Chapter 3

States: Caught in the Middle

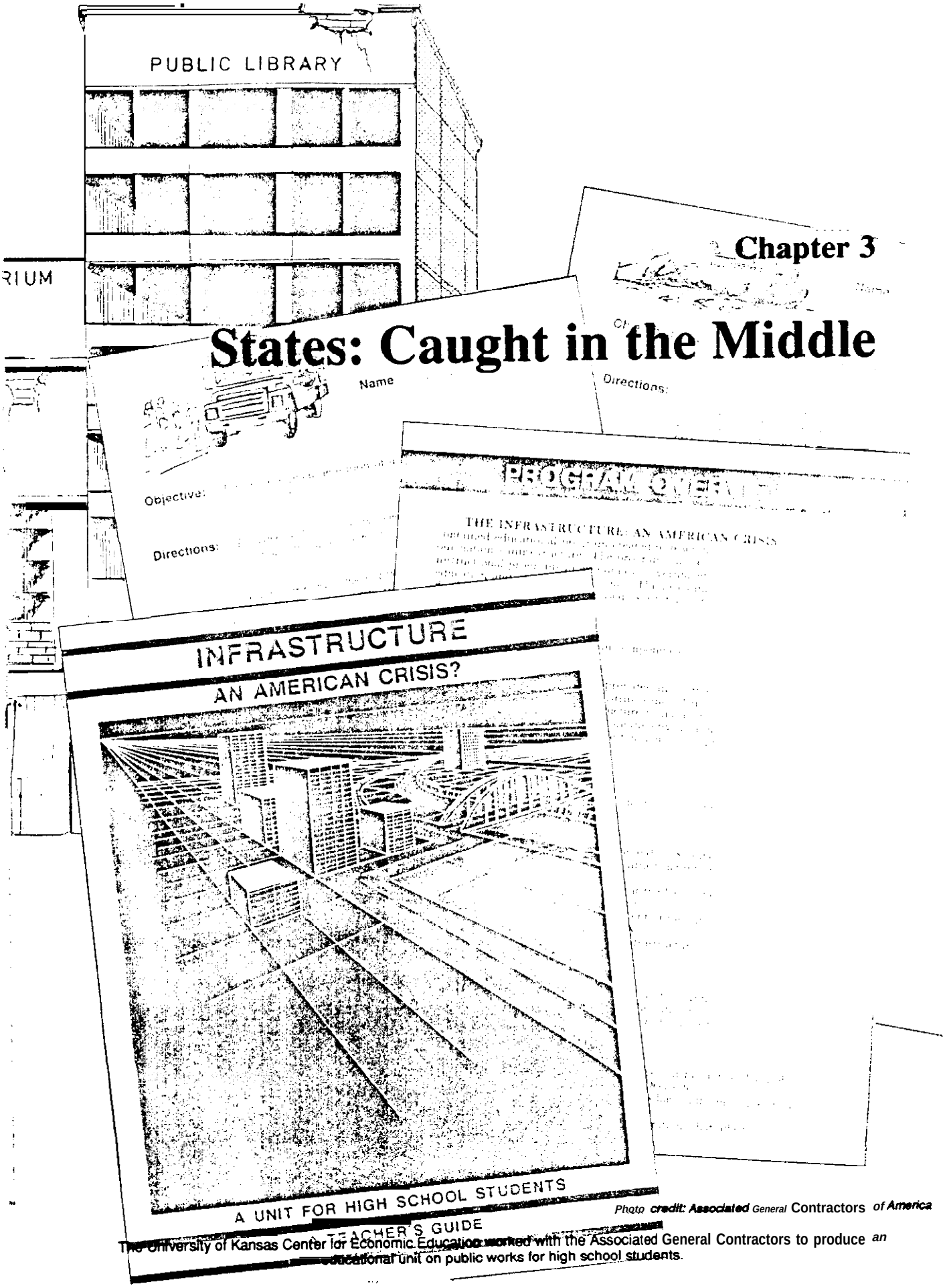

Photo credit: Associated General Contractors of America

The University of Kansas Center for Economic Education worked with the Associated General Contractors to produce an educational unit on public works for high school students.

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It is not the voters who failed [to approve a tax increase for transportation]; it is we, the political leaders, who failed the voters.[1]

Notwithstanding wide differences in size, economic conditions, and governmental structure, each State confronts the same problem: how to finance transportation and environmental infrastructure improvements as well as schools, hospitals, and prisons. A State's ability to finance public works is a product of its economic base and political composition; these determine the mix of taxes, charges, fees, and private investment a State may use to pay for infrastructure.

Marked increases in targeted taxes, benefit charges, and user fees have been necessary in most States over the past 5 to 6 years to support public works priorities, after more than a decade of flat investment. States have combined these special charges and broad-based taxes to boost funding for infrastructure improvements, principally for transportation-highways, airports, and mass transit—with some States supporting railroads and ports as well. Funding environmental public works has historically been a local responsibility, although some States have long assisted with wastewater treatment plant construction. Every State will be playing a larger role in the future, since new Federal requirements include environmental mandates that are straining local fiscal capabilities and sending local officials to their States for help. This chapter outlines the economic and political frameworks for State public works programs as well as fiscal and management strategies that States have developed over the past decade or more.

THE POLITICAL AND ECONOMIC MIX

Politics and economics interact in shaping a State's public spending portfolio. Political deliberations and decisions determine State debt limits, tax rate ceilings, spending caps, and whether to levy a sales or an income tax; all of these reflect a State's willingness-to-pay. However, its ability-to-pay—the actual capability to raise revenue—is grounded in economic factors, such as per capita income, industrial production, and retail sales.

Spending and Revenue Patterns

State governmental expenditure and revenue patterns are good indicators of a State's economic vitality and fiscal condition. In the aggregate, States appear to be in relatively good fiscal health-for 1989, State government expenditures are expected to total $247 billion, or 6.8 percent higher than estimated expenditures in 1988.[2] Since the recession of 1982-83, State expenditures have grown steadily, if moderately (the average rate has been 6 percent for the last 3 fiscal years), although this general picture masks wide regional variations.

State constitutional or statutory requirements for a balanced budget require that expenditures stay very close to or slightly lower than revenues. Almost every State adopted some sort of tax initiative to meet spending demands in 1988, producing $6 billion in new revenue (see table 3-1 for examples); nonetheless, 18 States also had to reduce expenditures or deal with shortfalls by other means.[3] Moreover, data indicate the rate of growth in revenues may be falling behind expenditures; the trend for 1989 shows a 5.4 percent growth in State revenue, compared to an anticipated 6.8 percent rise in expenditures.

Economically strong, diversified States are better able to pay for public works than States with low per capita incomes and weak economies. A State's economic base and ability to raise revenue measure its *fiscal capacity*; how heavily a State chooses to tax itself reflects its *fiscal effort. These* measures are a useful guide to which States are in the greatest need (have a low fiscal capacity) and which States are doing the most to help themselves (have a high fiscal effort). A more complete description of fiscal capacity and fiscal effort indices can be found in appendix B. The variety in State fiscal capacity and fiscal effort is illustrated in figure 3-1. Regardless of

[1]John Seymour, California State Senator, at "Technology for Tomorrow's Transportation: A Policy Conference," Costa Mesa, CA, unpublished remarks, Nov. 9, 1989.

[2]National Governors' Association and National Association of State Budget Officers, *Fiscal Survey of the States* (Washington, DC: 1988), p. 3.

[3]Ibid., p. 6.

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Table 3-1--Sample State Revenue Increases, 1988

state	Revenue increase	Tax change
Louisiana	$303 million	Suspended sales tax exemptions
Arizona	$153 million	Package of personal income, sales, business, and miscellaneous tax increases
New Jersey	$100 million	Raised the motor fuels tax by 2.5 cents
Massachusetts .	$ 77 million	Raised sales and business taxes
Iowa	$ 52 million	Raised cigarette and gas taxes
Minnesota	$ 46 million	Raised sales and business taxes
Idaho	$ 21 billion	Raised income and gas taxes

SOURCE: Advisory Commission on Intergovernmental Relations, *Significant Features at Fiscal Federalism,* 19S0 d., vol. 1 (Washington, DC: 1969), pp. 2S-29.

the strength of its economic base, a State must have the political will to raise revenue (exercise fiscal effort) to attack infrastructure deficits.

Regional Difference

Fiscal capacity and revenue effort vary widely among States even within regions (see figures 3-2 and 3-3). New England and the Mideastern States have stronger economies than much of the South and the Northern Plains. However, a look at fiscal effort shows that some States with strong economic bases have a below-average tax burden, while others with weak economies ask taxpayers to pay at a relatively high level. Combining information about fiscal capacity and effort with other economic data provides an overview of State and regional economic characteristics.

New *England boasts the* Nation's highest personal income growth and the lowest unemployment rates. The tax bases of Connecticut and Massachusetts are well above the national average, whereas Maine, Rhode Island, and Vermont have below-average capacity.

The *Mideastern States are in good* shape economically, with personal income growth above the national average and low unemployment. New Jersey has a particularly strong economic base and high fiscal capacity; only Pennsylvania has below-average revenue capacity, and the State budget office projects expenditure growth well below the national average.

The *Great Lakes* region has not fully recovered from the recession of 1982-83, and States in the region are slightly below the national average in fiscal capacity, with unemployment above the national average. State expenditures in 1989 are expected to increase by only 3.9 percent, the lowest annual regional rate in the Nation.

The *Plains region* has made an impressive recovery from the early 1980s. The unemployment rate has dropped from 5.5 percent to 4.2 percent, and all States except Minnesota and North Dakota anticipate spending increases of at least 5 percent. However, the region remains slightly under the national average in fiscal capacity, primarily because South Dakota, Iowa, and Nebraska have weak economies heavily dependent on agriculture.

While a few of the *Southeastern States are prospering, many are* struggling. Florida has been the dominant growth area, maintaining a spending growth rate over 10 percent for the last 3 years; Virginia and Georgia also enjoy strong economies. Nonetheless, the fiscal capacity of the Southeast region ranks the lowest in the country-Mississippi ranks last, and Alabama, Arkansas, Kentucky, South Carolina, and West Virginia are among the Nation's weakest 10 States.

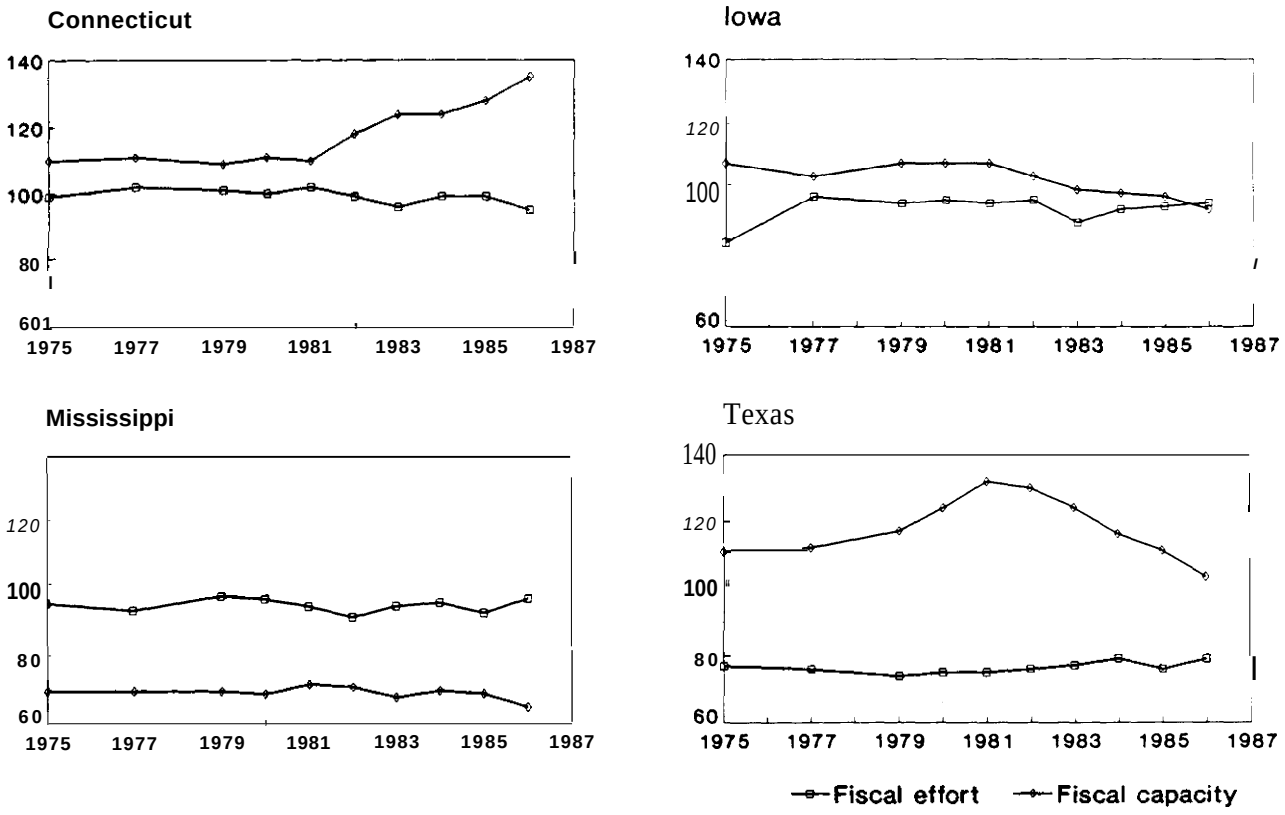
In the *Southwest, the* Texas economy dominates the regional statistics. Because of the State's recession, caused by the drop in oil prices, the region has had the Nation's highest unemployment rate, and the second lowest rate of increase in personal income. Among the other Southwest States, expenditure increases are expected to range from 2 percent in New Mexico to 10.6 percent in Oklahoma.

The *Roe@ Mountain region* continues to have economic and fiscal problems because of its economic dependence on the energy industry. State fiscal capacity is uneven; Idaho, Utah, and Montana are well below the national average, while Wyoming and Colorado have high capacity ratings because of their rich natural resources. State governments in this region have increased spending only moderately.

The *Far West States'* economic record is strong; personal income has increased by 6.7 percent (led by Nevada at 8.9 percent and Oregon at 7.2 percent), and the unemployment rate is at the national

[4]Ibid., pp. 21-23; and Advisory Council on Intergovernmental Relations, *1986* State *Capacity and Effort* (Washington, DC: 1989), pp. 5-7.

Figure 3-1--State Fiscal Capacity and Effort



[a]Average level for all States is 100.

SOURCE: Office of Technology Assessment, 1990, based on Advisory Commission on Intergovernmental Relations data.

average. Alaska has the only soft economy in the region, due to the drop in energy production.

The variability of economic strength among the 50 States is a product of factors that are difficult to control and that change over time. The impact of falling energy prices during the mid-1980s highlights the vulnerability of States like Alaska, Texas, Oklahoma, and Louisiana, which depend for income on one primary source. However, recent employment figures compiled by the U.S. Department of Labor show that the economies of several States (e.g., Texas and Louisiana) hard hit during the early and mid-1980s may be rebounding, while growth has slowed in States like Massachusetts and New Hampshire, which had, until recently, enjoyed vigorous economic healths Resource-poor States, like Alabama, Mississippi, West Virginia, and Montana, remain economically weak and have difficulty generating additional revenue; many are already taxing residents more heavily than the national average. States like California and Connecticut, with strong resource and industrial bases, have the option of choosing whether to enact new taxes or fees to raise additional funds.

Constitutional and Legal Constraints

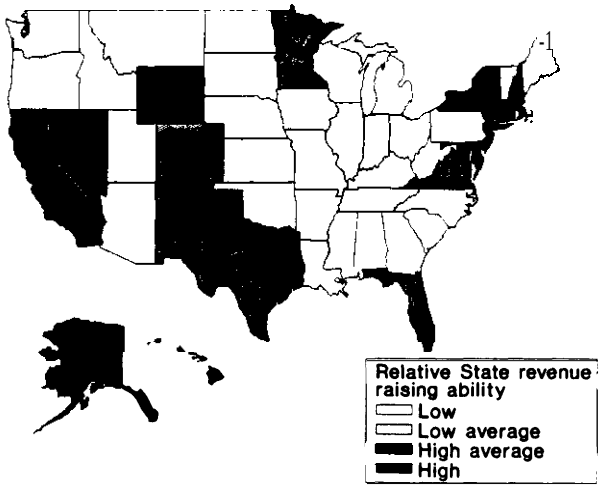
In most States constitutional provisions or statutes limit revenue, spending, and debt and bond financing for public works. Some States have strict statutes that make increasing levies for public services a lengthy and difficult process.

Revenue and Spending Limits

Many States restrict the financing authority of their local governments and require them to balance budgets. However, over the past decade, 20 States have limited their own fiscal authority as well, by statute or constitutional amendment, in response to

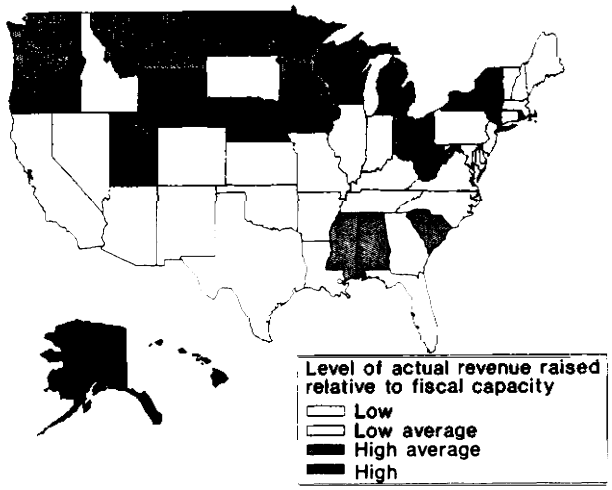
[5]John Berry, "Jobless Rate Masks State Shifts," *The* Dec. 27, 1989, p. F1.

Figure 3-2--State Fiscal Capacity, 1986



SOURCE: Office of Technology Assessment, 1990, based on Advisory Commission on Intergovernmental Relations data.

Figure 3-3--State Fiscal Effort, 1986



SOURCE: Office of Technology Assessment, 1990, based on Advisory Commission on Intergovernmental Relations data.

taxpayer revolts against government spending. For example, Massachusetts's Ballot Question 3, passed in 1986, restricts growth in State revenues 'to the average growth in Massachusetts wages and salaries over the preceding 3 years.[6]

California's Gann Initiative, approved by voters in 1979, restricts annual growth in tax-funded appropriations to a percentage increase no greater than the State's population growth plus the increase in the U.S. Consumer Price Index or per capita income in California, whichever is lower. Local officials soon found they could not fund legally required improvements and sought legislative relief, leading to passage of the Mello-Roos Community Facilities Act in 1984. The new law enabled local governments to create special assessment districts to finance construction and operation of public facilities if two-thirds of the local voters approve.[7] In July 1989, the California General Assembly approved an initiative for the 1990 ballot, which would again expand spending flexibility.

Debt Limits

For the majority of States, constitutional and statutory limits on borrowing also bound spending. State borrowing limits take widely varying forms, with nine States prohibiting the use of general debt altogether, and four States (Maryland, New Hampshire, Tennessee, and Vermont) setting no borrowing limits and requiring merely a simple majority vote of the legislature. For instance, in Alabama, the Governor authorizes borrowing up to $300,000, but specific bond issues must be authorized by constitutional amendment.[8] In Pennsylvania, bonds for capital projects that are itemized in a capital budget do not require a referendum if such debt will not cause the net outstanding debt to exceed 1.75 times the average annual tax revenues deposited in the previous 5 years. Minnesota requires approval of a bond issue by two-thirds of each house and a majority of the voters at any general election, except for short-term borrowing, qualified school bond loans, and transportation bonds pledging fuel taxes.

[6]Government Finance Research Center, *Constitutional, Statutory, Other Impediments to Local Infrastructure Finance*, prepared the National Council on Public Works Improvement (Washington, DC: October 19S7), p. 26.

[7]Larry C. Ledebur et al, Changing Stare *in Public Works*, prepared for the National Council on Public Works Improvement (Washington, DC: September 19s7), p. 38.

[8]Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism*, 1989 ed., VOL 1 (Washington, DC: 19S9), p. 120.

Most States currently employ a broad range of taxes, although they rely most heavily on income and sales taxes. Sales taxes bring in the most revenue (48.5 percent of total State tax revenues in 1987), but income tax revenues (39.2 percent of the total) are growing faster.[9] Strapped by spending requirements, States have recently turned more frequently to benefit or user charges and fees for specific purposes and are gradually allowing local governments more flexibility to tax.

Income Taxes

Personal income taxes are levied in 43 States with wide variations in tax rates and the value of exemptions (see figure 3-4). In 1987, income tax revenue ranged from a high of 43 percent of total tax revenue in Delaware to below 15 percent in several Southern States.[10] In addition, 46 States collect corporate income taxes, although their average per capita yield of $83 is far less than the average yield of $309 from personal income taxes. Income taxes are more sensitive to economic swings than sales taxes, making them a less reliable revenue source.

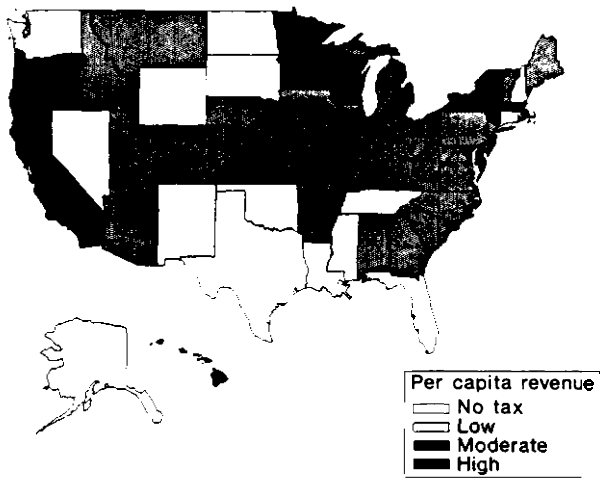
Sales Taxes

Currently 45 States impose general sales and gross receipts taxes; these yielded almost one-half of State tax revenue in 1987. Tax rates range from a low of 3 percent in Colorado, Georgia, North Carolina, and Wyoming to a high of 6.5 percent in Washington and 7.5 percent in Connecticut[11] (see figure 3-5).

STATE TRANSPORTATION PROGRAMS

Most State Departments of Transportation (DOT) were formed to administer highway programs and became increasingly important as the Federal Interstate highway program got under way in the 1950s. Over the past two decades, most have broadened their responsibilities to include other modes of transport as well. However, many aspects of State transportation programs are shaped by Federal policies and their modal orientation.

Figure 3-4--State Income Tax Revenue, 1$87



SOURCE: Office of Technology Assessment, 1990, based on U.S. Bureau of the Census data.

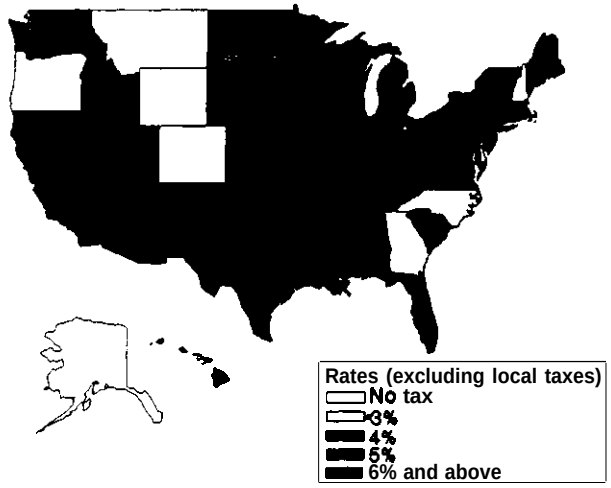
State highway and transportation departments administer a wide variety of State-funded programs and, with the Federal Highway Administration, the Federal-Aid Highway Program. States allocate 60 percent of all highway outlays and are responsible for about 22 percent of the Nation's highway mileage and 43 percent of the bridges.[12] State legislatures establish allocation formulas and priorities for State aid as well as for specific highway and bridge projects.

Revenue sources include user fees, sales taxes, tolls, and lotteries, and State policies range from sharing revenue with local governments and allowing them considerable autonomy on projects to maintaining tight fiscal control and requiring adherence to strict State guidelines. A few States, notably Alaska, Delaware, North Carolina, Virginia, and West Virginia, bypass local governments and assume responsibility for practically all highway and bridge construction and maintenance.

Issues—State highway departments operate under Federal- and State-aid program guidelines. Many State DOT officials are frustrated by delays in

[9]U.S. Bureau of the Census, *Government Finances* p. xv.
[10]Ibid., p. 21.
[11]Advisory Commission on Intergovernmental Relations, op. cit., footnote p.
[12]National Association of Counties, *Linking* (Washington, DC: PP.

Figure 3-5—State Sales Tax Rates,[a] 1988



[a]Numbers are rounded to the nearest whole number.
SOURCE: Office of Technology Assessment, 1990, based on Advisory Commission on Intergovernmental Relations data.

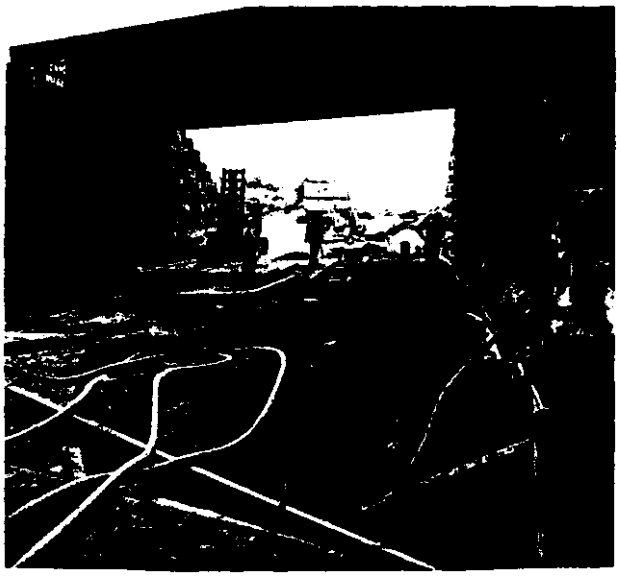


Photo credit: Port Authority of New York and New Jersey

Repairs to roads such as this one may involve underground pipes as well as surface work.

Federal project approval and by grant requirements, which they feel prevent them from directing aid to their most critical needs. States also decry the slowness of spending from the Highway Trust Fund, contending that it is outrageous for the Federal Government to collect gasoline taxes and not use them for their intended purpose.

The challenges facing each State are shaped by its geographic and economic characteristics. Large rural Western States must divide limited funds between maintaining their many Interstate miles and improving other important highways and bridges. States with large urban centers must provide funds to rehabilitate urban highways and bridges and to relieve congestion in suburbs, as well as for highway and bridge improvements in rural districts.

States confront numerous legislative and planning issues. **A** few States are trying to strengthen State and regional land use and capital improvement programs by linking highway financing programs to land development and by requiring private sector contributions for road improvements. Some have encouraged private construction of toll roads or bridges. **A** handful of States with major urban areas are looking at ways to link **highways with other** transportation modes to improve metropolitan mobility and reduce air pollution caused by congestion. Methods of addressing these issues are discussed later in this chapter.

Airports

Although airports are largely a local enterprise, 13 States own or operate commercial airports, including Maryland, Alaska, and Hawaii. Almost all States have aid programs, usually small, for purposes of airport development and/or improvement. Funds come from State aviation fuel taxes or general appropriations.[13] Many States target aid to smaller, nonmetropolitan airports, which are less likely than urban airports to be economically self-sufficient. Since 1946, Minnesota's State Airport Fund, supported by taxes on fuel and airline property and aircraft registration fees, has offered capital matching grants to local airports.

responsible for annual inspections of all (4,300) general aviation airports to collect safety information required by the Federal Aviation Administration (FAA), and many maintain statewide airport development plans. Although States play a key role in airport regulation, financing, and planning, Federal aid goes directly to airports, bypassing State agencies. State aviation

[13]Terry Brusson and Judith Hackett, *State Assistance Local Public Works* (Lexington, KY: The Council of State Governments, 19S7), p. 10.

Photo credit: Minnesota Department of Transportation

This terminal in Cook, MN, was constructed using a combination of local money and aid from a State Airport Fund. The facility has **aground-level** public area and a residence **for the airport manager on the second floor.**

officials maintain statewide capital improvement planning and coordination would be more effective if Federal grants were allocated at the State level. To test this proposition, a 2-year demonstration project has recently begun in three States (Illinois, Missouri, and North Carolina) in which State agencies will administer Federal block grants for reliever and general aviation airports.[14]

Compared to the private sector and the Federal Government, States play a relatively minor role in financing, operating, or regulating railroads. Nonetheless, at least 20 States provide assistance to local rail service from earmarked excise taxes and general appropriations, and 45 States have a recent State Rail Plan that includes an inventory of facilities and ranking of proposed projects .15 The bulk of State aid takes the form of grants or loans to small short-line height carriers that provide essential service to localities. Mississippi has a Railroad Revitalization Program that makes interest-free loans to local governments or railroad companies to rehabilitate track and upgrade other equipment. States that own tracks (usually because they have been abandoned) either operate the railroad, as in West Virginia, or, more commonly, contract with an operating railroad.

A few large, urbanized States, such as California, Illinois, New York, Maryland, and Pennsylvania, subsidize or provide intercity passenger train service to relieve highway congestion and air pollution. Such arrangements are likely to increase. Since 1985, California's DOT has operated a successful service between downtown San Francisco and San Jose. Connecticut DOT, in cooperation with Amtrak, will begin commuter service soon over a 33-mile route from New Haven to Old Saybrook.

Issues—Enabling legislation to permit public-private partnerships or other forms of private sector participation may be needed in many States, especially if efforts to develop high-speed rail transportation between major population centers to ease highway and airport congestion are to succeed.

Although 7 urban States contribute 80 percent of total State aid, at least 40 States provide local mass transit with some funds from general revenues, a dedicated portion of the general sales tax, or motor fuels and vehicle taxes. In 1988, State grants totaled $3.9 billion[16] and, for the first time, surpassed Federal aid, which was $3.3 billion.

Intercity bus service is subsidized in 9 States, 13 support ridesharing, and several target aid to specific users such as elderly or handicapped persons or to rural and small urban areas. While all States have technical assistance programs funded by Urban Mass Transit Administration grants, at least seven supplement Federal funds to expand this service. 17

issues—Keen competition for Federal revenue and the extreme difficulty of resolving urban air quality problems are indicators that States are likely to be pressed to increase their roles in financing transit, in supporting transportation planning, and in technical assistance.

[14]Ed Scott, staff associate, National Association of State Aviation Officials, personal communication, Dec. 14, 1989.

[15]American Association of State Highway and Transportation Officials, *State Rail Program Survey* (Washington, DC: 1989).

[16]American Association of State Highway and Transportation Officials, *1988 Survey of State Involvement in Public Transportation* (Washington, DC 1988).

[17]Ibid.

Photo credit: Metropolitan Transit Development Board of San Diego

San Diego constructed light rail lines without Federal funds, using money from the State of California, including revenues from the State gas tax.

Photo credit: Port of Long Beach

At the Port of Long Beach, CA, containers are removed from the ship to a dockside transfer area. From there, trucks pick up the containers and take them to the federally funded railroad transfer facility pictured here.

Ports and Waterways

Because of the importance of ports for economic development, 28 of the 40 States located on navigable waterways have provided grants for construction of landside port facilities and water cargo terminals during the last 12 years.[18] Three States, Georgia Maryland, and Louisiana, accounted for over 40 percent of the $1.7 billion total in State aid. Although the East and Gulf Coast States provided the most funds, the Mississippi Valley and West Coast States have also invested in port development In addition to general obligation bonds, State support has come from appropriations, transportation trust funds, and user fees. Louisiana dedicates partial proceeds from State motor fuel taxes, and Alaska dedicates watercraft fuel taxes and bond proceeds for port improvements.[19] Maryland and Hawaii tap their State Transportation Trust Funds. State program responsibility is in the departments of transportation, economic development, or State port authorities. In addition to financial support, the State agency frequently coordinates the public works components of major port improvement projects.

The Water Resources Development Act of 1986 established local cost-sharing provisions for channel widening or deepening projects, which had previously been financed solely from Federal funds. Currently, the deeper the channel, the larger the required local match. The Act stipulated that the local share of the costs should be recovered from increased user fees, but so far States have paid the local share from other sources, on the premise that increased fees would hurt their ports' competitive positions.[20]

States have no specific responsibility for the Nation's 12,000 miles of commercially significant inland waterways. The Army Corps of Engineers builds and maintains the locks and dams, and most inland waterway terminals are privately owned.

Issues—Federal technical expertise and funding has supported many State port and industry operations that now need to develop their own independent resources. Public-private partnerships and innovative user-fee arrangements are likely to be sought. Intermodal connections need improvement in many **states.**

[18] American Association of State Highway Transportation Officials, *Information* n *Standing Committee* on Water (Washington, June 1989).

[19] Brusson and Hackett, op. cit., footnote p.

[20] American Association of State *Highway and* Transportation Officials, *op.* cit., footnote *18,* p. 30.

State Transportation Funding

In addition to Federal grants, State revenues for construction and improvements to transportation infrastructure come from two principal sources: user fees, including fuel taxes, registration fees, ticket taxes, and tolls; and broad-based taxes. Financing is by annual appropriations (pay-as-you-go) or debt (general obligation or revenue bonds). Although most States rely primarily on traditional revenue sources and financing mechanisms, many have developed new sources and financing strategies, including collaboration with the private sector.

Benefit Charges-Motor Fuel Taxes and Other Vehicle Charges

User fees or broader benefit charges, principally motor fuel or gas taxes, form the financial base for most State transportation programs, especially for highways. In 1988, Federal, State, and local gas taxes provided $29 billion of the $52 billion State and local governments spent on highway capital, maintenance, and traffic services.[21] The remaining revenues came from a variety of other sources[22] (see table 3-2). Nonetheless, current gas taxes expressed in adjusted dollars are below their 1965 levels; increases of 2 to 4 cents per gallon are needed to bring their purchasing power up to that of 1965 levels.[23]

During the 1980s, 47 States (all except Alaska, Georgia, and New York) raised the per-gallon gas tax-some substantially and more than once—to keep pace with rising construction and maintenance costs. The yield from a penny of gas tax varies widely among States, depending on the amount of gasoline consumed, which is the product of State population, road mileage, and number of vehicles per capita California's 9-cent per-gallon tax, which is low by national standards, yields $1.1 billion, while Connecticut's 20-cent per-gallon tax produces only $320 million (see table 3-3 for State by State information).

Most States levy a flat per gallon tax on gasoline and diesel fuel. However, some States established variable rates, based on fuel prices, in the early 1980s, hoping revenues would track gas prices and provide a rising revenue stream; but as gasoline prices fell in the mid-1980s, so did revenue from variable rates. To compensate, some States tie the tax rate to an index based on changes in motor fuel use and construction costs. For example, Michigan, Ohio, and Wisconsin have enacted taxes that adjust automatically to fuel consumption levels and the Federal Operations and Maintenance Cost Index. The revenue raised reflects highway use and maintenance costs relatively well.

Earmarking Gas Taxes—Twenty-seven States earmark all gas tax revenue for highway use, both to guarantee a reliable revenue source and to ensure that motorists can see the benefits of the taxes. Frequently, State highway improvement programs are tied to increases in the gas tax. (See box 3-A for a description of Iowa's program.) Eight States dedicate gas tax revenue to a transportation trust fund, which may include transit.[24] At least nine States, mainly in the south, west, and midwest, return fuel tax and other benefit charges associated with flying to localities for airport development.[25]

A few States fold all gas tax revenue into the general fund from which all governmental programs are financed. Florida, Massachusetts, New Jersey, New York, South Carolina, Oklahoma, Arkansas, Texas, and California use a share of the gas tax revenue to fund other programs. In 1987, the Texas State highway fund loaned $280 million to the State general fund for education, and transferred $32.4 million to prisons and the State workers' compensation fund.[26] In recent years, fiscal pressures have generated an increase in State legislation to use gas tax and other vehicle-related charges for nonhighway purposes. **OTA concludes that these efforts are likely to continue, despite the opposition of transportation advocates, because gas taxes are broad-based and reliable revenue sources.**

Fees—Although most States exempt motor fuels from State sales taxes, eight collect substantial revenue by applying the sales tax

[21] Thomas Cooper, Federal Highway Administration, personal communication. Jan. 4, 1990.

[22] The Road Information Program, 1989 *State* Highway *Methods* (Washington DC: 1989), p.18.

[23] Thomas W. Cooper, Federal Highway Administration, and Judith A. Depasquale, Florida Department of Transportation, "Local Option Motor Fuel Taxes," draft document, May 1989, p. 3.

[24] American Association of State Highway and Transportation Officials, op. cit., footnote 16, p. 2.

[25] Aslan Institute, *Federal and State Roles in Infrastructure* (Washington, DC: National Council on Public Works Improvements, *1987), p. 72.*

[26] The Road Information Program, *op.* cit., footnote 22, p. 48.

Table 3-2—State Highway Funding Sources, 1988 (In percent)

State	Federal aid	Motor fuel taxes	Vehicle registration	Miscellaneous truck fees	Drivers license	Bonds	General fund	Miscellaneous
Alabama	47.4	28.5	8.0	—	—	8.7	—	7.4
Alaska	60.0	a	—	—	—	—	40.0	—
Arizona	23.1	34.6	8.7	10.8	0.7	6.9	1.4	13.8
Arkansas	28.9	46.9	14.3	4.1	1.2			4.6
California	46.0	23.0	—	—	—	—	—	31.0
Colorado	35.7	49.1	5.2	5.1	0.8	—	—	4.1
Connecticut	37.8	22.2	9.4	—	1.4	22.8		6.4
Delaware	35.5	21.7	—	2.4		—	40.4	
District of Columbia	38.0	16.0	8.0	—	1.0	23.0	14.0	—
Florida	38.0	a	18.0	—	—	—	—	44.0
Georgia	28.6	29.7	—	—	—	16.3	.5	23.9
Hawaii	38.0	33.1	5.7	0.4	—	—	—	22.8
Idaho	40.6	33.8	13.0	8.4	0.8	—	—	3.4
Illinois	24.6	33.4	27.0	—	1.6	4.0	4.3	4.1
Indiana	28.0	53.0	13.0[b]	—	—	—	4.0	2.0
Iowa	26.1	33.7	24.7	—	1.2	—	—	14.3
Kansas	41.0	27.0	19.8	1.0	1.0	—	5.6	4.6
Kentucky	21.5	32.5	5.0	0.3	0.5	14.9		25.3
Louisiana	31.0	20.0				43.0	6.0	0.0
Maine	25.6	37.0	16.2	—	1.4	4.8	5.0	10.0
Maryland	25.0	27.0	8.0	1.0	—	—	—	39.0
Massachusetts	12.7	51.8	26.9[b]	—	—	—	0.1	8.5
Michigan	23.0	45.5	24.5	1.0	0.5	—	—	5.5
Minnesota	30.8	33.4	20.7	—	1.3	—	—	13.8
Mississippi	47.0	35.0	—	—	—	—	—	18.0
Missouri	27.5	36.6	20.3	0.4	1.2	—	—	14.0
Montana	40.6	41.0	—	9.8	—	—	—	8.6
Nebraska	29.7	42.0	12.0	—	—	—	—	16.3
Nevada	28.0	34.0	9.1	10.2	1.2	14.8	—	2.7
New Hampshire	33.0	41.7	22.3[b]	—	—	—	—	3.0

Table 3-2—State Highway Funding Sources, 1988 (In percent)—Continued

State	Federal aid	Motor fuel taxes	Vehicle registration	Miscellaneous truck fees	Drivers license	Bonds	General fund	Miscellaneous
New Jersey	44.4	10.8			9.6	35.2	—	
New Mexico	30.2	34.9	9.0	11.5	1.0	—	—	13.4
New York	30.0	[a]	—		—	10.0	60.0	—
North Carolina	23.2	52.5	16.6	—	3.2	—		4.5
North Dakota	44.0	34.8	15.1	1.7	1.3	—	—	3.1
Ohio[c]	46.5	32.7	0.1	—	—	—	—	20.7
Oklahoma	45.9	48.8	0.2	—	—	—	2.3	2.8
Oregon	20.0	27.0	10.0	20.0	2.0	12.0	—	9.0
Pennsylvania	30.6	25.4	12.3	0.6	1.8	2.6	—	26.7
Rhode Island	51.0	[a]	—	—	—	13.0	36.0	—
South Carolina	32.2	52.2	9.2	1	1.1	—	0.2	5.0
South Dakota	44.6	36.4	2.2	—	—	—	—	16.8
Tennessee	35.6	37.6	16.2	—	—	7.0	—	3.6
Texas	31.7	37.9	21.7	—	—	—	—	8.7
Utah	41.5	46.6	6.4	.3	1.6	—	0.3	1.3
Vermont	35.2	25.0	18.9	—	—	—	—	20.9
Virginia	19.9	35.1	5.8	2.0	—	—	—	37.2
Washington	35.1	42.8	15.8	—	—	3.2	—	3.1
West Virginia	41.3	30.4	9.4	—	0.5	—	—	18.4
Wisconsin	21.5	46.9	17.0	—	1.5	4.2	—	8.9
Wyoming	36	4	4					34

[a]State motor fuel tax flows into the general fund.
[b]Indicates vehicle registrations and drivers' licenses.
[c]1987 data (1988 data unavailable).

SOURCE: The Road Information Program, *1989 State Highway Funding Methods* (Washington, DC: 1989).

Table 3-3--State Gas **Tax Rates and Yields, 1989**

	Gas tax (cents per gallon)	Yield per penny ($ millions)		Gas tax (cents per gallon)	Yield per penny ($ millions)
Alabama	13	20	Montana	20	4
Alaska	8	2	Nebraska	22	7
Arizona	17	17	Nevada	18	5
Arkansas	14	12	New Hampshire	14	5
California	9	120	New Jersey	11	35
Colorado	20	15	New Mexico	16	8
Connecticut	20	16	New York	8	50
Delaware	16	3	North Carolina	21	38
District of Columbia	18	2	North Dakota	17	3
Florida	10	61	Ohio	18	42
Georgia	8	34	Oklahoma	16	17
Hawaii	11	4	Oregon	16	13
Idaho	18	5	Pennsylvania	12	45
Illinois	16	44	Rhode Island	20	5
Indiana	15	25	South Carolina	16	17
Iowa	20	14	South Dakota	18	3
Kansas	15	12	Tennessee	21	24
Kentucky	15	17	Texas	15	85
Louisiana	16	23	Utah	19	7
Maine	17	6	Vermont	16	3
Maryland	19	24	Virginia	18	33
Massachusetts	11	28	Washington	18	21
Michigan	15	41	West Virginia	20	11
Minnesota	20	18	Wisconsin	21	20
Mississippi	18	13	Wyoming	9	2
Missouri	11	26			

SOURCE: Office of Technology Assessment, 1990, based on data from the Highway Users Federation; and The Road Information Program 1989. *State Highway Funding Methods* (Washington, DC: 1989).

to gasoline. In 1988, such taxes yielded $l.2 billion in California.[27]

Fees for driven' licenses, vehicle registration, inspections, truck weights, record checks, and vanity license plates are other revenue sources for State transportation needs.Tbgetherthesefeescontribute approximately 20 percent of all State highway revenues.[28] Most fees are assessed on a flat rate, and they do not reflect aspects of highway use, such as the weight of the vehicle and mileage driven. However, several court rulings have found that some State flat-rate fees are unconstitutional. For example, in 1987, the U.S. Supreme Court ruled that Pennsylvanians truck fees were illegal, and that the State must refund the $500 million collected. The court held that the flat-rate fee was not related to road use and that the State discriminated against out-of-State trucks by reducing fees for trucks registered in Pennsylvania.[29]

Tolls--The Pennsylvania Turnpike between Harrisburg and Pittsburgh was the first modern highway financed with tolls. Currently, tolls are charged on numerous bridges and tunnels, and 28 States operate 36 toll roads. In most cases, tolls pay the debt service on State or local revenue bonds used to finance construction of a specific road, and some also fund maintenance and operations.

Although legislation prohibits tolls on federally financed highways, the 1987 Surface Transportation and Uniform Relocation Assistance Act and amendments permitted test projects in nine States to use Federal funds for up to 35 percent of costs and toll financing for the balance. The projects, in California, Colorado, Delaware, Florida, Georgia, Pennsylvania, South Carolina, Texas, and West Virginia, reflect the Federal interest in encouraging financing based on benefit charges.[30]

States have many uses for toll revenues. New Jersey has formed a fund from excess toll revenues

[27]Ibid., p. 30.

[28]Ibid., p.

[29]Ibid.

[30]James McCarthy, chief, Policy Evaluation Branch, U.S. Department of Transportation, personal communication, Sept. 25, 1989.

Box 3-A—Iowa's RISE Program[1]

To increase support for streets and roads, the Iowa Legislature created the Revitalize Iowa's Sound Economy (RISE) program in 1985. The program's primary goal was to encourage private investment; and local politicians, business leaders, and developers joined State lawmakers in crafting the program.

Initially, the RISE Fund received a 2-cent per gallon portion of the State's motor vehicle fuels tax, totaling about $32 million each year. By law, 50 percent of the funds go to primary roads, 25 percent to secondary roads, and 25 percent to city streets. County and municipal governments may submit applications for either grants or loans, and the Iowa Department of Transportation (IDOT) may initiate projects as well. The State Transportation Commission, an arm of IDOT, accepts the applications, evaluates them, and offers grants and/or loans to the selected projects.

Assistance is available for three kinds of projects:

- *immediate opportunity projects*, for cases in which a developer's or firm's decision to locate or remain in a region hinges on an immediate commitment of public project funds;
- *local development projects*, for projects that support local economic development but do not require immediate funding; and
- *regional development projects*, for projects of relatively large scale and cost, extending beyond the scope of a single jurisdiction or site.

As its main allocation criterion, the Transportation Commission considers a project's potential to create or retain jobs in a region by attracting new development. In addition to promoting post-project economic growth, RISE also encourages local involvement by requiring jurisdictions to cover at least 20 percent of project costs. Frequently localities contribute more than the required 20 percent, and participation has reached as high as 70 percent. IDOT approved funding for 172 projects from among 312 applications between 1985 and 1989, and estimates that RISE has helped to leverage over $732 million in planned new capital investment from such diverse businesses as clothing manufacturing and barcoding.

Early in 1989, the State legislature modified the program, because funds designated for county road projects had a large uncommitted balance, and those designated for primary roads and city streets were completely committed for projects. The portions of Iowa's fuel tax allocated for primary roads and city streets remained the same, but the county road portion dropped substantially since economic development opportunities occur less frequently in counties. RISE loans have flexible terms. For example, in 1986, the city of Davenport undertook a $13.2 million road and utilities improvement project in a new economic development area at a highway junction. The RISE fund awarded Davenport a $2.5 million grant and a $2.5 million loan, giving the city 10 years to repay the loan at 2 percent interest. Loan payments will be low in the initial years and increase as development proceeds in the targeted area, and revenues from the development district accrue.[2]

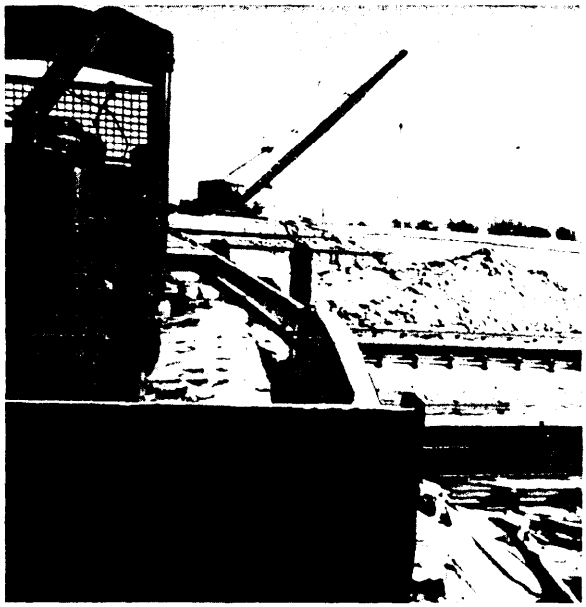


Photo credit: Iowa Department of Transportation

Highway construction in Davenport, IA, funded by the RISE program.

[1]Material on the IUSE program is based on Iowa Department of Transportation, *Transportation Improvement Program: 1989-1993* (Ames, IA: December *1988).*

[2]Apogee Research, Inc., *Financing Infrastructure: Innovations at the Local Level* (Washington, National League of Cities, December 1987), pp. 46-s1.

Photo credit: State of Washington Department of Transportation

A rural airport in Washington, financed by the local government in cooperation with the State development program.

to finance other needed State highways.[31] In 1986, Florida instituted a Toll Facilities Revolving Loan Fund that provides venture capital to localities to plan and construct toll roads and is repaid from tolls. The State appropriated $2.7 million in 1986 and $20 million in 1987. (See chapter 4 for further details of private toil-financed highway projects.)

***Earmarked Taxes*—Twelve States (California,** Arizona, Colorado, Florida, Georgia, Illinois, Missouri, Nevada, New York, Ohio, Texas, and Washington) permit local jurisdictions to levy a general sales tax dedicated for transportation improvement. In most cases, the localities can further target the funds for mass transit improvement. For example, in California up to 0.5 cents of sales tax revenue is returned to eligible counties for transit use.[32]

***Aviation Taxes*—Minnesota, Michigan, and Wis-**consin are among the States that earmark revenue collected from taxes on aviation fuel and airline property, and fees from aircraft registration to finance State airport development and capital improvement programs. Washington State finances an airport development program, focused on rural areas, with dedicated State aviation fuel tax revenue.[33]

Appropriations From the State General Fund

Most States use general fund appropriations for transportation capital improvements only for supplemental or emergency financing, although a few States support transit capital investments with general fired revenues. New York State appropriated $170 million in *1987* to transit projects, and Georgia appropriated $600,000 from general funds. States providing aid to local airports tend to use general fund appropriations in addition to benefit charges. For instance, California set up a revolving loan fund in 1979 with general appropriation seed money of $1 million a year for 5 years.[34] In 1988, about 6 percent of State transportation capital expenditures came from general funds[35] (see table 3-2 again). Because general appropriations require legislative action and are subject to changing State priorities, they are not a reliable source of financing for long-term capital projects.

Financing With State Bonds

Currently, States use general obligation bond financing less for transportation than they once did. In 1973,29 percent of State long-term debt was for highway improvements compared to 8 percent in 1984.[36] Bonds financed less than 10 percent of State capital expenditures for transportation projects in 1988.[37] Several factors have contributed to the downward trend in general obligation bond financing. First, many States have strict debt limitations restricting the use of **general** obligation bonds. Furthermore, States tend to give first priority for bond financing to school, prison, and hospital construction because gas taxes and other user fees provide a ready source of support for transportation. Finally, relatively high interest rates in the 1980s increased the costs of borrowing. Since bond issues must have voter approval in most States, they became more sensitive political issues.

[31] Apogee Research, Inc., *Trends* in *Financing Public Works* Council on Public Works Improvement, 1986). p. 49.
[32] Advisory Commission on Intergovernmental Relations, op. cit., footnote 8, vol. 1, p. 62.
[33] Busson and Hackett, op. cit., footnote 13, p, C-18.
[34] Ibid., p. C-2.
[35] National Association of State Budget Officers, *State Expenditure* *1988* (Washington, DC: 1988), p. 85,
[36] J. Richard Aronson and John L. Hilley, *Financing State and Local Governments* The Brookings Institution 1986), p. 167.
[37] National Association of State Budget Officers, op. cit., footnote 35, pp. 85-87.

Use of revenue bonds for transportation purposes will probably increase, both because of constraints on general obligation bonds and because tolls and other types of benefit charges provide reliable revenue streams for debt service. Michigan relies solely on revenue bonds backed by proceeds from gas taxes, driver's license fees, and motor vehicle registration to support long-term highway needs. In the fall of 1988, Florida voters passed a constitutional amendment allowing the State DOT to use gas tax revenues to repay revenue bonds to purchase rights-of-way and to build and rehabilitate bridges.[38]

Trust Funds

Most States earmark specific revenue, usually gas tax and registration fees, for a trust fund-a permanent account to be used solely for *transportation* or highway expenditures. In 1984, New Jersey established a comprehensive transportation trust fund to finance long-term improvements (see box 3-B). The Maryland Consolidated Transportation Fund, fed by the gas tax, a motor vehicle titling tax, license and registration fees, and a portion of the State corporate income tax, finances highways and public transportation. In 1986, Alabama established a Municipal Government Capital Improvement Fund to make grants to local governments for construction of public buildings and streets. The improvement program was to be funded from the State Oil and Gas Trust Fund when it reached $60 million. Currently, the fund stands at $45 million; the State anticipates it will be several years before it reaches $60 million.[39]

Public-Private Partnerships

Most existing public-private partnerships are between local governments and developers, and State governments are just beginning to develop such arrangements for financing capital investments in transportation. Before States or localities enter into public-private partnerships, they must have the legal power to take certain actions, and many have enacted or are considering legislation to provide the necessary authorizations. Some of the most important include:

- power of contract-the ability to enter into a service contract,
- power to convey—the ability to sell or lease existing facilities to a private company,
- power to purchase-the ability to purchase facilities from the private vendor at some point in the future, and
- bond authority to finance the facility.

In 1986, 19 States had statutes specifically authorizing privatization of one or more types of infrastructure. Arizona adopted a policy of joint sponsorship of certain highway projects as part of its 1984 transportation program and will assume only 50 percent of the cost of construction of freeway interchanges and grade separations not on the State plan.[40] Texas has authorized the formation of transportation corporations in which private property owners form nonprofit corporations to accept property and money to support highway developments. A landowner interested in having a road built must apply to the Right of Way Division of the Department of Highways. If the Division approves the need for the road, the applicant submits a plan and articles of incorporation for approval by the Highway Commission. Four corporations have been approved, two in Austin and two in Houston.[41]

Caltrans, the California DOT, has recently been authorized by the State legislature to develop partnerships with private firms to design, build, and operate four demonstration projects for State-owned rights-of-way. Caltrans is soliciting proposals from private developers who are guaranteed leases for up to **35 years** to operate the facility and the option to recoup their investment through toll revenue or through the value added by the transportation facility to associated private development.[42]

Lotteries

The State of New Hampshire established the first modem State lottery in 1964, and by 1989,28 States and the District of Columbia used lotteries to raise revenue. Gross receipts range widely; in 1986 Vermont lottery receipts were just $12 million, while California's lottery brought. in $1.6 billion.

[38]The Road Information Program, op. cit., footnote 22, p. 38.

[39]Gene stabler, assistant treasurer, State of Alabama, personal communication, Sept. 28, 1989.

[40]Chambers Associates, Inc., *Report of the Private Sector Advisory Panel on Infrastructure* Advisory Report to the Senate Budget Committee (Washington, DC: May 1987), p. IV-7.

[41]Ibid., p. IV-21.

[42]California Department of Transportation, Office of Privatization, *Privatization* (Sacramento, CA: October 1989), p. 1.

Box 3-B—New Jersey Infrastructure Financing[1]

Crafting an acceptable multipurpose infrastructure funding program appears to be among the most difficult of political tasks. In 1982 and early 1983, then-Governor Thomas Kean's innovative proposal for a New Jersey Infrastructure Bank (NJIB) was widely hailed. Disputes over control of the bank and its financial stability killed the idea, however, by the end of 1983. In 1984, the Governor rejected an alternative legislative proposal that gave the legislature more power over the bank. Ultimately the stand-off led to the establishment of a number of individual trust funds. Together these have provided more aid to local wastewater treatment and resource recovery systems than the Infrastructure Bank was projected to provide.

1982-83: The New Jersey Infrastructure Bank—The NJIB would have helped finance four categories of public works: wastewater treatment, water supply, solid waste disposal, and transportation. The majority of the funding would come from equity loans, which themselves would be funded by Federal Clean Water Act grants.

However, localities were loath to see their Federal grants converted into loans and disliked the requirements to set user fees or taxes high enough to meet costs. Moreover, the legislature, which had played no role in designing the program and would play none in program oversight, questioned the reliability and continuity of the funding sources. The lack of oversight was a special sticking point, because of the proposed bank's size (almost $1 billion in capital) and its power to make allocation decisions. The NJIB was designed to be an independent authority with close connections to the executive branch, prompting the legislature to demand the responsibility of determining the bank's rules and regulations. This demand was incorporated into the alternative proposal that was rejected.

1984-85: The Infrastructure Programs Enacted—The New Jersey State Legislature ultimately enacted three category-specific programs. The *New Jersey Transportation Trust Fund*, established in 1984, uses revenue bonds backed by dedicated motor vehicle fuel taxes to fund a $320.3 million program. The Trust Fund undertakes direct spending programs and finances State aid to counties and municipalities for transportation system improvements.

The *Resource Recovery and Solid Waste Disposal Program*, first established in 1980 and substantially expanded in 1985, authorizes grants and low- or no-interest loans to local governments to cover 10 percent of costs for developing resource recovery facilities and landfills. The State Department of Environmental Protection manages the program, which is backed by $168 million ($135 in general obligation bonds and $33 million transferred from the general fund). Local payback of the loans starts 1 year after operations begin at new facilities.

The *New Jersey Wastewater Treatment Trust Fund*, established in 1985, is an independent financing authority with the power to issue bonds backed by the Trust's loan agreements with borrower localities. These agreements, in turn, are secured by user-fee covenants, a State-appropriated reserve fund, and municipal bond insurance. Funds to localities come from two sources: the Wastewater Treatment Trust, an independent authority; and the Wastewater Treatment Fund, which is administered by the State Department of Environmental Protection. These programs are considered successful, although officials note that while nearly every eligible jurisdiction is eager to apply for a grant, many hesitate to apply for loans, because local financial solvency is a major concern.

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[1]Material on New Jersey infrastructure financing is based on the following reports: Council on New Jersey Affairs, *New Jersey Issues: Papers From the Council on New Jersey Affairs* (Princeton, NJ: Princeton Urban and Regional Research Center, Woodrow Wilson School of Public and International Affairs, March 1988); and Sophie M. Korczyk, "State Finance for Local Public Works: Four Case Studies," OTA contractor report, Dec. 19, 1988.

Prize money and administrative costs can claim up to three-quarters of the receipts. Though lottery revenue has in the past proven a very unpredictable source of funding, it can fill important gaps. Most States direct lottery revenues into general funds, but several States earmark at least a portion of lottery revenue for public works infrastructure (see table 34).

Table 3-4—Net Revenue From State Lotteries Used for Infrastructure

State	Net revenue (millions)	Dedicated use
Arizona	$42.2	Transportation
Colorado .. ..0.	$26.1	Parks, recreation, capital construction
Iowa	$26.3	Economic development
Oregon	$21.3	Economic development

SOURCE: Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism*, 19SS ad., vol. 2 (Washington, DC: July 1988), pp. SS-90.

Political Strategies for Transportation Funding

To help assure continued support for transportation improvements, several States have taken the lead and established long-range capital financing programs, based on bonds, increased gas tax revenues, or a package combining revenue sources. Successful financing programs are typically sold to voters and decisionmakers by a structured effort that includes establishing needs and priorities, evaluating alternatives, and developing political support. (See box 3-C for an example.) Six basic steps characterize successful efforts:

- identifying specific needs, the purpose of the program, and those benefited or otherwise affected;
- structuring the program and ranking projects;
- evaluating and establishing the financing program;
- setting up collection and accounting procedures for revenues and managing the program;
- coordinating with other public agencies and private sector leaders; and
- developing political support in advance.

STATE ENVIRONMENTAL PUBLIC WORKS PROGRAMS

Because local jurisdictions have historically been responsible for environmental infrastructure, the State role has been small, consisting primarily of setting public health standards and providing some financing and technical assistance to local districts. Supplying drinking water and managing solid waste have been almost entirely local tasks, However, for most of the past 20 years, States have acted to pass through and administer Federal grants to localities or special districts for wastewater programs. Since the passage of the Water Pollution Control Act in 1972, the Federal Government has provided construction grants for wastewater facilities, to help localities meet the standards mandated by the Act as rapidly as possible. The legislative intent was always that eventually State and local governments would assume full funding responsibility. The Farmers Home Administration of the Department of Agriculture has also played a significant role in water and wastewater treatment plant financing for rural areas and has supported State technical assistance programs as well,

charged with administering and enforcing Federal water purity regulations, and almost three-quarters of the States also support local improvement programs through grants, loans, and bond banks. Such assistance includes aid to local governments for purchasing land to protect underground water supply sites (Massachusetts), bond funds to support water supply contamination abatement (Maryland), and low-cost loans for controlling water supply and wastewater pollution (Kentucky). State management and technical assistance is provided by circuit riders who advise communities without engineering expertise and try to encourage inefficient small-scale systems to consolidate.

issues—Drinking water problems are increasingly moving from local jurisdictions to the State. Many problems demand regional solutions, because water-quality issues extend beyond political boundaries (much of Florida is facing drinking water problems, for example). **Moreover, the costs and technical requirements necessary to meet Federal Clean Water regulations exceed the financial and engineering capabilities of many local jurisdictions.**

Wastewater Treatment

States establish design, operations, and treatment standards and assist local governments with planning and engineering advice; some provide special

Box 3-C—Citizen Outreach Pays[1]

The New York Department of Transportation (NYDOT) and related agencies conducted an aggressive citizen outreach campaign in 1988 to encourage statewide support for transportation improvements. The agencies held public forums to ask residents how to pay for expansion and rehabilitation, and used capital improvement planning techniques to determine consistent and credible priorities around the State. Subsequently, NYDOT discussed its plans with public officials throughout the State to ensure their support for the designated improvements. In November 1988, voters overwhelmingly approved a $3 billion bond issue to rehabilitate the State's highways and bridges. The outreach and planning efforts developed for the campaign have helped NYDOT maintain good relations with constituents. Moreover, the Department now requires its regional directors to estimate project costs thoroughly, assess infrastructure condition accurately, and draft their programs in accordance with explicit NYDOT statewide construction goals.

[1]Material in this box is based on Ted Thompson, New York Department of Transportation, personal communication, April 1989.

Photo credit: New York State Department of Transportation

A Citizen's Forum conducted by the New York Department of Transportation.

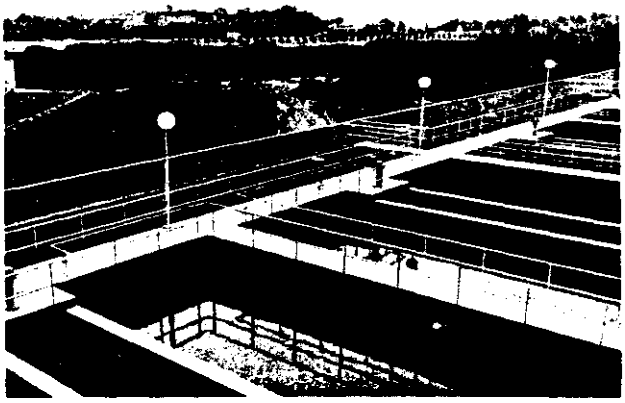

Photo credit: S.C. Delaney/U.S. Environmental Protection Agency

Large municipal wastewater treatment plants, such as this one in Washington, DC, have played *m* important role in cleansing water resources of pollutants.

technical assistance to small districts. Financially, States play a key role. They allocate Federal construction grants based on an annual State needs study, with over one-half of the States providing a share of the local match. States may use Environmental Protection Agency (EPA) funds for authorized wastewater treatment construction grants until 1990. However, between 1991 and 1994, all Federal funds must be used as seed money for self-sufficient **State** revolving funds (SRFs), from which local districts can borrow to build wastewater treatment facilities. After 1994, States will have full responsibility for administering and funding wastewater treatment construction loan programs and for providing financial and technical assistance to local districts. **EPA estimates that a $68** billion additional investment is required to meet current national treatment needs .43

Issues—After Federal support for SRFs ends in 1994, States will be responsible for expanding the loan fund base as well as for enforcing all Federal wastewater regulations. EPA is expected to extend current water-quality regulations to cover combined sewer overflows and bypasses, significantly increasing State regulatory responsibilities and local investment needs. In this rapidly changing framework, States play a vital role in providing local districts with financial advice and technical support. However, State technical expertise is often limited, because salaries for engineering and financing experts are lower than in the private sector,[44] and funding resources are thin. Federal aid for State environmental planning and program administration has been severely curtailed, and most States have not replaced it. Costs **are likely to exceed the capabilities of many local jurisdictions. Furthermore, few resources are available to encourage new technology or operating improvements.**

Solid Waste

Currently, the States' primary role is in enforcing EPA standards. A few States, including New Jersey, Wisconsin and Michigan, have programs to aid local districts in landfill siting and acquisition or resource recovery. **Because of the regional and statewide implications of solid waste disposal issues, the State role in providing technical assistance and political support will probably expand.**

Federal policies require States to assume a much larger role in administering and financing wastewater programs, and between 1982 and 1986, Federal funds as a portion of State budgets for water programs fell from 49 to 33 percent.[45] Some State governments-Texas, Ohio, Oklahoma, and West Virginia, for example-have a history of providing grants and loans to localities to supplement Federal programs. By 1981, 41 States had established programs (usually modest) of grants and/or loans to help meet the 25-percent local share of Federal matching grants.[46] More recently, many States have expanded loan and grant programs or established State-run bond banks. The programs have varied forms of capitalization (bonds or appropriations), eligibility requirements (need or fret-come, first-serve), loan terms, and interest rate subsidies. Almost all offer grants or large subsidies for hardship cases. Local self-sufficiency is the goal of several States, but most provide periodic infusions of capital from the general fund, bond issues, or

[43]U.S. Environmental Protection Agency, Office of Municipal Pollution Control, *1988 Needs Survey—Report to Congress* (Washington, DC: February 1989), p. 1.

[44]Jon L. Craig, chief, Water Quality Service, Oklahoma Department of Health, personal communication, Oct. 26, 1989.

[45]National Governors' Association, *Funding Environmental Programs: An Examination* (Washington, DC: 1989), p. 2.

[46]Congressional Budget Office, *The Policy Considerations for the* 1980's (Washington, DC: 1983), p. 58.

Box 3-D—Texas: State Water Loans and the State Revolving Fund[1]

With experience from a loan program that goes back 30 years, Texas has been able to move quickly to change to the State Revolving Fund (SRF) program. In 1957, the Texas Legislature authorized $200 million in general obligation bonds to establish the Texas Water Development Fund (TWDF) to make loans to local governments for the construction of dams, reservoirs, and other water storage facilities. Over the years, Texas voters and the Texas Legislature have approved additional bond issues and State appropriations for the program and expanded its functional scope. In 1971, voters authorized a bond issue to capitalize a Texas Water Quality Enhancement Account within the TWDF for the express purpose of supporting wastewater treatment. Between 1971 and 1988, the State authorized 316 Water Quality Enhancement loans, totaling about $173 million.

The TWDF offers loans for both wastewater treatment projects and water supply projects. Eligible borrowers include all political subdivisions as well as nonprofit water supply corporations.[2] To be considered for a *wastewater treatment loan*, the borrower must meet either of two conditions: 1) qualify as a "hardship case," with a low credit rating that precludes borrowing or issuing bonds on the open market; or 2) present a project that is regional in nature. To be considered for a *water supply loan*, a borrower must meet either of the two conditions noted above, or else submit a project intended to convert from a groundwater to surface water supply system.

The lending rate is usually one-half of a percent above the cost of funds, but the managing board can establish lending rates on a case-by-case basis if special local needs warrant. The TWDF monitors each loan carefully, seeks legal and financial advice when necessary,[3] and cooperates closely with applicants. No local government has defaulted on a loan over the program's 30-year history.

In 1988, the Environmental Protection Agency (EPA) issued Texas a $105 million capitalization grant, which Texas matched with an additional $21 million. Though the SRF funds reside in a separate account outside the State treasury, the same staff administers both TWDF and SRF loans.

The federally supported loan program offers loans only for wastewater treatment programs. Though SRF loan applicants do not have to meet either of the two TWDF threshold requirements, the SRF eligibility requirements are stiff. All SRF loans require that the State provide matching funds equal to or greater than 20 percent of the capitalization grant. In addition, approved projects under the SRF must be consistent with specified Clean Water Act requirements, and the State must establish an EPA-approved State environmental review program. Before using SRF funds for any allowable discretionary projects, the State must address projects identified under the National Municipal Policy of the Clean Water Act.[4] A final distinction between the two programs is that TWDF loan repayments are used to retire outstanding bonds. Because the loan repayments are not directly funneled into additional loans to local governments, the TWDF is not a true revolving fund. Notwithstanding these differences, Texas' experience with a loan program has allowed the State to adjust quickly to the SRF.

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[1]Material on Texas' loan programs is based on D. William Graham et al., *Tax Reform and State Revolving Funds: An Analysis of the 1986 Tax Reform Act*, Report From the Government Finance Research Center to the U.S. Environmental Protection Agency (Washington, DC: Government Finance Officers Association, Mar. 10, 1989); and Kevin Ward, Texas Water Development Board, personal communication, Aug. 3, 1989

[2]Loans to political subdivisions may be financed with tax-exempt bonds, but loans to nonprofit corporations are funded with taxable bonds.

[3]Evelyn Shields, *Funding Environmental Programs: An Examination of Alternatives* (Washington, DC: National Governors' Association, 1989), p. 10.

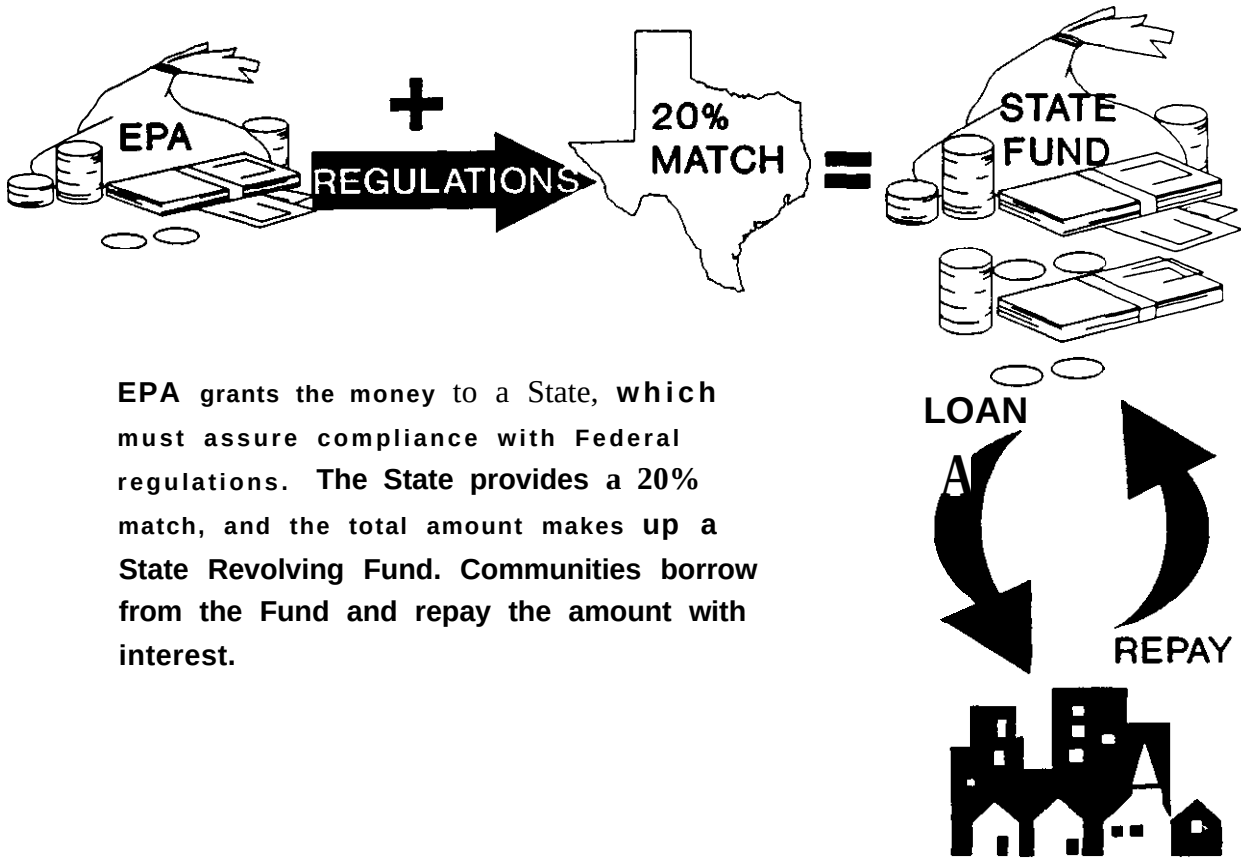
[4]William Kramer, chief, Policy and Analysis Branch, Office of Municipal Pollution Control, U.S. Environmental Protection Agency, personal communication, Nov. 27, 1989.

earmarked taxes .47 (Box 3-D describes the Texas Loan Program.)

State **Revolving Loan Funds**

EPA modeled the SRF program after existing State programs, and under EPA guidelines, States must add a matching 20 percent share to the Federal grant and enforce current EPA project regulations. The SRF can make loans to communities at or below market interest rates for 10 to 20 years. Loans can be used to finance new projects, refinance ongoing projects, or to "leverage" or guarantee other bonds. In effect, local districts borrow from a State agency that is responsible for managing the SRF, and the

Figure 3-6—How a State Revolving Loan Fund (SRF) Works



EPA grants the money to a State, **which must assure compliance with Federal regulations. The State provides a 20% match, and the total amount makes up a State Revolving Fund. Communities borrow from the Fund and repay the amount with interest.**

SOURCE: Office of Technology Assessment, 1990.

loan repayment stream feeds a self-sustaining loan fund (see figure 3-6).

In early 1990, 42 States and Puerto Rico had EPA-funded SRF projects under way.[48] The Federal grants total $1.4 billion, and individual State grants range from $188 million in Texas to $4.6 million in Vermont and South Dakota.[49] Utah was the first State to begin construction of an SRF-financed project; administrators credit the fast start to experience gained managing the State-based program, begun in 1984. In 1988, Tennessee awarded $8.3 million, including a $2 million State match, to six community water pollution control projects on the State's project priority list. Interest rates vary according to an ability-to-pay index developed by the University of Tennessee. Several States plan to leverage the capital grants to multiply the effectiveness of the Federal funds—New York, for example, plans to use its capital grant to secure bonds up to five times the amount of the capitalization.

The success of the SRF program from the State and local perspective depends on several factors. Chief among them are: Federal funding levels through 1994, successful financial management of the program by the State, and State support of local projects. Currently, Federal funds are authorized to provide $1.2 billion for capitalization grants in each of 1989 and 1990, and $2.4 billion for 1991,50 with amounts beginning to decrease in 1992, and falling to zero after 1994. Actual 1989 appropriations were

[48]U.S. Environmental Protection Agency, Office of Municipal Pollution Control, *SRF Update* p.

[49]Ibid., pp.

[50]The of Cities reports that billion would provide less than 25 percent of State and local costs of meeting the Clean Water Act mandates.

$941 million,[51] however; **and States** worry **that in future years** appropriated funds will also be lower than authorized levels.

States face three important financial/institutional issues related to SRFs. The first, is the required 20 percent match. In most cases, these funds are raised from general obligation bonds and/or general appropriations, depending on the State fiscal philosophy.

Second, State SRF officials are managing complex programs that require a high level of legal and financial expertise. Loan structuring, portfolio management, and compliance with Federal and State statutes demand sophisticated knowledge of local and national conditions and capital markets. The transition to a loan program will be unwelcome and difficult for many communities, and they will need more State help, particularly in establishing higher rate structures to cover full project costs and ensure loan repayment. For some poor communities, raising rates to permit conventional loan repayments will be impossible, and State officials will be called on to develop alternative financing plans. EPA funds available to States for program planning and administration are being drastically cut, handicapping those that need the funds for management staff and technical assistance.[52]

Third, States face the challenge of how and where to raise the additional capital to finance projects and meet Federal regulations--only some of which pertain directly to the objectives of the program. As one State wastewater program manager commented: "**having this many regulations is pretty hard for** local jurisdictions to stomach for a LOAN—and the Feds just added a new regulation on maintaining a drug-free work environment."[53] Utah SRF officials estimate that Federal contract conditions stipulating environmental reviews, wage rates, and access for the handicapped will increase local project costs by approximately 20 percent[54] and are compensating local districts by reducing interest rates **3** points. Costs are a problem now even with Federal support; difficulties will intensify when Federal funding ends in 1994. In most States, the SRF programs are not expected to meet all the financing needs, and EPA estimates that **20 States** will face a combined financing burden of nearly $57 billion.[55] Moreover, operating costs are expected to increase rapidly as more complex treatment processes are introduced, requiring higher user fees and ultimately making capital financing more difficult. Finally, State officials can buffer the Federal/local tensions arising from unanticipated changes in Federal regulations, which often hamper local program management and financing.

State Bond Banks

Vermont established the first State-sponsored bond bank in 1970, and at least 10 States have since followed suit: Alaska, Illinois, Kentucky, Maine, Michigan, New Hampshire, New Jersey, Nevada, North Dakota, and Oregon. Such banks reduce interest costs to local communities by pooling a number of small, local issues into one large, more easily marketable bond. State bond banks offer the greatest local savings when the State guarantees the consolidated bond issue with a reserve fund supported by the State general fund.[56] Furthermore, having a group of communities participate in the bond issue spreads the risk and lessens the chance of default, thus lowering interest costs. Underwriting costs are lower because of the larger issue and superior credit rating of the State bond bank,[57] and small town officials, inexperienced in finance, benefit from the expertise of State bond bank specialists.

Other Bond Financing

Bonds are the primary source of State matching funds for EPA SRFs, and now finance more construction of environmental facilities than Federal grants. During the 1980s, municipal bonds raised an

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[51] Don C. Niehus, environmental planner, Office of Municipal Pollution Control, U.S. Environmental Protection Agency, personal communication, k. 11, 1989,

[52] National Academy of Public Administration, Financing Strong *State* Water Proceedings of a National Workshop, Mar. 20-21, 1989 (Washington, DC: Us. Environmental Protection Agency, Office Of Water, August 1.

[53] Craig, op. cit., footnote 44, Mar. 9, 1989.

[54] U.S. Environmental Protection Agency, Office of Municipal Pollution Control, *SRF* 1988), p. 2

[55] Apogee Research, Inc., The *Cost of Environmental* (Washington, U.S. Environmental Protection Agency, Office of the Comptroller, m press).

[56] Chambers Associates, Inc., op. cit., footnote 40, p. II-11.

[57] The National Conference of State Legislatures, *Capital Budgeting Finance* (Denver, CO: 1987), p. 101.

Photo credit: S.C. Delaney/U.S. Environmental Protection Agency

This debris deposited by storm water illustrates why new environmental standards will require control of overflow resulting from storms.

average $3.8 billion per year in capital for wastewater projects alone.[58]

However, projections of future needs are daunting. EPA estimates that if future capital requirements for wastewater and water supply facilities are financed entirely with new bonds, municipalities will have to double the environmental public works debt they currently issue—from $4.5 to $9 billion a year.[59] Based on data from 1977 through 1985, this level of increase is not unusual. However, capital requirements for environmental programs compete with other public investment needs, and the limited ability of some small jurisdictions to issue new debt poses other problems. EPA estimates nearly 7,000 cities and towns, or 26 percent of all communities with populations under 2,500, could have difficulty meeting the fiscal standards for new bond issues.[60]

Despite the complexities of debt financing, numerous States have established environmental programs financed by State bond issues to assist local jurisdictions. California's Clean Water Bond Fund is authorized to issue up to $323 million in general obligation bonds to finance water treatment, reclamation, and conservation projects. The Illinois Anti-Pollution Bond Fund, established in 1970 with a $750 million bond authorization, funds wastewater facilities that would normally not be eligible for Federal aid. Maine has a Small Projects Community Assistance Program to finance wastewater projects that can be constructed for under $100,000; it is funded by a 1987$1 million bond issue. The State also sold $198 million in industrial development bonds in 1983 to capitalize the Finance Authority of Maine, which supports local pollution control and water supply system construction. Maryland supports a loan program to improve Chesapeake Bay water quality with a $25.4 million general obligation bond. West Virginia funds a solid waste disposal site program with revenue bonds, while Wisconsin provides financing for wastewater treatment facilities with $100 million in bonds and annual support from the general fund.[61]

A few States have financed major environmental programs through general appropriations, and some have used appropriations for the State share of initial SRF capitalization. To cite some examples: Massachusetts appropriated $750 million to assume the local share of EPA construction grants for wastewater facilities in 1985. In 1986, the Georgia Legislature appropriated $21 million for financing the State revolving loan program. Wisconsin added $63 million from the general fund in 1987 to support local wastewater treatment facilities, and Minnesota supported its Solid Waste Processing Facilities Capital Assistance Program with $20.2 million appropriated by the legislature between 1980 and 1988.

Earmarked Taxes

Although many States dedicate fuel taxes to transportation, it is unusual for a State to dedicate tax revenues to environmental programs. In 1985, the Washington State Legislature established the Centennial Clean Water Program and dedicated an 8-cent per-pack tax increase on cigarettes to finance it, based on the relative popularity of "vice" taxes. Since the first grants were made in 1987,$36 million has been paid out of the fund to 120 recipients. The program can accumulate funds and need not spend all that is raised annually; an "insurance" provision

[58] Apogee Research, Inc., op. cit., footnote 55.

[59] Ibid.

[60] U.S. Environmental protection Agency, Office of Policy, Planning, and Evaluation, *Business Agriculture* (Washington, DC: September 1988), p. 2-15.

[61] Busson and Hackett, op. cit., footnote 13, pp. C-19.

ensures that any shortfall in revenue is covered by general fund appropriations. Minnesota's 4-cent per-pack tax on cigarettes brings in approximately $16 million each year. Maryland levies a tax on boat sales, yielding $14 million annually, which is dedicated to the State's Clean Water Program,[62] and Missouri dedicates 0.1 percent of its State sales tax to water programs.

State-imposed fees raise only 8 percent of State outlays for environmental programs, although their use has increased as States look for politically acceptable supplements to general revenue sources. Because State responsibility for environmental services is primarily administrative and regulatory, State fees are applied to permit reviews and facility inspections, and charges are levied for emission of pollutants. Revenues are used for operating and administrative costs.

Public-Private Partnerships

Privatization of solid waste recovery facilities has been successful in some communities, and based on this experience, States see public-private ventures as an option for other types of environmental projects. However, Federal Tax Code changes have made some private-public projects more expensive because of restrictions on the use of tax-exempt bonds, and the repeal of tax credits and provisions allowing rapid asset depreciation (see chapter 2).

States encourage private investment by loosening existing State statutes and by not enacting additional barriers. Some States are currently adopting comprehensive statutes, which include granting local governments the right to enter into long-term service contracts with a private entity and to sell or lease facilities to private interests. Privatization is encouraged if the State acts to exempt public-private ventures in the environmental area from being classified and regulated as public utilities. At least four States (Alabama, Arkansas, Kentucky, and Minnesota) exempt public-private ventures from some or all local taxes.[63]

The New Jersey Wastewater and Water Supply Privatization Acts enacted in 1985 are among the most comprehensive privatization statutes. The Acts establish procedures through which local governments may contract with private entities for up to 40 years for financing, design, construction, and operation or management of wastewater or water supply systems.

MULTIPURPOSE STATE LOAN PROGRAMS

Throughout the United States, capital financing for transportation and environmental public works is usually provided categorically, with each public works function having its separate financing mechanisms. This approach gives each sector autonomy to finance its own improvements, but it complicates the coordinated capital infrastructure planning and budgeting important for economic development and environmental protection. Several States have established multifunctional infrastructure financing programs to promote economic development; in general, these are small programs oriented toward depressed areas. For example, Kentucky has instituted a $20 million Infrastructure Revolving Loan Fund with subsidized interest rates for local communities. Colorado set up a Local Government Impact Assistance Fund financed by mineral severance taxes in 1977 to help local communities cope with rapid expansion.[64] Since 1986, California has made loans or grants to rural counties for roads and water supply systems from the Rural Economic Development Fund.[65] Wyoming has one of the oldest multipurpose loan funds and Washington State has one of the newest (see boxes 3-E and 3-F).

STATE MANAGEMENT AND PLANNING

During the last 20 years, State governments generally have assumed more responsibilities related to public works, adopted modern management techniques and technologies, diversified their revenue bases, and upgraded their professional staffs. States are increasingly adroit at dealing in the international credit markets and in utilizing new financing techniques. Of particular interest are improvements in fiscal management and capital budgeting and planning. Thirty-six States now

[62] National Governors' Association, op. cit., footnote 45, p. S4.
[63] Chambers Associates, Inc., op. cit., footnote 40, p. IV-15.
[64] Ledebur et al, op. cit., footnote 7, p. 61.
[65] Ibid., p. 62.

Box 3-E—The Wyoming Joint Powers Act Loan Program[1]

The Wyoming Joint Powers Act (JPA) loan program[2] is a striking example of how the geography, financial and natural resources, and political climate of an individual State can foster a unique program. Wyoming's loan program provides funding for a broad range of public works: water and sewer projects, transportation projects (including airports), solid waste facilities, and even housing, hospitals, energy facilities, and schools. No priorities are set among these categories, and both existing facilities and newly proposed facilities are eligible for loans. The application process is simple, and the barriers to acceptance are few.

The main impetus for creating the JPA loan program was concern over the boom and bust energy cycles that characterize Wyoming's natural resource-based economy. Wyoming's dependence on natural resources also influenced the program's method of capitalization. With no State income tax and a sparse population, Wyoming relies heavily on earmarked funds established with current, resource-based revenues. JPA loans are backed primarily by the State Mineral Trust Fund, which is funded by mineral royalties and the State severance tax. The Wyoming Farm Loan Board, comprised of five members including the Governor, the State Treasurer, and the State Auditor, administers the loans.

JPA interest rates, which can range from 6 to 12 percent and are currently at 8.5 percent, are a big break for very small rural jurisdictions, which could never have access to such low rates on the open market. Loans are secured by pledges from the local jurisdictions to charge facility users adequate fees to cover costs. If higher fees are not initially affordable for users, the State provides interim aid to ease the transition. Since 1974, the Wyoming Farm Loan Board has awarded 266 JPA loans totaling more than $127 million; 54 percent of the funds have gone to water and sewer projects, 10 percent to transportation, and the remaining 36 percent to medical, educational, energy, and solid waste facilities.

As of 1988, virtually every jurisdiction applying had been awarded a loan. Program staff works closely with the applicants to counsel them on the most prudent application strategies, and local jurisdictions recognize the importance of cooperation in tapping a finite fund.

The wide availability of the loans has helped avoid arguments over targeting and distribution. The relative harmony between the legislative and executive branches is notable, especially since project selection is largely an executive branch undertaking. Relations between the two branches are eased because the program is funded with earmarked revenues, freeing the legislature from annual budget discussions. Second, the local jurisdictions are generally happy with the program, which pleases legislators. Last, the Farm Loan Board office makes an effort to be as accessible as possible in administering the program. One observer reports that: ". . . legislative oversight over executive branch actions is less important—and less stringent—in a State where an individual farmer seeking a loan can expect to discuss it directly with the governor, as is common with the Farm Board Loans."[3]

The legislature may take a more active oversight role in the loan allocation process if—or when—competition for the loans heats up, and the $100 million loan ceiling is approached. More competition seems likely, since the number of applications is steadily growing because of increasing public works needs, greater awareness of the program, and the fact that social service programs are requiring more of the State budget.

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[1]Material on the Wyoming loan program is based on Sophie M. Korczyk, "State Finance for Local Public Works: Four Case Studies," OTA contractor report, Dec. 19, 1988.

[2]The loan program is called a "joint powers" program because it allows local jurisdictions to cooperate in applying for a loan for a jointly used facility. Most applications, however, are made by single jurisdictions.

[3]Richard Miller, director, Wyoming Legislative Service Office, quoted in Korczyk, op. cit., footnote 1, p. 47.

Box 3-F—Washington State Public Works Trust Fund[1]

The Washington State Public Works Trust Fund (PWTF) is a rare example of a successful multipurpose infrastructure funding program. It emphasizes project self-sufficiency, comprehensive planning, and allocation according to ability to pay as well as severity of need.

The PWTF grew out of a 1982-83 statewide survey of Washington State infrastructure needs that pointed to serious gaps in the State's management of infrastructure. Capital spending for public works was at its lowest in 20 years and was expected to continue declining, while projected needs would require at least a 250 percent spending increase. These findings prompted the legislature to direct what is now the Washington State Department of Community Development (DCD) to prepare a plan for replacing and repairing local public works holdings.

As required by its mandate, DCD surveyed over 600 local jurisdictions about their needs and available resources. DCD found that total projected needs reached $4.3 billion, but that local resources could only meet 53 percent of this. The legislature responded by setting up a new loan program and charging DCD with examining ways to finance, manage, and administer the loans. DCD's subsequent report, *Financing Public Works: Strategies for Increasing Public Investment*, provided the design for the Public Works Trust Fund.

Washington State's strongly populist and activist tradition and cooperation between the legislative and executive branches contributed to the success in establishing the program. The legislature and DCD made a point of reaching out to localities, including them in the design process, and linking the program directly to local needs and resources. Though the PWTF stemmed from a legislative initiative, the legislature and the executive branch worked closely together to establish the fund. Key to establishing the effective program design were efforts to:

- involve all interested parties,
- maintain good communication,
- address common concerns, and
- tailor the program to common goals.

DCD annually invites all Washington cities, counties, and special-purpose districts to apply for low-interest (1 to 3 percent) loans drawn from the PWTF. The PWTF draws its funds from three sources: water, sewer, and garbage collection taxes; a portion of the real estate excise tax; and ultimately, loan repayments. A 13-member Public Works Board evaluates the applications. The Association of Washington Cities, the Association of Washington Counties, and associations of water, public utility, and sewer districts nominate elected officials and public works managers. Three members from each of the lists as well as four members of the general public with special public works expertise are appointed to the board. The Governor selects one of these latter four to chair the board.

[1]Material on the Washington State Public Works Trust Fund is based on Isaac Huang, Washington State Department of Community Development, interview, June 1989; and Sophie M. Korczyk, "State Finance for Public Works: Four Case Studies," OTA contractor report, Dec. 19, 1988.

prepare long-range capital plans as a basis for annual or biennial budget decisions.[66]

Planning Land Use

The coordination of public works functions with land use development policies can promote efficiency and maximize the benefits of investment. The low-density sprawl and traffic congestion that typify so many metropolitan regions mark the widespread lack of such planning and coordination. Although land use and public works decisions are generally made at the local level, States can be important players.

State policies on land use and public works planning vary widely, influenced by the political climate, the intensity of growth and environmental pressures, the **State** economy, and available resources. At one extreme, Idaho takes a minimalist

[66]National Conference of State Legislatures, *Capital and The* November p. 24.

The board passes its annual project recommendations on to the State legislature. After approving a project list based on the board's list of priorities, the legislature passes an appropriation from the Public Works Assistance Account to cover the cost of the loans granted. The Governor then signs the appropriation into law.

An important goal in the design of the PWTF was to discourage localities from deferring maintenance and repair, a side-effect of traditional grant allocation systems, which dole money out to the neediest localities. The PWTF program calls for the Public Works Board to base less than one-half (40 percent) of a locality's score on needs, and a full 60 percent of the score on the jurisdiction's demonstrated commitment to help itself. The board evaluates local effort by reviewing the jurisdiction's maintenance strategy, the percentage of local funds dedicated to public works, and the overall system of financial management. Since 1986, the PWTF has provided 194 loans totaling $100 million. Local jurisdictions have matched this amount with about $128 million in local funds for the completion of the projects.

In addition to proving its own commitment, a local government must meet two other requirements before it can be considered for a loan. First, the locality must levy at least a 0.25 percent real estate excise tax earmarked for infrastructure spending. Second, it must develop its own Capital Improvement Plan (CIP) for the specific infrastructure category (i.e., roads, bridges, water systems, storm sewers, and sanitary sewers) for which the loan is being sought.[2] In the 1991 loan cycle, eligibility requirements will tighten further. DCD will require a comprehensive CIP covering all of the five categories of infrastructure for which loans are offered, rather than the current single category-specific CIP.

The legislature and DCD understood that strict requirements for local effort could bias the selection process in favor of larger and better funded jurisdictions. In the program's early years, DCD addressed this issue by interpreting and enforcing application requirements liberally. More recently, however, DCD has placed stronger emphasis on local planning by beefing up the requirements to include the long-range local comprehensive CIP. To compensate for the potential bias problems posed by tighter requirements, DCD now offers zero-interest loans of up to $15,000 for the development of local long-range CIPs. If the no-interest loans are the "carrot" for the small jurisdictions, the "stick" is that without comprehensive CIPs, not even small jurisdictions will be able to apply for regular PWTF construction grants after 1991.

To prevent political and geographic considerations from skewing allocation decisions, the legislature and DCD designed a data-driven and rational selection process. First, loans are available only to projects intended to address existing needs; the funds may not be used for growth-related projects. Such targeting allows the Public Works Board to avoid the touchy issue of determining where growth ought to occur. Second, the effects of political interests are muted by the stipulation that in reviewing the Public Works Board's list, the legislature may delete projects, but not add any.

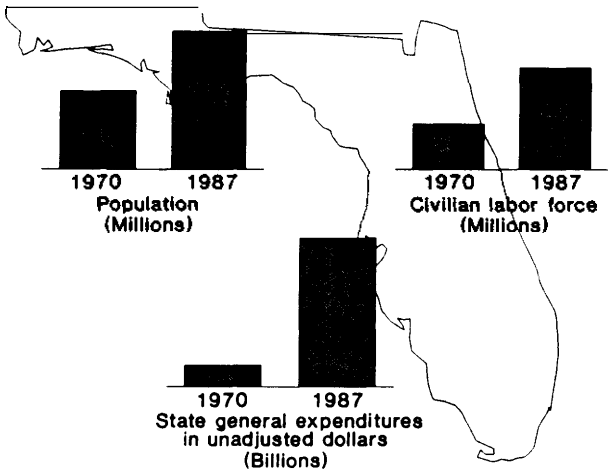
[2]The Public Works Board defines the minimum elements of an acceptable Capital Improvement Plan as: 1) needs assessment, 2) prioritization of major capital improvement projects for the coming 5 years, 3) project cost estimation, 4) proof that the plan has been updated in the past 5 years, 5) proof that the plan was developed with some general public input, and 6) formal adoption of the plan by a local legal entity.

approach toward the State's role in land use and infrastructure planning. It has no State planning office and provides no support for regional or local comprehensive planning, reflecting a distaste for intervention in local affairs and the State's flagging economy. Both State and local resources are so limited that planning is not a major issue; what State planning there is, is done on a departmental basis.[67]

On the other hand, a few States, especially those with sustained growth, have taken steps to coordinate regional land use policies and infrastructure development. Tennessee has had a State Office of Planning and legislation that permits regional planning agencies since 1935. Currently, the State is divided into nine regional development districts, which are responsible for data collection, land use and facility planning, air and water quality, and for fostering regional planning among counties and cities. However, the impact of regional planning is limited. Although coordination has improved in the development of regional sewer and water facilities, the development districts are not designated by the

[67]Campbell Associates, "Regional Planning," OTA contractor report, June 1989, A-5.

Figure 3-7--Growth In Florida, 1970-87



SOURCE: Office of Technology Assessment, 1990, based on Bureau of the Census data.

State as the **official** metropolitan transportation planning agencies, and they have only minor roles in transportation planning. Moreover, regional planning in Tennessee, as in many other States, suffers from competition among agencies because planning functions and enforcement authority are scattered among numerous State, metropolitan, and local agencies.

For the last decade, Florida has been a national leader in promoting regional growth management policies to link land use and infrastructure development. Faced with rapid population growth (see figure 3-7) and inadequate roads and sewer and water systems, Florida requires planning and development reviews at the State, regional, and local levels. While the State has established a strong institutional framework for State and regional planning (see box 3-G), it does not play a large role in financing local public works. In contrast, New Jersey's State transportation and environmental financing programs (see box 3-B earlier in this chapter) were designed to support its efforts to link regional capital improvements for infrastructure with land development.

TECHNICAL ASSISTANCE PROGRAMS

State technical **assistance** programs, such as circuit riders described earlier, can bolster local managerial and technical knowledge at modest cost, and are especially valuable in States with troubled economies and in those with small, isolated jurisdictions. As the mayor of a small town put it:". . . one of our bigger problems is that we don't know where to turn to for expertise, for help. [And if we do hire a private consultant] we have no one that tells us whether this person is doing the best job for us, or if they are doing what will make them the best fee."[68] Helping local officials spend public works funds wisely can be as important as procuring the funds.

Technical assistance services range from statewide databanks to financing and technology workshops. Three State assistance programs examined by OTA use their land grant universities to support local managerial and technological capabilities. However, each program is unique, reflecting its State's distinctive geographic, demographic, and financial conditions. New Mexico's program focuses primarily on mobilizing expertise within the University of New Mexico's Engineering Research Institute to develop local officials' managerial and technical skills (see box 3-H). Designers of the Nebraska and Oklahoma assistance programs, on the other hand, placed special emphasis on cultivating private sector participation in administering the local programs as well as using the programs to spur private sector investment.

Nebraska's Center for Infrastructure Research was established in 1988 at the University of Nebraska's College of Engineering and Technology, specifically to forge an alliance between technology producers and technology users. Consequently, the center places a high priority on transferring academic research results to industry and local government in the fields of solid waste management, bridge and road maintenance, and construction materials. Program officials describe their research efforts as "market-driven";[69] they focus their studies on community needs by consulting with local officials and

[68]Mary Simone, mayor, Rocksprings, TX, in U.S. Congress, Office of Technology Assessment, "Transcript of Proceedings—State and LAlCal Infrastructure Management and Financing Workshop," unpublished typescript, July

[69]Martha Gilliland, director, Nebraska *Center* for Infrastructure Research, personal communication, February 19$9.

private sector representatives before determining the research agenda.[70]

The Oklahoma Infrastructure Institute, established in 1988, is administered jointly by the University of Oklahoma and Oklahoma State University. Oklahoma was hard hit by the mid-1980s oil price fall, and the Institute's objectives have been shaped largely by the State's distressed economy. Program officials hope that improving Oklahoma's infrastructure will rejuvenate depressed areas by attracting new business. Preliminary program literature states that ". . . all aspects of infrastructure planning, financing, construction, rehabilitation, and management will be critical for achieving State economic development goals."[71]

FINDINGS AND CONCLUSIONS

States coping most effectively with infrastructure financing issues and Federal requirements are those that have both the fiscal capacity and political will to raise capital from public and private sources and an available pool of technical and financial know-how. However, some States must struggle just to provide current levels of environmental and transportation services; they do not have the financial capability to satisfy local and Federal demands for improvements. Five factors determine a State's ability to plan and pay for needed infrastructure improvements.

The first is the strength and balance of the State economic base, of paramount importance in determining its ability to raise both public and private funds. New England and the Mideast States have had strong economies in recent years, enabling them to raise State and local revenues and to offer attractive opportunities for private investment. States that lack a strong economic base, like West Virginia, or are dependent on one resource, like Louisiana, have a very hard time raising both public and private investment funds. In addition, poor jurisdictions within such States cannot afford to pay for engineering, planning, and financial expertise.

The second is the rate of population growth, a double-edged sword for many States-on the one hand, it generates heightened demand for services, while on the other, it provides a broader tax base. Growing States and communities are able to make significant demands on private developers for infrastructure investment-a practical impossibility in nongrowth areas where the real estate market is weak, and private investors see little opportunity to recoup an investment in infrastructure.

The combination of population size and density is a third and pivotal factor in determining how well States can raise additional revenues. Low-population, low-density States have greater difficulty financing public programs. The tax base is limited compared to the scale of needed investments; their menu of revenue sources is usually small; and they lack staff with specialized expertise, forcing them to rely, if they can afford it, on outside consultants. **OTA finds that those States most vulnerable to cuts in Federal transportation and environmental grants and in need of access to technical and financial expertise are large, rural Western States, such as North Dakota, South Dakota, and Montana; States with poor economic bases such as Alabama, Mississippi, and Louisiana; and States like New Mexico and Alaska, with large areas of federally owned land or dependent on the volatile extractive industry (see** chapter 2, figure 2-7). Although these States contain less than 11 percent of the Nation's population, their problems are pressing, and many Federal programs provide little effective special assistance. **For example, current Federal programs do not give special recognition to the needs of States with low fiscal capacities who are willing to tax themselves, nor take cognizance of States with substantial fiscal capabilities but low tax effort (see figure 3-3 earlier in this chapter).**

The land area or special topographic characteristics of a State or county-which determine the need for bridges, viaducts, or tunnels, for example—comprise the fourth important variable, especially when considering funding for roads and bridge improvements. Although this factor is taken into consideration in allocating Federal highway aid, the formula does not compensate for it.

Finally, the State political environment includes factors that can override physical and economic variables; spending and debt limits imposed by voters can hobble the ability of an economically

[70] University of Nebraska-Lincdn, *Summary* *Workshop* (Lincoln, NE: January 1989).

[71] Mark Meo, *Draft Discussion* *Infrastructure Institute* OK: University of Oklahoma, May 1988),

Box 3-G—Florida Emphasizes Planning

Florida grows by an average of 900 new residents each day. The State is in the midst of a political and financial struggle over growth management after enacting one of the Nation's strongest land development regulatory programs and taking a stand in favor of comprehensive planning. Although State and local officials are having problems finding the funds to implement the new planning and public works requirements, Florida's program can be instructive to other States that are considering a stronger role in growth management.

The State's role in planning began in 1975 with passage of the Local Government Comprehensive Planning Act, which required all local governments to prepare, adopt, and implement local comprehensive plans that included transportation and environmental public works. The initial results of the act were disappointing; most local plans contained only vague goals and policies, which made implementation difficult. In 1982, a State Study Committee

Photo credit: Ed Chappel/Westinghouse Communities, Inc.

Florida has enacted strict land-use planning and budgetary requirements, and new development continues to flourish.

identified the absence of strong State and regional planning as a major reason the local plans were ineffective and recommended overhauling the 1975 legislation.[1]

Convinced of the need for strong State and local controls, the legislature adopted the Local Government Comprehensive Planning and Land Development Regulation Act of 1985. The provision is the requirement that each of the State's 67 counties, in conjunction with their respective cities, submit a comprehensive 5-year development plan to the State Department of Community Affairs (DCA) for approval. The plans must conform to State comprehensive and regional plans and must spell out in detail what types of development are allowed and where, and where public works systems will go and how they will be financed. Each district must adopt a multi-year capital improvement program and an annual capital improvement budget. The teeth in the legislation is the "concurrency" requirement stipulating that a specified service level for highways, sewers, and other public facilities must be available at the time of the impact accompanying any new development. Within a year after plan adoption, a local government may not issue a development permit that will result in a reduction in the level of service for any facility identified in the plan.[2] In effect, the State is requiring local governments to provide services according to a comprehensive plan that is tied to a capital improvement budget. Twice a year, local districts may consider comprehensive plan amendments. The penalty for noncompliance is a cut off of State funds, primarily revenue sharing.

DCA began reviewing the mandated local plans in July 1988. Of the 201 plans received, 56 have been approved and another 18 are close to approval.[3] It is too soon to tell what will occur when local governments begin to carry out the plans. Some builders, particularly upset with the concurrency regulations, claim all development will be stymied unless local standards are lowered or the State substantially increases funding for public works.

Although local and State officials agree on the need for comprehensive planning, local governments want the State to take a bigger and more responsible role in financing needed public works, estimated to cost as much as $1.6 billion annually through the year 2000. The State has resisted local pleas for an increase in the State gas tax rate. Local governments frequently have not included transportation projects, funded by the State Department of Transportation (DOT), in their local comprehensive plans because the funding schedule for the projects has been unpredictable.[4] To remedy this, 1989 legislation enables local governments to count on State funding for the first 3 years of DOT's 5-year plan. The legislature has also given local governments authority to levy a l-cent local sales tax dedicated to infrastructure and a l-cent local gas tax for roads, although both levies are subject to local referenda, which makes them unpopular with elected officials. Nine counties have passed the sales tax and 13 have defeated it; prospects for passage are improving in some large urban counties. The State is encouraging local governments to make greater use of impact fees on developers.

[1] Daniel W. O'Connell, "Local Government Comprehensive Planning and Land Development Regulation Act," *Florida Environmental and Urban Issues*, vol. 13, No. 1, October 19S5, p. 4.

[2] State of Florida, "Senate staff Analysis and Economic Impact Statement," accompanying Senate Bill 2A, June 3, 1989, p. 1.

[3] Michael Richardson, legislative director, Florida state Department of Community Affairs, personal communication, Oct. 6, 1989.

[4] State of Florida, op. cit., footnote 2, p. 4.

strong State to finance infrastructure improvements. States with laws that permit districts to pursue a variety of financial strategies tend to manage better. OTA **finds that despite strict spending limits in some States, voters in many States have supported the use of general or dedicated revenues for well-defined transportation or environmental programs to address specific priorities. Successful efforts to raise fuel taxes or establish State bond banks are products of strong political leadership and commitment and the willingness of a State's voters to pay for public services.**

The expanding needs of social programs, such as education, health care, and criminal justice, for general revenues and debt financing are forcing most States to finance public works capital from benefit charges (e.g., user fees and special assessments) and to make local projects self-sufficient through loan program rather than grants. Currently, transportation is funded substantially from user charges, and environmental programs increasingly from debt backed by user fees. Greater use of benefit charges reflects a shift in attitude toward who should pay for public services; when there were fewer demands on government, broad-based taxes were able to carry most of the burden. The current trend is for State governments to rely more heavily on benefit charges for pay-as-you-go spending and to back revenue

Box 3-H—The New Mexico Infrastructure Development Assistance Program[1]

The New Mexico Infrastructure Development Assistance Program (IDAP), created by the New Mexico State Legislature in 1988, provides technical assistance, training, and technology development to communities around the sparsely populated State. The State's smaller cities and counties are often strapped for technical know-how.[2]

IDAP was built from the bottom up. The Local Government Division of New Mexico's Department of Finance and Administration contracted with the University of New Mexico's Engineering Research Institute to survey assistance needs of the State's 99 cities and 32 counties. With the information collected, the Engineering Research Institute drafted the IDAP Plan, a 5-year assistance program, to be updated annually. The plan identifies strategies for improving local governments' abilities to develop, operate, manage, and maintain a range of public works infrastructure, including roads; bridges; public buildings; water supply systems; wastewater, solid waste, and hazardous waste facilities; airports; and electric and gas utilities. Equally important, it aims to help communities develop the ability to implement their own financing mechanisms in the face of dwindling Federal aid.

IDAP is administered by a program manager from the University's Engineering Research Institute and advised by an Infrastructure Council made up of volunteer representatives from both public and private sector organizations. By coupling public and private talent, IDAP provides three basic types of services: education and training in public works management, outreach programs for information-sharing (including some limited field assistance), and technology transfer and development. New Mexico's State university system, State and local public agencies, and professionals from the private sector share the responsibility for providing these services.

In addition to fostering better managerial capability, IDAP coordinates its efforts with regional planning organizations throughout New Mexico to ensure uniformity of expertise and minimal duplication of effort. Because the program offers no money to the State's political subdivisions, its cost to the State is modest—$100,000 in 1988 and $150,000 in 1989.

So far, local public works managers have been eager to avail themselves of IDAP workshops and conferences. IDAP officials hope that State legislators will authorize greater support for technical assistance as New Mexico communities come to realize the benefits of good management. If convinced that bolstering local managerial capacity pays off, the legislature could ultimately condition eligibility for State financial assistance on good local infrastructure management.

[1]Material on the New Mexico Infrastructure Development Assistance Program (IDAP) is based on New Mexico Engineering Research Institute, *New Mexico Infrastructure Assistance Program Five Year Plan: 1989-1993* (Albuquerque, NM: University of New Mexico, 1988); and Norman Falk, IDAP program manager, personal communication, Aug. 18, 1989.

[2]In 1983, only Albuquerque had a population over 100,000, and only eight cities across the State held 25,000 or more, according to the Bureau of the Census.

bonds for long-term improvements. (See table 3-5 for advantages and disadvantages of financing strategies.) OTA **concludes that benefit charges are attractive and effective strategies, because of their revenue potential, voter acceptability, and service management opportunities. However, these charges have major socioeconomic trade-offs that need further consideration, including administrative issues, equity, and revenue reliability in the case of a political backlash, an economic downturn, or real hardship.** For example, States with low economic bases and/or small populations have major difficulties developing sufficient capital solely from user fees.

Reflecting the swing toward benefit charges, all but three States have raised gas taxes and other motor vehicle user charges over the last 10 years to pay for transportation improvements. The gas tax is a relatively large revenue producer, and increases are more acceptable to voters for supporting transportation improvements than raising general taxes. Although earmarking revenues for special purposes restricts their fiscal options if priorities change, States find earmarking a good way to ensure a stable revenue stream. Gas taxes and other vehicle user charges are frequently used to finance public transit; and a number of States use aviation-related taxes and fees to support airport development. Some States use gas tax revenues for nontransportation programs, although transportation advocates feel strongly that these funds should be reserved for transportation.

OTA concludes that because gas taxes and other transportation charges are politically acceptable and proven reliable revenue sources,

Table 3-5-Major Infrastructure Financing Mechanisms: Advantages and Disadvantages

	Advantages	Disadvantages
fund appropriation . .	*Administrative:* appropriations reflect current legislative priorities *Equity:* all taxpayers contribute to capital projects *Fiscal:* no debt incurred, so projects cost less during periods of inflation	*Administrative:* infrastructure must compete with other spending priorities each year; cannot plan long-term projects around uncertain funding *Equity:* no direct link between beneficiary and who pays, and current generation pays for capital projects that benefit future generations
General obligation bonds	*Equity:* capital costs shared by current and future users *Fiscal:* bonds can raise large amounts of capital; general obligation bonds usually carry lowest available interest rates	*Administrative:* States often impose debt ceilings and require voter approval *Fiscal:* adds to tax burden, especially if interest rates are high
Revenue bonds	*Administrative:* do not require voter approval and are not subject to legislative limits *Equity:* debt service paid by user fees, rather than from general revenues	*Administrative:* require increased reporting and restricted by Tax Reform Act limitations *Fiscal:* usually demand higher interest rates than general obligation bonds
State gas tax.	*Administrative:* established structure allows tax increase without additional administrative expense *Equity:* revenues are usually earmarked for transportation, so users pay *Fiscal:* revenues relatively high compared to other user taxes	*Administrative:* revenue fluctuates with use of gas *Equity:* fiscal burdens are not evenly distributed between urban and rural areas *Fiscal:* revenue does not rise with inflation or reflect differences in infrastructure use that may determine capital needs
Other dedicated taxes	*Administrative:* voters prefer dedicated taxes *Fiscal:* provides relatively reliable funding source not subject to annual budgeting	*Administrative:* reduces districts ability to meet changing needs *Fiscal:* major economic downturns can reduce revenues significantly
State revolving funds	*Administrative:* promote greater State independence in project selection *Fiscal:* debt service requirements provide incentives for charging full cost for services; loans can leverage other sources of funds; loan repayments provide capital for new loans	*Administrative:* States bear increased administrative and financial responsibility *Equity:* poor districts cannot afford loans *Fiscal:* repaying loans will mean increases in user charges or taxes

SOURCE: Office of Technology Assessment, 1890.

States are currently better able to finance transportation improvements than environmental programs. Highways, aviation, and (to some extent) transit have dedicated revenue sources, while State revenues earmarked for environmental programs are unusual. Because a large share of environmental capital currently comes from Federal grants, future funds for environmental needs will have to come from State general revenues, user fees, or new, earmarked taxes, unless a new Federal program is enacted.

States are providing local governments with nonfinancial support, such as enabling legislation to permit local option taxes or to facilitate public-private ventures and other types of innovative strategies. Some States have established comprehensive planning requirements, and others have created bond banks to assist local districts to reduce the costs of acquiring capital. Several States are offering technical assistance and help with capital budgeting, and others have established infrastructure research programs.

No State has a broad-based tax or revenue base for environmental services. However, most States have established EPA-capitalized revolving loan programs for construction of wastewater facilities and are working out the technical, administrative, and institutional difficulties inherent in such a complex financial activity. States will be hampered by coming cuts in Federal funds to support their administrative costs and must also accommodate the needs of those districts too poor to afford a loan and expand the supply of capital, both now and when Federal grants end in 1994.

Despite the success of several small, multipurpose, State infrastructure programs-Wyoming (box 3-E) and Washington (box 3-F), for example—it seems unlikely that States will fund and administer transportation and environmental programs jointly to any significant extent.. **Traditional differences in**

Photo credit: Port uthority New York and New Jersey

acil ties are an effective way to ensu e consiste eve es fo eti ng cap al deb and o operations and mai e ance

sources of fundıng and Federal/State/local nst tutional relationships are great, creat ng road blocks to comprehensive nfrastructure program integration OTA s research indicates that pol cymakers search ng for new fund ng and man agement strategıes may find greater success n pursu ng separate programs to support envıron mental and transportatıon publ c works