

March 1998

AIRPORT FINANCING

Funding Sources for Airport Development



**Resources, Community, and
Economic Development Division**

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Congressional Committees

More than 3,300 U.S. airports, ranging from large passenger airports like Chicago O'Hare to small general aviation airports, are part of the national airport system and therefore are eligible for federal assistance. To ensure their continued safe and efficient operations, these airports plan a wide range of capital development projects, including new runways, passenger terminals, navigational aids, and roadway access. Within the past year, several studies, including one of ours, have examined airports' capital development needs.¹ However, assessing airports' capacity to finance their future development has been constrained by incomplete financial information about airports.

To help clarify this issue, you asked us to answer the following questions:

- How much are airports of various sizes spending on capital development and where is the money coming from?
- If current funding levels continue, will they be sufficient to meet capital development planned for the 5-year period from 1997 through 2001?
- If a difference exists between current funding and planned development, what is the potential effect of various proposals to increase airport funding?

To overcome past limitations in assessing the extent and variance of airports' financial capacity, we developed an extensive database of airport funding information linked to each airport and its level of activity. These data and our analytical methodology are discussed in appendix III. Building the data from the ground up allowed us to ensure more accurate totals and, in particular, to assess the varying capabilities of airports on the basis of their size. It also enabled us to better examine the possible effects of various proposals to increase airport funding.

Results in Brief

In 1996, the 3,304 airports that make up the national airport system obtained about \$7 billion for capital development. More than 90 percent of this funding came from three sources: airport and special facility bonds (\$4.1 billion), funding made available from the Airport and Airway Trust

¹Avoiding Aviation Gridlock and Reducing the Accident Rate: A Consensus for Change, National Civil Aviation Review Commission (Dec. 1997); Federal Aviation Administration: Independent Financial Assessment, Coopers & Lybrand (Feb. 1997); and Airport Development Needs: Estimating Future Costs (GAO/RCED-97-99, Apr. 7, 1997).

Fund (\$1.4 billion), and passenger facility charges paid on each airline ticket (\$1.1 billion). Capital funding (adjusted for inflation) more than doubled from 1982 through 1992 and has since declined. The amount and source of funding varies with the size of airports. The nation's 71 largest airports, which handled almost 90 percent of the passenger traffic in 1996, accounted for 79 percent of all funding in 1996, while the 3,233 other smaller commercial and general aviation airports that make up the national system accounted for the other 21 percent, or \$1.5 billion.² However, airports' reliance on federal grants is inversely related to their size. For example, federal grants contributed a little over 10 percent of the funding for the nation's 71 largest airports but accounted for 50 percent of the funding for the other 3,233 national system airports.

Airports' 1996 capital funding of about \$7 billion is less than the \$10 billion per year that airports anticipate will be needed to fund the development planned for 1997 through 2001. While this difference is not an absolute predictor of future funding shortfalls—both funding and planned development may change in the future—it does provide a useful indication of where funding differences may be the greatest. The difference between past funding and planned development is especially acute for smaller commercial and general aviation airports, whose 1996 funding was a little over half of the estimated costs of their planned development. The picture is somewhat brighter if the categories of planned development are narrowed to just those the Federal Aviation Administration gives highest priority—that is, safety, security, and noise-mitigation projects and the maintenance of existing airfields. With the exception of the small commercial airports, federal grants in 1996 matched or exceeded the planned development for such projects.

Several proposals to increase funding for airports have emerged in recent years. These include increasing the size of the federal grant program, raising the ceiling on passenger facility charges, and leveraging existing funding sources. Each proposal varies in its magnitude and in its effect on airports and their users. For example, increasing the size of the federal grant program would mostly help small airports, while raising passenger facility charges would mostly help larger airports. We believe that the Federal Aviation Administration's current pilot programs to use grants in more innovative ways and to privatize airports are likely to yield only marginal benefits because of limited participation by airports. However, another means to expand airport investment, which may be more successful, would be to use federal airport grants to capitalize state

²See fig. 1 for a description of airport categories.

revolving funds. While not a currently permitted use for federal airport grants according to Federal Aviation Administration officials, state revolving funds have proved very successful in other infrastructure sectors, such as waste water and surface transportation, and could expand airport investment, especially at smaller airports that face the greatest potential funding shortages.

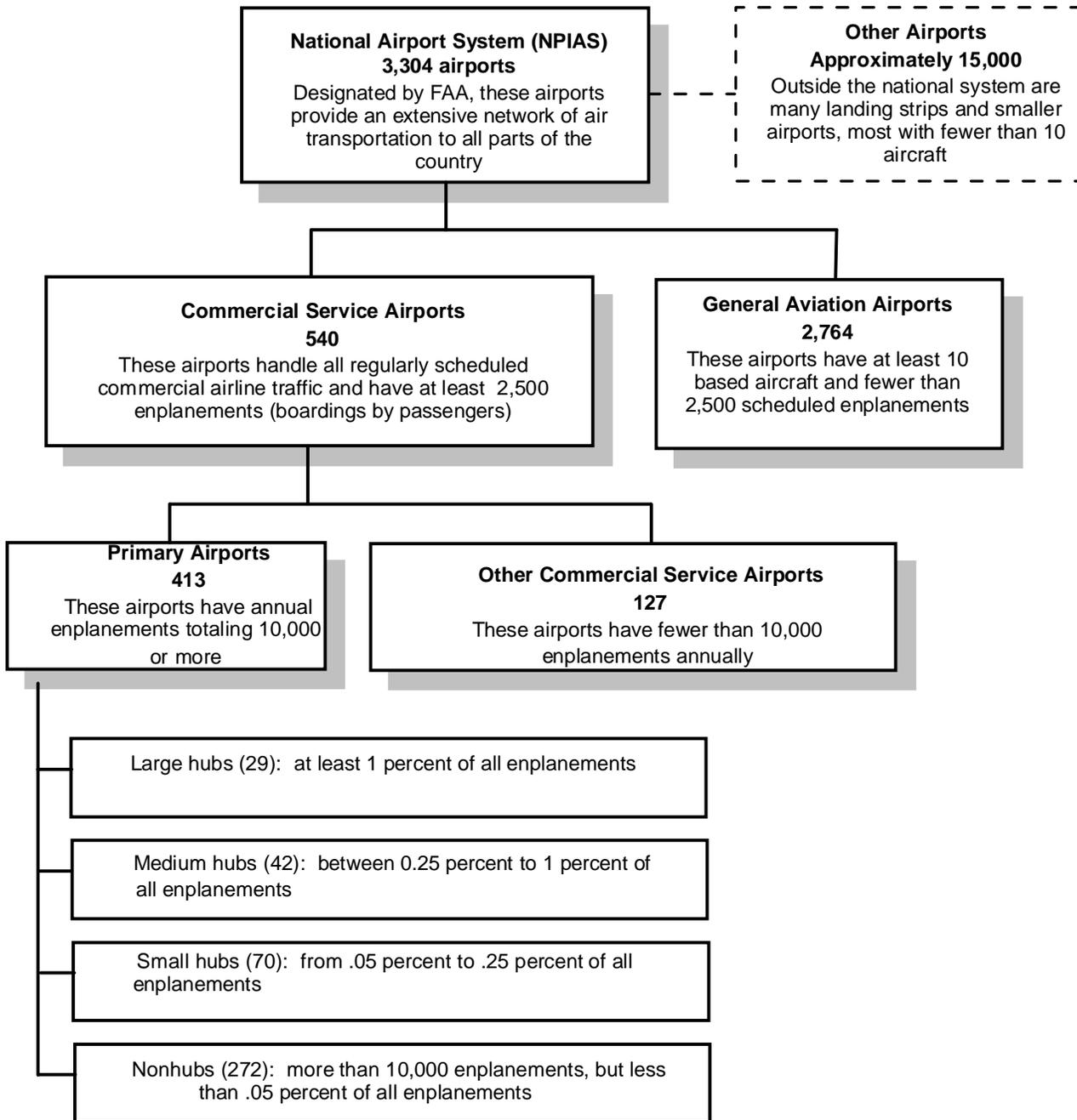
Background

The United States, which possesses the largest, most extensive aviation system in the world, has more than 18,000 airports. U.S. airports range from large commercial transportation centers enplaning more than 30 million passengers annually to small grass strips serving only a few aircraft each year. Of these, 3,304 are designated as part of the national airport system and are therefore eligible for federal assistance. The federal interest in capital investment for airports has been guided by several objectives, most notably ensuring safety and security, preserving and enlarging the system's capacity, helping small commercial and general aviation airports, funding noise mitigation, and environmental protection.

National system airports are of two types—commercial service airports, of which there are 540, and general aviation airports, of which there are 2,764. The Federal Aviation Administration further divides commercial service airports, defined as those publicly owned airports that enplane 2,500 or more passengers and have scheduled service—into primary airports (enplaning more than 10,000 passengers annually) and other commercial service airports. The 413 designated primary airports are arranged into various classes of hub airports—large, medium, small, and nonhub—as explained in figure 1. Statutorily, large and medium hub airports are designated as large primary airports and must contribute a larger share to projects funded under the Airport Improvement Program (AIP) as well as forgo a portion of their AIP grants if they collect passenger facility charges (PFC).³ This report follows that convention in grouping large and medium hub airports together separate from all other national system airports in considering airports' financial capabilities. In addition, financial information on each category of airport is presented in appendix II.

³See 49 U.S.C. §§47109(a) and 47114(f).

Figure 1: Categories of U.S. Airports



Note: These figures are based on FAA's 1996 enplanements, which totaled 621,613,161.

Airports, airlines, FAA, and a congressionally commissioned study have made various estimates of the future financing requirements needed to meet airports' future development plans. These estimated requirements have varied widely, ranging from \$4 billion to \$10 billion annually over the next several years. In our April 1997 report, we concluded that these estimates varied so widely because of differing views about what kinds of projects and airports to include as part of an estimate. In that report, we provided four estimates of future development, varying upon how many categories of projects are included. Our estimates ranged from \$1.4 billion per year to fund safety, security, noise mitigation, and reconstruction projects; \$2.8 billion if other high-priority projects, primarily capacity-related projects, are added; \$6.1 billion for all AIP-eligible projects; and \$10.1 billion per year to fund all types of projects, including those not eligible for AIP funding.

Airports' Funding Sources Vary

Airports rely on a variety of funding sources, some public and some private, to finance their capital development. The major funding sources, listed in further detail in table 1, are federal and state grants, PFCS airport and special facility bonds, and airport-generated income. In 1996, U.S. airports raised an estimated \$7 billion from these sources.⁴ Additional information on each of these funding sources and their distribution among various categories of airports is contained in appendix I.

⁴Airport and special facility bonds are reported as net of bonds sold to refinance outstanding bonds, unless otherwise noted. Airports' revenue is estimated on the basis of airports' net operating revenue in excess of 1.25 times the debt service requirements (the minimum required in most bond agreements). In addition, some development may have been funded by local communities or through third parties; however, we found no data to document the amount from these sources, although we believe they are relatively isolated and small. For additional discussion of these and other funding sources, refer to app. I.

Table 1: Sources of Airport Funding

Funding source	1996 amount (dollars in billions)	Percent of total	Source of funds
Tax-exempt bonds	\$4.104 ^a	58	Tax-exempt bonds are issued by state and local governments or airport authorities.
Airport Improvement Program (AIP) grants	\$1.372	20	Funds are made available by the Congress from the Airport and Airway Trust Fund, which receives revenues from taxes on domestic and international travel, domestic cargo transported by air, and noncommercial aviation fuel.
Passenger facility charges (PFC)	\$1.114	16	Funds come from passenger fees of \$1, \$2, or \$3 per trip segment at commercial airports, up to a maximum of four trip segments per round trip.
State and local contributions	\$0.285 ^b	4	Funds come from such sources as state aviation fuel and airline property taxes, aircraft registration fees, state bonds, and state general fund appropriations. The extent to which these sources are used varies by state.
Airport revenue	\$0.153 ^c	2	Funds are generated from (1) "airside" revenues derived from the operation and landing of aircraft, passengers, or freight and (2) "landside" revenues derived from concessions and leases.
Total	\$7.028	100	

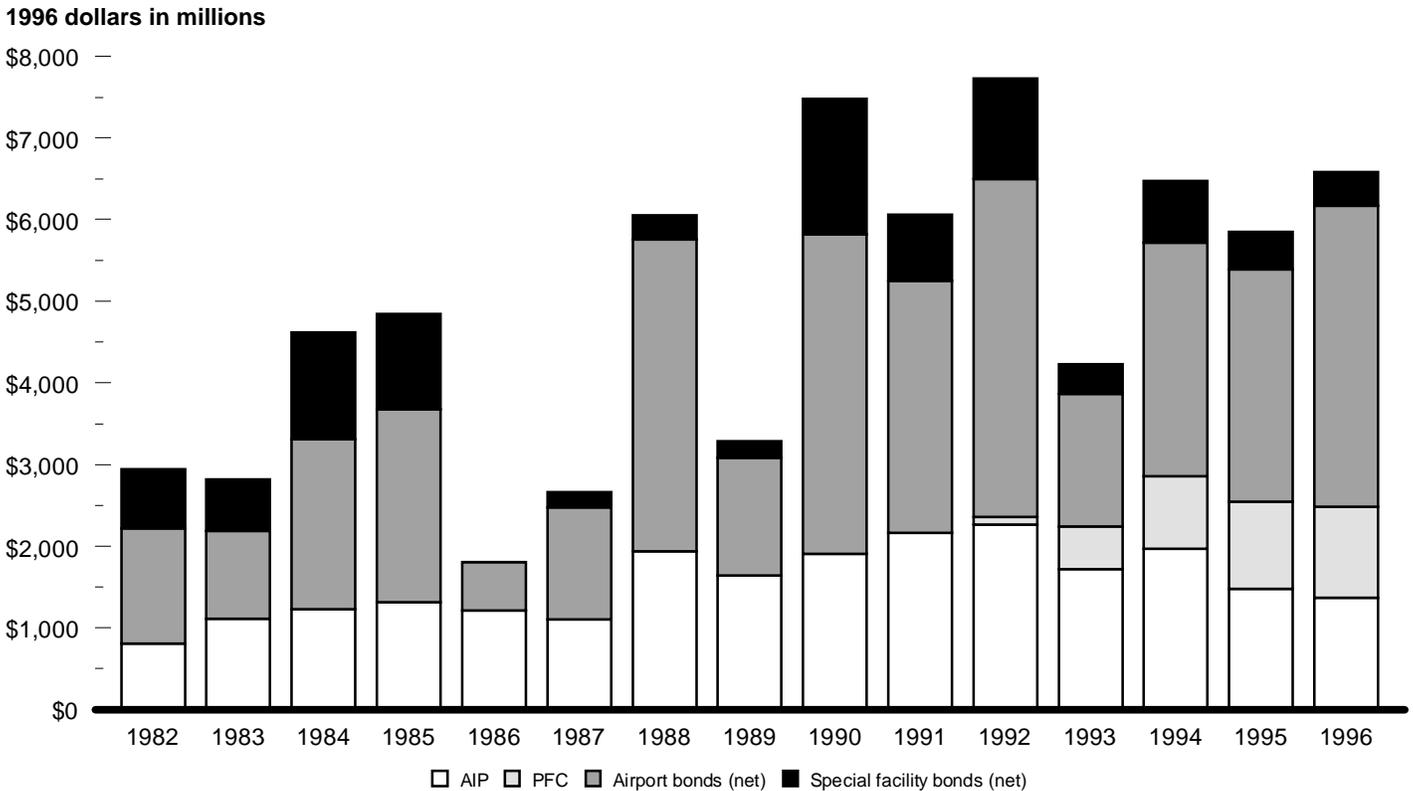
^aNet of refinancing. Of this total, a little over \$400 million is special facility bonds issued on the behalf of nonairport beneficiaries, such as airlines.

^bState grants only. Amounts for local capital subsidies are unknown but, we believe, are minimal.

^cNet operating revenue in excess of a minimum coverage ratio of 125 percent of the debt service (principal and interest payments).

As figure 2 shows, total airport funding varies year to year. For example, funding in 1993 declined by 45 percent from 1992. This variability results primarily from year-to-year changes in the amount of funding from bonds, which in turn is affected by changing interest rates, the demand for air travel, and airlines' agreements with airports.

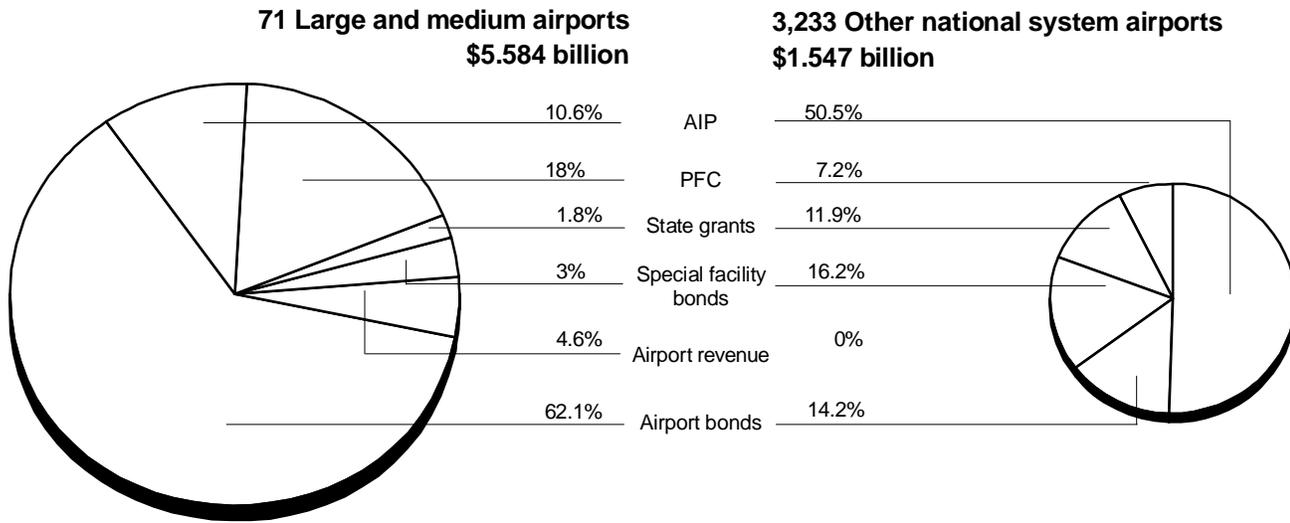
Figure 2: Airport Funding: Primary Sources, 1982 Through 1996



Note: State grant and airport revenue funding data were available for 1996 only.

The amount and type of funding varies considerably by the type of airport. The 71 large and medium hub airports, which accounted for almost 90 percent of all passenger traffic, also obtained 79 percent of all funding in 1996, while the 3,233 other national system airports accounted for the remaining 21 percent of the funding. In addition, as shown in figure 3, large and medium hub airports rely most heavily on private airport bonds, which constitute roughly 62 percent of their total funding, while the other airports rely on federal grants for about half of their funding. Additional information on each of these funding sources and their distribution among various categories of airports is contained in appendix I.

Figure 3: Distribution of 1996 Funding Sources for Large and Medium Hub and Other National System Airports



To test the strength of the relationship between the size of an airport and its reliance on the various funding sources, we analyzed the correlation between size, as measured by passenger enplanements, and funding sources, as measured by the proportion that each source contributes to the total funding for the 300 commercial airports for which we had complete financial data. We found that as an airport’s size increases, both within and across airport categories, an airport’s reliance on AIP diminishes, while the use of other funding sources, such as bonds and PFCs, increases.

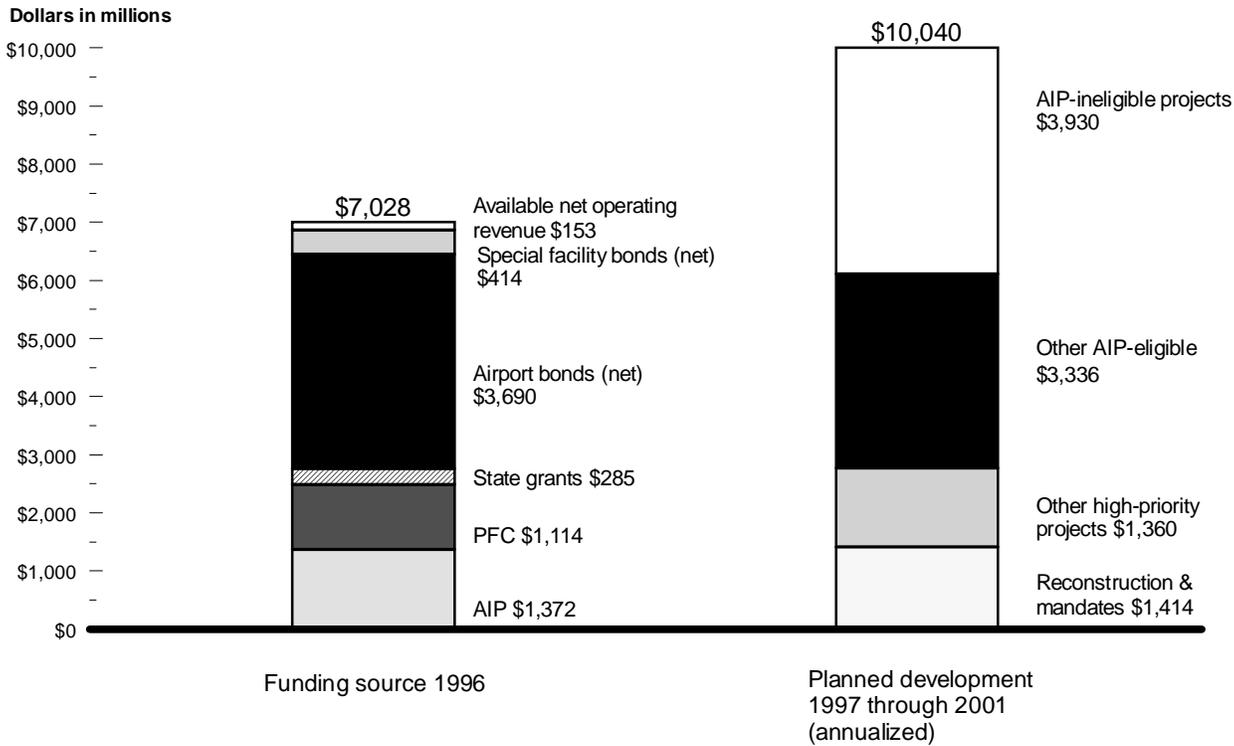
Funding Is Less Than Planned Development

Airports’ planned capital development over the next 5 years may total as much as \$10 billion per year, or \$3 billion more per year than their 1996 funding.⁵ Figure 4 compares airports’ total capital development funding in 1996 to their annual planned development over the next 5 years. Funding for 1996 is shown by source; planned spending is shown by the relative priority of the projects. FAA’s highest priorities are for projects to meet safety, security, and environmental requirements, including noise

⁵Estimates of planned development are based on our April 1997 report (*Airport Development Needs: Estimating Future Costs*, GAO/RCED-97-99, Apr. 7, 1997). As that report noted, estimating future development is fraught with complications. Data accuracy problems, unanticipated needs, and political and financial feasibility affect actual development.

mitigation, and for projects that maintain existing infrastructure (reconstruction). Other high-priority projects are primarily for adding capacity, while other AIP-eligible projects are a relatively lower priority, such as projects aimed at helping airports better meet FAA's design standards. Some projects, such as expanding commercial space in terminals and parking garages, are typically not eligible for funding from FAA. Although a difference may exist between funding and planned spending in total, there is a much closer match between funding from AIP and planned spending on FAA's highest-priority projects (reconstruction and mandates). In the aggregate, the \$1.372 billion in AIP grants in 1996 roughly equates to the \$1.414 billion in estimated development planned for the highest-priority projects. However, because about one-third of AIP grants are awarded to airports on the basis of the number of passengers enplaned and not necessarily projects' priority, the full amount of AIP grants may not be going to the highest-priority projects.

Figure 4: 1996 Funding Compared to Planned Development



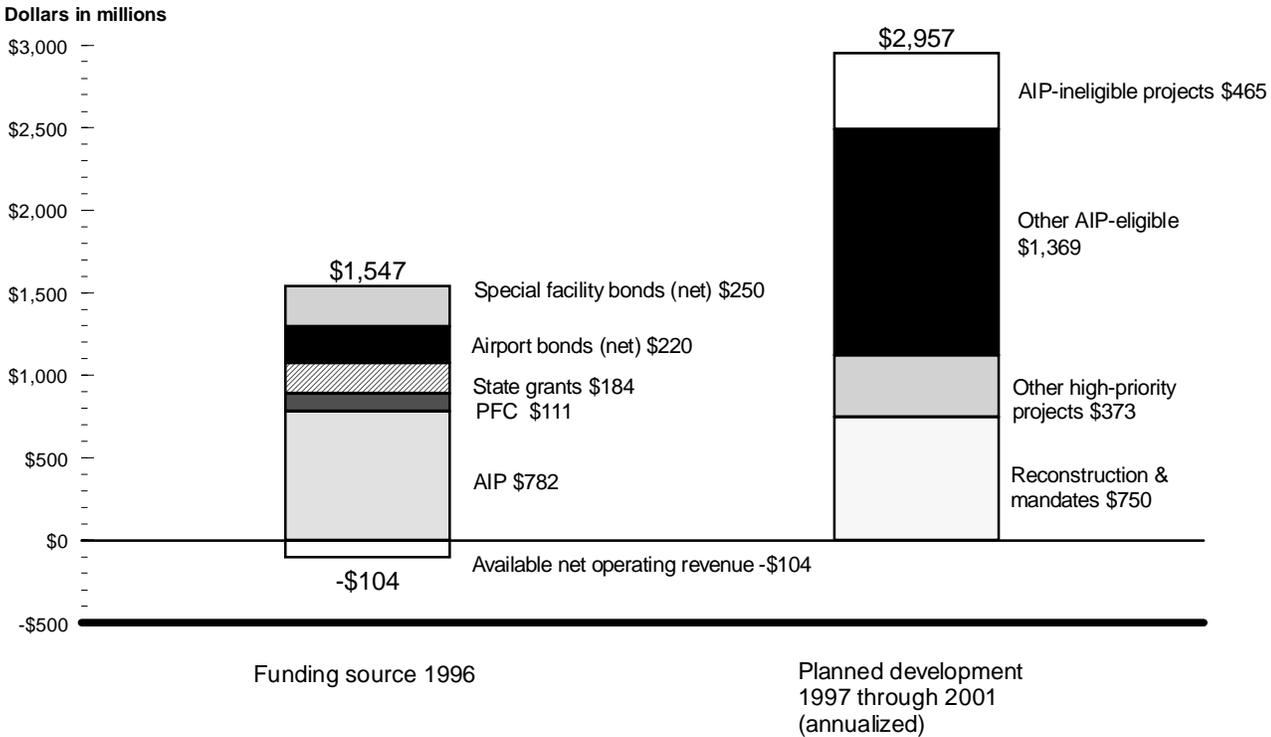
Note: Planned development excludes \$447 million over 5 years, cited in our April 1997 report, for the development of state system airports that are not part of the national system.

Potential Funding Difference at Smaller Airports Is More Significant Than at Larger Airports

The difference between current funding and planned development for smaller airports represents a greater proportion of their total planned development than for large and medium hub airports. Current funding at the 3,233 small, nonhub, other commercial service, and general aviation airports is a little over half of the estimated cost of their total planned development, producing a difference of more than \$1.4 billion (see fig. 5). The difference may actually be even greater if it were not for \$250 million in special facility bonding for a single cargo/general aviation airport.⁶ For this group of airports, the \$782 million in 1996 AIP grants surpasses the annual estimate of \$750 million for reconstruction, noise mitigation, and federally mandated projects.

⁶Fort Worth Alliance Airport, a general aviation-cargo airport, issued \$250 million in special facility bonds in 1996.

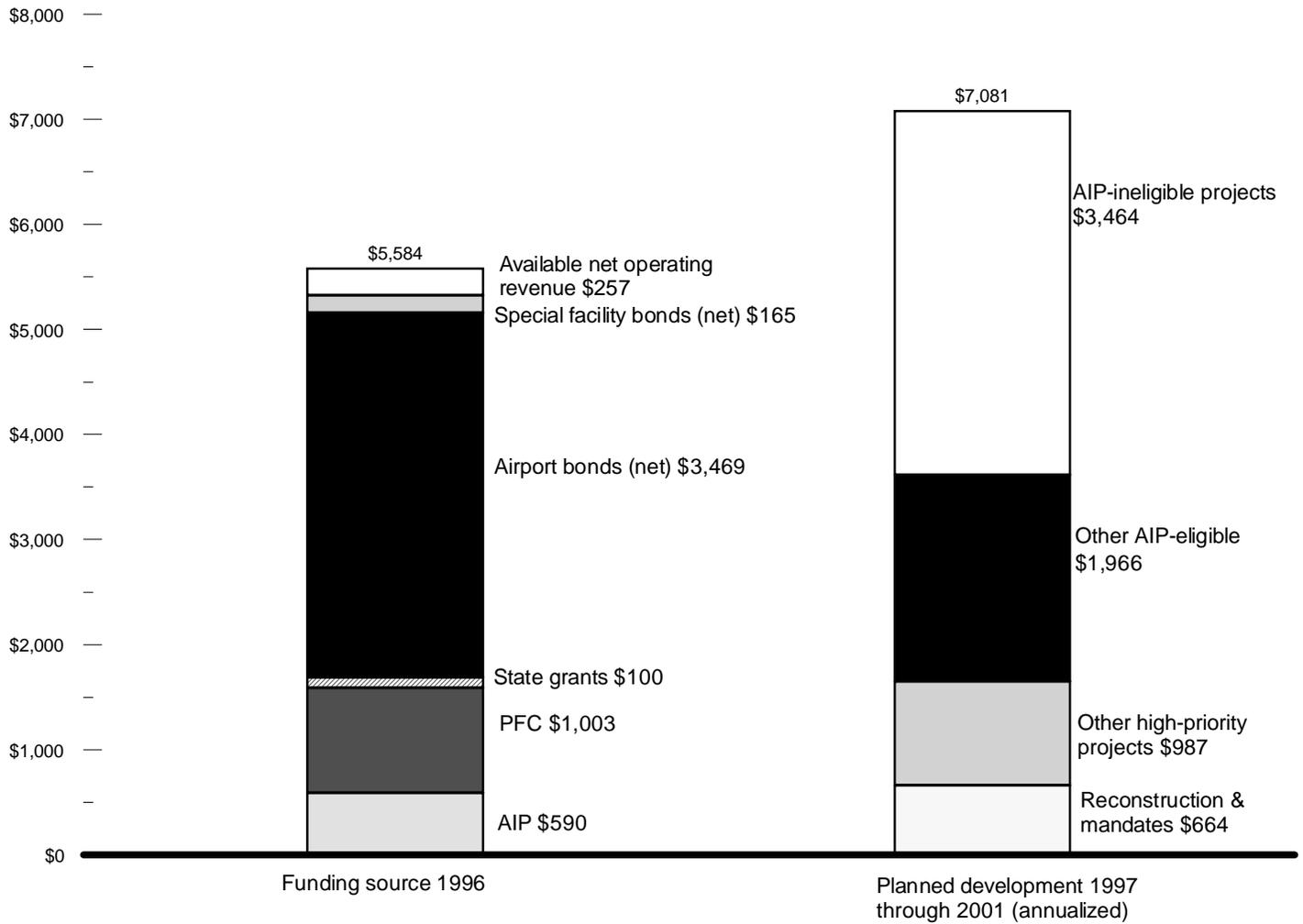
Figure 5: 1996 Funding Compared to Planned Development for Smaller Airports



As a portion of total funding, the potential funding difference for the 71 large and medium hub airports is comparatively less than for their smaller counterparts (see fig. 6). However, because total expenditures for capital projects are so much greater for these airports, this smaller portion represents a potential shortfall of \$1.5 billion, or \$87 million greater than smaller airports' collective shortfall. Figure 6 also indicates that \$590 million in AIP grants falls \$74 million short of the estimated cost to meet FAA's highest-priority development—meeting federal mandates and maintaining current infrastructure.

Figure 6: 1996 Funding Compared to Planned Development for Large and Medium Hub Airports

Dollars in millions



For a more detailed analysis that shows the difference between current funding and planned development for each of the six categories of airports, see appendix II.

Effect of Proposals to Increase Airport Funding Varies

Evaluating the various proposals to provide additional funding for airport development involves the consideration of the trade-offs among the various funding types as well as the potential effect each proposal would have on airports. Initiatives to increase funding for airport development include increasing AIP funding, raising the ceiling on PFCS, and other initiatives, such as FAA's pilot programs for innovative financing and privatization. In addition, we examined the potential benefits of state-administered revolving funds.

Emphasizing One Funding Source Over Another Requires Trade-Offs

Choosing to increase one source of funding instead of another involves making trade-offs because the current funding sources differ in several key characteristics, as shown in table 2. For example, increasing funding through grant programs will increase the extent to which the government can specify the recipient, the project, and the amount of funds that will be awarded because grant programs facilitate such targeting better than other funding mechanisms. However, because grant programs in general are relatively costly to administer, increasing funding through grants would increase administrative costs more than a similar amount from bonds or airport revenues.

The funding mechanisms also differ with respect to who bears the cost of airport financing. These differences affect the extent to which beneficiaries pay in proportion to the benefits they receive—a measure of economic efficiency and equity. In choosing, for example, between bonds and grants, it is useful to consider that they may have different efficiency and equity effects because of differences in the share of costs borne by users and nonusers of airports under each funding mechanism. Grants are funded through AIP, which is, in turn, funded primarily by the ticket tax. Thus, users pay for grants to airports. In contrast, part of the cost of tax-exempt bonds is borne by nonusers of airports because the interest earned by bondholders is exempt from federal income taxation. As a result, more of the cost of bond financing is borne by nonusers of airports than in the case of grants. Even so, it is uncertain whether using bonds to increase funding would improve or worsen the overall efficiency and equity of airport financing. This uncertainty arises because of the uncertainty in determining how much nonusers benefit from airport development that may stimulate economic development in the community surrounding any given airport. As a result, it is difficult to compare such benefits with the costs that nonusers currently bear. If, as some believe, these benefits are small, then increasing the use of bonds could reduce the overall efficiency and equity of airport financing. But this decrease in

equity and efficiency might be justified because bonds have lower administrative costs than grants.

Table 2: Trade-Off Characteristics of Airport Funding Sources

	AIP	PFC
To what extent is economic efficiency promoted by beneficiaries paying in proportion to the benefits they receive?^a	Collectively, airport users are the primary payers and beneficiaries, but the linkage between payments and benefits is loose because funds collected for the trust fund are redistributed among airports of different sizes rather than retained in the same proportion as generated by each airport.	Unlike funds collected and made available for AIP, there is, in general, a strong linkage between those who pay and those who benefit because airports retain PFC funds they generate. However, some beneficiaries do not pay for their benefits.
To what extent are airports' capital costs equitably distributed among those who benefit?^a	Only direct beneficiaries pay the costs. While larger airports provide more funds because almost 9/10 of the revenue comes from the passenger ticket tax, the disbursement of the funds results in some redistribution from large to small airports. Also, those who pay higher costs for tickets pay a higher dollar amount in tax than purchasers of lower-cost tickets.	Some beneficiaries do not pay—for example, some classes of carriers and passengers are exempted from paying PFCs. Also, airports that collect PFCs must return a portion of their AIP moneys to benefit smaller airports.
How easily or cheaply are funds managed?	Grant programs are more costly to administer. Administration of grant programs is a relatively labor intensive process that generally involves application for the grants, review of applications and award of the grants, and monitoring of compliance with grant program requirements.	Application for use of the fee at an airport is a one-time process for the amount and duration approved. Collections may occur over several years, but once the approved maximum is obtained, a new application is required to continue collection. Once airlines turn collections over to the airport, the airport may use the funds for the projects approved in their application.
To what extent can the federal government specify the recipient/project and the amount of funds provided?	The federal government (FAA) specifies the airport and project through the award of annual grants. Federal grant shares are set at 75 or 90 percent, with some experimentation at other levels. Primary airports are guaranteed a minimum amount of money on the basis of a statutory disbursement formula.	The federal government (FAA) must approve an airport's PFC application for a specified amount and for a specific project or projects that meet statutory goals and are adequately justified.
To what extent do federally authorized funding sources substitute for state or local funds?	Generally, federal funds provided through a grant program have been found to result in about a 60-percent substitution for state funds, leaving 40 percent of federal funds as a net increase in financing. The substitution rate that applies to AIP may be different.	Most PFCs are collected by larger airports, which are less likely to receive state assistance. Where airports using PFCs do receive state assistance, the substitution rate is likely to be similar to that for grant programs in general.

Tax-exempt bonds	State and local funds	Airport revenue
<p>While direct beneficiaries bear much of the cost, nonusers of airports also bear some direct cost through the tax-exempt subsidy but may benefit only indirectly, if at all. Nonusers may bear more of the direct cost of this financing mechanism than of any other financing source. Thus, although airports retain use of the bonds they issue, there may be less linkage between those who pay and those who benefit directly than under other financing mechanisms.</p>	<p>While direct beneficiaries bear much of the cost, nonusers also bear some direct cost to the extent state grants come from general funds. Because about 90 percent of the funds come from user taxes and fees, there is a stronger link between those who pay and those who benefit than is the case with bonds but less of a link than is the case with airport revenues and PFCs.</p>	<p>Because airport users appear to constitute most, if not all, of the immediate payers and beneficiaries, there is a strong linkage between those who pay and those who benefit.</p>
<p>All users of airport services repay the cost of bond financing through the revenues collected by airports. However, all taxpayers, who may benefit from the national airport system, even if they do not use the airports, help support tax-exempt bonds through an estimated \$560 million in forgone tax revenue annually.</p>	<p>Only direct beneficiaries pay the taxes and fees. While nonusers, as well as airport users that reside within the respective state, sustain general fund appropriations, they may benefit only to the extent the general public benefits from the states airport investment.</p>	<p>Only airport users pay. Airlines and concessionaires pay directly, while their customers pay indirectly through the prices of the services or goods they buy.</p>
<p>Provided bonds are properly secured by future revenue or taxing authority, they are relatively easy to issue. Bond issuers must pay up-front consulting and legal costs as well as underwriting costs between 0.6 and 1 percent of the proceeds. Use of the funds is a simpler process than that associated with a grant program.</p>	<p>Taxes on products are generally collected at the time of sale. General fund appropriations require no special collection process. Grant programs are generally costly to administer.</p>	<p>Collection and use of airport revenue represent a simpler process than that associated with a grant program.</p>
<p>The federal government cannot specify what development is funded, but it can influence the distribution of some of the funds through matching share requirements on federally funded projects. The bond issuer chooses what development is funded.</p>	<p>The federal government cannot specify what development is funded. But about 1/5 of state grants fund federal grant matching requirements.</p>	<p>Federal law requires airports to retain all revenue for airport purposes, but the federal government cannot specify what development is funded. However, federal matching requirements influence the distribution of some of the funds.</p>
<p>Not applicable.</p>	<p>Not applicable.</p>	<p>Not applicable.</p>

^aEquity and efficiency issues are discussed for each financing mechanism individually in this table, but the issues must also be assessed from the perspective of all of the financing mechanisms used collectively. While a single mechanism may be more or less equitable or efficient than another mechanism, collectively the financing sources may produce more or less equity or efficiency than any one financing approach. While airport users are the primary beneficiaries of airports, the general public and individual localities may also benefit even if they do not use the airports. In addition, some funding sources collect funds only from airport users, while others result in payments by nonusers. It is not known whether the funding sources collectively match payments made in proportion to the benefits received by airport users, the general public, and localities.

Increasing AIP Would Help Smaller Airports

Increasing the total AIP funding would benefit smaller airports more than hub airports under the existing distribution formula. Increasing the level of AIP under the existing distribution formula provides a slightly increasing share of AIP funds to the smaller airports, with a concomitant decrease for the large and medium hub airports. The Congress increased AIP funding for fiscal year 1998 by \$240 million to \$1.7 billion, but \$647 million less than the 1998 authorized level of \$2.347 billion, a funding level supported by the airport groups—the American Association of Airport Executives (AAAE) and Airports Council International-North America (ACI-NA). Both the National Civil Aviation Review Commission and the Air Transport Association (ATA), the commercial airline trade association, have recommended that future AIP funding levels be stabilized at a minimum of \$2 billion annually. Table 3 provides the amount and share of funds that may go to hub airports and other smaller airports if AIP funding were made available at the current (\$1.7 billion), proposed (\$2.0 billion), and authorized (\$2.347 billion) levels under the existing distribution formula.

Table 3: Estimated Distribution of AIP Funds at Different Funding Levels

Dollars in millions

AIP funding level	Large and medium hub airports ^a		Small hub, nonhub, other commercial service, and general aviation airports ^a	
	Amount ^b	Percent of total	Amount ^b	Percent of total
\$1,700.0	\$628.9	39.44	\$965.8	60.56
\$2,000.0	\$718.1	37.90	\$1,176.7	62.10
\$2,347.0	\$821.2	36.63	\$1,420.6	63.37

^aDollar amounts are based on 1996 enplanements and exclude about \$105.2 million in estimated carryover amounts.

^bThe distribution of funds for the cargo entitlement, the noise set-aside, and remaining discretionary funds (discretionary funds other than those for the noise set-aside, the general aviation/reliever/other commercial service set-aside, the small hub set-aside, and letters of intent), is based on the proportional distribution of those funds during fiscal year 1997, the first year under the revised distribution formula established in the 1996 reauthorization.

Smaller airports’ increasing share of AIP under higher funding levels is due primarily to higher levels of state apportionment funds and higher levels of discretionary funding if AIP funding increases.⁷ State apportionment funds constitute 18.5 percent of the total program funding, and those funds are for general aviation airports. As AIP increases, state entitlement funds

⁷There are two categories of AIP grants—apportionment and discretionary. Apportionment grants are distributed by formula to primary airports (on the basis of enplanements) and states (on the basis of population). Discretionary grants can generally be used for any eligible airport development project, although the Congress has earmarked or “set aside” some discretionary funding for certain types of airports or projects, such as for smaller airports and noise mitigation.

increase from \$314.5 million (at a \$1.7 billion level of AIP), to \$370 million (at \$2.0 billion of AIP), and finally to \$434.2 million (at \$2.347 billion of AIP). Under the current formula, the amount of apportionment funds for primary airports remains constant and, therefore, increasing total funding causes discretionary funding to account for an increasing proportion of the total funds. Greater discretionary funding, in turn, means more funding for smaller airports because one-third of discretionary funding in excess of \$300 million is directed to general aviation and other commercial service airports. For example, the one-third set-aside for general aviation and other commercial service airports increases from \$29.9 million at the \$1.7 billion level, to \$81.3 million at the \$2.0 billion level, and finally to \$140.7 million at the \$2.347 billion level.

While the National Civil Aviation Review Commission and the ATA have recommended a minimum funding level of \$2.0 billion for AIP, the ATA also has recommended redefining airport categories and the distribution formula for AIP. The ATA proposes that national system airports be grouped into four categories and that a specified portion of AIP funds be distributed to airports in each category. As table 4 shows, a slightly higher portion of a \$2.0 billion AIP would go to the larger airports and a slightly smaller portion to the smaller airports under the ATA's proposal than under the current approach.

Table 4: Comparison of the Air Transport Association's Proposed Distribution of AIP Funds With the Current Distribution

ATA's airport category	ATA's criteria for airport category	Airports included in the category ^a	ATA's distribution of AIP funds (percent)	Current distribution of AIP funds ^b (percent)
Primary commercial service	Over 5 million enplanements	29 large hubs and 5 medium hubs	55	52.68
Secondary commercial service	250,000 to 4.9 million enplanements	37 medium hubs, 70 small hubs, and 7 nonhubs		
Other commercial service	10,000 to 249,999 enplanements	265 nonhubs	45	47.32
General aviation	All other national system airports	127 nonprimary commercial service and 2,764 general aviation		

^aBased on 1996 enplanements. Comparative groupings differ from elsewhere in the report owing to the availability of data.

^bThese percentages are estimated on the basis of a \$2.0 billion for AIP level and the current distribution formula and were not adjusted to incorporate funds for the seven nonhubs in ATA's secondary commercial service category into the totals for the hub airports. Thus, the differences between ATA's and the current distributions for the airport categories may be slightly narrower than depicted.

Under the ATA's proposal, the 55/45 percent distribution would remain constant at higher levels of AIP funding. With the increasing share of AIP funds that might go to the smaller airports at higher funding levels, the disparity between the ATA's proposal and the current distribution would increase.

Increasing PFC-Based Funding Would Aid Larger Airports

Increasing PFC-based funding would help larger airports that have a large passenger base, while only minimally aiding smaller airports. Airport groups have actively supported increasing the amount of funding airports can raise through PFCs by eliminating the current \$3 per passenger ceiling.⁸ Meanwhile, the ATA actively opposes any increase in PFCs because it would increase passenger costs and, the association believes, reduce passenger traffic. The National Civil Aviation Review Commission stated that the PFC ceiling will need to be raised if AIP funding is not substantially greater than \$2 billion per year, but the Commission has also recommended that airlines have a greater voice than they currently do in deciding whether an airport needs a PFC.

According to airport groups, airports require more PFC funding to reduce congestion at airports, especially for passengers trying to access the airport and moving through the terminal. For some airports, roadside and terminal congestion may be more severe than that on the airfield⁹ and harder to finance, according to airport groups, because airlines are not as supportive of nonairfield projects, and these projects are ineligible for or a low priority for AIP grants. As a result, a majority of past and future PFC collections are dedicated to terminal and airport access projects and interest payments on debt.¹⁰

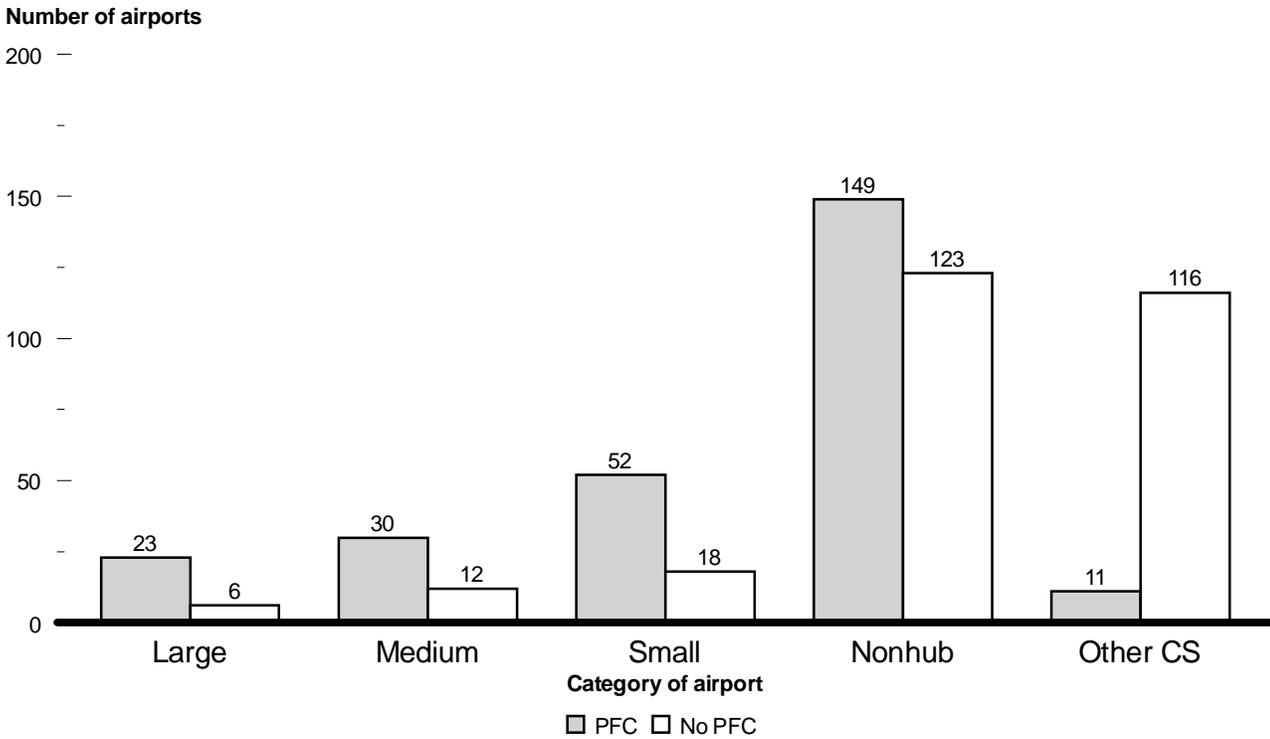
As of January 1, 1998, 264 commercial service airports—almost half of all such airports—imposed a PFC. The larger the airport, the greater the likelihood that a PFC is in place (see fig. 7). About three-quarters of large and medium hub airports impose a PFC, while only 45 percent of nonhub and less than 10 percent of other commercial service airports impose a PFC.

⁸PFCs are fees paid by passengers to airports. Airports may currently impose a \$1, \$2, or \$3 fee per flight segment, up to a maximum of four segments per round trip, subject to FAA's approval. For more information on PFCs, refer to app. I.

⁹FAA measures airside congestion and delays but does not gather information on the extent of landside congestion.

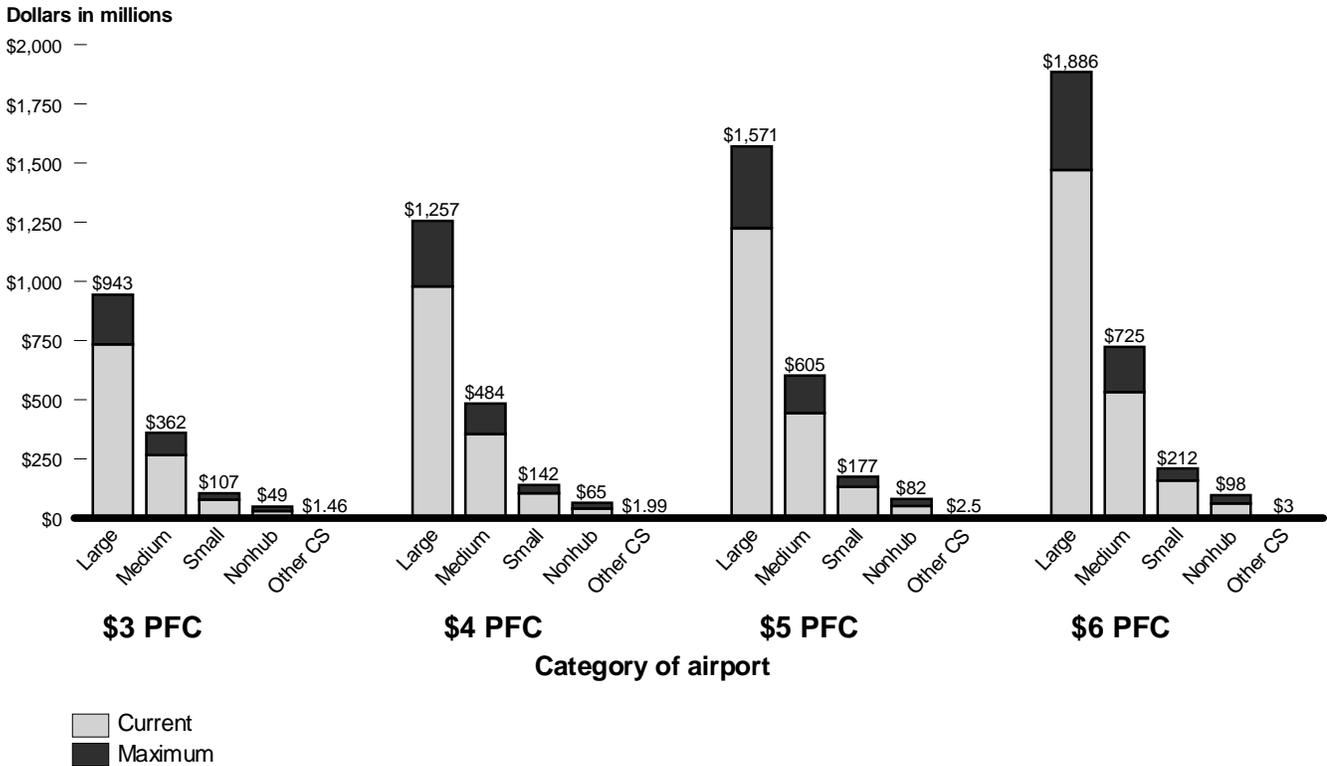
¹⁰Airport Improvement Program: Update of Allocation of Funds and Passenger Facility Charges, 1992-94 (GAO/RCED-95-225FS, July 1995).

Figure 7: Incidence of PFCs at Commercial Service Airports, January 1998



If the airports currently charging PFCs were to increase them to \$4, \$5, or \$6 per passenger instead of the current \$3 limit, total collections would increase to \$1.5 billion, \$1.9 billion, and \$2.2 billion, respectively, on the basis of 1996 enplanements and collection rates. On the basis of 1996 passenger levels, PFC collections could increase to \$2.9 billion, but only if all commercial airports imposed a \$6 PFC. Figure 8 shows the estimates by airport category. If enplanements continue to grow as expected, then future collections will be proportionally greater.

Figure 8: Current and Maximum PFC Collections Under \$3, \$4, \$5, and \$6 PFCs, January 1998



Note: The estimates are based on current collection rates and 1996 passenger enplanements.

Increasing the PFC ceiling would not substantially benefit smaller commercial airports. Because smaller airports have relatively few enplanements, PFCs do not generate much funding. In addition, while the PFC program requires large and medium hub airports that impose a PFC to forgo a portion of their AIP grants so that these funds can be redirected to

smaller airports,¹¹ most of these larger airports are already returning their maximum amount, according to FAA officials.

When PFCs were first introduced, airport groups hoped that PFCs would provide airports with additional cash flow that could be used to support more airport bonds and, therefore, capital development. However, the issuance of PFC-backed bonds has been limited, in part, by the Department of Transportation's authority to terminate a PFC if the airport does not use its collections as agreed or if it violates the Airport Noise and Capacity Act. Since 1995, FAA has worked to lessen the likelihood of termination by instituting a lengthy review and termination process, and, as a result, in 1996, two airports issued bonds secured by future PFC collections, and other airports are currently considering following suit.¹² Airports are also using their PFC collections as additional security in bonding arrangements, thereby expanding their overall debt capacity.

Innovative Financing Initiatives Demonstrate Limited Success

In recent years, FAA, with congressional urging and direction, has sought to expand airports' available capital funding through more innovative methods, including more flexibly applying AIP grants and attracting more private capital. The 1996 Federal Aviation Reauthorization Act gave FAA the authority to test three innovative approaches to financing airport development. In addition, the act authorized a pilot to privatize a limited number of airports. Thus far, these two innovative methods have attracted only limited interest among airports. Finally, another innovative alternative—funding state-administered loan funds for smaller airports—while not currently permitted, may hold some promise for increasing funding for smaller airports.

FAA's Pilot Program for Innovative Financing

Interest in alternative financing approaches was initially spurred by declining AIP funding and progress in establishing innovative approaches to finance surface transportation and other infrastructure improvements. In the FAA Authorization Act of 1994, the Congress directed FAA to study innovative approaches to using federal funds to finance airport development.¹³ FAA's study, released in March 1996, determined that

¹¹Legislation requires that the yearly grants to large and medium hub airports be reduced by 50 percent of their annual collections or up to 50 percent of their annual apportionment, whichever is less. The forgone grants are redistributed as discretionary grants, primarily to smaller airports—one-half to nonhub airports, one-quarter to general aviation airports, one-eighth to small hubs, and the final one-eighth is available to any airport. Since this provision was first implemented, \$647 million in AIP grants has been redistributed under it.

¹²In 1996, Little Rock and Chicago O'Hare issued bonds backed by future PFC collections.

¹³Section 520 of the Federal Aviation Administration Authorization Act of 1994 (P.L. 103-305).

investment at large and medium hub airports has kept pace with aviation growth and that therefore these airports generally do not face systemic financial constraints.¹⁴ However, the study also found that small hub airports may be financially constrained, particularly in connection with terminal and other nonairfield projects. FAA's study examined four alternatives—a federal guarantee for airport loans; using AIP to fund reserve accounts that act as a safety margin for future interest and principal payments; using AIP to pay for bond insurance; and using AIP to capitalize an airport loan fund—as innovative means to increase airport investment. The study concluded that these options offered modest potential gains but possibly greater benefits in certain circumstances if directed to smaller airports and properly targeted to avoid crowding out current investment.

The 1996 FAA Reauthorization Act gave the FAA the authority to test three innovative uses for AIP grants—(1) permitting greater percentages of local matching for AIP grants, (2) paying interest costs on debt, and (3) purchasing bond insurance—for up to 10 projects.¹⁵ Thus far, FAA has received 30 applications and approved 5 projects with grants totaling \$15.36 million. All five projects test the first innovative use of grants—allowing local contributions in excess of standard grant matching amounts, which for most airports and projects are otherwise fixed at 10 percent.¹⁶ FAA and state aviation representatives generally support the concept of flexible matching because it means that projects that otherwise might not get under way because of a lack of funding from FAA, can get started sooner; in addition, flexible funding may ultimately increase funding to airports. Applicants have shown less interest in the other two options, which, according to FAA and investment banking officials, do not offer new or substantial benefits for airports.

FAA's Pilot Program for Privatization

Declining airport grants and broader government privatization efforts spurred interest in airport privatization as another innovative means to bring more capital to airport development, but thus far efforts have shown only limited results. As we previously reported, the sale or lease of airports in the United States faces many hurdles, including legal and economic

¹⁴Based on econometric analysis of airports' investment in airfield and landside facilities and of aviation growth (as measured by aircraft operations) for 1986 through 1994.

¹⁵Section 148 of the Federal Aviation Reauthorization Act of 1996 (P.L. 104-264).

¹⁶Except terminal development, which is fixed at a 25-percent local share; airport planning and development for large and medium hub airports, fixed at 25 percent; and noise compatibility programs for large and medium hub airports, fixed at 20 percent.

constraints.¹⁷ As a way to test privatization's potential, the Congress directed FAA to establish a limited pilot program under which some of these constraints would be eased.¹⁸ Starting December 1, 1997, FAA began accepting applications from airports to participate in the pilot program on a first-come, first-served basis for up to five airports. Thus far, two airports have applied to be part of the program.¹⁹

State Revolving Funds

Allowing FAA to capitalize states' revolving airport loan funds with AIP grants is an innovative concept that some federal transportation, state aviation, and airport bond rating and underwriting officials believe would help smaller airports obtain additional financing. State revolving loan funds have been successfully employed to finance other types of infrastructure projects, such as waste water projects and, more recently, drinking water and surface transportation projects. While loan funds can be structured in various ways, basically they use federal and state moneys to capitalize the funds, from which loans are then made. Interest and principal payments are recycled to provide additional loans. Once established, loan funds can more quickly expand by issuing bonds using the funds' capital and loan portfolio as collateral. These revolving funds would not create any contingent liability for the U.S. government because they would be under state control. Some officials of bond rating agencies, underwriting firms, and federal and state transportation agencies believe that revolving loan funds would help smaller airports that have trouble obtaining affordable debt financing. Loan funds could also help speed construction and lower construction costs by providing financing up front, instead of incrementally, as is the case with AIP grants, according to a rating agency official.

FAA cannot use AIP grants to capitalize state loan funds because AIP construction grants can go only to a designated airport and project. Recently, FAA received an application from a state for an AIP grant to help establish a revolving fund as part of FAA's pilot program for innovative financing. However, the application was denied because FAA officials determined that such a grant could be construed as a guarantee of airport debt, which is expressly prohibited under the program. Currently, Florida is the only state with an established revolving loan program. Since 1985, the state has provided \$75 million in loans to airports for land acquisition and capital projects. While some of the loans are later reimbursed through

¹⁷Airport Privatization: Issues Related to the Sale or Lease of U.S. Commercial Airports (GAO/RCED-97-3, Nov. 1996).

¹⁸Section 149 of the Federal Aviation Reauthorization Act of 1996 (P.L. 104-264).

¹⁹These airports are Brown Field near San Diego, a general aviation airport, and Stewart International in New York, a nonhub airport.

AIP grants for eligible projects, the state funds the loan program itself. In addition, 39 states have established state infrastructure banks (SIB) using federal and state grant money to fund surface transportation projects.²⁰ This same SIB structure could also be used to fund aviation projects, and at least one state—Ohio—has already authorized its SIB to fund aviation projects using state funds.

Conclusions

The total funding for airport development peaked in 1992 in real terms and declined to about \$7 billion in 1996. Meanwhile, planned development at airports may total as much as \$10 billion per year over the next 5 years. Most of this amount—perhaps as much as \$7 billion per year—is attributable to the potential costs of development at large and medium hub airports, which enplane 9 of every 10 passengers. Continued funding for these airports will be critical to ensuring adequate capacity for the national airport system and avoiding congestion and delays. However, while the need for funding at hub airports may be considerable, these airports also have access to many funding sources, particularly tax-exempt bonds. The more difficult problem may rest with meeting the funding demands of smaller airports.

Smaller airports, especially small, nonhub, other commercial service, and general aviation airports, confront a potential funding shortfall that in percentage terms is far greater than for larger airports. These airports have the fewest funding options, relying on federal grants for half of their funding, which is sufficient to fund FAA's highest priorities but little else. Protecting the financial viability of these smaller airports will require adequate funding from existing federal and state grant programs, but also more innovative applications of existing funding. FAA has been testing several innovative approaches authorized by the Congress and expects to report to the Congress on the results of this testing later this year. However, a state revolving loan fund was not among those tested, and while not a panacea, state loan funds may offer some potential for helping smaller airports fund their development. FAA has determined that it does not currently have the legal authority to use Airport Improvement Program grants to fund state revolving loan funds. Nevertheless, state revolving loan funds have the support of some federal transportation, state aviation, and airport bond rating and underwriting officials because they believe that the funds could provide loans to airports that otherwise might not have access to debt financing. In addition to expanding available

²⁰For additional information, refer to *State Infrastructure Banks: A Mechanism to Expand Federal Transportation Financing* (GAO/RCED-97-9, Oct. 1996).

financing, these loans could also speed construction and lower costs by providing funding up front.

Recommendation

To help smaller airports fund some of the cost of their capital development, but to avoid undermining the level of federal support for larger airports, we recommend that the Secretary of Transportation seek authority from the Congress to use Airport Improvement Program grants to capitalize state revolving funds in those circumstances where states have a demonstrated capability and desire to manage a revolving fund.

Agency Comments

We provided the Department of Transportation, FAA, the American Association of Airport Executives, the Airports Council International-North America, the Air Transport Association, and the National Association of State Aviation Officials with a copy of our draft report for review and comment. We met with agency and association officials, including the Director of FAA's Office of Airport Planning and Programming; the Senior Vice President, Federal Affairs, of the American Association of Airport Executives; the Executive Vice President of the Airports Council International-North America; the Senior Vice President, Federal Affairs and Airports, of the Air Transport Association; and the Vice President of the National Association of State Aviation Officials. The agency and associations generally agreed with the facts presented and provided some clarifying comments and information, which we included in the report as appropriate. Regarding our recommendation for state revolving loan funds, FAA stated that there is strong interest in revolving loan funds among the states and noted that FAA has received inquiries from states interested in pursuing creation of such funds.

Scope and Methodology

To develop estimates of various airport funding, we analyzed five different databases maintained by FAA, industry organizations, and private data vendors. We did not audit the accuracy of the databases but did perform some limited cross-checking of information to assess their reasonableness. We then compared these estimates to planned development as reported in our April 1997 report. A more detailed discussion of our data sources and analytical methodology is contained in appendix III. We conducted our work from June 1997 through February 1998 in accordance with generally accepted government auditing standards.

As agreed with your offices, unless you publicly announce its contents earlier, we plan no further distribution of this report until 7 days from the date of this letter. At that time, we will send copies of this report to the Secretary of Transportation and the Administrator, Federal Aviation Administration. We will also make copies available to others on request. Please call me at (202) 512-3650 if you have any questions about this report. Major contributors to this report are listed in appendix IV.



Gerald L. Dillingham
Associate Director, Transportation Issues

List of Committees

The Honorable John McCain
Chairman
The Honorable Ernest F. Hollings
Ranking Minority Member
Committee on Commerce, Science, and Transportation
United States Senate

The Honorable Slade Gorton
Chairman
The Honorable Wendell H. Ford
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Subcommittee on Aviation
Committee on Commerce, Science, and Transportation
United States Senate

The Honorable Bud Shuster
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The Honorable James L. Oberstar
Ranking Democratic Member
Committee on Transportation and Infrastructure
House of Representatives

The Honorable John J. Duncan, Jr.
Chairman
The Honorable William O. Lipinski
Ranking Democratic Member
Subcommittee on Aviation
Committee on Transportation and Infrastructure
House of Representatives

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Abbreviations

AAAE	American Association of Airport Executives
ACI-NA	Airports Council International-North America
AIP	Airport Improvement Program
ATA	Air Transport Association
FAA	Federal Aviation Administration
GAO	General Accounting Office
GARB	general airport revenue bond
PFC	passenger facility charge
SIB	state infrastructure bank

Sources of Airports' Capital Funding

Funding for airport development comes from five primary sources: federal Airport Improvement Program (AIP) grants, passenger facility charges (PFC), airport and special facility bonds, state grants, and airport revenue. Airports vary in their reliance on these sources of funds.

Federal Grants

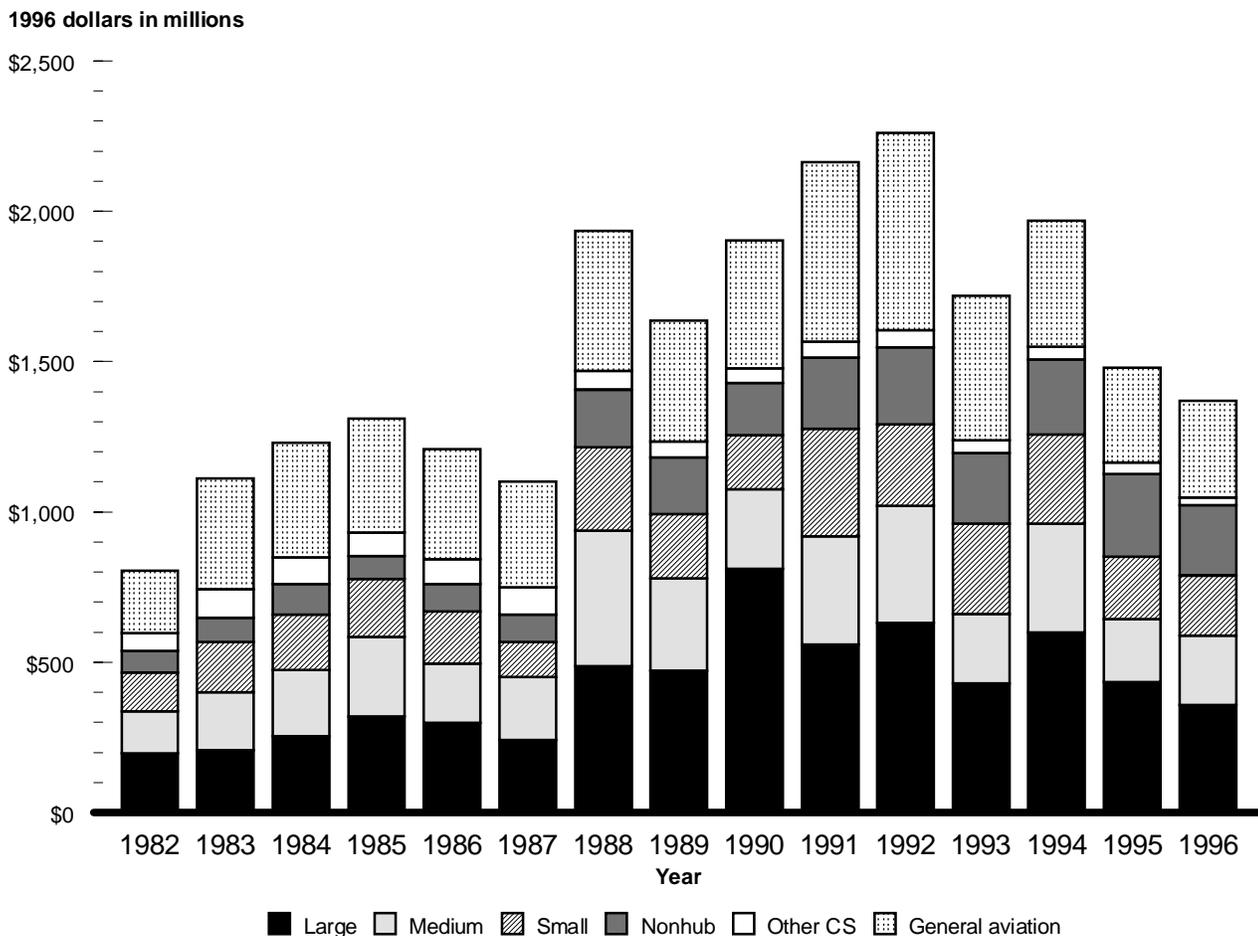
AIP grants are made available from the Airport and Airway Trust Fund.²¹ The Federal Aviation Administration (FAA) allocates most AIP grants on the basis of (1) a legislated apportionment formula, tied to the number of passengers an airport enplanes, and (2) set-aside categories earmarked for specific types of airports and projects. FAA has discretionary authority to allocate the remaining funds—about \$300 million out of the \$1.46 billion made available for fiscal year 1997—on the basis of needs identified by airports.

AIP grants peaked in 1992 at \$2.264 billion, as measured in 1996 dollars, and declined to \$1.372 billion in 1996, as shown in figure I.1.

²¹The Trust Fund is financed by taxes on domestic and international airline travel, domestic cargo transported by air, and noncommercial aviation fuel.

**Appendix I
Sources of Airports' Capital Funding**

Figure I.1: AIP Grants by Category of Airport, 1982 Through 1996



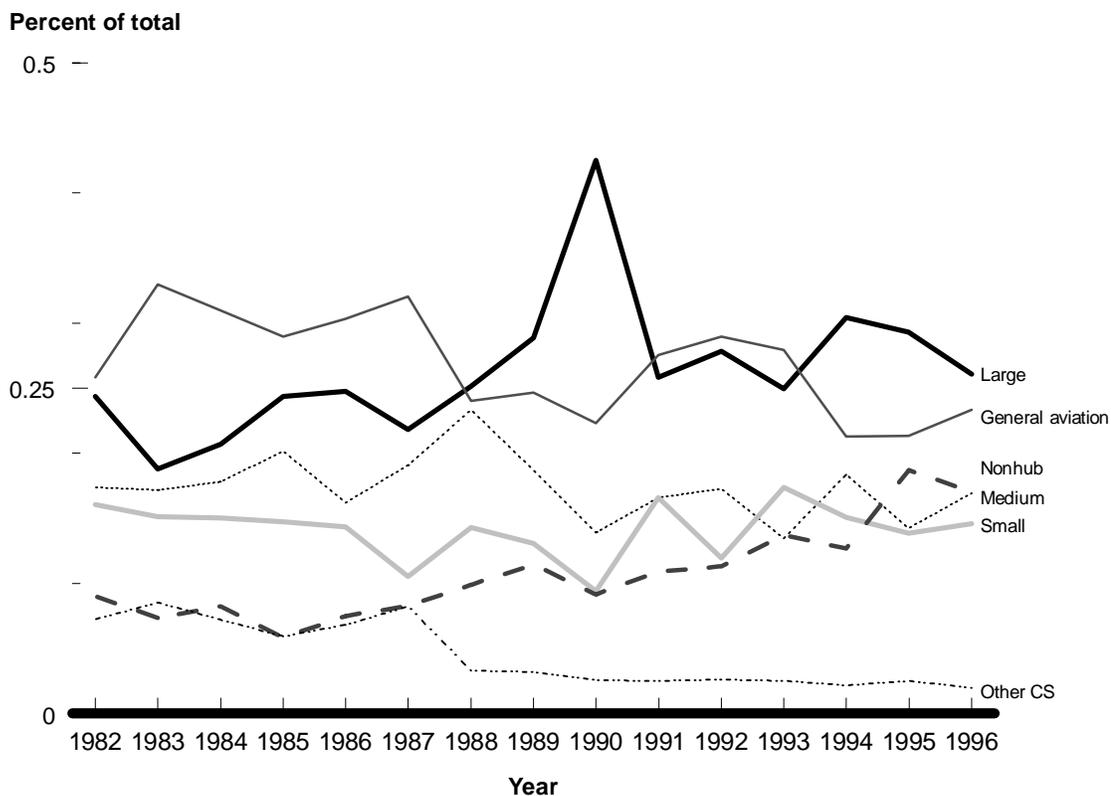
Note: Represents obligated amounts. System planning and state block grants are included with general aviation, where most of the benefit is derived.

While total AIP funding grew during the program's first decade and then declined since 1992, the allocation of funds among the various airport categories has been fairly consistent. Over the 15-year period, large hub airports garnered 27 percent of the grants, followed closely by general aviation airports (26 percent) and, to a lesser extent, medium hubs (17 percent), small hubs (14 percent), nonhubs (11 percent), and other

Appendix I
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commercial service airports (4 percent). Figure I.2 shows the percentage of AIP funding that each category of airport received in each of the last 15 years.

Figure I.2: Allocation of AIP Funds by Category of Airport, 1982 Through 1996



Note: In 1987, the Congress expanded the number of primary (nonhub) airports and conversely reduced the number of, and funding for, other commercial service airports.

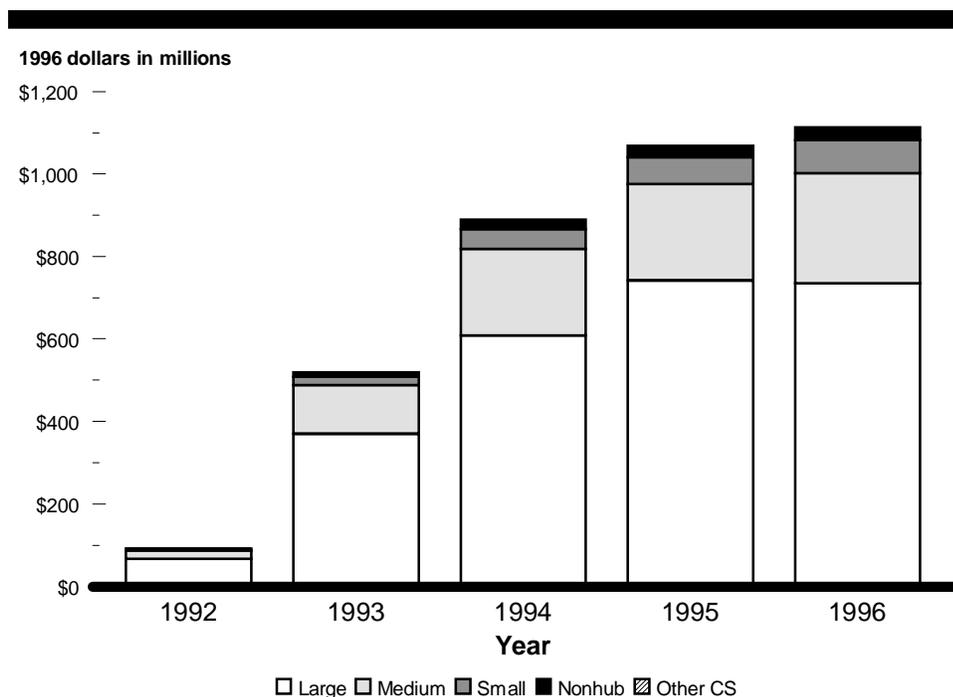
AIP funding for hub airports has ranged between 51 and 66 percent of the total. Meanwhile, the funding share for nonhubs has consistently grown, while general aviation airports' share has generally stayed between 21 and 33 percent of the total.

Passenger Facility Charges

In 1990, the Congress gave commercial airports the option to impose a PFC as an additional means to raise funds for development. Beginning in 1992, authorized airports were able to collect up to \$3 per enplaned passenger to use for projects that are eligible for AIP and for certain other types of costs that are not, such as debt financing costs. Airports must apply to FAA for the authority to collect the charges.

Large hub airports accounted for two-thirds of all PFC collections in 1996, while medium hub airports accounted for another 24 percent of total collections. Figure I.3 shows PFC collections by category of airport.

Figure I.3: PFC Collections by Category of Airport, 1992 Through 1996



Airport Bonds

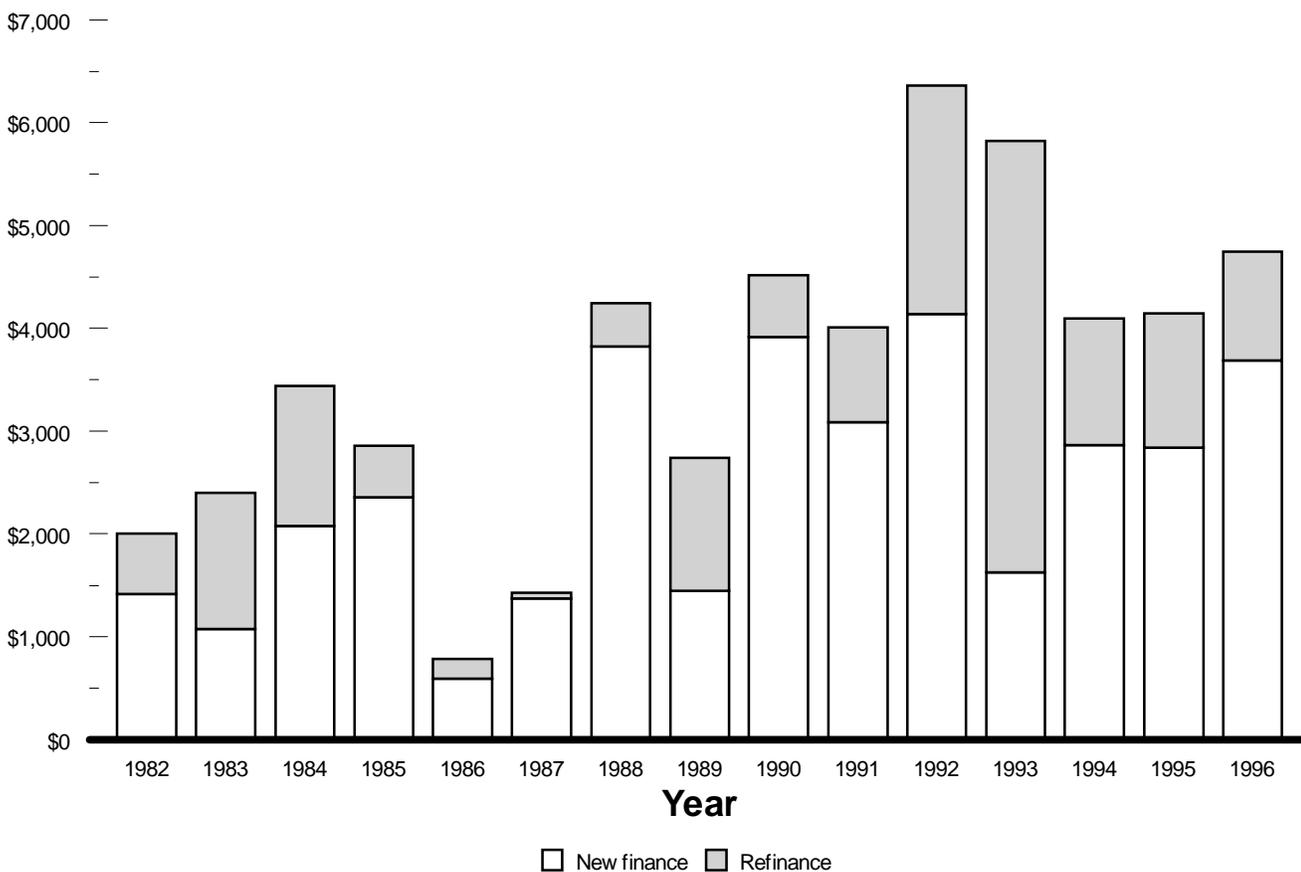
The single largest category of airport funding is bonds. Even before 1982, airports were fairly sophisticated in their use of debt to finance future development. From 1982 through 1996, airports issued \$53.6 billion worth of bonds. Roughly \$17.3 billion, or one-third of this total, was to refinance existing debt, while the other \$36.3 billion, or two-thirds, was new financing for airports' capital development. As figure I.4 shows, the total amount of bonding, as well as the split between "refinance" and "new

Appendix I
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finance,” varies from year to year. For example, when interest rates fell in 1992 and 1993, many airports refinanced their outstanding bonds. The figure also shows that the amount of new finance for airport development increased from less than \$1.5 billion in 1982 to more than \$3.7 billion in 1996.

Figure I.4: Airport Bonding, Total and New Finance, 1982 Through 1996

1996 dollars in millions

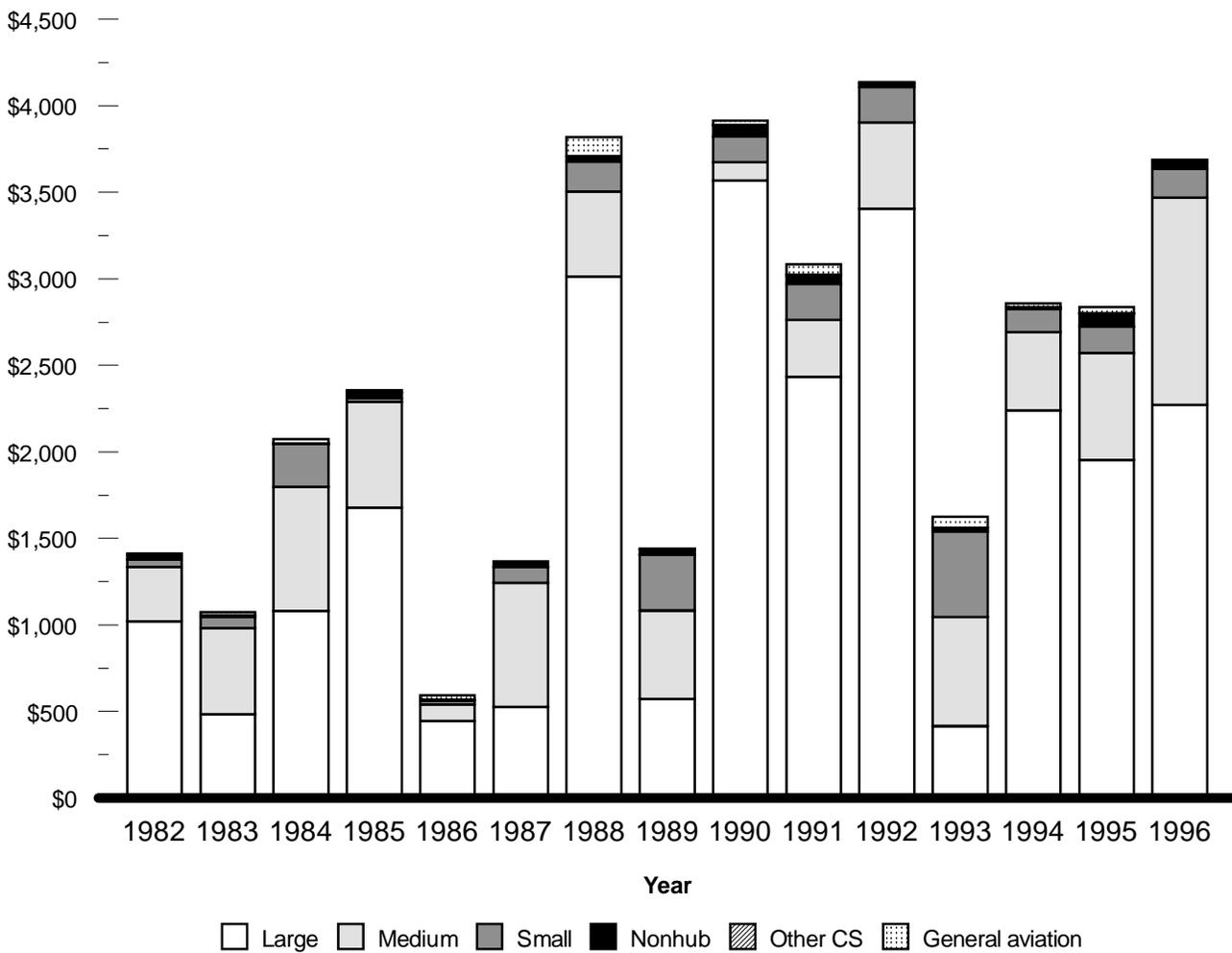


Since 1982, the vast majority of airport bonds have been issued by large and medium hub airports, nearly \$33 billion of a total \$36 billion. Figure I.5

Appendix I
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shows the distribution of new finance from airport bonds by the category of issuing airport.²²

Figure I.5: Airport Bonds, Net Refinancing, by Category of Airport, 1982 Through 1996
 1996 dollars in millions



²²Some bonds are issued by airport systems for use by more than one airport. For large systems, such as Hawaii's and Alaska's, we allocated the bonds on the basis of how the proceeds were distributed. For smaller systems, we allocated funds to the largest airport in the system, which may have created a small bias in favor of larger airports.

Despite the \$25 billion in new bonds issued by large hub airports from 1982 through 1996, their capacity to issue new debt has not been harmed. As we reported in 1996, large hub airports' operating ratios did not decline between 1988 and 1994, indicating that revenue kept pace with increased debt service costs.²³

More than 95 percent of all airport debt issued since 1982 has been in the form of general airport revenue bonds (GARBS), which are secured by an airport's future revenue. Thirty years ago, general obligation bonds, which are backed by the taxing power of a governmental unit, were far more common because of their stronger credit standing and therefore lower financing costs. The decline in general obligation bonds reflects the improved acceptance of GARBS by investors. Today, general aviation airports have been the most common issuer of general obligation bonds for airport development.

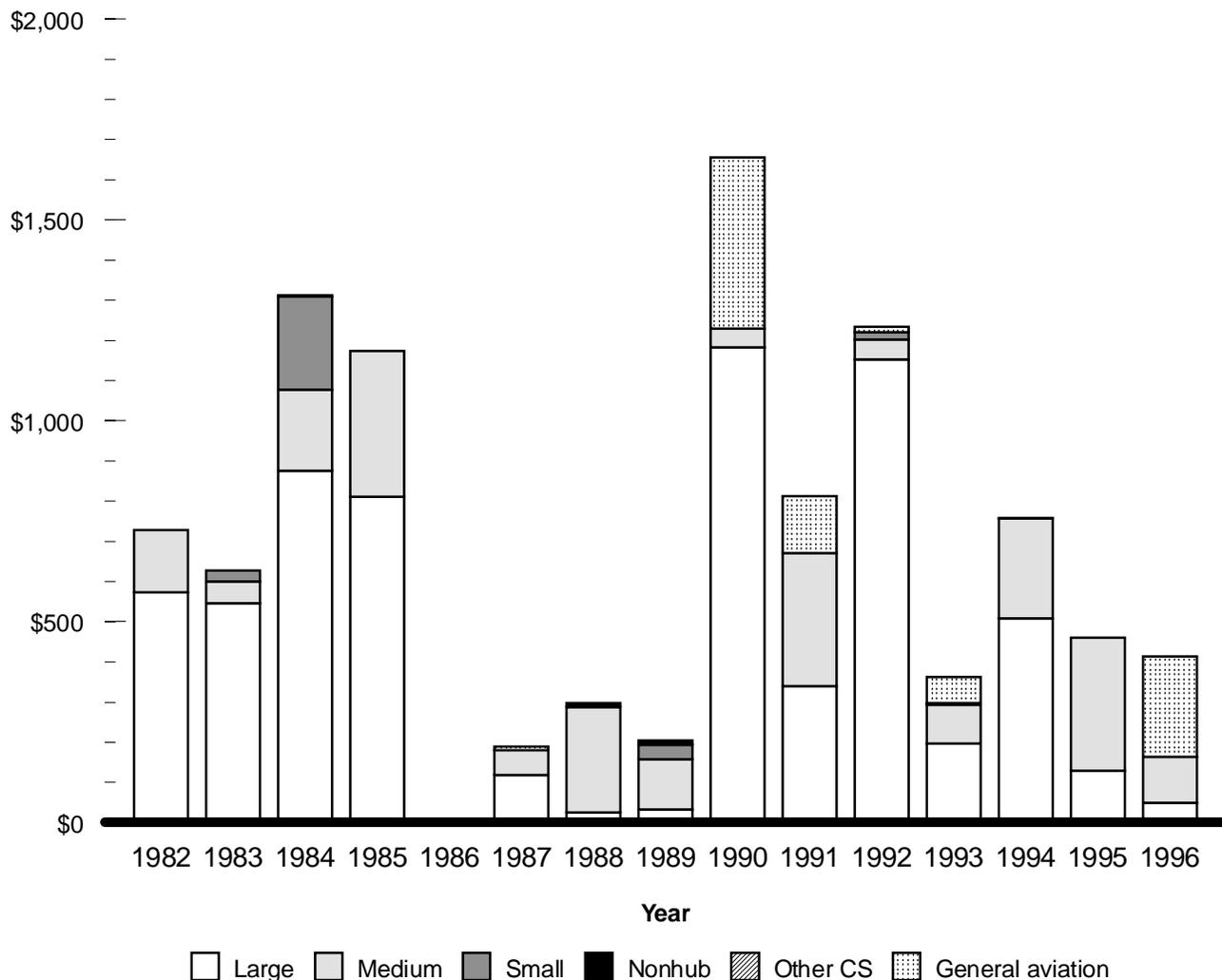
Special Facility Bonds

A special category of airport bonds is special facility bonds. While still issued by the airports' sponsors in order to obtain tax-exempt status, the special facility bonds are secured by the revenue from the indebted facility, such as a terminal, hangar, or maintenance facility, rather than the airports' general revenue. As figure I.6 shows, the amount of special facility bonds is especially volatile from year to year; they have tended to be issued by large hub airports.

²³AIP Funding for the Nation's Largest Airports (GAO/RCED-96-219R, July 31, 1996).

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Figure I.6: Airport Special Facility Bonds, Net Refinancing, by Category of Airport, 1982 Through 1996
1996 dollars in millions

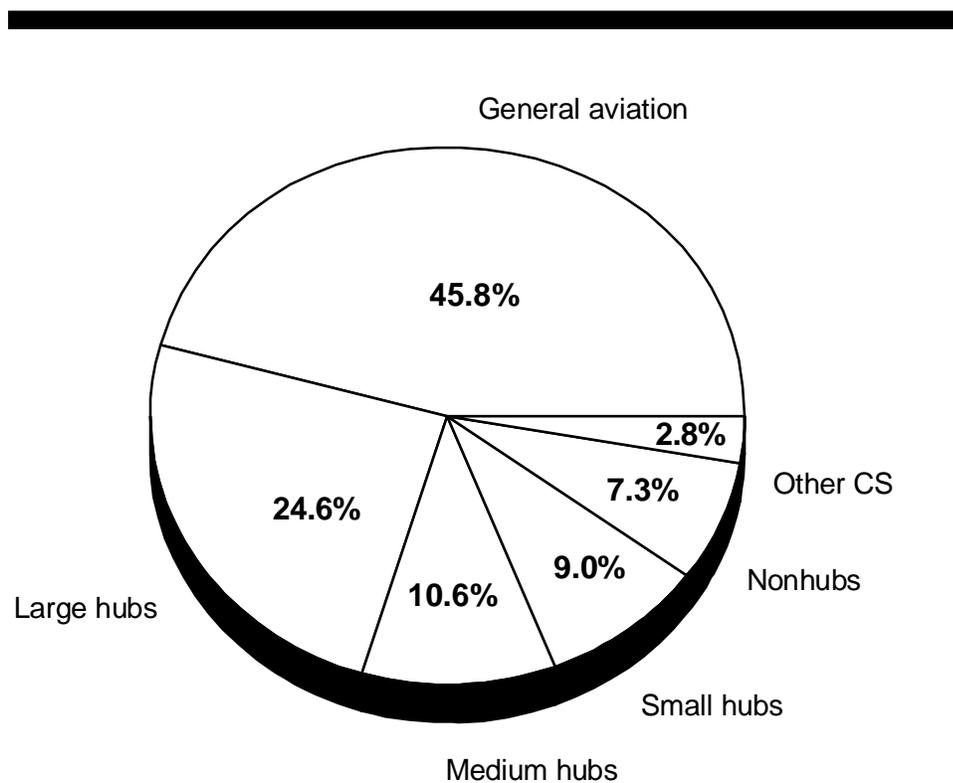


The annual amount of special facility bonds is more volatile than that for regular airport bonds because fewer special facility bonds are issued for larger amounts than regular airport bonds; since 1982, 158 special facility bonds averaging \$64.7 million have been issued versus 1,181 airport bonds averaging \$38.8 million per issue.

State Grants

Nearly all states provide financial assistance to airports, primarily in the form of grants as matching funds for AIP grants or as separate state grants. States fund their grant programs through a variety of sources, including aviation fuel and aircraft sales taxes, highway taxes, bonds, and general fund appropriations. State funding data have been aggregated periodically by the National Association of State Aviation Officials, which began its current annual reporting of state data in 1996. States provided about \$285 million to national system airports in the states' fiscal year 1996.²⁴ Figure I.7 shows the distribution of those grants by airport category.

Figure I.7: State Grants to Airports by Category of Airport, States' Fiscal Year 1996



About 20 percent of state grants, or \$57.3 million, was used to supplement AIP grants; the other 80 percent of grants, or \$227.4 million, was provided

²⁴Data for Washington state include some state grants to general aviation airports that are not in the national system.

as separate grants. In addition, states provided some funds to airports that are not part of the national system.

Total state funding levels vary by state and by year. In the states' fiscal year 1996, two states—Florida and Maryland—accounted for 45 percent of state grants, while six states provided no grants to national system airports. Also, states offer a slightly greater share of their grants to smaller airports than does the federal government grant program. In 1996, about 56 percent of state grants went to nonhub, other commercial service, and general aviation airports, while only about 42 percent of federal grants went to these same airports.

Airport Revenue

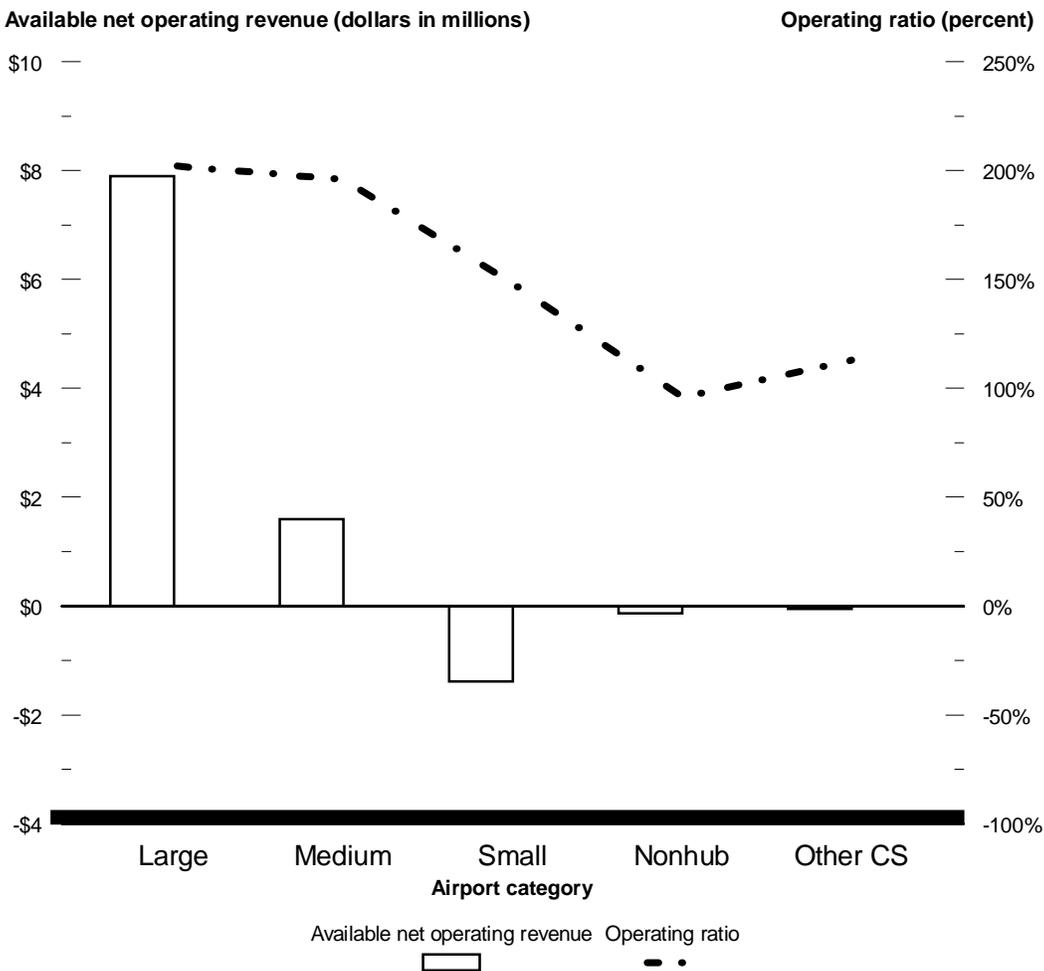
Airports generate revenue from landing fees and terminal leases (both paid by airlines), concessions (such as parking fees), and other income (such as advertising and fuel sales). Airports' operating revenue supports airports' operating expenses, debt service costs, and, to the extent available, other nonoperating expenditures, such as capital development. Using airports' operating revenue to fund development is sometimes referred to as "pay-as-you-go" financing, as opposed to leveraging future revenue to obtain bonds. In addition, to satisfy bond covenants and rating agencies, airports must reserve some portion of their operating revenue to ensure their ability to meet future debt service costs.

Beginning in 1996, FAA required commercial airports receiving grants to report financial statement information.²⁵ Of the 355 commercial airports, 63 percent reported audited financial information, from which we calculated airports' net operating revenue (operating revenue minus operating expenses) and, in consideration of airports' debt service and coverage requirements, any portion of net operating revenue in excess of 125 percent of debt service costs (the minimum coverage required by most bond agreements). While not an exact figure for revenue used to support capital development, it is a reasonable estimate of the revenue available for that purpose, according to rating agency officials. Figure I.8 compares airports' mean net operating revenue in excess of 1.25 times debt service.

²⁵Section 111 of Federal Aviation Administration Authorization Act of 1994 (P.L. 103-305).

Appendix I
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Figure I.8: Airports' Available Net Operating Revenue and Operating Ratios, 1996



Note: Data are unavailable for general aviation airports.

As figure I.8 shows, on average, large and medium hub airports generated modest revenue that can be used for capital development. In addition, large and medium hub airports produced a mean operating ratio, a measure of operational liquidity, twice that of nonhubs and other commercial service airports, which generally operate at or below the break-even point. While operating revenue data for general aviation

airports were not available, a recent study for FAA by Gellman Research Associates found that most general aviation airports operate at less than the break-even point, often having to rely on the local municipality for operating subsidies.

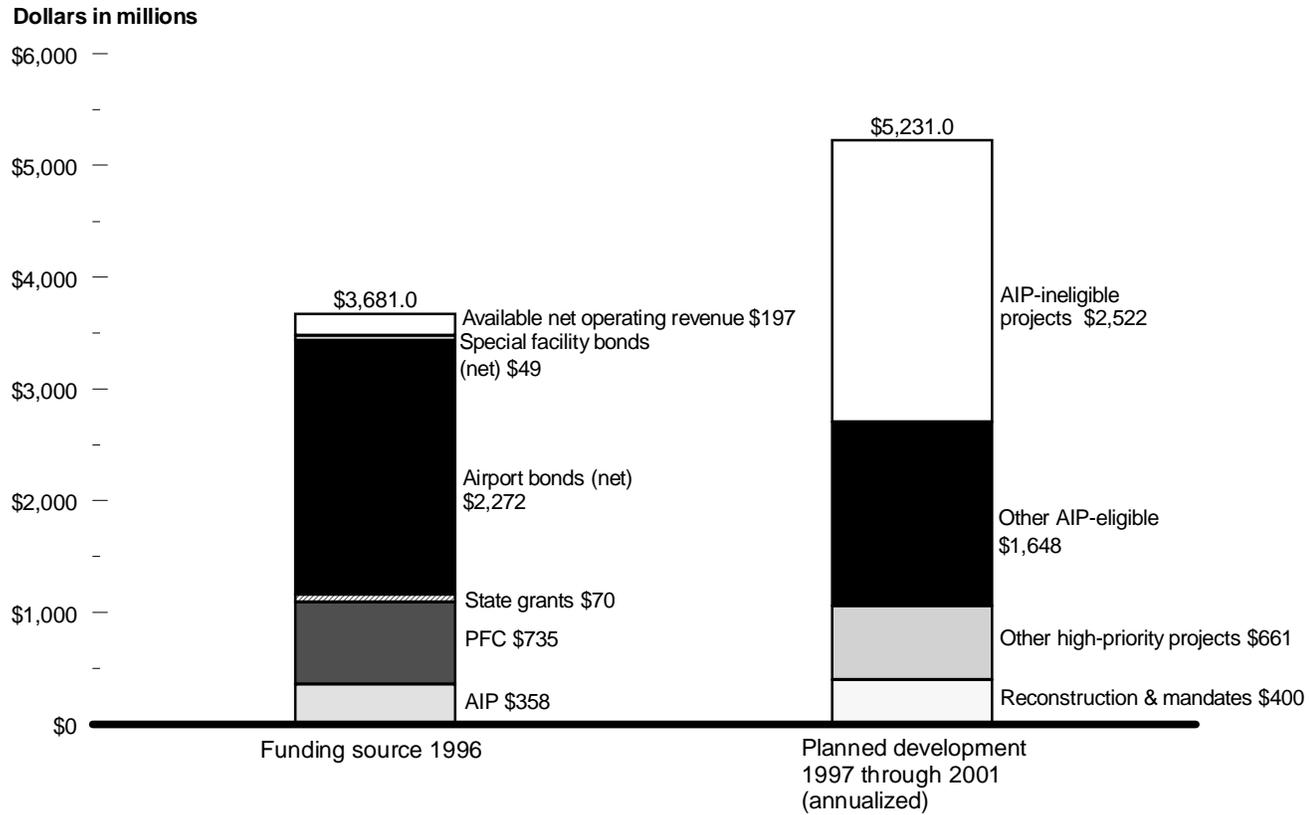
Other Capital Sources

According to rating agency officials, federal and state grants, PFCs, bonds, and airport revenue make up the vast majority of capital funding sources for airports. Although some local municipalities and outside developers may help finance airport development, little information exists that documents the magnitude or prevalence of these sources. According to FAA officials, local municipalities occasionally provide funding to airports, primarily to smaller airports and primarily as operating rather than capital subsidies. We found only one example of local financing for development.²⁶

²⁶Allegheny County, which owns and operates Pittsburgh International, provided a loan of \$42.5 million dollars to the airport to help finance construction of airport roadway projects in the early 1990s.

Current Funding and Planned Development

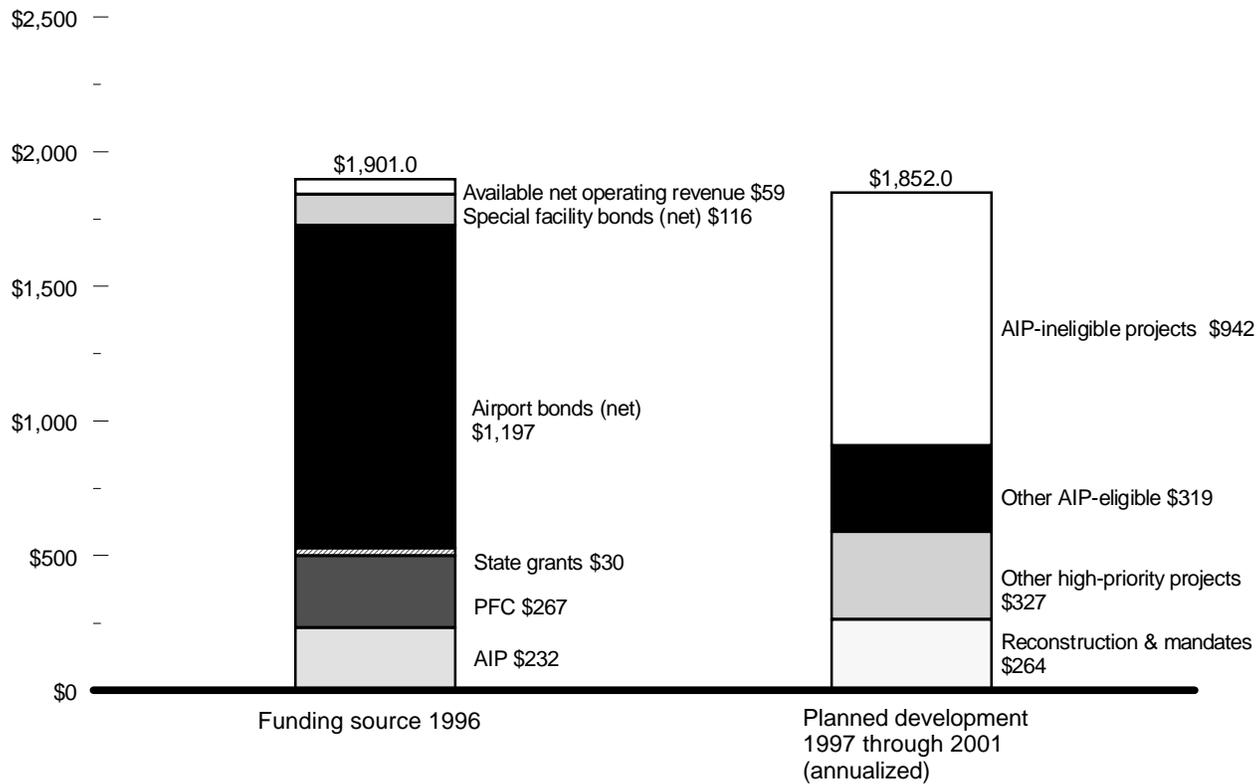
Figure II.1: Large Hub Airports: 1996 Funding Compared to Planned Development



**Appendix II
Current Funding and Planned Development**

Figure II.2: Medium Hub Airports: 1996 Funding Compared to Planned Development

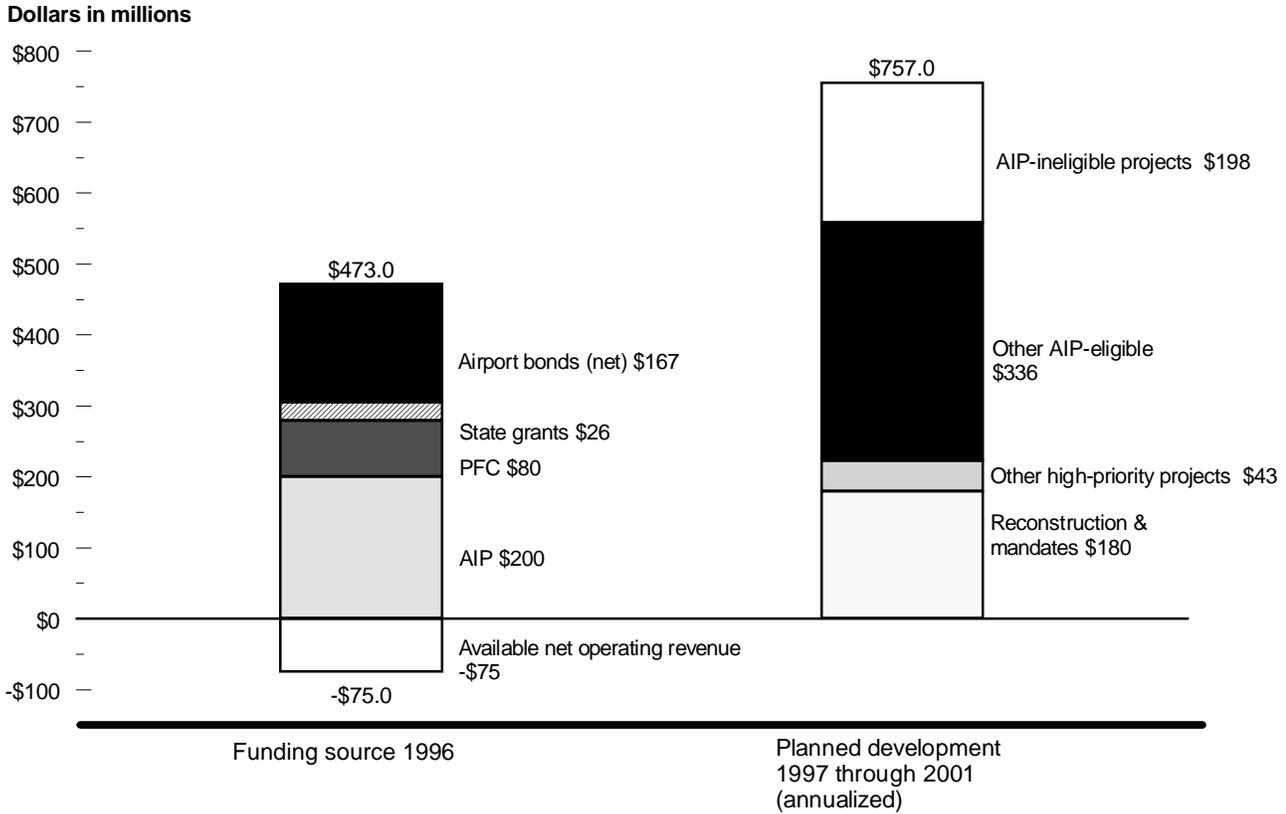
Dollars in millions



Note: Medium hub airport bonds in 1996 more than doubled the prior 5-year average.

**Appendix II
Current Funding and Planned Development**

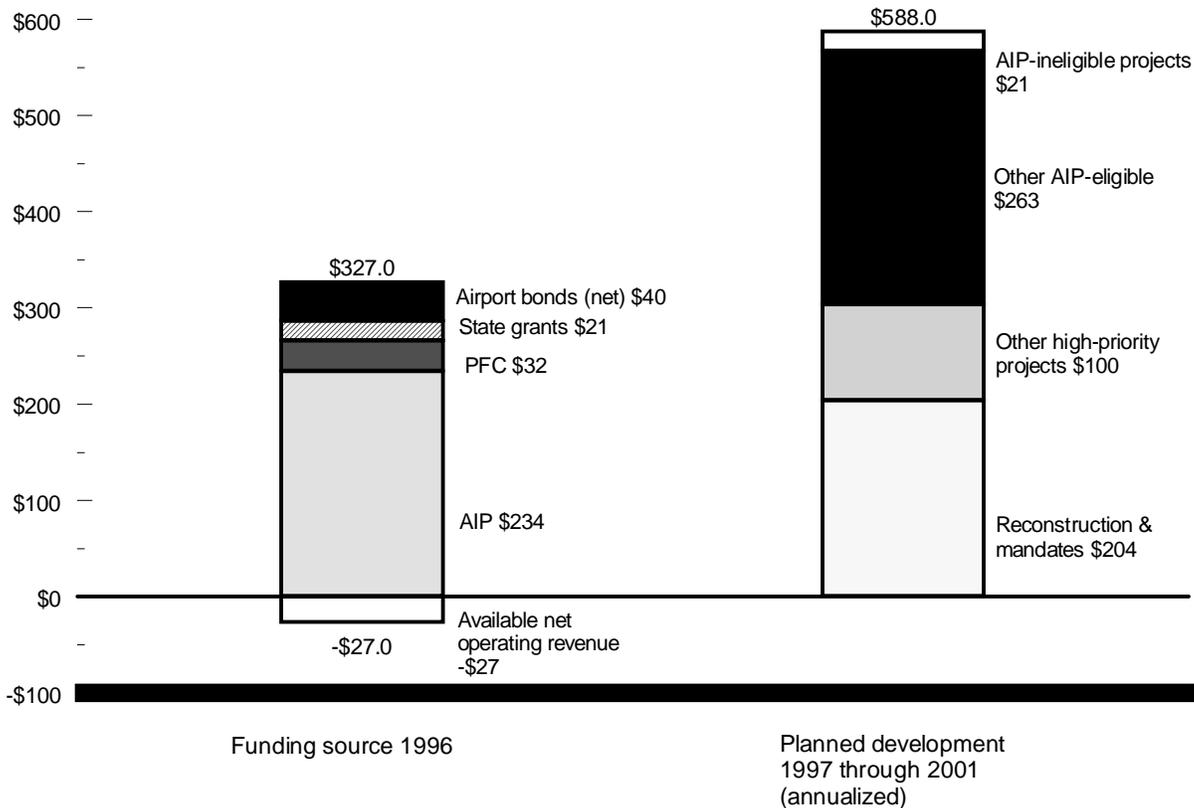
Figure II.3: Small Hub Airports: 1996 Funding Compared to Planned Development



**Appendix II
Current Funding and Planned Development**

Figure II.4: Nonhub Airports: 1996 Funding Compared to Planned Development

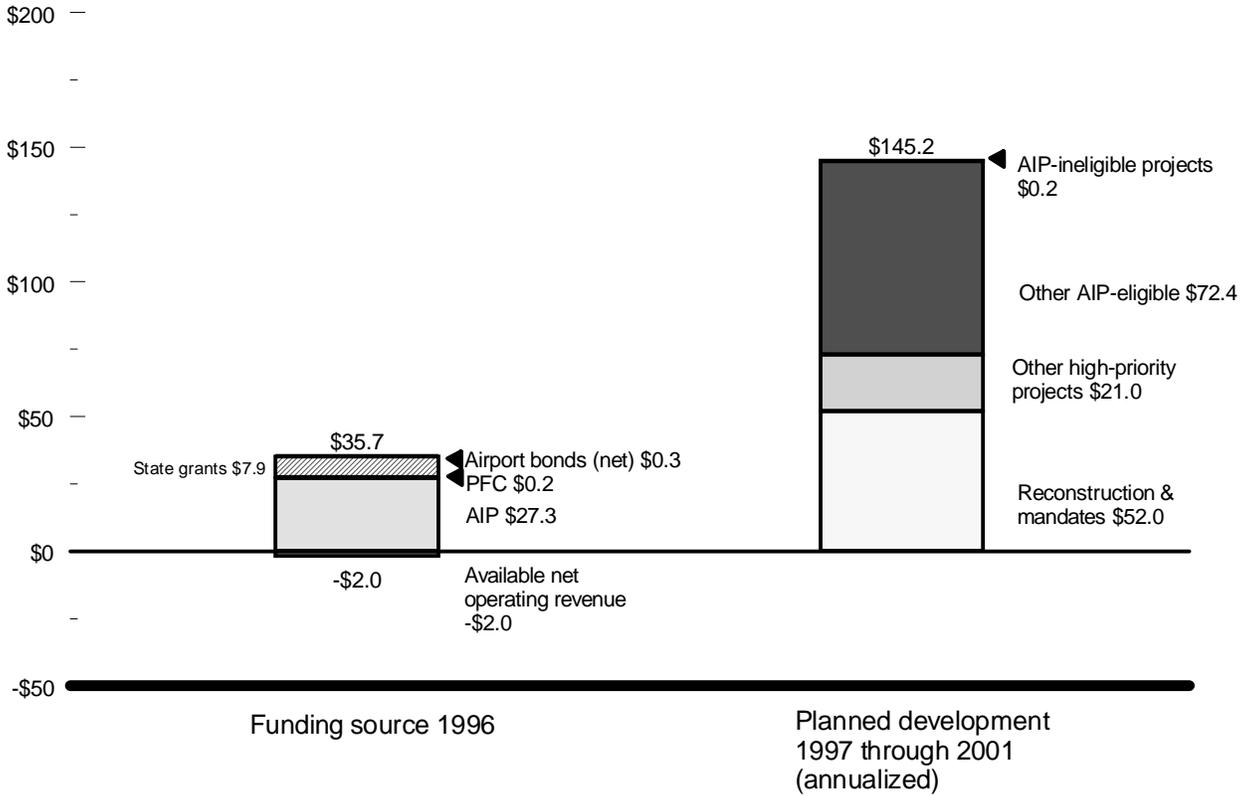
Dollars in millions



Appendix II
Current Funding and Planned Development

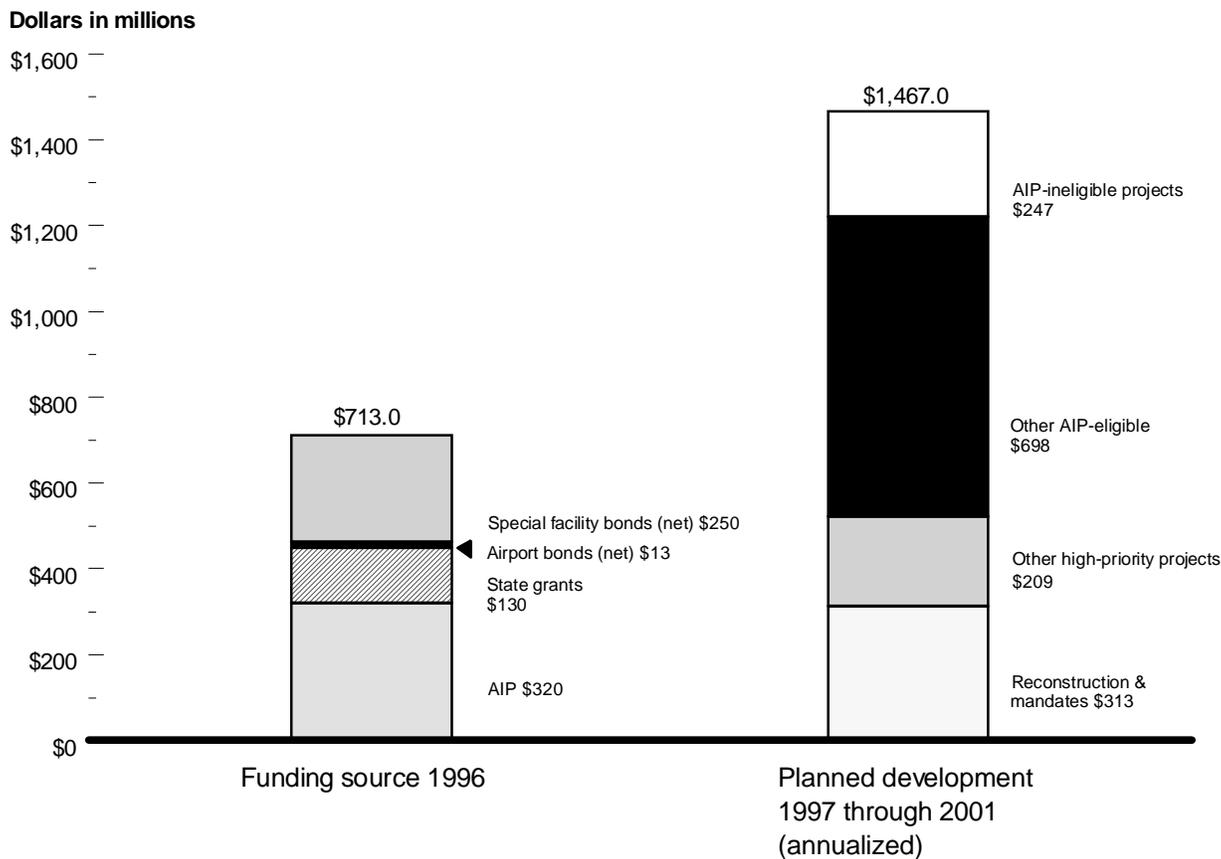
Figure II.5: Other Commercial Service Airports: 1996 Funding Compared to Planned Development

Dollars in millions



**Appendix II
Current Funding and Planned Development**

Figure II.6: General Aviation Airports: 1996 Funding Compared to Planned Development



Data on general aviation airports' revenue are unavailable. Special facility bonding was \$250 million for one airport.

Scope and Methodology

To determine how much airports of various sizes are spending on capital development and from which sources, we sought data on airports' capital funding because comprehensive airport spending data are limited and because, over time, funding and spending should roughly equate. We obtained capital funding data from the FAA, the National Association of State Aviation Officials, the Securities Data Company, the Airports Council International-North America, and the American Association of Airport Executives. We screened each of these databases for their accuracy to ensure that airports were correctly classified and compared funding streams across databases where possible. We did not, however, audit how the databases were compiled or test their overall accuracy, except in the case of state grant data from the National Association of State Aviation Officials, which we independently confirmed. We subtotaled each funding stream by year and airport category and added to other funding streams to determine the total funding. With FAA, bond rating agencies, bond underwriters, airport financial consultants, and airport and airline industry associations, we then discussed the data and our conclusions to verify their reasonableness and accuracy.

To determine whether current funding is sufficient to meet planned development for the 5-year period from 1997 through 2001 for each airport category and overall, we compared total funding to planned future development as determined in our prior report on airport development. We also compared funding from AIP to higher-priority projects to assess the relative balance between federal funding and their primary intent. Additionally, we correlated each funding stream to the airports' size, as measured by activity, and among other funding streams to better understand airports' varying reliance on them and the relationships among sources of finance. We then discussed our findings with FAA, bond rating agencies, bond underwriters, airport financial consultants, and airport and airline industry associations to determine how our findings compared with their knowledge and experiences.

Finally, to evaluate how funding shortages, if they were found to exist, might be reduced, we examined several proposals and initiatives for their effect on funding and the relative distribution among different categories of airports. To evaluate the effects of increased AIP funding, we applied the current AIP formula and 1997 distribution percentages to larger funding levels. To evaluate the Air Transport Association's proposal, we categorized airports and distributions on the basis of 1996 enplanements and operational data. To evaluate the effects of raising the PFC ceiling, we estimated potential PFC collections under \$4, \$5, and \$6 PFCs on the basis

of 1996 enplanements and collection rates under two scenarios: (1) with only those airports currently with a PFC imposing one and (2) all airports imposing a PFC. To evaluate various innovative financing proposals, we first identified various proposals and initiatives from discussions with aviation industry associations and FAA and a review of prior studies and legislation. Specifically, the results of FAA's March 1996 report to the Congress on innovative approaches to the use of federal funds formed the basis for the primary alternatives we considered. We discussed the potential for each of these alternatives with FAA, bond rating agencies, bond underwriters, airport financial consultants, and airport and airline industry associations. We also determined the status of FAA's pilot programs for innovative financing and privatization.

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