

Chapter 2

The Intergovernmental Framework



Photo credit: U.S. Department of Agriculture, Farm Security Administration

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The Intergovernmental Framework

*The changing fiscal fortunes of the national government now stand out as the single most important factor reshaping relations between Washington and the 50 State-local systems. It has transformed the expansive Great Society Federalism of the 1960s into the fairly austere and competitive fend-for-yourself federalism of the 1980s.*¹

Financing for public works, a major factor in how States and localities manage these services, is profoundly affected by Federal policies. For many years, Federal funds have been an indispensable part of the capital financing packages for ports, waterways, highways, and bridges, and more recently for transit systems, airports, and wastewater treatment and water supply plants in every State and most jurisdictions in the United States. Federal tax policy affects the cost of capital for State and local projects, Federal regulations determine performance and design standards for public works facilities, and Federal grant conditions influence how the planning and construction are carried out.

Although the Constitution provides the basis for a Federal role in public works services, which are fundamentally State or local in nature (see table 2-1), it does not draw clear lines between Federal responsibilities and those of States and localities. Because of these interdependent relationships, States and localities have had to readjust their own public works management continuously, as national economic conditions and Federal policies have changed over the years. During the past decade, shifts in national priorities and severe budget constraints have curtailed Federal spending for public works, left large unspent balances (see table 2-2) in user-funded transportation trust funds, and placed more responsibility on State governments to increase local spending on public works improvements. As if this fiscal upheaval were not enough, environmental concerns have also prompted more stringent Federal mandates and standards for public health-related facilities, and much of the transportation infrastructure has been found to need extensive repair or renewal. (See figures 2-1 and 2-2.)

The realignment in governmental roles that has resulted has been both wrenching and painful. State

and local governments confront huge, unexpected funding requirements for public works services and, although they have increased spending, have not been able to put funding packages together fast enough to meet infrastructure needs. Although Congress has acted to cut back Federal funding, members are unwilling to relinquish totally their right to allocate funds for local programs. Strong Federal-local partnerships forged during the 1960s and 1970s have been weakened somewhat, to the distress of local officials who often feel ignored by State administrations and prefer to maintain a direct link to Washington.²

Thus, tensions are high among State officials over the reduced levels of Federal program funding and their increased responsibilities, while local governments—large cities and counties and small rural communities, alike—fight to keep their Federal connections in addition to developing new ties to their State governments. How to ensure adequate investment in public works for long-term maintenance, repair, rehabilitation, as well as new construction, in such a contentious climate involves crucial and difficult intergovernmental issues.

PUBLIC SERVICES—WHO PAID FOR WHAT AND HOW

Until about 1900, local governments were the dominant providers of all governmental services, including public works—except for waterways, which have always been constructed, operated, and maintained by the Federal Government. Local governments accounted for 71 percent of total general government expenditures, with Federal spending representing 18 percent of the total, and States providing the remaining 11 percent.³ Almost all Federal revenue came from consumption taxes; in contrast, over 50 percent of State revenue came from

¹John Shannon, former executive director, Advisory Commission on Intergovernmental Relations, as quoted in Norman Beckman, "Development: in Federal-State Relations," *of States: 1988-89 Edition* (Lexington, KY: The Council of State Governments, 1989), p. 438.

²John Gunyou, city finance officer, Minneapolis, MN, in U.S. Congress, Office of Technology Assessment, "Transcript of Proceedings — State and Local Infrastructure Management and Financing Workshop," July 7, 1989, p. 189.

³J. Richard Aronson and John L. Hilley, *Financing State and Local Governments* (Washington, DC: The Brookings Institution, 1986), pp.

Table 2-1--Public Works Spending by Level of Government (in percent)

Year	Federal			State and local		
	Capital	Operations and maintenance	Total	Capital	Operations and maintenance	Total
1960	28	3	31	36	33	69
1970	23	5	28	37	35	72
1975	22	6	28	31	41	72
1980	25	7	32	23	45	68
1985	22	5	27	21	52	73
1987	19	5	24	24	52	76

^aIncludes spending for highways, airports, mass transit, water resources, wastewater, water supply, and solid waste. Data for 1988 and 1989 are not available.
 SOURCE: Apogee Research, Inc., based on data from U.S. Department of Commerce, Bureau of the Census, and the Office of Management and Budget.

Table 2-2--Federal Public Works Trust Fund Summary, 1988 (dollars in millions)

Trust Fund	Revenues	Outlays (end of year)	Balance
Highway Trust Fund:			
Highway Account . . .	\$13,645	\$14,036	\$9,020
Transit Account . . .	1,661	696	5,167
Airport and Airway Trust Fund	4,081	2,896	5,841
Inland Waterway Trust Fund	102	59	315
Harbor Maintenance Trust Fund	161	169	8

SOURCE: Office of Management and Budget, *Budget of the United States Government, Fiscal Year 1990* (Washington, DC: 1989).

property taxes, as did 90 percent of local revenues. Early in this century, beginning an emphasis still important today, Federal funds were provided to assist developing rural and agricultural areas, where revenue sources were scarce. For example, the Bureau of Reclamation was established in 1902 to encourage agricultural expansion, and the Rural Post Roads Act of 1916 funded roads across sparsely settled Western States. Although needs have long since changed, the influence of these policies still lingers.

Spending by all levels of government grew rapidly through the 1920s. Although the relative shares provided by each governmental level remained about the same, the structure and composition of taxes changed markedly. For example, in 1902, revenue from income taxation was so small that government records did not tabulate it separately. However, by 1920 the Federal Government levied taxes on both personal and corporate income,

and by 1927 income taxes accounted for 64 percent of Federal tax revenue.

Recovering from diminished prestige and authority after the Civil War and Reconstruction, State governments slowly began to expand their support for public works in the first three decades of the 20th century. Although still not major players, States increased their revenues during the 1920s by introducing personal income taxes.⁴ By 1930, 16 States taxed individual incomes; 17 taxed corporate incomes.⁵ Relinquishing property taxes as a revenue source to local governments, States gradually introduced excise taxes on motor fuels and cigarettes. Local governments continued to rely solely on the property tax, their primary source of income to this day.

The Depression

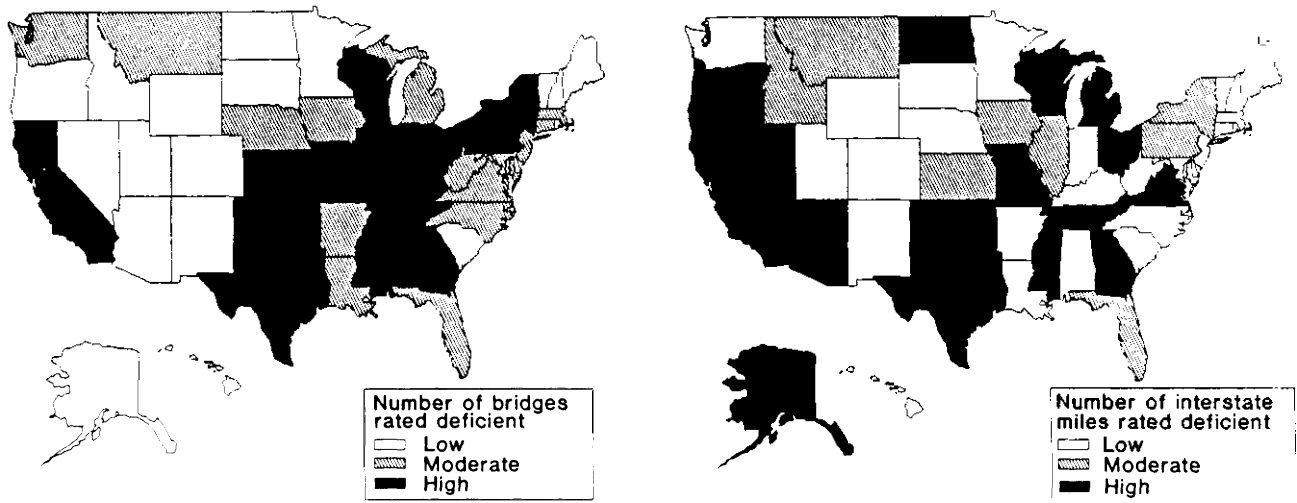
The Depression dramatically altered the Federal-State-local relationship, ultimately expanding the Federal role. Property values and tax revenue plummeted, depriving local governments, the steady providers of public services, of their major source of income. They could not borrow, because banks had gone out of business, and eventually simply ran out of money.⁶ Because State governments did not have the resources or the programs to help, the Federal Government stepped in, beginning with emergency programs. Eventually, an extensive system of Federal public assistance grants and other support programs developed. Although some of these were entirely federally funded, many required a State match.

⁴Ibid., p. 17.

⁵Advisory commission on Intergovernmental Relations, *Significant Issues* (Washington, DC: 1959), p. 114.

⁶Aronson and Hilley, *op. cit.*, footnote 3, p. 18.

Figure 2-1--Deficient Bridges and Interstate Miles on the Federal Aid System, 1988



^a Deficient is the Federal Highway Administration term for substandard structural or pavement condition.

SOURCE: Office of Technology Assessment, 1990, based on U.S. Department of Transportation, *The Status of the Nation's Highways and Bridges: Conditions and Performance—Report of the Secretary of Transportation to the United States Congress* (Washington, DC: 1989), pp. 63, 73, 155.

To muster additional revenue during the Depression years, States expanded their use of general sales and other selected taxes. Between 1931 and 1938, 24 States introduced general sales taxes, and 29 States put excise taxes on liquor.⁷ During this period, some political scientists criticized State governments as obsolete and called for scrapping them, except as administrative centers for the Federal Government.⁸ They cited the inability of the States to deal with the broad economic problems of the Depression and the inefficiency of providing programs and services on a State by State basis.

Public Sector Expansion After World War II

State and local spending declined during World War II but rebounded during the immediate postwar era, as governments turned to addressing deferred public works needs. For a while, the fiscal climate was good; revenues were adequate because property values increased, and interest rates hit new lows.⁹ From 1950 to the mid-1970s, State and local

spending grew rapidly; expenditures increased from \$30.7 billion in 1954 to \$108.8 billion by 1975.¹⁰ During 2 years (1965-67) of the Johnson administration, Congress increased the number of Federal grant programs from 221 to 379, expanding social and health programs to address major societal problems.¹¹

The enlarged Federal presence reignited debate over the role and structure of State governments. In 1955, a Federal study by the Kestnbaum Commission recommended major reforms in State government, including revising State constitutions and reorganizing legislatures and procedures. The Commission found that State Governors' authority was undermined by numerous independent agencies and boards, the election of many administrative officers, and weak executive influence over budgets. In addition, State legislatures had restricted their own powers by enacting limits on their ability to tax and borrow and by earmarking revenue.

⁷ Advisory Commission on Intergovernmental Relations, op. cit., footnote 5, pp. 114-115.

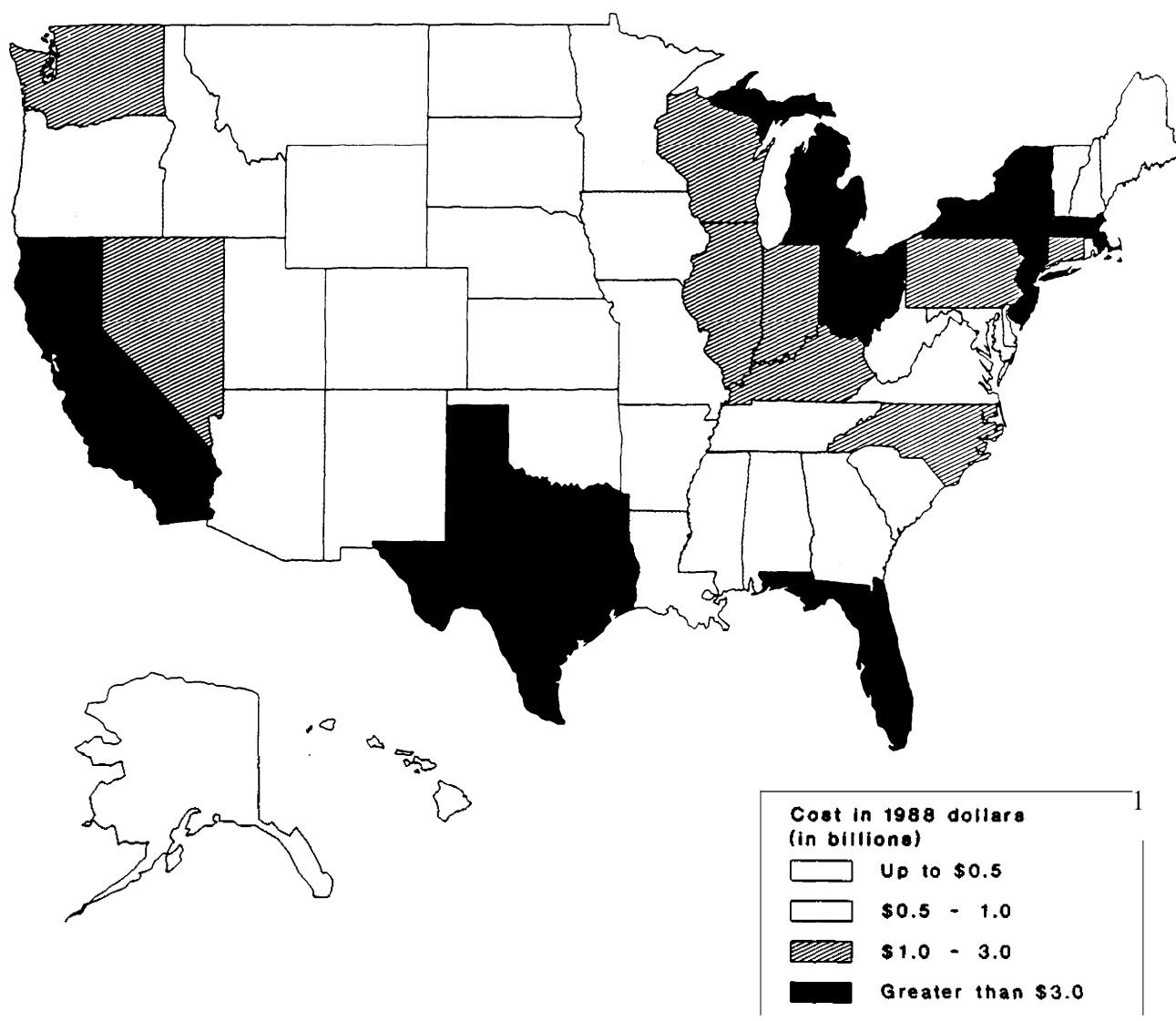
⁸ Aronson and Hilley, op. cit., footnote 3, p. 18.

⁹ Ibid., p. 19.

¹⁰ Ibid., p. 21.

¹¹ Ibid., p. 72.

Figure 2-2--Wastewater Treatment Facility Needs, 1988



SOURCE: Office of Technology Assessment, 1990, based on U.S. Environmental Protection Agency calculations for construction costs of publicly owned wastewater treatment facilities necessary under the Clean Water Act.

During the next two decades, most States revised **their constitutions and modernized their structures** and legislative procedures to strengthen the executive authority. In 1981, the Advisory Commission on Intergovernmental Relations, a permanent agency established as a successor to the Kestnbaum Commission, reported that as a result of the reforms, most States had improved their government systems.¹²

¹²*Ibid.*, p. 28.

Federal Grant Structure—Shifting Sands

Traditionally, most Federal grants and aid have been for specific categories of projects as defined by Federal legislation, such as the construction of airports, transit systems, dams, locks, or highways. States and localities serve as conduits for Federal funds targeted at these categories, and projects must



Photo credit: Federal Works Agency

By funding projects such as construction of local roads, the Federal Government provided both employment and transportation improvements during the Depression.

comply with many conditions and regulations, including matching funds, to be eligible for grants.

Congress finds categorical grants attractive because they permit channeling Federal funds to home district projects, allow close control over the use of Federal funds, and minimize State government interference.¹³ In contrast, State and local governments view categorical grant requirements as narrow, restrictive, and hard to adapt to specific needs. While some grant requirements are specific to a particular program, most are general and apply to all Federal construction grants. Among those that have the greatest impact on State and local government public works projects are requirements to:

- conduct an environmental impact study prior to project construction,

- pay construction workers the “prevailing wages” in the area,
- provide opportunities for citizen participation,
- provide relocation assistance for people and businesses displaced by projects, and
- initiate intergovernmental consultation concerning project planning.

In the 1960s and 1970s, however, the structure of some Federal grants to State and local governments changed.

Block Grants

In response to criticisms of categorical grants during the 1960s, Congress consolidated some of them into block grants, dedicating these to broad, public purposes, such as the revitalization of cities, which included public works projects. Some block

¹³James Q. Wilson, *American Government—Institutions and Policies* (Lexington, MA: D.C. Heath & Co., 1986), p. 62.

programs--Urban Development Action Grants, for example--were established specifically to enhance the autonomy of local governments, bypassing the States and providing funds directly to local projects. Block grants generally did not require matching funds and, instead, were allocated by formulas based on measures of need. They gave project selection and administrative responsibility to the local district or the State, although they retained many of the restrictions of **categorical grants**.¹⁴

Block grants continued during the 1970s, but Federal review and oversight increased, as Congress sought to ensure that all State and local projects meet a variety of policy objectives, such as transportation and environmental planning, environmental impact assessment, equal employment opportunity, or requirements to "Buy America."

Revenue Sharing

In another attempt to support local needs with less Federal interference, the Nixon administration introduced revenue sharing in 1972. The program allocated unrestricted Federal funds to States and localities without a match requirement. The funds could be used for any type of government program or project and were distributed by formulas designed to reflect population, local tax effort, and State wealth, and were intended to funnel more Federal funds to poor, heavily taxed States than to richer States. (For a comparison of the Federal dollars per capita received by each State and the amount returned through taxes, see appendix A.)

Although block grants and revenue sharing played an important role in Federal policy from 1960 to the 1980s and funded many local infrastructure projects, they did not have strong congressional support and did not grow as rapidly as categorical grants. Moreover, broad-based grant programs lack the influential industry support groups, such as the railroad, highway, and aviation lobbies, that categorical grants and trust fund programs enjoy. These factors took their toll; block grants and revenue sharing, which amounted to 27 percent of all Federal grants in 1979, declined to 21 percent in 1983.¹⁵ Revenue sharing with the States was cut off in 1980

and ended for cities in 1986, as part of the Reagan administration's policies of shifting local program costs to the States and establishing the concept of user-supported trust funds as the basic Federal revenue supply for infrastructure.

The Reagan administration briefly revitalized the block grant concept during the early 1980s by consolidating additional categorical grants, and several of the block grants persist. However, most Federal grants are once again categorical, continuing to focus p-ly on new construction, despite major rehabilitation and maintenance deficits, and retaining elements of their initial underlying Federal goals, regardless of the relevance to current needs and conditions.

Pursuing its goal of reduced Federal domestic spending, the Reagan administration successfully reversed the growth trend in Federal grants to State and local governments (see table 2-3). Between 1980 and 1989, Federal grants to State and local governments for all programs, excluding payments to individuals, dropped from \$68 billion to \$42 billion, when adjusted for inflation.¹⁶

PUBLIC WORKS FUNDING AS THE 1990s BEGIN

The share of Federal, State, and local government budgets devoted to public works dropped from 12 percent to below 7 percent between 1960 and 1987,¹⁷ and capital investment decreased markedly, relative to the gross national product (GNP) (see figure 2-3). During the 1980s, annual capital expenditures in adjusted dollars stayed relatively flat, fluctuating between \$40 billion and \$50 billion annually--well below the pace of national economic growth.¹⁸ State and local governments substantially increased revenue-raising efforts, permitting outlays for maintenance and operations to keep pace with GNP. However, when adjusted for inflation, total Federal spending for public works, capital, maintenance, and operations dropped from \$37 billion to \$29 billion between 1980 and 1988. (See table 2-4, part B.)

The decreased share of public spending allocated to infrastructure reflects a shift in national priorities

¹⁴Ibid.

¹⁵Ibid., p. 65.

¹⁶Office of Management and Budget, *Budget of the*

Fiscal 1990

historical tables, pp. 128 and 130.

¹⁷Apogee Research, Inc., database derived from U.S. Department of Commerce, Bureau of the Census, and Office of Management and Budget.

¹⁸Ibid.

Table 2-3—Federal Grants to State and Local Governments (adjusted 1982 dollars, in billions)

Year	Amount
1960	\$25
1965	35
1970	61
1975	87
1980	106
1985	94
1989 estimate	92

SOURCE: Office of Technology Assessment, 1990, based on data from Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism*, 1988 ed., vol. 2 (Washington, DC: July 1988).

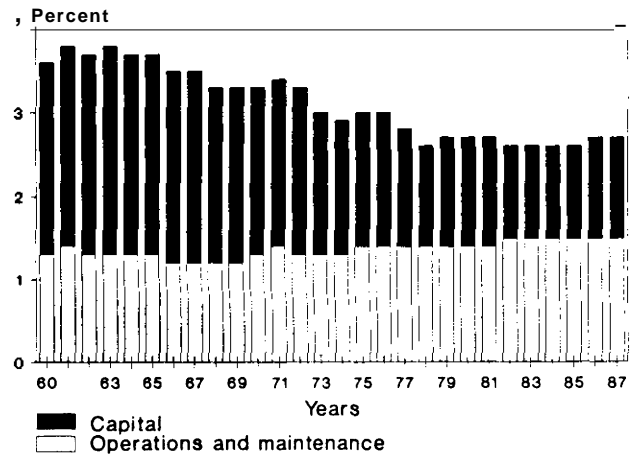
that has brought significantly higher governmental expenditures for social programs. Currently, State and local governments spend 29 percent of their Federal grant monies on health care, a dramatic rise from 3 percent in 1960. In comparison, 15 percent of current Federal grant funds are directed to transportation compared to 43 percent in 1960.¹⁹

Even though Federal public works expenditures, when adjusted for inflation, have decreased during the 1980s, Federal grants are crucial to State and local governments, financing 40 to 50 percent of their annual capital spending (see figure 2-4). The share of Federal funds spent on transportation has grown significantly compared to water supply and wastewater treatment programs, thanks primarily to constant replenishment of the highway, aviation, and inland waterway user-supported trust funds. In 1980, 80 percent of Federal infrastructure outlays were directed to transportation programs, and 20 percent to water and water treatment projects. In 1988, transportation's share was 90 percent with 10 percent going to water projects (see table 2-4). The 60 percent reduction in adjusted Federal spending for wastewater treatment from \$6 billion in 1980 to \$2.4 billion in 1988, reflects Federal policy, established with the Clean Water Act of 1972, to provide construction grants for wastewater treatment plants temporarily as abridge to local self-sufficiency. The phasing out of Federal investment in water supply, while never large, conforms with the traditional convention of local responsibility for water supply.

FEDERAL REGULATORY POLICIES

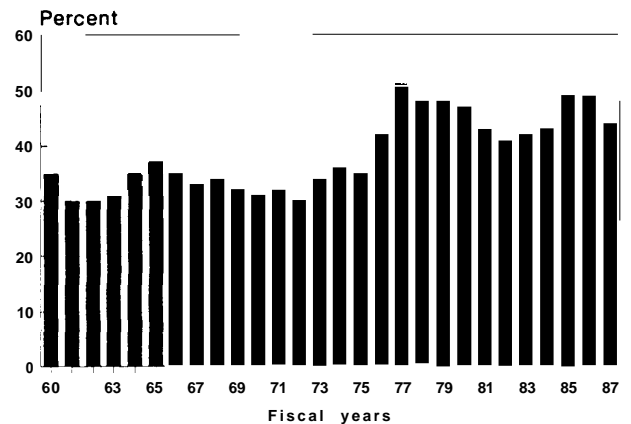
Through its regulatory standard-setting powers, the Federal Government has a major impact on State

Figure 2-3—Public Works Spending as Percent of Gross National Product



SOURCE: Office of Technology Assessment, 1990, based on information provided by Apogee Research, Inc.

Figure 2-4—State and Local Capital Spending Financed With Federal Grants



SOURCE: Office of Technology Assessment, 1990, based on information provided by Apogee Research, Inc.

and local public works projects. Congress, with its legislative and oversight responsibilities, and the executive branch, primarily the Department of Transportation (DOT) and the Environmental Protection Agency (EPA), meet virtually every aspect of State and local transportation and environmental public works activities. State and local officials consulted by OTA for this study did not question the necessity for Federal regulations governing environmental quality and protecting public health and

¹⁹Office of Management and Budget, op. cit., footnote 16, pp. 244 and 248.

Table 2-4—Federal Infrastructure Expenditures, 1980-88 (in millions)

	1980	1981	1982	1983	1984	1985	1986	1987	1988
Part A: Expenditures (unadjusted actual dollars):									
Total	\$31,849	\$33,388	\$29,312	\$30,140	\$31,872	\$34,163	\$36,721	\$33,158	\$34,673
Transportation:									
Highways	9,523	9,407	8,204	9,133	0,761	13,082	14,396	12,946	14,213
Mass transit	3,307	3,914	3,930	3,759	3,811	3,427	3,399	3,353	3,315
Rail	2,444	3,753	2,188	1,374	1,586	1,097	930 ^a	850	820
Aviation	3,723	3,814	3,526	4,363	4,682	4,940	5,321	5,520	5,897
Shipping ^b	2,229	2,381	2,687	2,969	3,010	3,201	3,964	3,461	3,111
Water resources ^c ..	4,223	4,132	3,948	3,901	4,068	4,122	4,041	3,783	4,034
Environmental:									
Water supply	1,182	1,213	599	954	754	782	892	157 ^d	543 ^d
Wastewater	5,219	4,775	4,231	3,689	3,200	3,512	3,778	3,088	2,941
Part B: Expenditures (1982 dollars adjusted for inflation):									
Total	\$37,164	\$35,520	\$29,312	\$29,009	\$29,594	\$30,805	\$32,240	\$28,171	\$28,656
Transportation:									
Highways	11,112	10,008	8,204	8,790	9,991	11,796	12,639	10,999	11,746
Mass transit	3,858	4,164	3,930	3,618	3,539	3,090	2,984	2,849	2,740
Rail	2,852	3,993	2,188	1,322	1,473	989	817 ^a	722	512
Aviation	4,344	4,057	3,526	4,199	4,347	4,455	4,671	4,690	4,874
Shipping ^b	2,601	2,533	2,687	2,857	2,795	2,886	3,480	2,940	2,571
Water resources ^c ..	4,927	4,396	3,948	3,755	3,777	3,717	3,548	3,214	3,333
Environmental:									
Water supply	1,380	1,291	599	918	700	705	783	134 ^d	449 ^d
Wastewater	6,089	5,079	4,231	3,551	2,971	3,167	3,317	2,624	2,430

^aDrop expend reflects ease of Contrail.^bMaritime Adminis on^cop ncpally harbo and land wat nway

Low spending fig for water supply

98 988 fleet repayments of Farmer's Home Administration (FmHA) water supply loans.

SOUR E Congressional Budget Office es males based i Office of Management and Budget historical data.

safety. However, they criticized the unfunded regulatory mandates written into recent legislation and the requirements attached to categorical grants, which, they maintain, create planning, administrative, and financing problems. (For further discussion, see chapters 3 and 4.) Moreover, while they welcome Federal financial aid and reject suggestions to eliminate the transportation trust funds, many chafe at grant requirements, which they view as encroachments on their governmental sovereignty, and at large, unexpended trust fund balances. These intergovernmental issues have their roots in the compromises hammered out between Congress and the executive branch as they established, and continue to change, the responsibilities of the Federal agencies over the years.

of the National Environmental Protection Act of 1970 marked the start of a tempering of the Federal commitment to developing natural resources for economic purposes—a process that has been evolving over the past three decades. In a recent example, the Clean Water Act Amendments of 1987 strengthened the commitment to environmental protection, expanding Federal jurisdiction to include any body of water in or affecting the commerce chain, with the intent of extending regulation of navigable waters to include wetlands. **Such legislation reinforces the tensions between the goals of economic development and environmental quality. These laws form a major intersecting point for Federal, State, and local transportation and environmental public works programs.**

EPA is the Federal agency that has the largest impact on public works services related to the environment and public health. The Agency was created in 1970 by an executive reorganization order²⁰ that brought together functional branches of the Departments of Agriculture; Interior; and Health, Education and Welfare; the Atomic Energy Commission; and the Council on Environmental Quality. However, the order did not include an official mandate. Caught between industry advocates and environmental activists, the Agency has

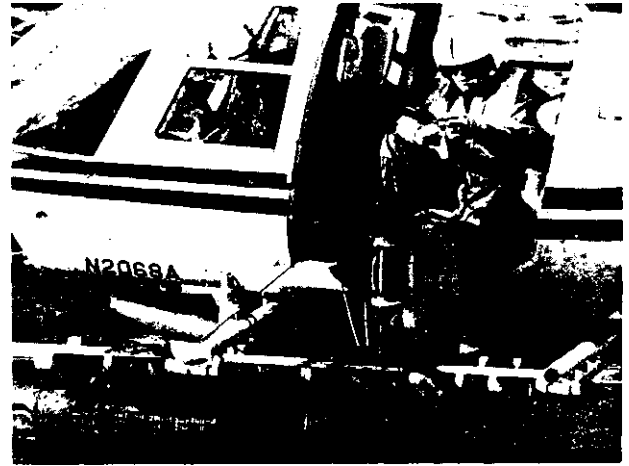


Photo credit: S.C. Delaney, U.S. Environmental Protection Agency

A EPA technician tests water quality for compliance with regulations. Many local governments acknowledge the need and expertise to ensure that they meet Federal requirements.

struggled, with little success, since its inception with the need to make its programs reflect the interrelated nature of environmental problems. Federal environmental policies continue to target individual environmental media—air, water, and land—even though pollution control in one medium may have an adverse effect on another. This "... single medium approach is set up like concrete in the practical day-to-day administrative operations of EPA. . ."²¹ and is further reflected in congressional committee structure.

State environmental departments tend to mirror this media-related approach, leaving local governments, which must resolve and pay for pollution problems—including those resulting from cross-media pollution—without adequate planning and technical support. As just one example, requirements to control air pollutants at wastewater treatment facilities could create acidic conditions that would turn the concrete facilities to gypsum.²² The history of Federal legislation highlights the fragmented framework in which local public works directors operate.

²⁰Reorganization Plan No. 3 of 1970.

²¹Lee M. Thomas, "A Systems Approach: Challenge for EPA,"

September p. 21.

²²Blake P. Anderson, director of technical services, Fountain Valley, CA, personal communication, June 7, 1989,

Water Supply²³

In the late 1960s and early 1970s, growing concern over the purity of the Nation's drinking water prompted Congress to pass the Safe Drinking Water Act of 1974²⁴ as an amendment to the Public Health Service Act. The Act and its amendments require EPA to set standards for drinking water quality; the States are to enforce them. All public water supply systems—whether publicly or privately owned—are subject to the mandate.

Dissatisfied with EPA's implementation of the 1974 Act and faced with the threat of suits by environmental advocates, Congress enacted the Safe Drinking Water Act Amendments of 1986²⁵ to simplify the EPA regulatory process, stiffen the requirements, and accelerate the pace for EPA to establish and implement new National Primary Drinking Water Regulations. Congress specified 83 contaminants for which EPA was required to promulgate regulations by June 1989, and required that 25 contaminants be added to the list every 3 years. The 1986 Amendments also authorized continued, but relatively small, grants to States and localities, as well as new Federal assistance intended to help small systems monitor for unregulated contaminants and install disinfection equipment.

Wastewater Treatment²⁶

With the Federal Water Pollution Control Act (Clean Water Act) of 1972,²⁷ the Federal Government shouldered some of the responsibility for controlling water pollution for the first time. The Act required EPA to promulgate nationwide minimum standards for municipal and industrial wastewater treatment and authorized a marked increase in

Federal funding. The Federal matching rate for local wastewater treatment construction costs grew from 50 to 75 percent, and annual construction grant appropriations rose five-fold between 1972 and 1977. From 1973 to 1988 Congress granted over \$50 billion to municipalities.²⁸

The grants were not intended to be permanent, but rather as a bridge to help the localities toward self-sufficiency. Amendments in 1977, 1978, and 1981 created more stringent rules for governing toxic pollutants in wastewater, and Congress simultaneously began returning to States and localities the responsibility for water quality costs. The most dramatic shift was signaled by the 1987 Clean Water Act Amendments,²⁹ which required that the municipal construction grants program be phased out by 1991 and replaced by capitalization grants for State Revolving Funds. In 1994, all Federal aid to States and localities for wastewater treatment facility construction will end.

Clean Air³⁰

By the 1950s, Congress had recognized that the itinerant nature of air pollution rendered efforts at State control insufficient, and in 1963 Congress passed the first Clean Air Act.³¹ Amendments passed in 1967³² enabled the Federal Government to set emission control standards in areas especially troubled by pollution and exercise limited enforcement powers. Amendments in 1970³³ authorized the newly founded EPA to establish minimum air quality standards, specified deadlines for action, and empowered the Agency to take over if a State failed to meet the deadline.

²³Material on Safe Drinking Water Act and the 1986 Amendments is based on Apogee Research, Inc. and Wade Miller Associates, Inc., "Problems in Financing and Managing Smaller Public Works," Report to the National Council on Public Works Improvement, Sept. 10, 1987, pp. 59-61; Sidney M. *Pollution Law Handbook: Guide to Federal Environmental* ninth ed. Books, 1988); and J. Gordon Arbuckle et al., *Environmental Law Handbook* (Rockville, MD: Government Institutes, Inc., 1987).

²⁴Public Law 93-523, 88 stat. 1660.

²⁵Public Law 99-339, 100 stat. 642.

²⁶Material on wastewater treatment legislation is based on Claudia Copeland, Congressional Research Service, "Federal Assistance for Water and Sewer Systems," background briefing paper prepared for Senate Agriculture Committee, Feb. 22, 1988; Arbuckle et al., op. cit., footnote 23; and Wolf, op. cit., footnote 23.

²⁷Public Law 92-500, 86 stat. 816.

²⁸Copeland, op. cit., footnote 26, p. 2.

²⁹Public Law 100-4, 101 stat. 7.

³⁰Material on clean air legislation is based on Arbuckle et al., op. cit., footnote 23, and Wolf, op. cit., footnote 23.

³¹Public Law 88-206, 77 Stat. 392.

³²Public Law 90-148, 81 Stat. 485.

³³Public Law 91-604, 84 Stat. 1676.



Photo credit: Virginia Department of Transportation

Special lanes for high occupancy vehicles (HOV), such as the center lanes pictured above, are one way States can demonstrate a commitment to enforcing the Clean Air Act.

Despite these legislative efforts, the control of some major pollutants, most notably ozone, has failed. With the Clean Air Act Amendments of 1977,³⁴ Congress strengthened EPA's enforcement powers, limited its discretion to authorize waivers to nonattainment regions, and imposed new and tighter State planning requirements. Should a State fail to submit an acceptable clean air implementation plan, EPA may cut off Federal funds for highway and sewage treatment facility construction and air quality control programs. EPA can waive sanctions and penalties if it determines that a State is making a good faith compliance effort, lessening the burden on States and localities. Congress is expected to reauthorize the Clean Air Act in 1990 and is likely to include provisions calling for additional controls on mobile pollution sources, such as automobiles, trucks, and buses. Most States and localities may be

responsible for major changes in their urban transportation patterns as a result.

Solid

Congress enacted the Solid Waste Disposal Act in 1965,³⁵ the first Federal legislation to deal directly with solid waste disposal. The goal was to create a national research and development program to determine better solid waste disposal methods.³⁶ Today, the main piece of Federal legislation governing State management of solid waste is Subtitle D of the Resource Conservation and Recovery Act (RCRA) of 1976.³⁷ RCRA was intended to improve municipal and industrial waste management by discouraging landfill disposal and encouraging resource recovery technologies.³⁸ The Act confers most of the planning and regulatory responsibility for the disposal of solid waste on the States and provides some financial assistance to rural commu-

³⁴Public Law

³⁵Public Law 89-272, 79 Stat. 992.

³⁶Public Law Stat.

³⁷Public Law 94-580, 90 Stat. 2795.

³⁸U.S. Congress, Office of Technology Assessment, *Facing America's Trash: What Next for Municipal Solid Waste?* OTA-()-424 (Washington, DC: U.S. Government Printing Office, October 1989), p. 348.

nities. The Hazardous and Solid Waste Amendments of 1984³⁹ target hazardous waste management, encourage compliance of State solid waste plans with Federal guidelines, and give EPA the authority to takeover the management of a State's solid waste management plan if implementation efforts are unacceptable.⁴⁰

Transportation and Mobility

Transportation laws developed historically to address specific defense and economic development needs as each succeeding mode of transportation—water, rail, highway, and air—emerged. Federal programs and congressional committee structure retain much of this special purpose and modal orientation, despite creation of the Department of Transportation. DOT was formed to ". . . coordinate the executive functions of our transportation agencies in a single, coherent instrument of government . . . [to] strengthen the national economy as a whole."** DOT ultimately came to house organizations that had been independent (e.g., the Federal Aviation Agency) as well as those previously a part of other departments (e.g., the Urban Mass Transportation Administration).

From DOT's inception, Congress has favored the modal emphasis inherent in the Agency's original structure, an approach supported by strong industry interest groups. These powerful forces have so far stymied development of policies that would permit implementation of a national transportation system in which the modes work in a complementary manner. This problem has not gone unrecognized by the Federal Government. A congressional report in 1977 pointed out that ". . . the fragmentation of the laws which define national transportation goals . . . have dramatic impacts in conflicts between the major promotional agencies within DOT. . . each program proceeds more or less independently—with

predictable inefficient and counter-productive results."⁴² The Secretary of Transportation, Samuel Skinner, is expected to unveil a strategic plan for transportation early in 1990 that will attempt once again to address these issues.

State DOTs by and large reflect the Federal modal organization and place a particular emphasis on highways. The lack of Federal and State support for a systems approach to transportation creates special difficulties for local officials, who need technical and funding assistance to facilitate the intermodal transfers for people and goods that are an integral part of any healthy economy. An airport executive, for example, asserted that he could find no where to go in DOT to seek help for the ground access problems his facility has.⁴³ Legislative history shows the grip of the different modes on even present-day programs.

Highways⁴⁴

The Rural Post Roads Act of 1916⁴⁵ marked the Federal Government's first foray into Federal highway aid. The Federal commitment to the Nation's highways deepened and broadened with the creation in 1941 of the Interstate and Defense Highway System, and in 1956 of the Highway Trust Fund,⁴⁶ which provided a dedicated source of funding. Through the 1960s, the Federal Government continued to bear a large portion of highway capital costs, but left operations and maintenance costs to the States and localities.

In 1976, Congress enacted legislation making some maintenance costs, as well as construction costs for highways, roads, and bridges, eligible for Federal funding. The new funds carried conditions, and new conditions have been added during several annual appropriations processes. These include Federal constraints on States' rights to define road rules,

³⁹Public Law 98-616, 98 Stat. 3221.

⁴⁰Office of Technology Assessment, op. cit., footnote 38, p. 350.

⁴¹Lyndon B. Johnson, "From the President of the United States," in U.S. Congress, House Committee on Government Operations, *Creating Transportation, Before Subcommittee on Government Operations, Creating Transportation, Before Subcommittee on Government Operations* (Washington, U.S. Government Printing Office, pp. 38-39).

⁴²U.S. Congress, Senate committee on Governmental Affairs, *Study on Federal Regulation*, 5 (Washington, DC: U.S. Government Printing Office, 1977), p. 156.

⁴³Richard Marchi, director of aviation planning and development, Massport, personal communication, July 25, 1989.

⁴⁴Material at highway legislation is based on National Council on Public Works Improvement, FM@ *Foundations: on America's Works* (Washington, February 1988); and American Transportation Advisory Council, *New Directions in Transportation* (Washington, October

Stat. 355.

⁴⁶70 sm. 374.

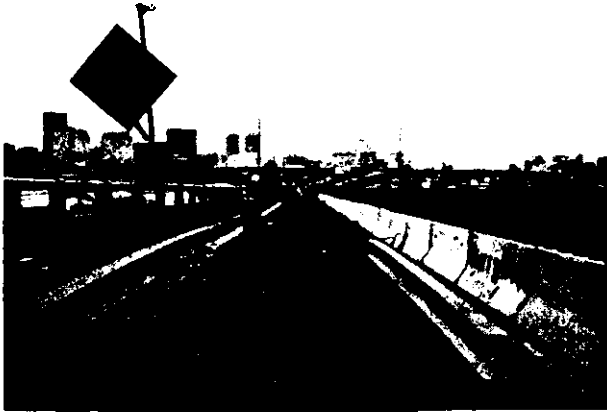


Photo credit: Massport

Despite badly deteriorating bridges, such as the one pictured here, Highway Trust Fund monies could not be used for rehabilitation until 1982.

speed limits, drinking age, truck access to both federally and nonfederally funded roads, and other policy issues. The Surface Transportation Assistance Act of 1982 (STAA) boosted the Federal gas tax, authorized increased appropriations for resurfacing, and authorized appropriations out of the Highway Trust Fund for highway bridge replacement and rehabilitation. The STAA was reauthorized in 1987, and most previous conditions were continued.⁴⁷

Mass Transit

Until the late 1960s, the private sector owned and operated most of America's mass transit systems. By 1970, newly constructed highways, increased automobile use, and sprawling suburbs had put many public transportation companies out of business. Local governments, knowing the importance of the service, assumed an active role in supporting mass transit. Initially Federal aid was limited to discretionary project financing for States and localities. After 1970, the Federal Government expanded its support for transit, as mass transit systems were declared eligible for aid from the Highway Trust

Fund.⁴⁸ New and non-urban systems, in addition to existing systems, became eligible for Federal aid, and States were allowed to substitute transit projects for interstate highway projects they judged non-essential. Perhaps most important, the Federal Government began to contribute to operating costs as well; indeed, during the late 1970s, over 80 percent of Federal formula grants were used for operating assistance.⁴⁹ Though amendments to the STAA (Public Law 97-424) in 1983 gave mass transit its first dedicated revenue source (a 1-cent per gallon portion of the newly increased Federal gas tax), the Federal Government has generally retreated from its support for mass transit during the 1980s.

Airports

Since passing the Air Commerce Act of 1926,⁵⁰ the Federal Government has steadily invested in the Nation's airports and airways. Between 1947 and 1969 the Federal Government covered nearly one-half of airport construction costs.⁵¹ The 1970 Airport and Airway Development Act⁵² marked a major expansion of Federal support for aviation infrastructure; Congress approved new fuel and passenger ticket taxes, and other charges, and established the Airport and Airway Trust Fund. The Act lapsed in 1980, in the wake of conflicts over suitable uses for Trust Fund money, but in 1982 Congress reauthorized the Trust Fund with the Airport and Airway Improvement Act. Legislation in 1987 reauthorized funding for airport development and directed the Secretary of Transportation to develop a long-term comprehensive airport system plan.

Ports and Waterways

Federal dominance of water resources development was established in 1787, when Congress, in the Northwest Ordinance, interpreted the Commerce Clause of the Constitution as a mandate for Federal regulation and maintenance of navigable waterways.⁵³ The U.S. Army Corps of Engineers was made responsible for waterways and harbors. The 1824 General Survey Act authorized surveys for a

⁴⁷Public Law 100-17, 101 Stat. 132.

⁴⁸Congressional Budget Office, *New Directions* Nation's Works (Washington, DC: September p.

⁴⁹*Ibid.*, p. 29.

⁵⁰44

⁵¹Congressional Budget Office, *cit.*, footnote 48, p. 56.

⁵²Public Law 91-258, 84 Stat. 219.

⁵³Paul Walker, *of Independence* (Washington, DC: U.S. Army Corps of Engineers, 1981), p. 365. The Northwest Ordinance pertained to mapping and exploring of waterways and land resources.

national network of internal improvements, explicitly including waterways. In 1824, the Rivers and Harbors Act established Federal river and harbor construction and maintenance programs. The Corps had and continues to have the tasks of planning, developing, operating, and maintaining waterways.

Water programs became increasingly multipurpose in the 20th century. Flood control was incorporated into many projects in the 19th and early centuries, culminating in the 1936 Flood Control Act, which formally designated the Corps as responsible for flood control. The Bureau of Reclamation was established in 1902 to encourage westward expansion by providing inexpensive irrigation water for agriculture; hydropower was added to project purposes in legislation enacted in 1912 and 1917.

The backbone of the Corps' support for water transport lies in the 11 division and 38 district offices. These form a cadre of technical expertise and are responsible for operations, maintenance, construction, preparation of preliminary and design studies, and acquisition of real estate for projects throughout the country. The waterways industry and regional and local port officials rely heavily on the Corps for advice and maintenance, and even operating assistance. As one put it: "Without them, we wouldn't be in business."

Over the past decade, the Federal Government has continued to retrench its role as water resources developer. The 1986 Water Resources Development Act instituted waterway user fees and cost-sharing requirements for most water projects, with non-Federal sponsors responsible for a minimum of 25 percent of the costs of most construction projects. The focus of water resources development at the Federal level has now shifted to operations, maintenance, environmental accountability, and decreased financial and administrative responsibility.

Funding for waterway improvements comes from Federal appropriations and the Inland Waterways Trust Fund, supported by marine fuel tax revenue. The Inland Waterways Users Board makes recommendations on project priorities based on consideration of national system needs.⁵⁵

INDUSTRY PERSPECTIVE

Every industry uses or provides services dependent on public works, and most take for granted governmental decisions that create the infrastructure necessary for their business, except when a tax increase or regulation that directly affects them is proposed. Then, industry associations swing into action and lobby Federal, State, and local officials to ensure that their interests are thoroughly considered. Their lobbying activities often reinforce the status quo, because they do not want the way they do business disturbed.

However, when an infrastructure issue has been widely recognized as a problem, and legislation or regulation seems a certainty, industry is likely to acknowledge a need to change and to engage in the policymaking process. As the 1990s begin, air quality problems, the need for greater investment in transportation infrastructure, and urban traffic congestion are three such potent issues. Each industry segment is trying to shape government action according to its concerns. For example, southern California government agencies and industries are trying to craft a solution to the area's severe air pollution and traffic congestion problems. With current technologies, the poor air quality precludes construction of more roads to relieve traffic congestion, so new approaches must be tried. The California Trucking Association's members are willing to operate at night as much as possible to relieve daytime congestion.⁵⁶ However, many industries that depend on truck transport find the noise problems and costs of keeping their loading facilities open to accommodate deliveries at night unacceptable. Finding a reasonable balance among the diverse interests will be a lengthy and difficult process.⁵⁷

In one area--intermodal transportation--industry has moved rapidly to capitalize on burgeoning international trade and changes in manufacturers' shipping patterns. Federal oversight, programs, and organization have not kept pace, and a host of difficult transportation system issues are emerging, ranging from how to provide sufficient ground access for busy airports to congestion that prevents efficient local truck transfer of freight containers

⁵⁴Donald C. McCrory, director, Memphis and Shelby County Port Commission, Memphis, TN, personal communication, Dec. 5, 1989.

⁵⁵U.S. Army Corps of Engineers, *The Waterways Transportation System: A* April 1989), p. 42.

⁵⁶Karen E. Rasmussen, director, Governmental and Industry Affairs, California Trucking Association personal communication, Nov. 10, 1989.

⁵⁷Sarah Siwek, manager of transportation, South Coast Air Quality Management District, personal communication, Nov. 10, 1989.

from ship to rail. Local governments must deal with such problems on a piecemeal basis when Federal monies are involved, because of categorical grant requirements and the absence of a coherent Federal transportation policy that incorporates environmental concerns. (For further information, see chapter 4.)

INTERGOVERNMENTAL ISSUES

Generally, State and local officials accept the need for Federal standards to protect public health and welfare, especially if they are tied to a grant. However, officials contend that federally mandated standards and grant requirements raise their costs, through expenditures for projects or procedures that may be extraneous to State priorities and that add time to the project. As one example, Federal aid for highways requires that a percentage of Federal monies be used for repairs to “off-system” bridges (bridges on highways that are not eligible for Federal aid), and these bridges are on underutilized or unimportant routes in many States.⁵⁸ Concerns about Federal programs center on unfunded mandates, such as those described in chapter 1, box 1-A; grant requirements, such as a focus on new construction rather than maintenance or management improvements; and on the regulatory process,⁵⁹ including:

- inflexibility in the administration of standards (standards aim at uniform performance and do not accommodate local variation in need and conditions);
- lack of coordination among Federal agencies engaged in related activities;
- frequent changes in Federal regulations, which require major local program adjustments;
- excessive time required for Federal review and approvals; and
- requirements for meetings and paperwork.

The complicated application process for approval of a major harbor improvement shown in figure 2-5 gives ample evidence that these concerns are justified.

In 1987, 60 percent of State and local infrastructure capital came from bonds.⁶⁰ Traditionally, tax-exempt municipal or governmental bonds have been the fiscal workhorses for State and local governments, which use them to acquire the large amounts of capital needed for roads, schools, and environmental projects. In addition, tax-exempt “private activity” bonds are issued to finance many types of public-private ventures, which create facilities for public use.

To the concern of State and local governments, Federal tax reform legislation aimed at closing loopholes and minimizing revenue loss—primarily the Tax Acts of 1986 and 1988—made tax-exempt bonds much more difficult to issue. At least partially as a result of the changes, the value of new issues of municipal debt has decreased by one-half since 1985, with even more dramatic reductions in the issuance of private activity bonds.⁶¹

However, while it is too early to be certain, OTA analysis indicates that the impact of tax reform on traditional public-use infrastructure projects may not be significant in the long term. Debt financing of traditional public works, such as publicly owned and operated wastewater and water supply plants and roads, appears to be at a higher real level now than before the passage of the 1986 Act.⁶² The decrease in tax-exempt private activity bonds for “public facilities, such as convention centers and sports complexes, may have boosted the use of tax-exempt government bonds to finance traditional infrastructure projects. A significant drop in borrowing did occur between 1986 and 1987, but the market returned to its pre-1985 level in 1988 and increased more than three-fold between 1980 and 1988⁶³ (see figure 2-6).

However, the reforms have had a significant effect on a wide range of activities financed by State and local governments, especially those undertaken in cooperation with the private sector. Four provisions have raised the greatest concern:

⁵⁸Ian MacGillivray, director, Planning Research Division, Iowa Department of Transportation, in Office of Technology Assessment, op. cit., footnote 2, pp. 118-119.

⁵⁹Remarks from OTA Advisory Panel meeting, March 1989; and participants in Office of Technology Assessment, op. cit., footnote 2.

⁶⁰Government Finance Research Center, “Federal Tax Policy and Infrastructure Financing,” OTA contractor report, Sept. 13, 1989, p. IX-4.

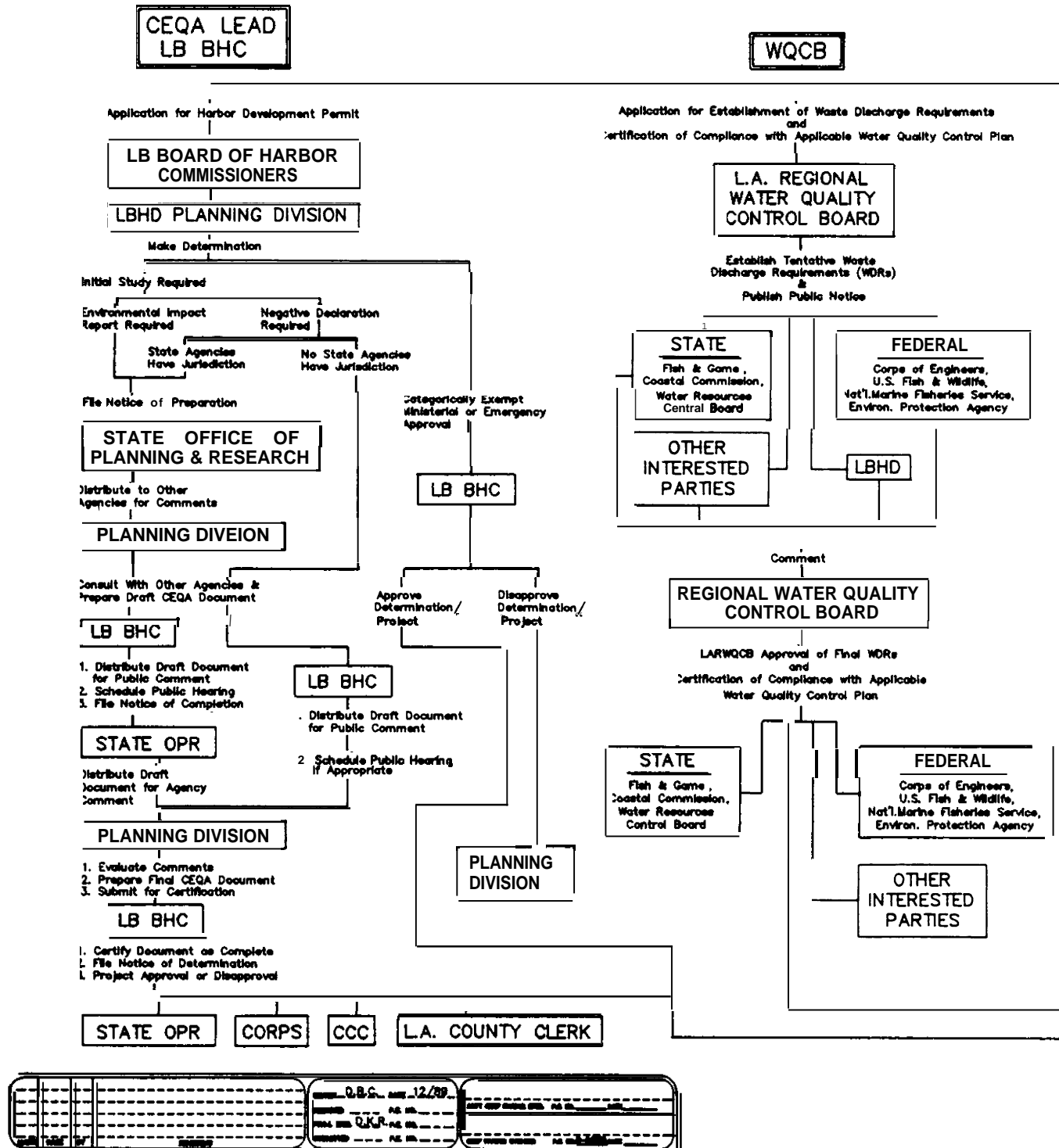
⁶¹Ibid., p. I-4.

⁶²Ibid., p. I-2.

⁶³Ibid., p. II-4.

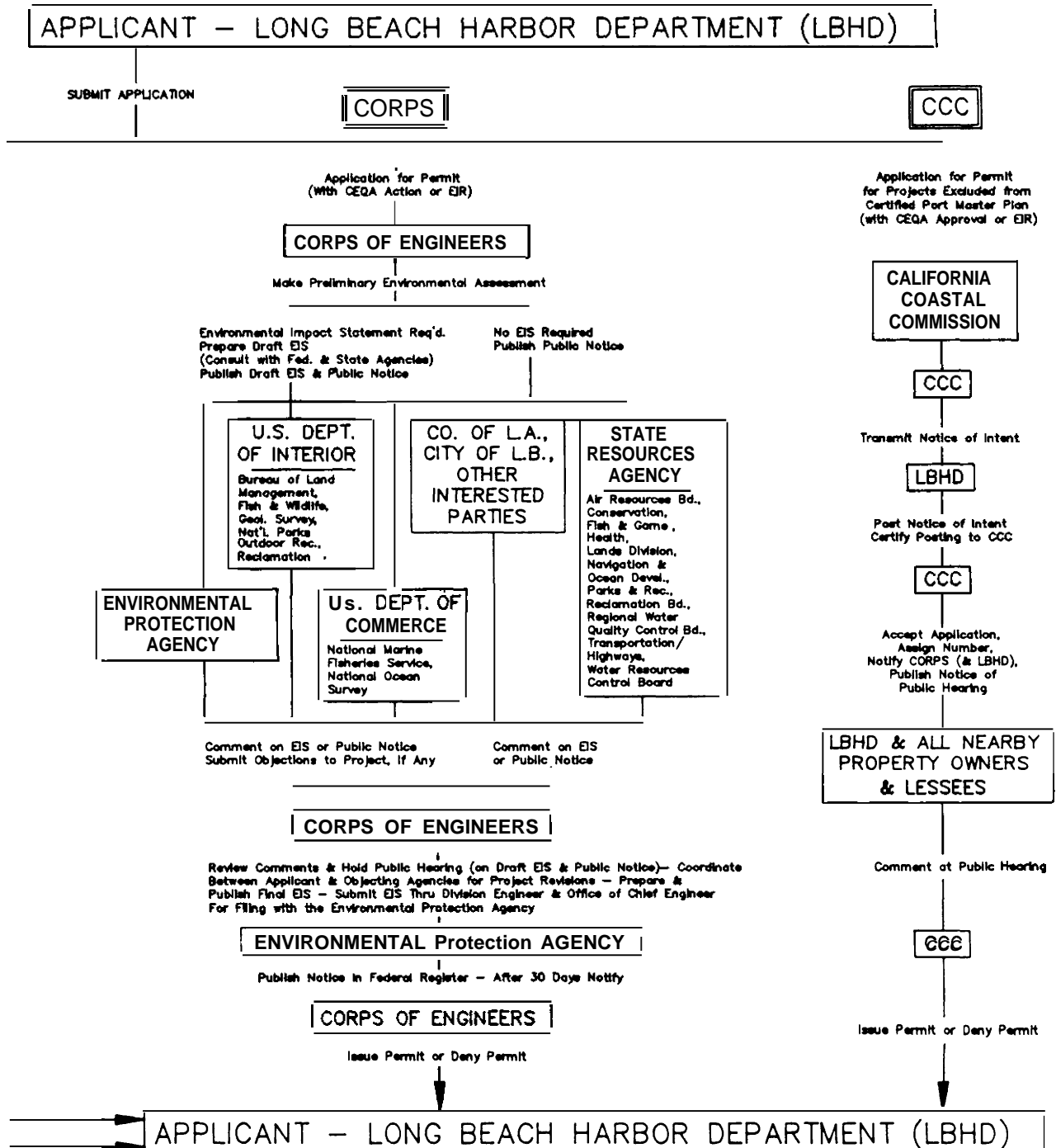
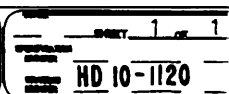
Figure 2-5—Marine Project Permit Process

MARINE PROJECT PERMIT PROCESS DETAILED FLOW



SOURCE: Traffic Engineering Department, Long Beach Harbor.

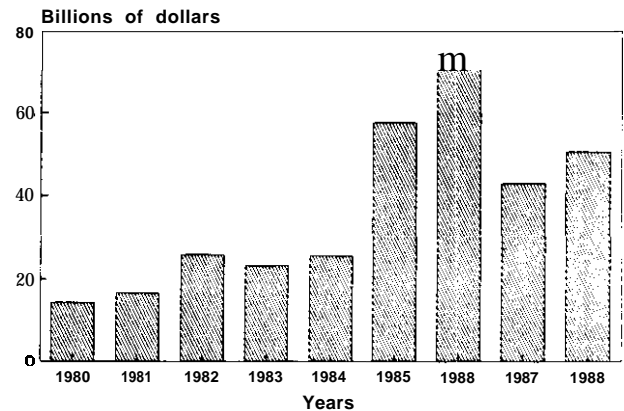
Figure 2-5--Marine Project Permit Process

MARINE PROJECT PERMIT PROCESS
DETAILED FLOW

SOURCE: Traffic Engineering Department, Long Beach Harbor.

- *Stricter criteria for tax-exempt bonds.* Tax Code revisions have restricted the use of tax-exempt private activity bonds to projects in which generally no more than 10 percent of the facility is used for private purposes and no more than 10 percent of the debt service is paid from private sources. The previous private activity maximum was 25 percent. This reduction in permissible level of private sector involvement has limited tax-exempt borrowing and raised costs for some forms of public works infrastructure, such as water treatment plants that are owned or operated by private firms. The new lower limits on private activity will require developers to rely more on private capital for project improvements, like new subdivision streets. In **Vacaville**, California the widening of a major arterial failed the test for tax-exempt financing because the cost of required relocation of private utility lines exceeded the 10 percent limit on debt service allowable from private sources.⁶⁴
- *Additional procedures and reporting requirements.* All tax-exempt transactions must now be reported regularly to the Internal Revenue Service. In addition, records must be kept on investment earnings in order to make rebates on profits, if necessary, and the costs of insurance for private activity bonds are restricted. These new regulations mean increased effort and costs for every jurisdiction, but hit small, and unsophisticated issuers hardest, as they must seek outside financial help.
- *Reduced arbitrage opportunities.* Strict limits were placed on the opportunities for State and local governments to earn arbitrage income by borrowing with tax-exempt bonds and investing the proceeds, usually in higher yielding bonds, until needed.⁶⁵ Arbitrage is a lucrative income source, used in many cases to reduce project costs. After strong protests spearheaded by local governments, Congress eased these restrictions in the budget reconciliation legislation passed in November 1989.
- *Limitations on refinancing.* The 1986 Act permits governments to refinance tax-exempt loans only once. In the past, governments could

figure 2&Tax-Exempt Governmental Purpose Bonds



SOURCE: Office of Technology Assessment, 1990, based on data from the Government Finance Research Center.

refinance bonds frequently to take advantage of falling interest rates.

State and Local Financing Relationships

Although the extent varies, State governments provide essential financial support to local jurisdictions for public works, currently providing 54 cents (down from a high of 61 cents in 1975) in grants for every dollar raised by local government. Generally, State funds go for education and public welfare, and to support specific transportation infrastructure needs, such as highways, airports, and in some cases, wastewater treatment and mass transit. The relative decrease in the State contribution since 1975 does not mean that total State dollar aid to cities has decreased; indeed it increased by 10 percent in real terms from 1979 through 1986. Rather, local governments have increased the revenues they collect, which have grown 37 percent for cities and 52 percent for counties.⁶⁶ Further details are given in chapters 3 and 4.

CONCLUSIONS

Through funding support, legislation, and regulation, the Federal Government has driven public works infrastructure policy since the early part of the 20th century, and its fiscal policies and funding capabilities have shaped and local public

⁶⁴Virginia B. Rutledge, president, Government Finance Officers Association, testimony before the Senate Committee on Governmental Affairs, Subcommittee on General Service's, *Federalism* and the District of Columbia, May 4, 1989.

⁶⁵Government Finance Research Center, op. cit., footnote 60, pp.

⁶⁶Advisory Commission on Intergovernmental Relations, *Significant Features of Fiscal Federalism*, 1988 ed., VOL 2 (Washington, DC: 1988), p. 14.

works construction and service. Over the past decade, changes in Federal policies have forced States to play a larger role in financing and administering public works programs, and local communities to do more for themselves. **Federal spending is likely to continue for the short term to focus on health and social programs, defense (although this may decline gradually), and national debt service. State and local governments must expect to finance a larger share of public works with their own revenues—general taxes and fee-rid where feasible, with private sector partners.**

Competition for revenue sources—excise and income taxes, user fees, and other benefit charges—is characteristic of our Federal system and can be expected to continue at all governmental levels. When Federal funds were more plentiful, State and local governments used them as substitutes for their own resources for public works facilities, focusing their own spending on education, health, or other special program areas that do not generate revenue. They will not withdraw from funding education or caring for the destitute as Federal funding levels decline. The resulting financial squeeze on State and local governments is a major factor in the poor condition of public works infrastructure and heightened intergovernmental tension. **The impacts of continued low levels of Federal spending on public works will affect States with varying degrees of severity (see figure 2-7). This raises equity questions that Federal policymakers will want to consider.**

Recent Federal tax reforms enacted to conserve Federal revenues have increased the cost of local capital and discouraged public-private partnerships. While they understand the fiscal forces behind these actions, State and local governments do not welcome the effects and maintain that the Federal Government is pursuing conflicting fiscal policies.

Strong environmental lobbies have encouraged Congress to raise standards for environmental public works projects, and other concerns have prompted the addition of grant requirements, such as Buy America, which promote goals unrelated to the primary purpose of the grant. These entail substan-

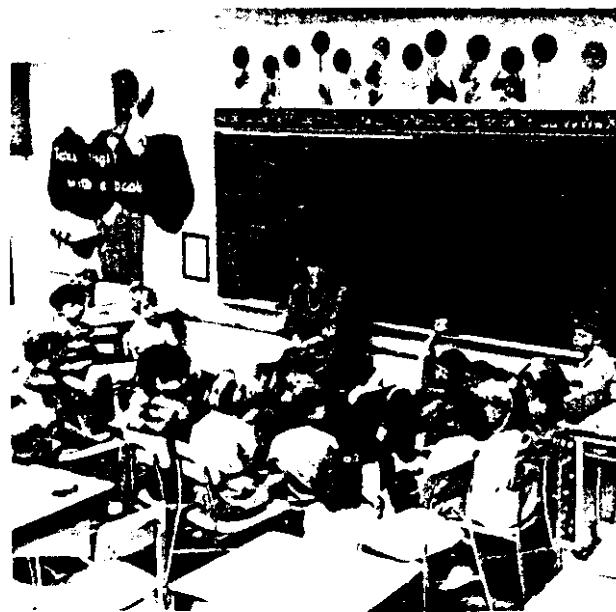


Photo credit: Iowa State University

Resources are limited and State and local governments often direct capital to education and health care programs rather than public works.

tial costs, both in money and time required for project completion. **Local and State officials question the appropriateness of Federal policies requiring them to conform to national priorities and guidelines that often are not sensitive to local conditions or needs, but increase the project price and timeline.**

Federal oversight, programs, and funding are targeted through categorical grants at specific issues and problems—from wastewater treatment to airport, highway, and harbor improvements. Strong industry interest groups have grown up to support each of these categories, and environmental activists focus on enforcement of specific laws that target a single issue. **Such potent but diverse vested interests make coordinated environmental and transportation programs difficult, and congressional and executive branch policies and programs often appear to State and local governments to work at cross purposes. More systematic Federal policy coordination and consideration of reorganization or restructuring are warranted.**

