



United States Government Accountability Office

Statement for the Record to the
Subcommittee on Aviation Operations,
Safety, and Security, Committee on
Commerce, Science, and
Transportation, U.S. Senate

For Release on Delivery
Expected at 10:00 a.m. ET
Thursday, March 23, 2017

AIRPORT FUNDING

FAA's and Industry's Cost Estimates for Airport Development

Statement for the Record by Gerald L. Dillingham, Ph.D.,
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Accessible Version

GAO Highlights

Highlights of [GAO-17-504T](#), a statement for the record to the Subcommittee on Aviation Operations, Safety, and Security, Committee on Commerce, Science, and Transportation, U.S. Senate

Why GAO Did This Study

Roughly 3,300 airports in the United States are eligible for federal AIP grants from the FAA that can be used for certain types of projects, such as building runways and noise mitigation. To fund development, in addition to AIP grants, airports rely on locally generated revenues and federally authorized PFCs, which are added to the price of an airline ticket and have been capped at \$4.50 per flight segment.

The administration's call to boost spending on public infrastructure has renewed attention on the importance of maintaining and improving airport infrastructure.

This testimony discusses: (1) the differences between estimates of airports' planned development costs, (2) the federal funding and other airport funding and revenues that may be available to defray development costs, and (3) the implications of increasing the cap on PFCs, among other objectives.

This testimony is based on previous GAO reports issued from March 1998 through April 2015, with selected updates conducted through March 2017. To conduct these updates, GAO reviewed recent information on FAA's program activities and analyses outlined in FAA reports, and related airport industry estimates of infrastructure development costs. GAO also interviewed officials from FAA, and airport and airline trade associations.

View [GAO-17-504T](#). For more information, contact Gerald L. Dillingham at (202) 512-2834 or dillinghamg@gao.gov.

March 23, 2017

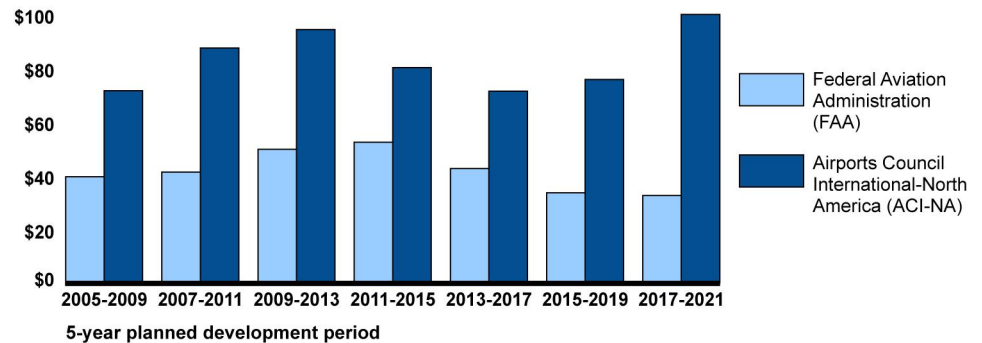
AIRPORT FUNDING

FAA's and Industry's Cost Estimates for Airport Development

What GAO Found

The Federal Aviation Administration's (FAA) estimate of the costs for planned capital development at airports over the next five years is about \$32.5 billion, compared to the Airports Council International-North America's (ACI-NA) estimate of almost \$100 billion, both for the period 2017-2021. The difference between these two estimates can be attributed to a number of factors, but most significantly to the types of projects included in the estimates. FAA's estimate is limited to projects that are eligible for Airport Improvement Program (AIP) grants that do not already have funding arranged, whereas ACI-NA's estimates include all projects regardless of AIP eligibility or whether funding is arranged. The figure below illustrates the disparity between the two estimates since 2005. Note that since 2015, FAA's estimate has decreased by \$1 billion whereas ACI-NA's has increased by \$24.4 billion.

FAA's and ACI-NA's Planned Development Cost Estimates, 2005-2021
Dollars in billions



Source: GAO analysis of FAA and ACI-NA data. | GAO-17-504T

Data Table for FAA's and ACI-NA's Planned Development Cost Estimates, 2005-2021

5-year planned development period	Federal Aviation Administration (FAA)	Airports Council International-North America (ACI-NA)
2005-2009	39.5	71.5
2007-2011	41.2	87.4
2009-2013	49.7	94.3
2011-2015	52.3	80.1
2013-2017	42.5	71.3
2015-2019	33.5	75.7
2017-2021	32.5	99.9

In addition to the AIP and state grants they receive, airports generate funds through airport-generated income and Passenger Facility Charges (PFC), among other sources. In 2015, GAO estimated that funding from these sources totaled an average of \$10.3 billion annually (2013 dollars), \$2.7 billion less than airports' planned development costs. Airports have a number of options for addressing any shortfall in funding their planned development costs, including prioritizing development projects, financing projects with long term debt, attempting to increase airport revenues, or entering into public-private partnerships.

Increasing or eliminating the PFC cap would significantly increase PFC collections available to airports under three scenarios GAO modeled in prior work. However, according to GAO's model, an increase in the PFC could also marginally slow passenger growth and therefore the growth in tax revenues to the Airport and Airway Trust Fund (AATF), which is used to fund FAA programs. Such projected effects depend on key assumptions regarding the consumers' sensitivity to a PFC cap increase, whether the airlines decide to pass on the full increase to consumers, and the rate at which airports would adopt the increased PFC cap. Any increase in PFCs is strongly opposed by airlines which contend that an increase could reduce passenger demand.

Chairman Blunt, Ranking Member Cantwell, and Members of the Subcommittee:

I am pleased to submit this statement on funding airport infrastructure as you begin considering reauthorization of the Federal Aviation Administration (FAA). U.S. airports are important contributors to our economy, providing mobility for people and goods both domestically and internationally, and often contributing to the economic success of the communities served. The administration's call to boost spending on public infrastructure has focused attention on the importance of maintaining and improving the state of the nation's entire infrastructure, including airports.

Since 1998, we have reported on airport funding relative to airports' planned development. The last time we testified on this topic in 2015, we noted that following several airline mergers, a spike in fuel prices, and the Great Recession, aviation activity slowed or even declined at many airports, while at the same time becoming more concentrated at larger (i.e., large and medium hub) airports.¹ We also noted that federal support for airport development declined during this period. In response, airports have leveraged their expected future revenues and sought to increase their non-aviation revenues to finance past or current development.² These trends have continued affecting the demands on infrastructure at these airports, as well as their finances. To meet future planned development costs, airports have long sought an increase in the cap on federally authorized but locally imposed Passenger Facility Charges (PFC), which are added to ticket prices along with federal taxes.³ However, airlines strongly oppose a PFC increase because higher ticket prices could reduce passenger demand and airline revenues.

My statement today focuses on funding for airport capital development. Specifically, this statement discusses (1) the differences between estimates of airports' planned development costs; (2) federal funding, other airport funding, and revenues that may be available to defray capital development costs; (3) the implications of any potential gap between the

¹GAO, *Airport Funding: Changes in Aviation Activity Are Reflected in Reduced Capacity Concerns*, [GAO-15-498T](#) (Washington, D.C.: Apr. 23, 2015).

²[GAO-15-498T](#).

³49 U.S.C. § 40117.

estimated costs of planned development and expected future funding; and (4) the implications of increasing the cap on PFCs.

This statement draws from our body of work, completed from March 1998 through April 2015, on airport and aviation-industry trends. Specific products are cited throughout the statement. We have updated this work through March 2017 with interviews with key FAA and trade association officials and updated FAA and trade association airport-funding data from 2005 through 2017.

More detailed information on our objectives, scope, and methodology for that work can be found in the issued reports. We conducted the work on which this statement is based in accordance with generally accepted government auditing standards. Those standards require that we plan and perform the audit to obtain sufficient, appropriate evidence to provide a reasonable basis for our findings and conclusions based on our audit objectives. We believe that the evidence obtained provides a reasonable basis for our findings and conclusions based on our audit objectives.

Background

The United States has more than 19,000 airports, ranging from busy commercial service airports such as Hartsfield-Jackson Atlanta International Airport that enplanes millions of passengers annually, to small grass airstrips that serve only a few aircraft each year. Of these, roughly 3,300 airports are designated by FAA as part of the national airport system and are therefore eligible for federal assistance for airport capital projects.⁴

The national airport system consists of two primary types of airports—commercial service airports, which have scheduled service and board 2,500 or more passengers per year,⁵ and general aviation airports, which have no scheduled service and board fewer than 2,500 passengers.⁶ Federal law divides commercial service airports into various categories of airports, based on the number of passenger boardings, ranging from











⁴49 U.S.C. § 41703.

⁵49 U.S.C. § 41702(7).

⁶49 U.S.C. § 41702(8).

large hub airports to commercial service nonprimary airports (see fig. 1). The majority of passenger traffic occurs at large hub airports: almost 73 percent of all passengers in the United States boarded at the 30 large hub airports in 2015.

Figure 1: Commercial Airport Categories Based on 2015 Boardings of U.S. Passengers

Airport category	Annual passenger boardings per airport		Annual passenger boardings per airport category		Number of airports
	Percentage/ number	Minimum number	Percentage	Number	
 Large hub	1% or more	7,993,112	 72.6%	580,568,021	30
 Medium hub	At least 0.25%, but less than 1%	1,998,278	 15.4%	123,217,532	30
 Small hub	At least 0.05%, but less than 0.25%	399,656	 8.4%	67,449,117	72
 Nonhub	More than 10,000, but less than 0.05%	10,001	 3.4%	27,503,037	250
 Commercial Service Nonprimary	At least 2,500 and no more than 10,000	2,500	 0.1%	573,453	121

Source: GAO presentation of FAA data. | GAO-17-504T

Note: The term “hub” is defined in federal law to identify commercial service airports as measured by passenger boardings, and the airports are grouped into four hub categories. (49 U.S.C. § 40102 (29), (31), (42), and (34)).

Data Table for Figure 1: Commercial Airport Categories Based on 2015 Boardings of U.S. Passengers

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The federal government provides grants to help fund airport capital development through its Airport Improvement Program (AIP). Congress appropriates funds for AIP and other FAA programs from the Airport and Airway Trust Fund (AATF), which is itself funded by a variety of aviation-

related taxes, such as taxes on tickets, cargo, general aviation gasoline, and jet fuel.⁷ FAA's tool for identifying airports' future capital projects that are eligible for AIP grants is the National Plan of Integrated Airport Systems (NPIAS).⁸ FAA relies on airports, through their planning process, to identify individual projects for funding consideration. Federal law and FAA's rules establish which types of airport development projects are eligible for AIP's funding.⁹ Generally, most types of airfield improvements—such as runways, lighting, navigational aids, and land acquisition—are eligible. AIP-eligible projects for airport areas serving travelers and the general public—called “landside development”—include entrance roadways, pedestrian walkways and movers, and common space within terminal buildings, such as waiting areas. Hangars and interest expense on airport debt are not eligible for AIP grants. Some landside development projects—including revenue-producing terminal areas, such as ticket counters and concessions—are also ineligible.

PFCs are another federally authorized source of funding that commercial airport sponsors can levy on passengers to help pay for capital development at national system airports.¹⁰ Commercial airports must designate which projects PFCs will fund and must seek and obtain FAA's approval to charge a PFC. Funding for both AIP and PFCs is linked to passenger activity. In this way, Congress aimed to direct funds to where they are needed most. Airports also fund their development with state and local contributions as well as airport generated funds, such as income from airports' tenants and commercial activities. Airport-generated revenue is typically used to finance the issuance of local debt such as tax-exempt bonds, which for larger commercial airports constitute more than half of their financing. Because of the size and duration of airport development—for example, planning, funding and building a new runway can take more than a decade and several hundred-million dollars to complete—long-term debt is used to help finance these types of projects.

⁷26 U.S.C. § 9502.

⁸49 U.S.C. § 47103.

⁹49 U.S.C. § 47102(3).

¹⁰49 U.S.C. § 40117.

Airport Planned Development Cost Estimates Differ due to Multiple Factors

The FAA's estimate of the costs for infrastructure development at airports over the next 5 years is about \$32.5 billion compared to the airport industry's estimate of almost \$100 billion for the same period. In 2016, FAA estimated that airports have roughly \$32.5 billion in planned development projects for the period 2017-2021, which represents a 3 percent, or \$1 billion, decrease from its estimate for the 2015-2019 period. The FAA attributes the decline in capital development costs to a range of factors, including a reduction in current and future traffic relative to earlier predictions, the use and age of airport facilities, and costs related to changing aircraft technology. FAA reported a decrease in estimated costs for planned projects at most large and medium hubs, with increases at other hub types. For instance, according to the FAA, there is an increase in terminal projects at small airports, while FAA notes that many large and medium sized airports have terminal projects planned. Further, according to FAA's analysis, airports will experience decreased demands for building new airside capacity, such as runways, to reduce delays.

The airport industry's estimate of 5-year planned development cost, as developed by Airports Council International-North America (ACI-NA), is three times FAA's. ACI-NA's most recent estimate of almost \$100 billion in planned investment is a 32 percent increase over its 2015 5-year estimate of \$75.5 billion. According to ACI-NA officials, of the nearly \$100 billion in total planned development costs, \$61 billion are for AIP-ineligible projects and \$38.9 billion are for AIP-eligible projects (as compared to FAA's \$32.5 billion estimate), with most of the ineligible projects for terminal or landside improvements such as ground access. The percentage increase in planned development estimates is greatest for large hub airports, where estimated costs have increased more than 50 percent, from about \$40 billion to about \$60 billion in ACI-NA's most recent estimate. For example, according to the latest ACI-NA report, the Los Angeles International Airport reported that its planned new development will cost about \$10 billion between 2017 and 2021 for infrastructure projects. In contrast, most small airports reported single-digit increases in infrastructure costs, according to ACI-NA, although there are some exceptions. ACI-NA officials told us that a key driver for its increasing cost estimate is that airports have deferred some airport projects due to a lack of funding in the past.

The principal reason why FAA's and ACI-NA's planned development costs differ so significantly is that the ACI-NA cost estimate encompasses substantially more projects than does FAA's, according to ACI-NA. As we have previously reported, the ACI-NA uses AIP-eligible and AIP-ineligible projects to develop its estimates, while the FAA only uses AIP-eligible projects.¹¹ Additionally, ACI-NA cost estimates are made up of projects that have already identified funding sources as well as those that have not. According to ACI-NA officials, 77 percent of the cost of planned development for large hub airports in their most recent cost estimate has funding already arranged. In contrast, FAA's estimates only include projects without financing arranged.

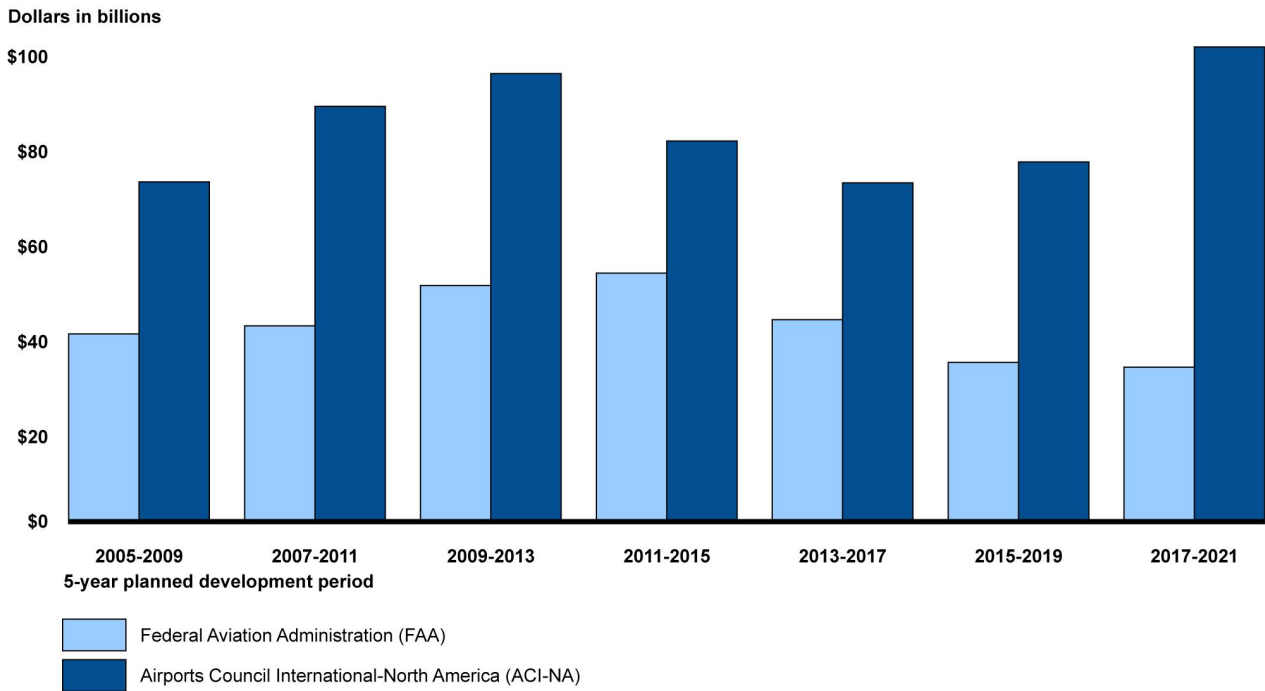
Additional reasons for differences in FAA's and ACI-NA's estimates are technical and methodological. First, the sources and methods for surveying information from the airports differ. FAA estimates are developed by reviewing information from airport plans that were available through 2015. The ACI-NA costs estimates are based on a survey of airports completed in 2017. Second, the FAA does not adjust its estimates for inflation, but the ACI-NA uses a 1.5 percent annual inflation adjustment.¹² Without the inflation adjustment, ACI-NA's estimate would drop \$4.2 billion to \$95.7 billion in constant 2016 dollars. Third, the ACI-NA estimate includes contingency costs for potential design changes, whereas FAA's estimate does not.

While FAA and ACI-NA cost estimates have long differed for the reasons outlined above, the most recent estimates diverge considerably, as shown in figure 2. The 5-year FAA estimate for 2017 through 2021 fell from the prior estimate to \$32.5 billion, whereas ACI-NA's estimate increased by \$24.4 billion to \$99.9 billion, or three times FAA's estimate.

¹¹[GAO-15-498T](#).

¹²According to ACI-NA, a 1.5 percent inflation factor only partially accounts for changes in the inflation rate.

Figure 2: Comparison of FAA and ACI-NA 5-year Planned Development Estimates, 2005–2021



Source: GAO analysis of FAA and ACI-NA data. | GAO-17-504T

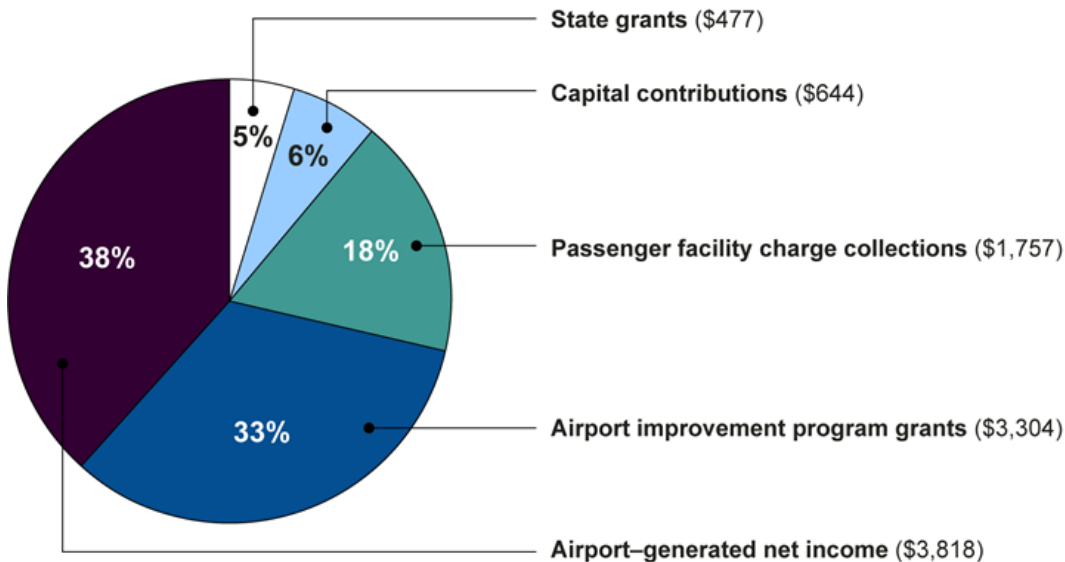
Data Table for Figure 2: Comparison of FAA and ACI-NA 5-year Planned Development Estimates, 2005–2021

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2007-2011	41.2	87.4
2009-2013	49.7	94.3
2011-2015	52.3	80.1
2013-2017	42.5	71.3
2015-2019	33.5	75.7
2017-2021	32.5	99.9

Airports Rely on Federal and Locally Generated Revenues to Fund Development

In 2015, we estimated that in recent years national system airports had generated an average of \$10 billion annually for capital development.¹³ These funds come from a variety of sources, as noted in figure 3.¹⁴

Figure 3: Sources of Airport Funding Available for Capital Projects, Annual Averages for Fiscal Years 2009–2013 (Dollars in Millions)



Sources: GAO analysis of Federal Aviation Administration (FAA) data and data obtained from GAO's survey of state aviation officials. | GAO-17-504T

Note: We subtract interest payments from airport-generated income and PFC collections because these costs are financing rather than project costs, and the estimated costs of planned development projects largely exclude financing costs. To subtract interest payments, we obtained data on total interest expenses from FAA's airport financial reports database. We estimated the percentage of PFC collections used to pay interest expenses—36 percent—based on FAA data on PFC application

¹³GAO, *Airport Finance: Information on Funding Sources and Planned Capital Development*, [GAO-15-306](#) (Washington, D.C.: Apr. 28, 2015).

¹⁴In addition to these funding sources, private investment is another option for funding airport development. While privatization of an entire airport has seldom been used in the United States, many public-sector airport owners have engaged the private sector through a variety of partnerships ranging from management contracts to development agreements to reduce costs, improve services, and obtain capital investment without transferring airport control. See GAO, *Airport Privatization: Limited Interest despite FAA's Pilot Program*, [GAO-15-42](#) (Washington, D.C.: Nov. 19, 2014).

approvals. We assumed that the remaining interest expenses were paid with airport-generated net income. Dollar amounts are in nominal dollars.

Data Table for Figure 3: Sources of Airport Funding Available for Capital Projects, Annual Averages for Fiscal Years 2009–2013 (Dollars in Millions)

State grants	Capital contributions	Passenger facility charge (PFC) collections	Airport Improvement Program grants	Airport-generated net income
5%	6%	18%	33%	38%
477	644	1757	3304	3818

AIP grants: Since 2012, AIP authorizations have been unchanged, although the health of the AATF, which funds AIP, has improved. The AATF’s balance has recovered in recent years, ending fiscal year 2016 with an uncommitted balance of \$5.7 billion and a cash balance of \$14.3 billion.¹⁵ AIP grants must be used for eligible and justified projects, which are planned and prioritized by airports, included in their capital improvement plans, and reviewed and approved by FAA staff and the Secretary of Transportation. The distribution system for AIP grants is complex. It is based on a combination of formula grants—which are often referred to as “entitlement grants” within this program¹⁶—that go to all national-system airports, and discretionary grants that FAA awards for selected eligible projects.¹⁷ In 2015, we reported that, for fiscal years 2009 through 2013, national-system airports received an average of \$3.3

¹⁵FAA considers the committed balance of the AATF to include amounts that have been appropriated from the trust fund (directly or to liquidate prior contract authority) and authorized contract authority (contract authority up to the annual obligation limitation), whether or not an actual obligation has been incurred. The uncommitted balance is the revenue that would remain in the Trust Fund after subtracting the committed balance. The financial condition of the AATF generally can be evaluated by looking at the uncommitted balance and the cash balance. The uncommitted balance is used to evaluate FAA’s ability to enter into future commitments as provided in authorization and appropriations acts. The cash balance reflects all cash on hand in the AATF—both that money that may be required to satisfy outstanding obligations and those funds for which no commitments may have been made. This balance is used to evaluate the AATF’s ability to pay outstanding bills as they become due.

¹⁶49 U.S.C. § 47114.

¹⁷49 U.S.C. § 47115.

billion annually in AIP grant funding.¹⁸ Grant awards in fiscal year 2016 totaled almost \$3.3 billion.

PFC collections: Congress last raised the PFC cap in 2000¹⁹ to \$4.50 per flight segment, with a limit on the total PFCs that a passenger can be charged per round trip of \$18 total. Large and medium hub airports that collect PFCs of \$3 or less per flight segment have their AIP entitlement funding reduced by 50 percent; any of these airports that collect PFCs of more than \$3 have their AIP entitlement funding reduced by 75 percent.²⁰ Most of these AIP reductions to large and medium airports are distributed to smaller airports through the AIP.²¹ We found in 2015 that for fiscal years 2009 through 2013, commercial airports had an annual average of \$1.8 billion of their PFC collections available for capital projects after deducting interest payments on debt.²² Ninety percent of that amount was collected by larger airports. Of the \$90 billion in FAA approved PFC collections, 34 percent has been committed for landside projects, such as terminals; 34 percent for the interest payments on debt used to pay for capital projects, and 18 percent for airside projects, such as runways and taxiways. As of January 2017, 96 of the top 100 airports have been approved to collect PFCs.

State grants: Airports can also obtain funding for capital development projects from state grants. This money is often used to provide the airport's share of matching funds required for AIP-funded projects. According to the results of a survey we conducted in collaboration with the National Association of State Aviation Officials (NASAO), for fiscal years 2009 through 2013, states provided an annual average of \$477 million to national system airports, with \$345 million (72 percent) going to smaller airports and \$131 million (28 percent) going to large and medium hub airports.²³

¹⁸[GAO-15-306](#).

¹⁹Pub. L. 106–181, title I, §§ 105(a), (b), 135(a), (b), 151, 152(a), 155(c), Apr. 5, 2000, 114 Stat. 71, 83, 86–88. 49 U.S.C. § 40117(b)(4).

²⁰49 U.S.C. § 47114(f).

²¹49 U.S.C. § 47116(a).

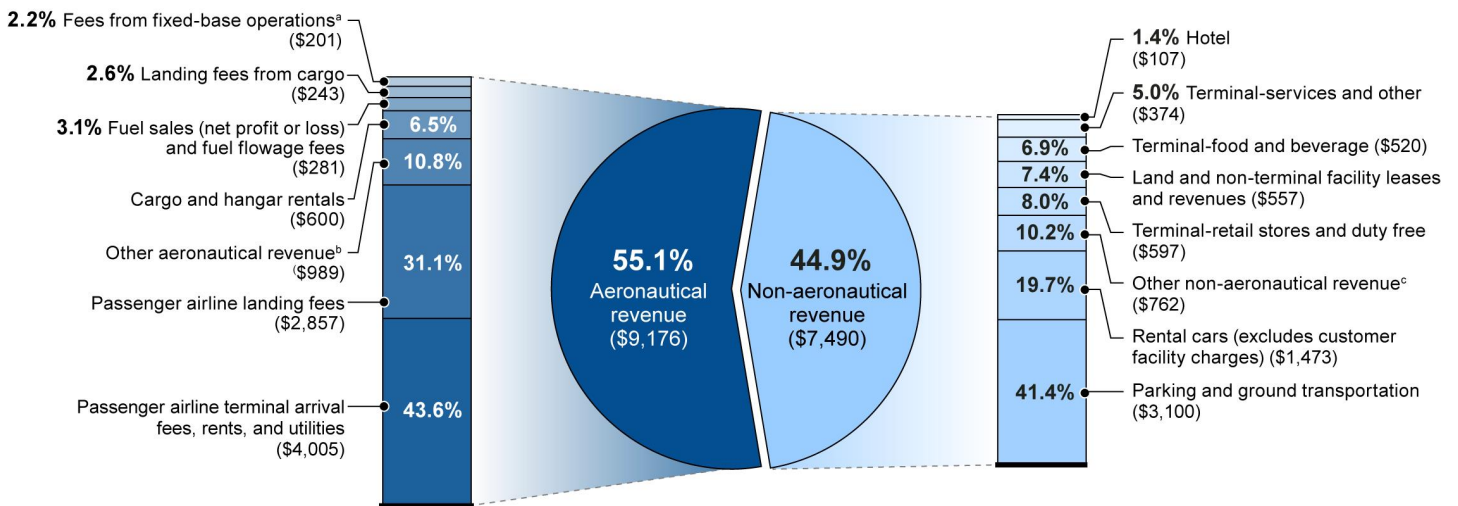
²²[GAO-15-306](#).

²³[GAO-15-306](#).

Capital contributions: Capital contributions are funds contributed for infrastructure projects by the airport sponsor or entities that use the airport, such as airlines or tenants. According to FAA data on commercial airports' annual financial reports, for fiscal years 2009 through 2013, commercial airports received an annual average of \$644 million in capital contributions.²⁴ Of this amount, \$419 million went to larger airports and \$225 million went to smaller airports.

Airport-generated net income: Airports generate both aeronautical revenues, such as revenues earned from leases with airlines and landing fees, and non-aeronautical revenues, such as earnings from terminal concessions and parking fees. We found that for fiscal years 2009 through 2013, airport-generated net income available for capital development projects averaged \$3.8 billion annually—55 percent from aeronautical revenues and 45 percent from non-aeronautical revenues (see fig. 4).²⁵

Figure 4: Sources of Aeronautical and Non-Aeronautical Revenue for All Commercial Airports (Based on Average Annual Airport Operating Revenues for Fiscal Years 2009–2013) (Dollars in Millions)



Source: GAO analysis of Federal Aviation Administration (FAA) data. | GAO-17-504T

Notes: Percentages may not sum to 100 percent because of rounding. Dollar amounts are in nominal dollars.

²⁴GAO-15-306.

²⁵GAO-15-306.

^aFees charged to fixed-base operations (FBO) are for the use of airport facilities and land. FBOs are typically privately owned businesses that provide flight and aircraft support services to aeronautical users of the airport, such as the sale of aircraft fuel, aircraft maintenance, and hangar facilities.

^bOther aeronautical revenue includes other fees paid by passenger airlines for aeronautical services or use of terminals and nearby areas, such as security fees, fees for federal inspections of international passengers, and fees for parking or tying down aircraft near terminals; landing fees paid by general aviation users and the military; non-passenger aviation fuel tax retained for airport use; non-passenger aviation security reimbursement from the federal government; and other non-passenger aeronautical uses.

^cOther non-aeronautical revenue includes revenue from all other non-aeronautical use of the airport.

Data Table for Figure 4: Sources of Aeronautical and Non-Aeronautical Revenue for All Commercial Airports (Based on Average Annual Airport Operating Revenues for Fiscal Years 2009–2013) (Dollars in Millions)

Aeronautical revenue sources	Percent	Dollars
Fees from fixed-base operations	2.2%	\$201
Landing fees from cargo	2.6%	\$243
Fuel sales (net profit or loss) and fuel flowage fees	3.1%	\$281
Cargo and hangar rentals	6.5%	\$600
Other aeronautical revenue	10.8%	\$989
Passenger airline landing fees	31.1%	\$2,857
Passenger airline terminal arrival fees, rents, and utilities	43.6%	\$4,005
Total Aeronautical revenue	NA	(\$9,176)

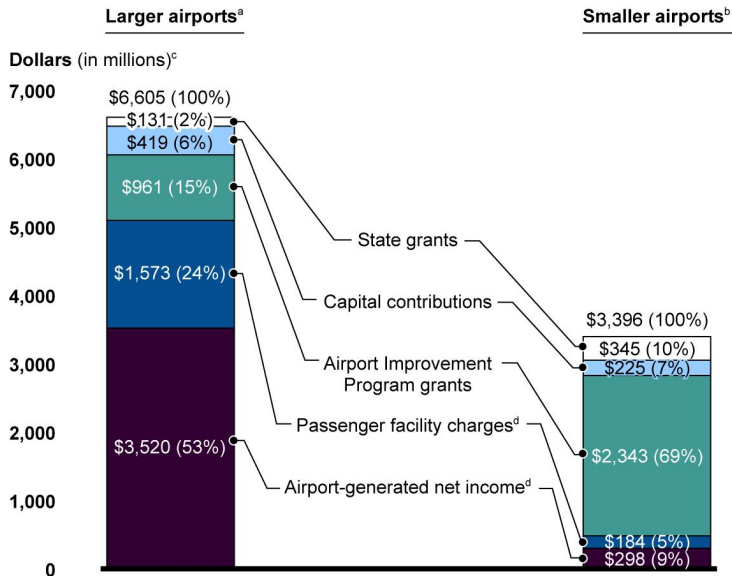
Non-aeronautical revenue sources	Percent	Dollars
Hotel	1.4%	\$107
Terminal-services and other	5.0%	\$374
Terminal-food and beverage	6.9%	\$520
Land and non-terminal facility easements and revenues	7.4%	\$557
Terminal-retail stores and duty free	8.0%	\$597
Other non-aeronautical revenue	10.2%	\$762
Rental cars (excludes customer facility charges)	19.7%	\$1,473
Parking and ground transportation	41.4%	\$3,100
Aeronautical revenue (\$9,176)	NA	\$7,490

To leverage these funding sources, some airports also issue bonds to finance infrastructure projects, often for larger and longer-term developments. Bonds allow an airport to fund a project up front and pay for its cost, plus interest, over a much longer time frame compared to the

construction of the project. Because many U.S. airports are owned by states, counties, cities, or public authorities, bonds issued by these entities to support airport projects may qualify as tax-exempt bonds for federal tax purposes. The tax-exempt status enables airports to issue bonds at lower interest rates than taxable bonds, thus reducing a project's financing costs. Tax-exempt bonds can be issued at lower rates because the federal income-tax exclusion on the interest paid by the purchasers can make these investments more attractive to investors than taxable bonds. Based on our analysis of data from Thomson Reuters on airport bond issuances, from 2009 to 2013, airports obtained an average of \$6.3 billion per year for new projects by issuing bonds. Bond financing has traditionally been an option exercised by larger airports because they are more likely to have a greater and more certain revenue stream to support repayment of debt. Smaller airports tend to be less reliant on bonds and, to the extent that they do issue bonds, make greater use of general obligation bonds that are backed by the tax revenues of the airport sponsor, which is often a state or municipal government. Data from FAA's airport financial-reporting system indicate that from fiscal year 2009 to fiscal year 2013, 94 percent of bond proceeds—including both new bonds and refinancing—went to larger airports and 6 percent went to smaller airports.

The total amounts of funding by source differ between larger and smaller airports. As shown in figure 5, larger airports are more dependent than are smaller airports on airport-generated net income and larger airports are less dependent than are smaller airports on AIP grants.

Figure 5: Sources of Airport Funding Available for Capital Projects, Annual Averages by Size of Airport for Fiscal Years 2009–2013



Sources: GAO analysis of Federal Aviation Administration (FAA) data and survey of state aviation officials by GAO and National Association of State Aviation Officials. | GAO-17-504T

Note: Dollar amounts may not sum to totals because of rounding.

^aLarger airports include large and medium hubs. The number of airports in FAA’s National Plan of Integrated Airport Systems (NPIAS) varies over time. Based on prior NPIAS reports that provide data on the number of existing airports as of dates that fall within the time frame of our analysis (fiscal years 2009 to 2013), there were 66 larger airports as of February 2010, and there were 65 larger airports as of February 2012. However, each of these airports may not have received funding from every source.

^bSmaller airports include small hubs, non-hubs, nonprimary commercial service airports, relievers, and general aviation airports. The number of airports in the NPIAS varies over time. Based on prior NPIAS reports that provide data on the number of existing airports as of dates that fall within the time frame of our analysis (fiscal years 2009 to 2013), there were 3,266 smaller airports as of February 2010, and there were 3,265 smaller airports as of February 2012. However, each of these airports may not have received funding from every source.

^cDollar amounts are in nominal dollars.

^dEven though airport-generated net income and Passenger Facility Charge (PFC) collections are used to pay bond principal, we do not subtract bond principal payments because we do not include bond proceeds as a source of funding. We do, however, subtract payments on bond interest from airport-generated net income and PFC collections because these costs are financing rather than project costs and the estimated costs of planned development projects largely exclude financing costs. The gross average annual amounts of airport-generated net income for larger and smaller airports were \$5,665 million and \$418 million, respectively; the gross average annual amounts of PFCs for larger and smaller airports were \$2,456 million and \$288 million, respectively.

Data Table for Figure 5: Sources of Airport Funding Available for Capital Projects, Annual Averages by Size of Airport for Fiscal Years 2009–2013

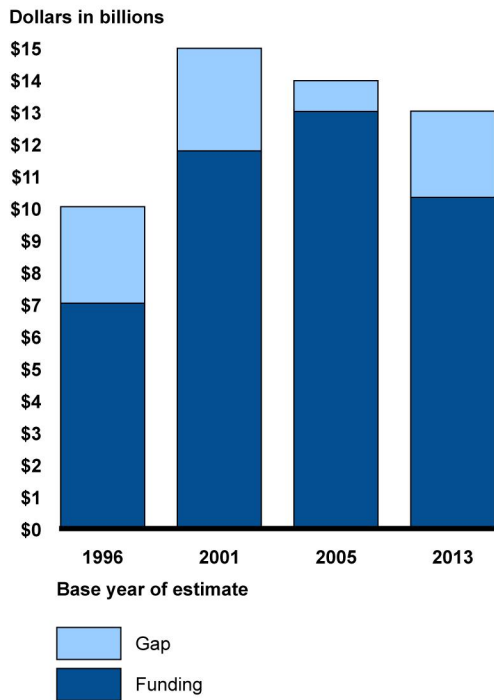
	Larger airports		Smaller airports	
	Dollars (in millions)	Percent	Dollars (in millions)	Percent
State grants	\$131	2%	\$345	10%
Capital contributions	\$419	6%	\$225	7%
Airport Improvement Program grants	\$961	15%	\$2,343	69%
Passenger facility charges	\$1,573	24%	\$184	5%
Airport-generated net income	\$3,520	53%	\$298	9%
Totals	\$6,605	100%	\$3,396	100%

Airports Continue to Report Funding Gap for Planned Investments

In 2015, we estimated airports’ planned capital-development costs for fiscal years 2015 through 2019 at \$13 billion annually, which exceeded airports’ average funding of \$10 billion by roughly \$3 billion in recent years (\$2.7 billion in constant 2013 dollars).²⁶ We have examined airport funding and planned development four times since 1998 and, as figure 6 shows, the difference between planned development and historical funding has never exceeded \$3 billion. Note that the gap also tends to be proportionally greater for smaller airports.

²⁶[GAO-15-306](#).

Figure 6: Comparison of Past Airport Funding and Planned Development Costs



Source: GAO analysis of Federal Aviation Administration (FAA) and Airports Council International-North America (ACI-NA) data. | GAO-17-504T

Data Table for Figure 6: Comparison of Past Airport Funding and Planned Development Costs

Base year of estimate	Funding	Gap
1996	\$7.03	\$3.01
2001	\$11.78	\$3.2
2005	\$13.01	\$0.96
2013	\$10.33	\$2.69

As we reported in 2015, airports have a number of options for addressing any shortfall in funding their capital development, including prioritizing capital development projects, financing projects, attempting to increase airport revenues, or entering into public-private partnerships. States and local communities can also choose to increase state grant funding.²⁷ For individual airports, a common method for aligning funding with planned development is to prioritize projects. This generally entails decisions

²⁷GAO-15-306.

about which projects to move forward with and which to defer, but could also include scheduling a project in phases or reducing the scope of or cancelling a planned project. Another method that airports can use to align funding with capital development is to borrow money to fund a project. Most commonly, this consists of issuing a bond. However, as previously discussed, borrowing has traditionally been an option exercised by larger airports. To be able to finance projects, an airport's financial situation must be viewed positively enough to be able to borrow money at affordable rates in the bond market. Two of the airport financial-consulting firms with whom we spoke in 2015 noted that some airports are already leveraged to a large extent, and one bond-rating agency stated that taking on additional debt is always a risk. A third method for airports to fund capital development is to try to increase airport-generated net income. We have found in recent prior work that in addition to traditional commercial activities to generate non-aeronautical revenue, such as parking fees or terminal concessions, some airports have developed commercial activities with stakeholders from local jurisdictions and the private sector to help develop airport properties into retail, business, and leisure destinations.²⁸

Increasing Passenger Facility Charges Would Increase Airport Funding, but Other Effects Are Less Certain

One approach to increasing funding for airports that has been advanced by airports and others is to increase or eliminate the current \$4.50 cap on PFCs. However, any increase in PFCs is controversial and strongly opposed by airlines, which contend that airports currently have adequate access to funding for their development. We have previously found that increasing the PFC cap would significantly increase PFC collections available to airports.²⁹ Specifically, in 2014, we developed an economic demand model to estimate the potential funding airports might generate using three different PFC amounts.³⁰ The general approach of this analysis was to model airport collections and passenger traffic under

²⁸[GAO-15-306](#).

²⁹GAO, *Commercial Aviation: Raising Passenger Facility Charges Would Increase Airport Funding, but Other Effects Less Certain*, [GAO-15-107](#), (Washington, D.C.: Jan. 12, 2005).

³⁰[GAO-15-107](#).

various PFC cap levels. We modeled three different increases in the PFC cap amount, each starting in 2016:

- PFC cap of \$6.47 (the 2016 equivalent of \$4.50 indexed to the Consumer Price Index (CPI) starting in 2000 when the cap was first instituted);
- PFC cap of \$8 based on the President’s 2015 budget proposal; and
- PFC cap of \$8.50 that would be indexed to inflation.³¹

Our analysis indicated that all three scenarios would significantly increase the potential amount of PFC collections in comparison to what would be available without a PFC increase, as shown in table 1. For example, we estimated that raising the PFC cap to \$8.00 would result in an additional \$2.6 billion in PFCs, an increase of 77 percent in PFC revenue in 2020.³²

Table 1: Estimated Passenger Facility Charge (PFC) Collections Available to PFC-Approved Airports, 2016–2024 (Dollars in Millions)

Current baseline estimate for PFC revenue (in millions of dollars)

Scenario	2016	2017	2018	2019	2020	2021	2022	2023	2024
\$4.50 cap ^a	3,073	3,149	3,225	3,301	3,373	3,437	3,498	3,561	3,628

³¹This had been the airport trade associations legislative proposal at the time of our report in 2014, since then ACI-NA and the American Association of Airport Executives (AAAE) had modified their proposal to an uncapped PFC.

³²These projected effects depend on key assumptions regarding consumers’ sensitivity to a fare increase caused by an increase in the PFC, whether airlines would pass on the full increase to consumers, and the rate at which airports would adopt the increased PFC cap. For the purposes of this model, we assumed that the entire PFC increase would be fully passed on to consumers and not absorbed by the airlines by adjusting their base fares downward. We also assumed that airports that currently impose a PFC would raise it to the maximum allowed amount in the first year. While all airports likely would not immediately raise their PFC level in the first year, based on near universal adoption of the current maximum by nearly all of the largest airports, it is not unrealistic to expect that most airports would be at the maximum by 2024. Finally, this model assumes an elasticity of demand of -0.8. See [GAO-15-107](#).

Estimated increases to the baseline estimate for PFC revenue (in millions of dollars)

Scenario	2016	2017	2018	2019	2020	2021	2022	2023	2024
\$6.47 cap ^b ((\$4.50 cap, Consumer Price Index (CPI) adjusted)	+1,341	+1,375	+1,409	+1,444	+1,476	+1,505	+1,533	+1,561	+1,592
\$8.00 cap ^c (President's 2015 budget)	+2,364	+2,424	+2,485	+2,546	+2,604	+2,655	+2,705	+2,756	+2,810
\$8.50 cap, CPI adjusted ^d	+2,696	+2,886	+3,093	+3,316	+3,551	+3,787	+4,033	+4,291	+4,562

Source: GAO analysis using Department of Transportation (DOT) data. | GAO-17-504T

Notes: These projections assume: (1) 100 percent adoption of maximum allowable PFCs in 2016 by airports approved to collect a PFC as of July 31, 2014; (2) a -0.8 elasticity rate; and (3) 100 percent pass through of the cost of the PFC increase to passengers.

Results are reported in nominal dollars.

^aBaseline PFC revenues under current cap (\$4.50). 49 USC § 40117(b)(4).

^bChange in PFC revenues relative to baseline under \$6.47 PFC cap. This cap was developed by using CPI to adjust for inflation between 2000 and 2016.

^cChange in PFC revenues relative to baseline under \$8 PFC cap. This cap was proposed in the President's 2015 budget.

^dChange in PFC revenues relative to baseline under \$8.50 PFC cap which is adjusted for inflation using the Congressional Budget Office's projected CPI for each calendar year in our analysis. This amount was proposed by Airports Council International-North America and American Association of Airport Executives. The trade associations have not proposed an inflation rate so GAO has used the CPI to adjust for inflation as this is a federal inflation index standard.

Because passenger traffic is highly concentrated at larger airports, PFC collections are similarly concentrated. Thus, larger airports would benefit most from a PFC increase. A hub level analysis of a PFC cap increase shows that large hub airports could receive nearly three-quarters of all PFCs, while large and medium hubs together could account for nearly 90 percent of total PFCs, similar to the current distribution. For example, under an \$8 PFC, large hub airports could receive additional PFC revenues of \$1.74 to \$2.08 billion annually and medium hubs could receive additional PFC revenues of \$372 to \$435 million annually from 2016 to 2024. Small and non-hub airports could receive up to \$212 million and \$82 million in additional annual PFC revenues, respectively, from 2016 to 2024.

While an increase in PFCs would mainly flow to the larger airports, smaller airports could also benefit from increased PFC collections. As previously noted, under current law, large and medium hubs'

apportionment of AIP formula funds may be reduced,³³ which in fiscal year 2014, resulted in a redistribution of approximately \$553 million. The majority of this funding (87.5 percent) goes to the Small Airport Fund for redistribution among small airports.³⁴ The remaining 12.5 percent became available as AIP discretionary funds, which FAA uses to award grants to eligible projects regardless of airport size.³⁵

According to our model, while increasing the PFC cap could raise PFC revenue, it could decrease passenger demand. Such a decrease would also result in marginally slowing growth in revenues to the AATF.³⁶ Assuming that the PFC increase is fully passed on to consumers and not absorbed through a reduced lower base in (before tax) fares, the higher cost of air travel could reduce passenger demand according to economic principles. Economic principles and past experience suggest that any increase in the price of a ticket—even if very small—will have an effect on some consumers' decisions on whether to take a trip. For example, an increase in the price by a few dollars may not affect the decision of a business flyer going for an important business meeting but could affect the decision of a family of four going on vacation. Under all three scenarios, AATF revenues, which totaled \$14.3 billion in 2016 and are used to fund FAA activities, would likely continue to grow overall based on current projections of passenger growth; however, the modeled cap increases could reduce total AATF's revenues by roughly 1 percent because of reduced passenger demand. For example, under a \$6.47 PFC, we estimated that AATF's revenues would total \$105 million less in 2024 than they would total if the cap were not raised.

For more than a decade, airlines and airports have hotly debated a PFC increase because it would give greater control over airport investment to

³³49 U.S.C. § 47114(f).

³⁴49 U.S.C. § 47116(a).

³⁵49 U.S.C. § 47115(a)(2).

³⁶See [GAO-15-107](#).

airports.³⁷ All else being equal, lower PFCs can provide airlines with more influence over airport infrastructure decisions and higher PFCs can provide airports more control over local capital-funding decisions, including the ability to decide how to apply PFC revenues to support capital projects and thus how those revenues might influence airline rates and charges. Generally, PFCs offer airports relative independence over investment decisions at their airports. While airports must notify and consult with the airlines on how they spend PFCs, as long as FAA approves, airlines cannot block these decisions. Airlines can choose to serve other airports, however, so airports still have an incentive to listen to airline concerns.

Chairman Blunt, Ranking Member Cantwell, this concludes my statement for the record.

Contact

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Staff Acknowledgments

Key contributors to this testimony include Paul Aussendorf (Assistant Director), Amy Abramowitz, Dave Hooper, Malika Rice, Amy Suntoke, Melissa Swearingen, and Michelle Weathers.

³⁷Representatives Peter DeFazio (D-OR) and Thomas Massie (R-KY) recently introduced legislation (H.R. 1265) that would eliminate the PFC cap all together. Large and medium hub airports that increase their PFC rate above \$4.50 would have AIP funds reduced by 100% of the PFC charge. The bill also reduces the AIP “trigger” mechanism from \$3.20 billion to \$2.95 billion. In current law, the trigger mechanism doubles entitlement grant funding for all airports when the appropriated amount is at least \$3.2 billion. 49 U.S.C. § 47114(c)(1)(C)(i)).

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