cirium had not assigned the network carrier as the marketing carrier when a wholly owned subsidiary operated the flight or when a regional carrier flew exclusively for a particular network carrier. In these cases, we recoded the marketing carriers to their associated network carriers. However, SkyWest and Mesa operate for multiple network carriers. GoJet also operated for both Delta and United Airlines prior to April 2020. In these cases, we kept the marketing carrier as is, and recoded the type of the marketing carrier as a network carrier.

factors—a measure of the percentage of seats occupied by passengers—greater than 100 percent that are likely erroneous, we replaced passenger count with available seats. Moreover, we deleted flights marketed by foreign carriers due to cabotage restrictions.[10] We also restricted both origin and destination airports to those with at least 2,500 enplanements in 2018, based on the statutory definition of public airports with commercial service. We further restricted the data to include routes with at least 52 annual departures, which is equivalent to about one departure per week.[11]

Data Analysis

We conducted our analysis on a directional basis—that is, a route departing from airport A to destination airport B is treated as a separate route from a route departing from airport B to destination airport A—and used the marketing carrier instead of the operating carrier to identify the airline. We calculated the following metrics at the community and airport levels each year to track the changes in air service for communities and airports of different sizes:[12]

- Total departures
- Mean daily departures per route
- Total seats
- Mean number of seats per departure
- Total passengers onboard
- Mean load factor per flight
- Number of nonstop destinations
- Mean number of carriers serving the community or airport
- Connectivity index

Total Departures

Airport level. For each origin airport, we summed up monthly departures performed to all nonstop destinations to generate annual departures performed. For airports within each size category, we calculated the mean of annual departures performed.

[10]The air cabotage law prohibits the transportation of persons, property, or mail for compensation or hire between points of the U.S. in a foreign civil aircraft. 49 U.S.C. § 41703.

[11]The CARES Act and Consolidated Appropriations Act, 2021, granted DOT the authority to require air carriers receiving payroll support payments under each Act or loans under the CARES Act to maintain scheduled air transportation service, as DOT deems necessary, to any point served by that carrier before March 1, 2020. Pub. L. No. 116-136, §§ 4005, 4114(b), 134 Stat. 281, 477, 499-500 (2020); Pub. L. No. 116-260, § 407, 134 Stat. 1182, 2058-59 (2020). For air carriers subject to DOT's minimum service obligations, DOT required different service levels —between one and five flights per week—depending on percent share of total industry domestic capacity and service levels prior to the pandemic. Continuation of Certain Air Service, Order 2020-4-2 (DOT served Apr. 7, 2020).

[12]Any community with multiple airports incorporates data from all airports, and the data are either summed up or averaged appropriately.

Community level. For each community, we summed up annual departures of all the airports within the community. For communities within each size category, we calculated the mean of annual departures performed.

Mean Daily Departures per Route

Airport level. For each route, we used annual departures and divided this number by the number of days per year to calculate average daily departures per year. We then calculated the mean of route-level average daily departures to calculate average daily departures for each airport. For airports within each size category, we calculated the mean of average daily departures of all the routes departing from airports of each size category each year.

Community level. For each origin and destination community pair, we used annual departures and divided this number by the number of days per year to calculate average daily departures per year. For each community, we then calculated the mean of average daily departures for all the airports within the community. For communities within each size category, we calculated the mean of average daily departures of all the routes departing from communities of each size category each year.

Total Seats

Airport level. For each origin airport, we summed up monthly available seats to all nonstop destinations to generate annual seats. For airports within each size category, we calculated the mean of seats available each year.

Community level. For each community, we summed up annual seats of all the airports within the community. For communities within each size category, we calculated the mean of seats available each year.

Mean Number of Seats per Departure

Airport level. For each origin airport, we calculated available seats per flight by the sum of monthly available seats each year divided by the sum of departures performed each year. For airports within each size category, we calculated the mean of available seats per flight by the sum of monthly available seats per year of all the airports within each size category divided by the sum of departures performed.

Community level. For each community, we summed up monthly available seats each year for all the airports within each community and divided this number by the sum of departures performed of all the airports within each community. For communities within each size category, we calculated the mean of available seats per flight by the sum of monthly available seats per year of all the airports within each community size divided by the sum of departures performed.

Total Passengers Onboard

Airport level. For each origin airport, we summed up monthly passengers onboard to all nonstop destinations to generate annual passengers onboard. For airports within each size category, we calculated the mean of annual passengers onboard each year.

Community level. For each community, we summed up annual passengers of all the airports within the community. For communities within each size category, we calculated the mean of annual passengers each year.

Mean Load Factor per Flight

Airport level. For each airport, we calculated the average load factor per flight using annual passengers onboard divided by annual seats available. For airports within each size category, we calculated the mean of average load factor per flight of all the routes departing from airports in each size category each year.

Community level. For each community, we calculated the average load factor per flight using annual passengers onboard divided by annual seats available. For communities within each size category, we calculated the mean of average load factor per flight of all the routes departing from airports in each community size category each year.

Number of Nonstop Destinations

Airport level. For each origin airport, we counted the number of nonstop destinations for a given year. For airports within each size category, we calculated the mean of annual nonstop destinations each year.

Community level. One nonstop connection between community 1 and 2 is defined as having at least one nonstop route from any airports within community 1 to any airports within community 2. Then we summed up the number of nonstop destinations for each community. For communities within each size category, we calculated the mean of annual nonstop destinations to generate the number of nonstop destinations for each community size each year.

Mean Number of Carriers Serving the Airport or Community

Airport level. We counted the number of carriers serving each airport each year. For airports within each size category, we calculated the mean of the number of carriers.

Community level. We counted the number of carriers serving each community each year. For communities within each size category, we calculated the mean of the number of carriers.

Connectivity Index

Airport level. We used Wittman and Swelbar's Airport Connectivity Quality Index (ACQI), which is a function of the frequency of available scheduled flights, the quantity and quality of destinations serviced, and the quantity and quality of connecting destinations.[13]

[13]Michael Wittman and William Swelbar, "Modeling Changes in Connectivity at U.S. Airports: A Small Community Perspective," Report No. ICAT-2013-05 (June 2013).

Let A be a set of origin airports and H be a set of airport types. The ACQI score for an airport $\alpha \in A$ is:

$$ACQI_\alpha = \sum_{h \in H} f_{a,h} d_{a,h} w_h + \alpha \sum_{h' \in H} d'_{a,h'} w_{h'}$$

Where:

- $f_{a,h}$ is the average number of daily scheduled flights per destination from airport α to airport type h.
- $d_{a,h}$ is the number of nonstop destinations of type h served from airport α.
- $d'_{a,h'}$ is the number of connecting destinations of type h' served from airport α. (note: If an airport A can reach a connecting destination D through both connecting airport B and C, D will be counted as one connecting destination to avoid double counting.)
- w_h is a weighting factor based on the quality of airport type h.
- $w_{h'}$ is the weight attached to connecting airport destination, which is calculated the same as w_h.
- α is a scaling factor that weights the importance of nonstop destinations versus one-stop destinations. The scaling factor of 0.125 is chosen for α in the ACQI model.

In other words, the connectivity score can be represented as:

$$ACQI_\alpha = (Quality\ of\ nonstop\ service) + Scaling\ Factor * (Quality\ of\ connecting\ service)$$

Based on the formula, an airport's ACQI score would increase if more flights are offered to an existing nonstop destination (i.e., $f_{a,h}$ increases); if the number of nonstop destinations increases (i.e., $d_{a,h}$ increases); if more connecting service is available from an existing nonstop destination (i.e., $d'_{a,h'}$ increases); or if the quality of existing nonstop or connecting destinations increases (resulting in a change in w_h or $w_{h'}$).

The w_h weight terms are computed by finding the average enplanement levels for each airport type for a given year, and then computing a ratio of each type's average enplanement level to the large hub average enplanement level. The 2023 enplanement data were not available at the time of the analysis, so we used the 2022 enplanement data as a proxy for 2023 to calculate the weights for 2023. Table 3 lists the weights assigned by airport size group across years.

Table 3: Weights Assigned by Airport Size Group for Analysis of Connectivity

Airport size group	Year: 2018	Year: 2019	Year: 2020	Year: 2021	Year: 2022	Year: 2023
Large hub	1	1	1	1	1	1
Medium hub	0.23	0.23	0.23	0.24	0.24	0.24
Small hub	0.05	0.05	0.06	0.06	0.06	0.06
Nonhub	0.006	0.006	0.007	0.007	0.006	0.006
Non-primary nonhub	0.0003	0.0008	0.0008	0.0005	0.0006	0.0006

Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Note: To calculate the Airport Connectivity Quality Index (ACQI), weights are assigned to the nonstop and connecting airport, where the weights are computed by finding the average enplanement levels for each airport type for a given year, and then computing a ratio of each type's average enplanement level to the large hub average enplanement level.

We first calculated the connectivity index score for each airport. Then we calculated the mean of connectivity index score for airports within each size category each year.

Community level. Following the approach used in the 2020 DOT Office of Inspector General report, we extended the connectivity index to the community level and calculated the Community Connectivity Quality Index (CCQI). (note: U.S. Department of Transportation Office of Inspector General, Changes in Airline Service Differ Significantly for Smaller Communities, but Limited Data on Ancillary Fees Hinders Further Analysis.) Let P be a set of origin communities and C be a set of community types. The CCQI score for a community $p \in P$ is:

$$CCQI_p = \sum_{c \in C} f_{p,c} d_{p,c} w_c + \alpha \sum_{c' \in C} d'_{p,c'} w_{c'}$$

Where:

- $f_{p,c}$ is the average number of daily scheduled flights per destination from PSA p to community of size c.
- $d_{p,c}$ is the number of nonstop destinations of size c served from PSA p.
- $d'_{p,c'}$ is the number of connecting destinations of size c' served from PSA p.
- w_h is a weighting factor based on the quality of size c.
- $w_{h'}$ is the weight attached to connecting community destinations, which is calculated the same as w_h.
- α is a scalling factor that weights the importance of nonstop destinations versus one-stop destinations. Following the 2020 DOT Office of Inspector General report, the scaling factor of 0.125 is chosen for α in the CCQI model.

The w_h weight terms are computed by finding the average enplanement levels for each PSA size group for a given year, and then computing a ratio of each group's average enplanement level to the large PSA average enplanement level. Similar to the calculation of ACQI, we used the 2022 enplanement data as a proxy for 2023 to calculate the weights for 2023. Table 4 lists the weights assigned by community size group across years.

Table 4: Weights Assigned by Community Size Group for Analysis of Connectivity

Community size group	Year: 2018	Year: 2019	Year: 2020	Year: 2021	Year: 2022	Year: 2023
Large	1	1	1	1	1	1
Medium-large	0.58	0.59	0.70	0.68	0.60	0.60
Medium	0.19	0.20	0.26	0.25	0.22	0.22
Medium-small	0.02	0.02	0.03	0.03	0.02	0.02
Small	0.002	0.002	0.003	0.003	0.002	0.002

Source: GAO analysis of Department of Transportation data. | GAO-24-106681

Note: To calculate the Community Connectivity Quality Index (CCQI), weights are assigned to the nonstop and connecting community, where the weights are computed by finding the average enplanement levels for each Primary Statistical Area (PSA) size group for a given year, and then computing a ratio of each group's average enplanement level to the large PSA average enplanement level.

We first calculated the connectivity index score for each community. Then we calculated the mean of connectivity index score for communities within each size category each year.

Objective 2

To identify factors that contributed to changes in scheduled passenger air service to small communities from 2018 through 2023, and to describe how those factors affected federal air service programs—specifically, the Essential Air Service (EAS) program and Small Community Air Service Development Program (SCASDP)—we reviewed federal laws and documentation, including EAS reports and SCASDP grant award orders. We analyzed financial data reported by airlines to DOT from the first quarter of 2018 through the fourth quarter of 2023. We selected the eight regional airlines that reported cost per available seat mile without gaps over this period. To assess the reliability of the data, we conducted selected manual and electronic tests of the data. We determined the data were sufficiently reliable for the purpose of analyzing airline cost per available seat mile.

We also reviewed 23 publications dating from 2014 to 2023 on issues and programs related to small community air service, including factors contributing to air service loss, the effects of the COVID-19 pandemic, and Essential Air Service. We identified these publications by searching databases including ProQuest, EBSCO, Scopus, and Dialog for key words such as “small community air service,” “Essential Air Service,” and “small” or “underserved” communities and markets.

Further, we conducted interviews with a non-generalizable sample of 33 aviation stakeholders. These interviews included semi-structured interviews with representatives of five passenger airlines and 16 small hub, nonhub, or non-primary nonhub airports. Our criteria for selecting airlines and airports included the airline business model, airport hub size, participation in EAS or SCASDP, and geographic distribution. Specifically, we selected a mix of airline business models that serve small communities, including at least one network, ultra-low-cost, regional, and commuter airline. For airports, we selected a mix of small hub, nonhub, and non-primary nonhub airports. Among these airports, we selected seven airports that participate in EAS and nine non-EAS airports that are potentially eligible for SCASDP. For geographic distribution, we selected at least one airport from each of FAA’s eight airport regions in the contiguous U.S. We conducted pre-tests of the semi-structured interview questions for airlines with a representative of one airline, and for airports with representatives of two airports. We analyzed the content of the airline and airport interview write-ups and quantified their responses to open-ended questions.

Our interviews with aviation stakeholders also included unstructured interviews with four industry associations, two academic researchers, one aviation consultant, a company that provides airport-linked bus service, and a state department of transportation. We selected the industry associations to represent aviation industry segments that are involved in air service to small communities, and the researchers and consultant based on their prior analyses of air service to small communities. We selected the bus company and state department of transportation to provide additional perspectives on policies that could improve air service to small communities. We also interviewed DOT officials to obtain their perspectives on EAS, SCASDP, and options to improve air service to small communities. Because we used a judgmental sample of industry stakeholders, findings from these interviews cannot be generalized to a broader population. However, we determined that the selection of these stakeholders was appropriate for our design and objectives and that these interviews would generate valid and reliable evidence to support our work. See table 5 for the aviation stakeholders we interviewed.

Table 5: Selected Aviation Industry Stakeholders Interviewed

Type of organization	Stakeholder
U.S. federal agency	Department of Transportation
Industry associations	Aircraft Owners and Pilots Association
Industry associations	Airlines for America
Industry associations	General Aviation Manufacturers Association
Industry associations	Regional Airline Association
Airports	Blue Grass Airport
Airports	Clovis Regional Airport
Airports	Decatur Airport
Airports	The Eastern Iowa Airport (pre-test)
Airports	Helena Regional Airport
Airports	Kalamazoo/Battle Creek International Airport (pre-test)
Airports	Knox County Regional Airport
Airports	Laramie Regional Airport
Airports	Mammoth Yosemite Airport
Airports	McAllen International Airport
Airports	North Central West Virginia Airport
Airports	Page Municipal Airport
Airports	Rapid City Regional Airport
Airports	Sioux Gateway Airport/Brigadier General Bud Day Field
Airports	St. George Regional Airport
Airports	Wichita Dwight D. Eisenhower National Airport
Airports	Williamsport Regional Airport
Airports	Valdosta Regional Airport
Passenger airlines	Cape Air (pre-test)
Passenger airlines	Contour Airlines
Passenger airlines	SkyWest Airlines
Passenger airlines	Southern Airways Express
Passenger airlines	Sun Country Airlines
Passenger airlines	United Airlines, Inc.
Academic researchers and consultants	Austin Drukker
Academic researchers and consultants	Stacey Mumbower
Academic researchers and consultants	William S. Swelbar
State department of transportation	Wyoming Department of Transportation Aeronautics Division
Bus service	The Landline Company

Source: GAO. | GAO-24-106681

Objective 3

To describe options that aviation stakeholders and recent studies have identified to improve air service to small communities, we interviewed the non-generalizable sample of aviation stakeholders listed above. We also reviewed and analyzed the literature described above.

We conducted this performance audit from March 2023 to September 2024 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 III: List of Small Communities and Associated Airports

Table 6: Small Communities and Associated Airports

Small community	Airport
Aberdeen, SD	ABR
Abilene, TX	ABI
Alamosa, CO	ALS
Albany, GA	ABY
Alexandria, LA	AEX
Alpena, MI	APN
Altoona-Huntingdon, PA	AOO
Amarillo-Pampa-Borger, TX	AMA
Appleton-Oshkosh-Neenah, WI	ATW
Aroostook (Presque Isle), ME	PQI
Augusta-Waterville, ME	AUG
Bangor, ME	BGR
Beaumont-Port Arthur, TX	BPT
Bellingham, WA	BLI
Bemidji, MN	BJI
Bend-Prineville, OR	RDM
Billings, MT	BIL
Binghamton, NY	BGM
Bismarck, ND	BIS
Bloomington-Pontiac, IL	BMI
Box Butte (Alliance), NE	AIA
Bozeman and West Yellowstone, MT	BZN, WYS
Bradford, PA	BFD
Brainerd, MN	BRD
Brunswick, GA	BQK
Burlington-Fort Madison-Keokuk, IA-IL-MO	BRL
Burlington-South Burlington-Barre, VT	BTV
Butte-Silver Bow, MT	BTM
Cape Girardeau-Sikeston, MO-IL	CGI
Carbondale-Marion, IL	MWA
Carlsbad-Artesia, NM	CNM
Casper, WY	CPR
Cedar City, UT	CDC
Champaign-Urbana, IL	CMI

Small community	Airport
Charlottesville, VA	CHO
Cheyenne, WY	CYS
Clarksburg, WV	CKB
Clovis-Portales, NM	CVN
College Station-Bryan, TX	CLL
Columbia-Moberly-Mexico, MO	COU
Columbus-West Point, MS	GTR
Coos Bay, OR	OTH
Crescent City, CA	CEC
Crestview-Fort Walton Beach-Destin, FL	VPS
Dawes (Chadron), NE	CDR
Dawson, MT	GDV
Decatur, IL	DEC
Del Rio, TX	DRT
Dickinson, ND	DIK
Dodge City, KS	DDC
Dothan-Ozark, AL	DHN
Dubuque, IA	DBQ
Duluth (and Hibbing), MN-WI	DLH, HIB
Durango, CO	DRO
Eau Claire-Menomonie, WI	EAU
Edwards-Glenwood Springs (Aspen and Vail), CO	ASE, EGE
El Centro, CA	IPL
El Dorado, AR	ELD
Elko, NV	EKO
Elmira-Corning, NY	ELM
Emmet (Pellston), MI	PLN
Erie-Meadville, PA	ERI
Escanaba, MI	ESC
Eugene-Springfield, OR	EUG
Eureka-Arcata, CA	ACV
Evansville, IN-KY	EVV
Fargo-Wahpeton, ND-MN	FAR
Flagstaff, AZ	FLG, GCN, PGA
Florence, SC	FLO
Florence-Muscle Shoals, AL	MSL
Fort Dodge, IA	FOD
Fort Leonard Wood, MO	TBN
Fort Smith, AR-OK	FSM
Gainesville-Lake City, FL	GNV
Garden City, KS	GCK

Small community	Airport
Gogebic (Ironwood), MI	IWD
Gillette, WY	GCC
Grand (Moab), UT	CNY
Grand Forks, ND-MN	GFK
Grand Island, NE	GRI
Grand Junction, CO	GJT
Great Falls, MT	GTF
Green Bay-Shawano, WI	GRB
Greenbrier, WV	LWB
Greenville, MS	GLH
Greenville-Kinston-Washington, NC	PGV
Gulfport-Biloxi, MS	GPT
Gunnison, CO	GUC
Hailey (Sun Valley), ID	SUN
Hancock (Bar Harbor), ME	BHB
Harrison, AR	HRO
Harrisonburg-Staunton (Shenandoah Valley), VA	SHD
Hattiesburg-Laurel, MS	PIB
Hays, KS	HYS
Helena, MT	HLN
Hermiston-Pendleton, OR	PDT
Hill (Havre), MT	HVR
Hilton Head Island-Bluffton, SC	HHH
Hobbs, NM	HOB
Hot Springs-Malvern, AR	HOT
Houghton, MI	CMX
Idaho Falls-Rexburg-Blackfoot, ID	IDA
Ithaca-Cortland, NY	ITH
Jackson, WY-ID	JAC
Jackson-Brownsville, TN	MKL
Jacksonville, NC	OAJ
Jamestown, ND	JMS
Jefferson (DuBois), PA	DUJ
Johnstown-Somerset, PA	JST
Jonesboro-Paragould, AR	JBR
Joplin-Miami, MO-OK	JLN
Kalispell, MT	FCA
Kearney, NE	EAR
Kennewick-Richland-Walla Walla, WA	ALW, PSC
Kirksville, MO	IRK
Knox (Rockland), ME	RKD

Small community	Airport
Koochiching (International Falls), MN	INL
La Crosse-Onalaska, WI-MN	LSE
Lake Charles-Jennings, LA	LCH
Laramie, WY	LAR
Laredo, TX	LRD
Lawton, OK	LAW
Lebanon, NH-VT	LEB
Lewiston, ID-WA	LWS
Liberal, KS	LBL
Lincoln-Beatrice, NE	LNK
Longview, TX	GGG
Lubbock-Plainview-Levelland, TX	LBB
Lynchburg, VA	LYH
Macon-Bibb County—Warner Robins, GA	MCN
Malone (Saranac Lake), NY	SLK
Manhattan, KS	MHK
Marinette-Iron Mountain, WI-MI	IMT
Marquette, MI	MQT
Mason City, IA	MCW
Medford-Grants Pass, OR	MFR
Meridian, MS	MEI
Midland-Odessa, TX	MAF
Minot, ND	MOT
Missoula, MT	MSO
Mono (Mammoth Lakes), CA	MMH
Monroe-Ruston, LA	MLU
Montezuma (Cortez), CO	CEZ
Montrose, CO	MTJ
Morgantown-Fairmont, WV	MGW
Nantucket, MA	ACK
New Bern-Morehead City, NC	EWN
North Platte, NE	LBF
Ogdensburg-Massena, NY	MSS, OGS
Oneida (Rhinelander), WI	RHI
Owensboro, KY	OWB
Paducah-Mayfield, KY-IL	PAH
Panama City, FL	ECP
Park (Cody), WY	COD
Parkersburg-Marietta-Vienna, WV-OH	PKB
Pennington (Thief River Falls), MN	TVF
Peoria, IL	PIA

Small community	Airport
Pierre, SD	PIR
Plattsburgh, NY	PBG
Pocatello, ID	PIH
Prescott Valley-Prescott, AZ	PRC
Pueblo-Cañon City, CO	PUB
Pullman-Moscow, WA-ID	PUW
Quincy-Hannibal, IL-MO	UIN
Ramsey (Devils Lake), ND	DVL
Rapid City-Spearfish, SD	RAP
Redding-Red Bluff, CA	RDD
Richland, MT	SDY
Riverton, WY	RIW
Roanoke, VA	ROA
Rochester-Austin, MN	RST
Rock Springs, WY	RKS
Rockford-Freeport-Rochelle, IL	RFD
Roosevelt (Wolf Point), MT	OLF
Roswell, NM	ROW
Rutland, VT	RUT
Saginaw-Midland-Bay City, MI	MBS
Salina, KS	SLN
Salinas, CA	MRY
San Angelo, TX	SJT
San Juan, WA	FHR, ORS
San Luis Obispo-Paso Robles, CA	SBP
Sault Ste. Marie, MI	CIU
Scottsbluff, NE	BFF
Sheridan, WY	SHR
Show Low, AZ	SOW
Shreveport-Bossier City-Minden, LA	SHV
Silver City, NM	SVC
Sioux City, IA-NE-SD	SUX
Sioux Falls, SD	FSD
Springfield-Jacksonville-Lincoln, IL	SPI
St. George, UT	SGU
State College-DuBois, PA	SCE
Steamboat Springs-Craig, CO	HDN
Stillwater, OK	SWO
Tallahassee, FL	TLH
Texarkana, TX-AR	TXK
Traverse City, MI	TVC

Small community	Airport
Tupelo-Corinth, MS	TUP
Twin Falls, ID	TWF
Tyler-Jacksonville, TX	TYR
Valdosta, GA	VLD
Valley (Glasgow), MT	GGW
Vernal, UT	VEL
Victoria-Port Lavaca, TX	VCT
Vineyard Haven (Martha's Vineyard), MA	MVY
Waco, TX	ACT
Waterloo-Cedar Falls, IA	ALO
Watertown, SD	ATY
Watertown-Fort Drum, NY	ART
Wausau-Stevens Point-Wisconsin Rapids, WI	CWA
Wenatchee, WA	EAT
Wichita Falls, TX	SPS
Williamsport-Lock Haven, PA	IPT
Williston, ND	XWA
Wilmington, NC	ILM
Yakima, WA	YKM
Yuma, AZ	YUM

Source: GAO analysis of U.S. Census Bureau and Federal Aviation Administration data. | GAO-24-106681

Appendix IV: GAO Contact and Staff Acknowledgments

GAO Contact

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Staff Acknowledgments

In addition to the contact named above, Jon Carver (Assistant Director), Justin Reed (Analyst in Charge), Paul Aussendorf, John Bornmann, Drew Buys, Melanie Diemel, Dan Luo, Rebecca Morrow, Jim Russell, Laurel Voloder, Kiley Wilson, and Susan Zimmerman made key contributions to this report.

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Website: https://www.gao.gov/about/what-gao-does/fraudnet

Automated answering system: (800) 424-5454 or (202) 512-7700

Congressional Relations

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