

CRITICAL ISSUES

*How Privatization
Can Solve
America's
Infrastructure
Crisis*

*edited by
Edward L. Hudgins, Ph.D.
and
Ronald D. Utt, Ph.D.*





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AMERICA'S
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CRISIS**

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ISBN 0-89195-052-4

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INTRODUCTION

Edward L. Hudgins, Ph.D. and Ronald D. Utt, Ph.D.

Infrastucture, by its very name, conveys its importance. It is upon it—upon the roads, bridges, and in the airports and other permanent facilities—that American commerce moves and the American people travel. A solid, modern, infrastructure is essential to a modern, thriving economy. It is essential too to the health and safety of Americans.

Today, America's roads, bridges, airports, and other permanent facilities are wearing out. Repairing them and modernizing them will cost hundreds of billions of dollars. These funds are not likely to be available from government because the local, state, and federal governments that built and operate most of the nation's infrastructure are very short of money. As such, these governments surely will not be able to upgrade the nation's infrastructure nor construct the new facilities that America needs economically to grow and remain efficient.

The current infrastructure deterioration cannot be allowed to continue. If roads and bridges crumble, if cities choke on traffic gridlock, if airplanes are grounded for lack of runways, if garbage piles up uncollected in city streets, if sewage surges unprocessed into the country's lakes and rivers, and if criminals go free due to lack of prison space, Americans will pay the penalty of a sharp decline in their quality of life.

Heading off an infrastructure catastrophe will not, as some argue, require huge new tax increases. While extra government revenues will build some new bridges, it also would cripple the economy by reducing the incentive to work and invest. Economically the most effective prescription for America's faltering infrastructure is a dose of private sector creativity and participation.

This would avoid the problems of infrastructure built, owned and operated by governments. Since government built or operated infrastructure, for example, and usually faces no competition, there is little or no incentive for governments to build efficiently or at a reasonable price.

Another problem is created when governments rely on tax revenues to fund infrastructure. Since charges are not levied on those benefitting from the services, there is no direct relationship between the construction and operational costs of facilities and the economic cost to users. The inevitable result is inefficiency. No matter, moreover, how costly an infrastructure item may be, users press officials to vote for more subsidies or funds, knowing that people other than the users will pay most of the cost. When the user does not pay the full cost, of course, he or she has little incentive to choose a less expensive alternative. If residents, for example, had to pay the full cost of disposing of each can of trash, they might begin buying products with less packaging material. This and countless similar decisions, that weigh the full cost of alternative choices, use resources more efficiently.

The way to build and run infrastructure that best fits the needs of Americans at the least cost is to allow the private sector to build and operate as much infrastructure as possible. Private firms make a profit only if they attract and keep customers. They do this only by offering the best service at the best price.

The private sector can be involved in the infrastructure in two broad ways. First, the private sector can provide the facilities or services themselves, charging users the full cost. These costs are kept low by competition.

Second, private firms can compete for government contracts to provide specific goods or services. While governments retain ultimate control over the infrastructure, the bidding process keeps costs low and service quality high.

This Heritage Foundation study assesses how the private sector can build and operate infrastructure facilities. In many parts of the nation, the private sector already is doing this. From these examples, local, state, and federal policy makers can find guidance on how they can answer their constituents' demands for quality infrastructure without busting budgets. Businessmen, meanwhile, can find in these examples opportunities to profit while helping to meet these demands.

HIGHWAYS AND BRIDGES

As discussed in Chapter 1, the cost of repairing America's deteriorating roads and bridges is estimated at as much as \$700 billion. Cash-strapped governments would be hard pressed to foot this bill. But frustrated government officials, as well as frustrated motorists, might learn a lesson from American history. In the early nineteenth century, most roads in the United States were built, owned and operated by private companies or by local governments. In the latter part of that century state governments took over

most road ownership and operation. In this century, and especially after World War II, the federal government became the major funder of road construction. This reliance on governments, especially at the federal level, has meant higher costs for road construction. It also has meant that when government budgets become tight, as they are now, the infrastructure suffers.

European nations, by contrast, in modern times have tended to permit private firms to build, own and operate major highways. There are, for instance, more than 5,000 miles of private toll roads in France, Italy and Spain. These have been built by companies that operate the roads as a concession from government. The costly tunnel under the English channel between Britain and France is being financed and built almost entirely by private firms.

While no private large roads exist in the U.S., several major private toll roads are planned. The most notable is from Dulles International Airport in Virginia, near Washington, D.C., to Leesburg, Virginia. But privatization does not necessarily imply a toll system. A state or municipality can lease or transfer title of a road to a private concern which then is obligated to upgrade the road and keep it in good repair. In return, the private firm might receive rental payments from government and the development rights along the highway corridor.

Such creative and more efficient ways to operate and construct highways, however, are hindered or blocked by federal government regulations. Example: Section 129, Title 23 of the U.S. Code effectively bans tolls on federally aided highways or private-public partnerships in the ownership or operation of roads. Further, there are no clear federal guidelines or procedures that allow states to privatize roads that at any time in the past have received federal funds. Governments at the local and federal level can facilitate more private sector involvement in the provision of roads and bridges through the following reforms:

- ◆ **Compare the costs and benefits of privatization with those of publicly owned and maintained roads.**
- ◆ **Develop new federal guidelines for selling existing roads.**
- ◆ **Remove federal government procedural barriers to the private provision of roads.**
- ◆ **Allow the blending of public and private funds on road projects.**
- ◆ **Enact state legal changes to streamline private road building.**
- ◆ **Promote, through the Department of Transportation, the viability and practicality of private ownership of roads.**

URBAN MASS TRANSIT

Chapter 2 explains that traffic congestion is cited by most inhabitants of America's major metropolitan areas as the most frustrating feature of urban life. The nature of this congestion, however, differs from that in the past. Most commutes today no longer are between suburbs and city centers but between suburban locations. This means that subways and rail systems, often touted by governments as the solution to urban transport problems, do not fit the new commuting patterns of suburban Americans.

Public transit systems also tend to be very expensive and are becoming rapidly more expensive. In fact, over the past two decades, public transit capital and operating costs hikes have outpaced every other major item in the Consumer Price Index. Yet customer fares still cover only about one-third of the actual cost of most transit systems. The rest is covered by government subsidies. Labor costs are especially high in mass transit. This is in part because a provision of the 1964 Urban Mass Transportation Act requires local transit agencies, as a condition of receiving a federal grant, to hold special negotiations with transit unions to assure the unions that the interests of their members will not be adversely effected by the federal funds. Unions in these negotiations have been able to head off labor and money saving reforms. Moreover, the federal government covers up to 75 percent of the costs of new subways and rail construction. This may seem like a boon to some commuters. But what it does is to encourage states and local governments to favor these expensive systems, because they are largely paid for with "free" federal funds, rather than alternative systems of mass transit which are far less expensive systems of mass transit—but for which federal support is less generous.

The large subsidies for new construction also have the perverse effect of discouraging orderly maintenance to preserve mass transit systems while encouraging pressure for grants to build new systems.

Local government and transit officials thus find themselves saddled with systems that do not meet local transportation needs and with operating costs that are too high to maintain in the face of tight local and state budgets.

In an effort to deal with this financial pressure, many local transit authorities contract with private firms, chosen through competitive bids, to provide bus service in some areas. On average this cuts transit costs by 30 percent and gives transit agencies incentives to improve the service that they still provide.

A number of reforms would give local governments incentives to chose transport systems appropriate to their specific needs, and to remove barriers to cost cutting reforms. Among them:

- ◆ **States should require local public transit agencies to incorporate competitive contracting.**
- ◆ **Section 13(c) of the Urban Mass Transportation Act that gives special privileges to transit labor unions should be repealed.**
- ◆ **The maximum rate of federal matching funds for capital expenditures should be reduced from 75 percent to 25 percent.**

AIRPORTS

Chapter 3 explains that since airlines were deregulated in 1978, the number of passengers flying in a calendar year has increased by 80 percent. Deregulation thus has made Americans very mobile. As more Americans travel and as Americans travel more, of course, airports became congested and flights are delayed. This has become a serious problem mainly because airports have not been able to respond to the rising air travel demand. The key cause of this is that airports generally are owned and run by local governments. This means that funds for new construction or improvements must compete with other items in government budgets. Perhaps not surprisingly, no new major airports have been opened since 1974 and no new airport or major expansion of existing facilities is planned for the future to meet the increased need.

Adding to the problem of funding new or improved facilities is that airports tend to be used very inefficiently because of government pricing policies for landing slots. There is, in fact, no direct relationship between the financial incentives that cause airlines to schedule a certain number of flights between certain locations and the incentives for government airports to provide runway slots for these flights. Airlines set their flights and ticket prices in response to customer demand. Airports allocate runway slots and set prices for their use based on federal government regulations and formulae.

One way to ease congestion thus would be for airports to charge take-off and landing fees based on the demand for landing slots at certain times of day. This would link the incentives in the airline and airport industries. Airlines would respond to the direct customer demands for flights, and airports would respond to the demand of their customers, the airlines, for runway slots, rather than to the demands of federal bureaucrats. Under this arrangement, higher “rush hour” rates would give many travelers an incen-

arrangement, higher “rush hour” rates would give many travelers an incentive to fly at less congested times, when tickets would cost less because landing fees would be lower. Market pricing for landing slots also would encourage airlines to divert some flights from crowded to less crowded airports. And market pricing would generate funds for busy airports to expand their capacity.

The obstacle to such a change is that the U.S. Department of Transportation interprets federal law as prohibiting full market pricing. By the Department’s enforcement of the law, a small private airplane with only a few passengers pays a very small landing fee, encouraging such planes to use major airports. But a small airplane landing at rush hour means that fewer jumbo jets with hundreds of passengers can land. So the airport does not operate efficiently in terms of passengers served. If airports were allowed to set landing fees according to supply and demand pressures, they would almost certainly charge higher fees to all planes during peak periods. This would discourage airplanes with few passengers from using airports at busy times, allowing the airports to operate more efficiently.

In light of the budget constraints on new construction, the best way to expand airport facilities would be to sell airports to the private sector. This would give the private sector the greatest flexibility to meet the demands of airlines and their customers in the most cost effective manner. The British government did this in 1987, when it sold Heathrow airport, the principal airport serving London. But the federal government makes such sales virtually impossible in the United States, because the Department of Transportation interprets a provision of Section 511 of the Airport and Airway Improvement Act of 1982 requiring that airports that have received federal grants to reinvest all revenues in a way that prevents most local governments from selling airports to the private sector. Specifically, the Department assumes that if an airport is sold to the private sector, the provisions would still apply.

If airport congestion is to be alleviated through rational pricing and privatization, the following steps should be taken:

- ◆ **The Secretary of Transportation should announce that takeoff or landing fees or other user charges based on such factors as demand or noise will not be considered unfair, unreasonable, or unjustly discriminatory.**
- ◆ **The Secretary of Transportation should reconsider the Department’s anti-privatization interpretation of Section 511 of the Airport and Airway Improvement Act of 1982.**

- ◆ **The Secretary of Transportation should consider waiving compliance with the reinvestment assurances in existing and future grant contracts in order to facilitate privatization.**
- ◆ **The Secretary of Transportation should seek legislation to remove all legal barriers to rational pricing by airports or to the sale of government-owned airports to the private sector.**

AIR TRAFFIC CONTROL

Chapter 4 explains why the government-owned Air Traffic Control (ATC) system, which is vital to the safety of air travelers, has not been able adequately to handle the increased air traffic generated by airline deregulation. Among the system's many problems: outdated equipment, a shortage of qualified controllers, and a pricing policy that leads to inefficient use of the ATC system.

These problems with the ATC system arise from government policies. First, funds for operations, personnel training and upgraded facilities are inadequate. ATC managers also are never certain if and when funds will be available so it is difficult for them to plan major capital projects. This is because the funds come from the federal government, which constantly is wrestling with chronic budget deficits.

Second, federal work rules are not flexible enough to allow controllers to be compensated according to the demand for their services. Controllers at the busiest control towers, therefore, typically receive the same pay as controllers at slower, less stressful facilities. Third, the Federal Aviation Administration (FAA), which oversees safety and the ATC system, also in is charge of promoting the economic interests of civil aviation, that is, private airplane owners. This causes a conflict of interest. The FAA has an incentive to give insufficient attention to safety problems, since such attention could mean less customers for civil aviation. Further, private airline owners might be forced to pay more for ATC services if pricing changes and other reforms were instituted to allow the ATC system to operate more efficiently. Hence these owners lobby hard, and often effectively, against many reforms.

Many countries have experimented with privatization of ATC systems as a solution to financing and management problems. In Britain, for example, some airports now operate their own ATCs, while private contractors are used to operate control towers. The Swiss have even created a government-chartered ATC corporation with minority shares owned by the airlines, airports and air traffic controllers, and the majority held by the government. In these and other cases of privatization, user participation or control of ATC

systems makes the systems more responsive to the needs of airlines and airports. The U.S. Department of Transportation's Contract Tower Program has allowed contracting with the private sector for ATC services on an experimental basis for the least sophisticated and busy towers.

Privatization has relieved pressure on the ATC systems of other countries, and would do so in the U.S. Thus the federal government should take steps to introduce privatization into the U.S. system.

- ◆ **The Secretary of Transportation should accelerate the FAA's current Contract Tower Program.**
- ◆ **The Secretary of Transportation should direct the FAA to extend the Contract Tower Program to Level II Towers.**
- ◆ **The Secretary of Transportation should permit large airports to own and operate their control towers.**
- ◆ **The national ATC system should be reorganized as a corporate structure.**

WASTEWATER TREATMENT

Chapter 5 cites an Environmental Protection Agency (EPA) estimate that more than two-thirds of America's 15,600 wastewater treatment plants have documented water quality or public health problems. According to the EPA, some \$83.5 billion is needed to bring these ailing facilities up to federal standards. The EPA also estimates that water bills for homeowners could double over the next decade to cover the costs of increased use of wastewater treatment systems and tighter environmental regulations.

Local governments traditionally have looked to Washington for the bulk of funds needed to construct or improve facilities. But this no longer is possible. The Water Quality Act of 1987 calls for the ending of federal grants to states for wastewater treatment facilities, replacing them with loans from state revolving funds. The initial funds will be provided by the federal government. In revolving funds, the money for new loans comes from the repayment of old ones. Past federal grants have led local governments to construct expensive facilities that in many cases they cannot afford to maintain. With federal money to revolving funds will come regulations that will inflate the cost of treatment facilities. Still, the shift from federal grants to state loans creates powerful incentives for local communities to seek cost effective solutions for water treatment and, in particular, to turn to private institutions to finance and operate facilities.

Currently, about 50 cities contract with private firms to construct or operate wastewater plants. Private construction and operating costs typically are 20 percent to 30 percent below those of publicly-operated facilities. Construction costs also are much lower in large part because it takes only about two years to construct a private plant compared to an average of seven years to construct a government-funded plant. The reason privatization of wastewater treatment facilities is not more widespread is that federal laws effectively prohibit the private sector from purchasing and operating facilities that have received federal financial assistance. Other federal regulations limit cooperation between states on cost-saving ways to regulate water quality. Even so, the EPA has begun to experiment with partnerships with the private sector to provide some wastewater treatment.

The federal government can take actions to encourage local governments to use privatization techniques to reduce the cost of constructing and operating wastewater facilities.

- ◆ **End all federal wastewater treatment construction subsidies as scheduled.**
- ◆ **Continue the EPA's successful Public-Private Partnership Program.**
- ◆ **Eliminate federal grant and State Revolving Fund loan regulations that inflate wastewater treatment costs.**
- ◆ **Revise federal regulations that restrict private ownership of facilities that have received federal funds.**
- ◆ **Change the law to allow private firms to compete with the public sector in the wastewater treatment area.**
- ◆ **Allow states to experiment with innovative wastewater permitting schemes that would reduce water pollution and lower compliance costs.**

SOLID WASTE TREATMENT

Chapter 6 explains that America is running out of landfills in which to dump garbage. This has prompted some local and state governments to require residents to recycle packaging, either to reduce their use of certain products or to use more bio-degradable products. Some policy makers are calling for more widespread and more stringent versions of such laws to

reduce the need for landfills. But recycling can be harmful to the environment. Many forms of recycling have the side effect of producing more pollutants and using more energy than if trash were simply buried in landfills. Further, many of the products that are most criticized as unfit for landfills, such as plastic containers, account for very little of the bulk of trash in landfills.

What is worse, the notion that America is running out of landfill space is largely a myth. There is plenty of space for new landfills. But this does not mean that potential landfill space is used wisely and efficiently. One problem is that the full costs of disposal is not paid by the consumer. This means that the consumers often will throw away items when other forms of disposal actually would be less costly. Still, even when landfills are the best option, few local governments want to allow new landfills to open. Many of these governments fear local opposition from resident who do not want garbage dumps in their neighborhoods. A further problem arises because even when consumers are, on average, charged the full cost of trash pickup and disposal, normally this is paid for indirectly through property taxes. Thus the resident pays the same, whether he or she produces a great deal of trash or just a few cans each week. Hence there is still no financial incentive for the consumer to produce less trash.

Some local governments have tried to deal with these weak or perverse incentives by charging citizens directly for the amount of trash they leave for pickup. This gives consumers an economic incentive to cut down on unnecessary trash production in ways that promote economic efficiency. But an even better way to reduce the cost of disposal is for local governments to contract with private firms for disposal services. The competition for contracts by private firms tends to keep down collection costs.

Trash disposal is almost exclusively a local matter. While the federal government's role in solid waste disposal policy should be limited, it can take certain actions to deal with the problem. It can:

- ◆ **Develop environmental, health and safety standards for waste disposal facilities.**
- ◆ **Develop federal guidelines to facilitate interstate transport of solid waste.**
- ◆ **Revise federal government procurement policies to encourage the use of products made of recyclable materials.**

Local and state governments can assure safe, low-cost solid waste disposal through a number of reforms. Such a government role would:

- ◆ **States should ensure that solid waste disposal facilities do not pose health and safety hazard.**
- ◆ **Eliminate public utility rate regulation of solid waste disposal services in states where such regulation now is in place.**
- ◆ **States should require local governments to use full-cost accounting for solid waste services, including collection operations and solid waste disposal.**

PRISONS

Chapter 7 notes that state prisons now are operating at between 15 percent and 27 percent above capacity. Federal facilities, whose inmate population more than doubled between 1980 and 1986, are running at 51 percent above capacity. But limited capital budgets, and other fiscal constraints, make it difficult or impossible for federal agencies and state governments to take decisive action to reduce overcrowding by using taxes or government bonds to finance construction of new facilities.

Recognizing this, several states and local governments have turned to creative private sector solutions. This experience shows that private prison companies can construct or manage prisons for as much as 20 percent less than facilities built under the direction of government departments. For example, by contracting out the management of a penal farm to the Corrections Corporation of America, a private firm, Hamilton County, Tennessee saved about 15 percent over three years compared with the cost of operating the prison itself. Some 39 states, as well as the Immigration and Naturalization Service and the U.S. Marshall Service, now contract with private firms to operate minimum security facilities. Some two-thirds of detention centers at all levels of government are privately run.

Yet all levels of governments still often fail to take full advantage of the private sector option. For example, they often fail to take account of the full costs of government-run prisons. This makes the privatization option look less desirable than it actually is. Further, Federal Bureau of Prisons has not followed the lead of the Immigration and Naturalization Service by contracting with the private sector for management of a minimum security facility.

A number of policy changes would expand the use of the private sector in constructing and managing prisons. This would allow inmates to be housed at lower cost and thereby help relieve overcrowding. Among the

necessary reforms:

- ◆ **State governments should introduce legislation authorizing the private financing, construction, operation, and ownership of prisons and jails.**
- ◆ **Governments at the state and federal level should adopt fair and accurate accounting procedures to determine the government cost of operating prisons.**
- ◆ **The federal government should authorize a tax-exemption for interest earned on state bonds that finance privately operated and owned prisons.**
- ◆ **The Bureau of Prisons and the Immigration and Naturalization Service should conduct studies comparing the costs of a privately-run facility with one run by the government.**
- ◆ **The federal Bureau of Prisons should experiment by contracting out to the private sector one of the agency's minimum to medium secure Federal Correctional Institutions.**



America's infrastructure is wearing down. But the current condition of this infrastructure, and the policies needed to repair and expand it, do not center on taxes and more public spending. The problems of today are in a large part artificial, due to the absence of market incentives, and to the fact that the government rather than the private sector provides most infrastructure facilities and services. This has led to structural inefficiency.

Experiments with private the sector provision of such facilities and services, primarily by state and local governments, show that market pricing and privatization can lead to existing infrastructure being used more effectively and enable new infrastructure to be constructed and managed at lower cost. An increasing number of state and local officials recognize this, but their attempts to introduce privatization often are stymied by federal law and regulations.

If the American economy is to have a system of infrastructure constructed, created, and used in the most efficient way, so that it enhances rather than detracts from the nation's competitive position. Congress and the Administration must overhaul these statutes and rules.



Chapter 1

A Private Sector Foundation for Roads and Bridges

Terree P. Wasley

For many bridges and roads in the United States the rhyme of London Bridge falling down has come true. Each year more of America's bridges and roads break down, their iron and steel bending and bowing, the pavement crumbling and disintegrating. A few bridges actually have collapsed, taking with them cars and people.

The quality of the nation's roads and bridges increasingly has become a matter of government and public concern. Cost estimates for repair and update of the nation's highways are as high as \$655 billion, and the cost to rehabilitate bridges could be as high as \$50 billion. George Bush is seeking \$105 billion over five years for improvements in transportation infrastructure. Yet with budget constraints at federal and state levels of government, dollars for infrastructure repair are few and far between.

Government and industry alike are examining new alternatives, such as public/private partnerships and privatization, that could ease the burden on severely strained government budgets. Interestingly, a look at the history of roads and bridges in America shows that the involvement of the private market is not new. Through most of the nineteenth century local governments and private companies provided roads. Only in the late nineteenth century did the state governments take up this task and only since World War II did roads become a federal concern. In large part, government provision has driven up the cost of roads.

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Now, as the states and federal government face huge budget deficits and the need for massive funding to repair existing roads and build new ones, a return to the private provision of roads is attracting attention. States are experimenting with private toll roads and special arrangements and concessions to private companies. But many state and federal government regulations and practices slow this process, which in turn slows down the driving public and adds unneeded costs to road construction.

Governments at the local and federal levels can provide roads at less cost to the taxpayers by enacting a number of reforms. Among them:

- ◆ **Compare the costs and benefits of privatization with those of publicly owned and maintained roads.**
- ◆ **Develop new guidelines for selling existing roads.**
- ◆ **Remove federal government procedural barriers to the private provision of roads.**
- ◆ **Allow the blending of public and private funds on road projects.**
- ◆ **Enact state legal changes to streamline private road building.**
- ◆ **Promote, through the Department of Transportation, the viability and practicality of private ownership of roads.**

A HISTORY OF AMERICAN ROADS

Construction of American roads and bridges usually has been a local, and often a private, matter. Originally, local townships maintained their own roads. This was fine so long as trips were short. But as the typical road trip lengthened, a growing number of travelers passed through several local jurisdictions, becoming what economists call “free riders.” They paid nothing for benefiting from the facilities, in this case the roads that were built and maintained by local residents.

As the residents began to balk at providing roads for non-residents, the private sector stepped in. Borrowing from English practice, Americans built private turnpikes. The first notable project was chartered in 1794 and connected Philadelphia and Lancaster, Pennsylvania. A private corporation, financed by shares sold to the public, built the entire 61-mile project in two years. Users paid at tollgates along the route. By 1840, more than 10,000 miles of user-financed turnpikes laced the young nation, most of the mileage predictably in the more populated New England and Middle Atlantic states.

A Private Sector Foundation for Roads and Bridges

During the same period state road construction was virtually nonexistent. In New York between 1790 and 1821, the state's expenditure of \$622,000 on the construction of roads and bridges was dwarfed by private investment of \$11 million in turnpike companies and \$850,000 in bridge companies.

Although the turnpikes were private, state governments increasingly placed caps on toll rates. These regulations reduced turnpike profits. During the mid-nineteenth century, state governments gradually claimed control over most of the roads. But it was not until 1891 that New Jersey became the first state to authorize spending state funds to assist counties in road construction. Still, in the first part of the twentieth century, roads were being built by and for private firms. For example, in 1911 twice-nominated presidential candidate T. Coleman du Pont was unable to persuade the Delaware legislature to build a 110-mile highway. Frustrated, he formed a private company and built it himself for \$4 million.¹

As for federal road building, there was little activity through most of the nineteenth century, though Article I, Section 8 of the U.S. Constitution gives Congress the power to establish post roads. The first federal road construction across state lines was not authorized until 1802 as part of the law admitting Ohio into the Union. But, by the mid-1830s, federal funding of road construction had ceased.

It did not resume until 1893 when Congress authorized rural mail delivery service. The first federal agency concerned with roads, the Office of Road Inquiry, was established in that year with an appropriation of \$500,000 to improve postal routes. In 1916, President Woodrow Wilson signed the "Federal Aid Road Act" to finance road construction in cooperation with the states. To be eligible for federal assistance, states were required to establish a highway department with professional staffs. Under the law, once a road was completed, the state was responsible for its maintenance.

The National Recovery Act of 1933 assigned \$400 million to the states for highway construction with a major emphasis on developing farm-to-market roads. In 1944, President Franklin Roosevelt signed the Federal Aid Highway Act earmarking \$1.6 billion over three years for roads. The new law also authorized a National System of Interstate Highways. Funding for this system had to await President Dwight Eisenhower's Federal Aid Highway Act of 1956. In what became the largest road construction project in American history, it called for a 41,000-mile interstate highway system

1 "Pete Du Pont," *The Wall Street Journal*, July 29, 1987.

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to be completed by 1972, at a cost of \$41 billion. The system is only now nearing completion. The Act also established a Highway Trust Fund as a long-term source of federal funds for road construction and improvement with revenues coming from a federal tax on gasoline. In 1966 a cabinet-level U.S. Department of Transportation was created with the Federal Highway Administration as one of its departments.

In addition to roads, the federal government also finances bridge construction. Congress authorized \$250 million in 1970 for bridge replacement. This program was expanded in 1978 and made permanent. More than \$1 billion per year was made available at that time for bridge rehabilitation and replacement. In 1982 bridge repair and replacement funds doubled.

In 1976 Congress authorized \$175 million per year for a program of resurfacing, restoration, and rehabilitation work on sections of interstate highway, called the "3R" program. In 1981 it expanded "3R" to include reconstruction projects, becoming the "4R." The program's annual funding was doubled in 1982.

In 1982 Ronald Reagan signed the Surface Transportation Assistance Act that boosted federal spending for highway construction and repair work. It raised the federal tax on gasoline sales from four cents to nine cents per gallon. Funding for interstate repair programs was doubled, and more funds appropriated for bridge repair and replacement. And in 1987 the Surface Transportation Act provided \$17 billion to complete the Interstate Highway System by the mid-1990s.

WHAT IS WRONG WITH U.S. ROADS AND BRIDGES?

Trucker Wilbert Fuselier and 45,000 pounds of coffee were headed down Louisiana's Interstate 10 in 1989 when a shattering jolt threw him upward and slammed his head into the top of his cab. Five similar jolts hit his 18-wheel tractor trailer in quick succession as the driver bumped along. As a veteran of I-10, however, Fuselier was prepared. On the ceiling of his cab he had installed an inch-thick strip of red foam rubber padding.²

This painful scenario is reenacted countless times daily across America, where roads and bridges are deteriorating faster than governments can afford to repair or replace them. The Federal Highway Administration, which now spends about \$13 billion a year on repairs and construction,

2 John Yoo, "As Highways Decay, Their State Becomes Drag on the Economy," *The Wall Street Journal*, August 30, 1989, p. 1.

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estimates that bringing the roads up to “minimum engineering standards” would cost between \$565 billion to \$655 billion over the next twenty years, a level of funding that is just not available.³

According to the Federal Highway Administration, 239,568 bridges—41.5 percent of America’s 576,025 bridges over 20 feet in length—are either structurally deficient or functionally obsolete. It also estimates that 150 bridges buckle, sag or collapse each year.⁴ The estimated cost to repair or replace all eligible bridges is \$51.4 billion. The Highway Bridge Replacement and Rehabilitation Program, created in 1978, funds the repair or replacement of approximately 2,871 bridges per year. At that rate it would take an estimated 83 years to catch up with the existing backlog of bridge needs.

THE INHERENT PROBLEMS OF PUBLIC OWNERSHIP

A major cause of America’s highway and bridge difficulties is the problem inherent in public ownership of infrastructure. The incentives operating in the public sector often lead to misdirected spending, the inefficient use of existing infrastructure, and a failure to maintain the infrastructure properly. Mismanagement and poor workmanship dog many federal highway projects.

Politics plays a crucial role in the allocation of infrastructure projects. Because each member of Congress insists that his or her state or district receive a pro-rata share of federal highway funds, numerous projects of relatively low priority are funded, leaving fewer dollars for more appropriate projects. In addition, members of Congress spend much time fighting over “demonstration projects,” usually new roads or access ramps, often paid for out of the Highway Trust Fund. Congress managed to slip 157 of these projects into the last highway authorization bill in 1987, costing the taxpayer \$1.4 billion.

Another obstacle to infrastructure improvement is the creative accounting used by the Administration and Congress for the Highway Trust Fund to make the federal budget deficit appear smaller. Receipts from gasoline taxes and other user fees are earmarked to this fund, which is currently valued at around \$14.5 billion. In fact, there are no funds held in an actual

3 *Ibid.*

4 “The Bridge Corps Program,” a report by the Toll Road Corporation of America, Leesburg, Virginia, 1989.

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account. The money goes into the general revenue pot and the Highway Fund is “owed” its amount. While the public believes that its gasoline taxes are going for road improvements, Congress refuses to spend much of this money because it would have to replace the money owed to the Highway Fund.

Public ownership of the roads meanwhile, creates a strong bias against market pricing for road use. Free access inevitably leads to overuse, which then inevitably leads to demands for additional capacity. This costly new capacity would not have to be constructed were market pricing used on existing structures. Economists in fact long have suggested market pricing for infrastructure use. Echoing this, the Congressional Budget Office maintains that pricing policies on federally supported infrastructure fail to give either users or state and local managers the incentives to make efficient choices. The current practice of below-cost pricing encourages users to request more services than they are willing to pay for, while giving planners an exaggerated perception of investment needs from misleading signals about high demand.

MYTHS ABOUT THE PRIVATE OWNERSHIP OF ROADS

As states find themselves increasingly facing high costs of road maintenance, they should consider public-private partnerships for road building and private ownership of roads. This idea, though not new, is encumbered by many myths. Among them:

Myth #1: Only the government can operate a road system that meets the needs of citizens.

The idea of private companies operating roads may seem strange to many Americans. Admittedly, there is a plausible basis for the premise that government must own and operate the roads. Besides the enormous resources available to government to operate the system, transportation is so vital that any breakdown would threaten the nation’s security and economy. Can the U.S., say critics of private ownership, entrust this function to private firms, which may go out of business, go bankrupt, or otherwise cease to exist?

Unlike government, of course, private sector firms must rely upon resources voluntarily supplied by customers and investors. Private firms cannot compel payment through taxation. But far from being a disadvantage, this encourages private firms to be more prudent in managing resources, more responsive to complaints, and more sensitive to market demand. Private firms must make good decisions or they are out of business.

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The purported advantages of the public sector, however, insulate government agencies from the necessity of making good decisions and from much of the information concerning demands, communicated by consumer choices and crucial to making good decisions. This absence of a link between services rendered and payments allows public agencies to ignore consumer wishes — as every motorist knows who has complained about a pothole.

The dependence upon legislated sources of revenue makes public agencies very sensitive to political pressures for special favors. Such political favors divert scarce resources from more urgent needs. Other more beneficial and more useful road repairs or construction will be delayed or abandoned because of the political manipulation of road finance.

Myth #2: Roads are a “public good” and thus can only be supplied by government.

It often is assumed that roads are an example of what economists call a public good — a good or service that of necessity must be made available to everyone. Common examples of public goods are defense and the criminal justice system. Because it is not considered possible to exclude nonpayers from receiving the service, an individual user can avoid paying for the amount of service individually consumed. The demand for such a public good or service always exceeds the amount that a private owner can supply, given the private owner’s limited ability to raise revenue from users. This gap is generally taken as an argument for the desirability of government supplying the service and compelling payment through taxes.

Yet roads are not necessarily a public good. Nonpayers of tolls, vehicle registrations, or other charges for roads, for instance, can be, and are, excluded from using the service. Toll roads are the obvious example of roads that are not a “public good” in the strict economic definition.

Myth #3: Roads are a natural monopoly.

A natural monopoly is said to exist if the cost of producing an extra unit of a good or service consistently declines as production increases. It is supposedly impossible to make a profit on small-scale production. The most efficient production then takes place when the producer is as large as possible — that is, a monopoly. If there were many firms competing to provide such goods or services, all likely would go out of business. The interconnecting road system, critics maintain, can work only on a large scale with one owner: the government.

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Even if it were conceded that roads are natural monopolies, it does not follow that government ownership would be better than a private monopoly regulated by the government. While being in most ways similar to government monopolies, regulated private firms frequently are at odds with government policy makers over prices, labor practices, and other matters concerning the business. This results in close scrutiny of the firm by the government officials and an incentive for managers to pay attention to consumers. By contrast, the relationship between the public sector agency and government officials tends to be extremely cooperative, with bureaucrats and politicians serving each other more than they serve the consumers. Because of this cozy relationship, budgets for public agencies tend to expand regardless of external circumstances.

Roads, in any case, are not necessarily natural monopolies. There are no significant economies of scale in road construction. In fact, as road systems expand, they cross more political jurisdictions and thus face more, often overlapping, authorities and regulations. This tends to raise administrative costs per unit of roads as systems are enlarged, leading to substantial diseconomies of scale. Construction costs have gone up by over 400 percent in the last thirty years, while administrative costs have risen by over 1,200 percent in the same period. Roads thus fail to exhibit the ever-increasing economies of scale that are requisite of a natural monopoly.

Myth #4: Highways cannot compete with each other.

Most roads, particularly in urban areas, compete with each other to carry traffic and attract businesses or residences along their routes. Convenient and well-maintained routes would entice motorists to spend user fees on the facility if they were allowed to do so. High-volume roads attract businesses dependent upon visibility and access, while low-volume roads are more useful for residential areas. This suggests that use of roads has many market-like aspects, presenting the possibility of a competitive market managed by private sector roadway operators.

Myth #5: Only the rich will be able to travel; low-income drivers would not be able to afford private roads.

Privately owned roads in congested areas will give travelers greater choice of routes. Those who pay to drive on the private road will find less congestion, and also those who remain on the public road will find less congestion due to the addition of the private roads.

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LEGISLATIVE AND LEGAL OBSTACLES TO PRIVATE MARKET INVOLVEMENT

Several legislative and legal hurdles arise when public/private partnerships or privatization of infrastructure are considered. The use of a single federal dollar or the exercise of any federal discretion in planning, constructing, or selling of a road brings with it a long list of federal regulations, review processes, and permit requirements. The sale of many existing roads or the introduction of private investment in those roads will be affected by both state and federal laws. Some of these legislative barriers include:⁵

1) **Construction Wage Laws.** The Davis-Bacon Act of 1932 requires that any project receiving federal funds must pay laborers the area's prevailing negotiated wage. In most cases this means high union wages. This raises road construction costs and makes it too costly for private providers to get into the road business. Similar state labor laws also raise costs.

2) **Restrictions on Blending Federal and Private Funds.** The Surface Transportation Act of 1987 authorizes using federal funds for seven pilot toll facilities. The law states specifically that the facilities must be publicly owned and operated. Section 129, Title 23 of the U.S. Code effectively bans tolls on federally aided highways or public/private partnerships by requiring the repayment of all federal monies spent on a highway if it is converted to a toll road. This provision remains in force, with the exception of the seven projects authorized by the 1987 act, and is a significant barrier to widespread expansion of the toll road approach, or the use of tolls to fund rehabilitation of existing highways.

3) **Environmental Impact Assessments.** The National Environmental Policy Act of 1969 deters private road construction by requiring that every federally assisted project or project adjoining federal lands or waterways undergo an environmental impact assessment. But often these assessments, rather than being used to safeguard the environment, are used by opponents of roads as an obstacle to stall projects regardless of their environmental effects. The resulting delays on new road construction can result in higher costs that far outweigh any small amount of resulting environmental protec-

5 Much of the following material summarizes information from Steven A. Steckler, "Privatization of Highways and Bridges," *Federal Privatization: Toward Resolving the Deficit Crisis* (Santa Monica, California: The Reason Foundation, June 1988), Chapter 11.

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tion. These costs especially hinder the efforts of private firms putting their own capital at risk in road construction.

4) Federal Highway Abandonment Rules. A key stipulation of federal highway grants is that the recipient state government continue to maintain the road or bridge that was built with the grant. Termination of this “continuing maintenance” requirement is necessary for a state to sell a road that was built with federal aid. This can be done only if the road is officially “abandoned” by the state, which requires federal approval. Currently, there are no guidelines for approving an abandonment request, nor are there provisions for paying back the federal government for its share of sale proceeds. Nevertheless, the abandonment process requires that the federal government make a decision, and with that discretion comes the long list of procedures and red tape.

There also is the question of whether a state government can privatize a road that has received federal funds. On the one hand, there apparently is nothing to prevent the sale of a federally funded road or bridge. On the other, this leaves open the opposing interpretation that the federal interest continues indefinitely. Thus, a “statute of limitations” and some guidelines on how the federal government should be reimbursed after a sale may be critical to successful highway privatization ventures.

The removal of federal interest is also important for “temporary privatization” projects. Many bridges cannot be rehabilitated through toll charges precisely because federal law forbids imposing tolls on a facility that has received federal financial support. With no clear limitation of the federal interest, it would be difficult to apply temporary privatization to many bridges that were originally built with federal aid.

Other legislative and regulatory questions in public/private partnerships or privatization of infrastructure on federal and state levels include: Can the power of eminent domain be delegated to a private corporation? Can a corporation be given the authority to condemn property? Can a private corporation and government share ownership? Will a state guarantee the debt of the private entity? How does each state develop its own regulatory process?

These questions are being studied as several private road-building projects are in various stages of development in the United States.

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PRIVATIZATION IN EUROPE AND THE PACIFIC RIM

While America's dependence on private roads decreased after World War II, toll roads became far more common in Europe and Asia.⁶ Dating back to 1281, when tolls were collected on London Bridge, the concept of paying to use a road, bridge, or other structure has been accepted in Europe. A 1977 study by the International Bridge, Tunnel, and Turnpike Association found that Belgium, Britain, France, Italy, and Spain had 8,868 miles of toll roads, compared with 4,416 miles in the U.S.⁷ Most of the national network of major roads in Western Europe are toll roads constructed and owned by private companies, and most of the major bridges and tunnels have also been built with toll financing.

The basic European model is for government to award a franchise or concession to a commercial entity for a period of time long enough to amortize its investment, typically 25 to 35 years. Then the road is transferred to the government. This is known as the B-O-T method—for “build-operate-transfer.” It has built some 5,300 miles of toll highways in France, Italy, and Spain, including 90 percent of Italy's motorway system. France adopted the B-O-T approach in the late 1960s, and nine semi-private and private firms have built and operate the major motorways. French toll roads generate approximately \$2 billion a year in toll revenues.

In early 1988 the Costain Group, one of Britain's largest construction firms, announced plans for three B-O-T projects, totaling \$12 billion. One is a 16-mile motorway beneath the Thames River; the second project is a second deck on the M25 motorway, which circles London; and the third is a high-speed rail line from London to the entrance of the Channel Tunnel that will link Britain and France.

The historic \$12 billion Channel Tunnel, popularly called the “Chunnel,” itself goes one step beyond B-O-T since ownership will not revert to government. Though the project does have the authorization of the British and French governments, it employs neither government financing nor guarantees. It has raised funds through international banks and equity capital from public offerings.

6 Condensed from Robert W. Poole, Jr., “Private Tollways: Resolving Gridlock in Southern California,” Reason Foundation, *Policy Study* No. 111, May 1988.)

7 *Ibid.*, p. 11.

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British Transport Secretary Paul Channon has been streamlining legal procedures and abolishing regulations that have stifled private investment. These rule changes will speed what has been a slow and expensive approval process for toll roads. While the Department of Transport and local government bodies have powers to promote roads, each private scheme has required an act of Parliament to authorize the route, tolls, and condemnation of necessary land. Channon currently is trying to acquire powers to authorize projects directly. He expects direct tolls to be the sole source of revenue, and that market forces will dictate toll levels. According to William Reinhardt, the editor and publisher of *Public Works Financing*, a newsletter documenting public-private ventures, a franchise was awarded to the Trafalgar House company in August 1991 to construct a £450 million bypass around Birmingham, England. The project will now begin final approval process. Channon also is considering future private involvement in government road construction.

Over the past decade, the B-O-T model has been used in the Pacific Rim. Indonesia is linking its islands of Bali, Java, and Sumatra with a network of toll roads and bridges. South Korea has developed a toll road network to toll farm products to the cities. Hong Kong has built its famed private harbor tunnels using this model. And Malaysia is using B-O-T to build the final 310-mile link in a 560-mile motorway from Singapore to the Thai border.

The Sydney Harbour Tunnel, under construction in Australia, is the largest privately-funded public works project in that country. It is a private joint venture of an Australian construction firm, a Japanese contractor, and The New South Wales Department of Main Roads. The tunnel, which is expected to be finished in 1992, will be operated privately until 2022 when it will revert to the government at no charge.

The most dramatic of the new Pacific rim projects is under construction today in China. Hong Kong entrepreneur Gordon Wu broke ground in April 1987 for a \$1 billion, 155-mile private toll road linking Guangzhou (Canton) with Hong Kong and Macao. Wu's franchise is for 30 years, after which time ownership will revert to the Chinese government.

PUBLIC/PRIVATE PARTNERSHIPS IN THE UNITED STATES

Toll roads suddenly are back in vogue in the U.S. as money-strapped states look for ways to finance new highways. Currently 26 states have some 4,700 miles of toll roads, bridges and tunnels. Statistics compiled by the International Bridge, Tunnel and Turnpike Association show that sixteen

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states are considering \$8.5 billion worth of proposals that would add 882 miles in toll roads or bridges. Among the noteworthy projects:

California

In June 1989 the California Legislature, as part of a \$18.5 billion transportation bill, authorized private companies to build four demonstration tollways in the state. All four projects will involve the development of transportation facilities by the private sector. There will be three projects in Southern California and one in Northern California. The San Joaquin Hills corridor is a fifteen-mile extension of the Corona Del Mar Freeway. The Eastern corridor runs six miles from Riverside County to Santiago Canyon, where it splits in two, one section running five miles to Interstate 5 and the other running eight miles to the Laguna Freeway. The Foothills corridor will be thirty miles in length, connecting with Interstate 5 near San Diego County. These three projects will cost an estimated \$2.1 billion. An environmental review of the first project has been completed and ground breaking for the project could be in late 1991. The Northern California project involves a \$1.2 billion, 85-mile long tollway in the San Francisco Bay area.

The projects are to be privately planned, funded, financed, built and operated, although the state will own the completed facilities and lease them back to the private developer. The projects will, therefore, follow the Build-Transfer-Operate (B-T-O) model for public-private partnership. The reason for adopting this over alternative approaches is because the B-T-O approach avoids potential legal problems. "California is the tort capital of the U.S.," says Robert W. Poole, Jr., president of the Santa Monica-based Reason Foundation and a member of CalTran's privatization advisory board. "Because of that [the state] did not go with the B-O-T mode. They went with B-T-O, so the state will own these roads from the day they open. That supposedly will reduce the liability exposure of the private sector."

Plans are for tolls and developer fees to fund the projects. In addition to tolls, other revenue available to the private builders could include rents from private development of air rights, private real estate development at interchanges or station stops, transmission of data, water, and electricity, exclusive truck lanes, and anything else legal and profitable.

Colorado

A 1983 Colorado law gives private road companies the right and ability to build new roads. Road developers can file a claim on a transportation corridor, acquire the right of way by purchase, dedication or condemnation, and finance, build, operate, and own a toll road. All of these powers are

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distinct from those of state and local governments with the exception that the counties along the route must approve the toll rates.

The Front Range Toll Road. The Front Range Toll Road Company of Denver has proposed a \$1.3 billion, 210-mile route from Pueblo to Fort Collins to run parallel to congested I-25, which passes through Denver. The project is envisioned as a "purely private" multipurpose utility corridor which would include pipelines, electric lines, and communications lines. Landowners in eastern Colorado hired an Illinois engineering company and a Denver contract management firm to promote the project before the highway department and the state legislature. A 1985 state survey called attention to the need for an alternative route to the I-25 highway, but no funds had been available for construction at that time. From 12,000 to 14,000 acres would be acquired along the corridor. There are about 200 public and private property owners along the 210-mile corridor, and it is expected that as much as 40 percent of the land will be donated.

Developers are negotiating with several U.S. companies seeking financial support for the project, which will take three years to construct. According to Ray S. Wells, president of R.S. Wells Corporation, "About \$2.5 million in additional equity is needed to prepare credible financial documents for Wall Street." The equity would buy a 44 percent stake in the Front Range Toll Road Company.

The E-470 Beltway. An unusual mixture of public funding and private development is being used in a project to construct and operate the E-470 Beltway, a section of a business tollway that eventually will encircle Denver. The E-470 Public Highway Authority (PHA) representing a broad range of regional interests, was formed in 1988 to replace a coalition of four local governments. The PHA is to supervise construction and maintenance and will be a liaison between the public and the private sectors.

Initial financing for the E-470 has come from a \$10-a-vehicle increase in automobile registration fees in two counties within the corridor and bonds issued by the E-470 Authority. Those revenues and the projected income from tolls enabled the E-470 Authority to draw \$63 million from an escrow account established by Arapahoe County, one of the counties in the Denver area. These funds financed construction of the first section of the beltway, a 5.5 mile stretch opened in June 1991. The \$63 million will be paid back to the county, with interest, and toll revenues are expected to pay for the final three sections of the beltway.

The total project is expected to cost \$1 billion, cover 48 miles, and be completed around the year 2000. Estimates are that 92 percent of the total funding for construction will come from toll revenue, with only 5 percent

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of the cost financed by the state's vehicle-registration fee increase. The remaining costs will be absorbed by developer impact fees, that is, fees paid by the developer for development rights, donations, and designations of the right of way. A bid for the construction of the second and third segments of E-470, an additional 30 miles at an estimated cost of \$700 million, is expected late in 1991.

Berthoud Pass. In October 1989 voters in Winter Park, Colorado, authorized an independent finance authority that would issue tax-exempt bonds for a \$250-million four-mile highway tunnel under Berthoud Pass. This would be the first privately built major highway tunnel in the U.S. in decades.

Illinois-Missouri: The Chicago-Kansas City Toll Road

A proposed \$2.5 billion, 425-mile private tollway linking Chicago and Kansas City is perhaps the most challenging project to date. It is intended to stimulate development along a corridor in Illinois and Missouri. A feasibility study conducted jointly by the Illinois Department of Transportation and the University of Illinois was completed in January 1990. The study concluded that a public-private partnership would be feasible given anticipated revenues and costs. Both state's Departments of Transportation are looking at the passage of necessary enabling legislation, establishing public-private financing partnerships, appointing a bi-state commission to monitor planning and construction, acquiring right-of-way and existing roadways, acquiring permits, and establishing the responsibilities of public and private parties.

Puerto Rico

The Puerto Rico Highway Authority has named a management consulting team to help negotiate long-term franchises with private developers for three toll roads and one bridge in the fast-developing northeast region of the island.

Virginia

The Dulles Toll Road. The 1988 Virginia Highway Corporation Act opened the way for private companies to seek authority to construct and operate roads in the state. Soon after the law was enacted, the newly created private Toll Road Corporation of Virginia (TRCV) submitted a proposal to the Virginia Commonwealth Transportation Board to build and maintain an extension of the publicly run Dulles Toll Road. The fourteen-mile extension

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from the Dulles International Airport to the town of Leesburg would be America's longest private toll road and the first authorized in Virginia since 1816.

The road will be built at no expense to taxpayers. All permits and have been approved. Completion of the project is expected by 1993, at least eighteen months earlier than the state could do the job, and without dipping into the \$20 million surplus generated by the present toll road. And it will leave untouched millions of dollars in Department of Transportation funds that can be applied to other road projects.

Plans for Bridges. According to Ralph Stanley, founder and president of the Toll Road Corporation, America's crumbling bridges and highways offer profitable opportunities for the private sector. Stanley already has suggested that the Toll Road Corporation repair and rehabilitate bridges, acting as a general contractor, financing agent, and construction supervisor. Upon a project's completion, the Toll Road Corporation would collect tolls for a set number of years to pay off the project debt and make a profit.

KEEPING TRAFFIC FLOWING

The toll road inconvenience most often cited is the stop-and-go process at a toll booth. The new technology of electronic pricing, however, can make toll booths obsolete and allow non-stop travel. Current technology already in use on roads in Delaware, Texas, New Orleans, and on the Coronado Bridge between San Diego and Coronado, California is called the automatic vehicle identification device, or AVI. An identification card the size of a credit card is attached to the inside of the vehicle's windshield. As it passes the tollbooth or sails up the on-ramp the card signals to radio transmitter/receivers or underground electronic cables that the driver has already paid a month's worth of tolls and does not have to stop. Users receive a monthly toll bill similar to a utility bill or have the fees charged to their credit cards.

A Means of Market Pricing

New automatic vehicle identification technology allows higher tolls to be charged during rush hours to divert non-essential traffic to cheaper off-peak hours. Other businesses already use differential pricing to rechannel demand to off-peak periods. Movie theaters feature mid-day reduced prices to fill otherwise empty seats. Electric utilities and telephone companies offer time-of-day rate schedules to entice consumers to shift some of their demand to off-peak hours.

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Congestion pricing, by charging drivers a price that reflects the replacement cost of the road plus the time cost of delays to other users caused by congestion, quickly would regulate traffic to its optimal flow. According to Randall J. Pozdena, an economist with the San Francisco Federal Reserve Board, optimal road pricing in California would require peak-period fees of about 65 cents per mile in urban areas, 21 cents on suburban roads, and 17 cents on fringe suburban roads. Off-peak fees would be 3 cents to 5 cents per vehicle mile across-the-board.

The need to rebuild America's transportation infrastructure and the increasing cost of congestion is encouraging the use of market pricing. "I'm sure that in 10 or 20 years, it will be a common feature of everyone's life around the world," says Carl Williams, Assistant Director of the California Department of Transportation. Williams estimates that peak-period pricing of new private toll roads and bridges has wide appeal. "The environmentalists should like it. The operators should love it. Business should support it, and the drivers should like it because they are going to get to use that facility at its highest and most efficient use level."

Other options to alleviate traffic congestion also are available to private sector road management. Motorists could purchase a travel permit that would allow unlimited street usage for a given period of time. Like a season's pass such an arrangement would alleviate the need for metering travel patterns. Some critics might express concern over possible violations of the rights of privacy if their travel and the hours they are on the road are monitored. Yet instead of noting the exact travel pattern, monitoring devices could be set to record the number of times a client passed a limited number of points on the map, and highway owners could always provide toll booths on one lane, allowing the others to be monitored electronically.

An interesting proposal involving peak-demand hours has grown out of a smog-control plan in the San Francisco Bay Area. The San Francisco City Council has proposed a smog fee, determined by multiplying the emissions level of a car by the number of miles driven per year. This would give motorists an incentive to keep their cars running clean. In addition to the smog tax, the Council would strengthen incentives by imposing special tolls on those who use congested highways at peak morning hours. Besides reducing emissions, the plan would benefit by improved traffic flow.

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FINANCING MECHANISMS FOR PUBLIC/PRIVATE PARTNERSHIPS

The first step in the process of public/private road construction is to assemble an analysis team that includes financial, economic, and legal experts, and investment bankers, and that refers to local land use and engineering studies. The critical financial issues that must be addressed include: 1) whether to use single or multiple revenue sources; 2) what sort of revenue streams can be expected; 3) whether to use taxable versus tax-exempt financing; 4) what mix of borrowed funds, debt, and sales of shares or equity is best; and 5) what should be the relationship between the public and private entities involved.

In deciding who should pay for construction, policy makers should determine who will benefit from the new road.⁸ The primary beneficiaries in most cases are: 1) the user; 2) the landowner adjacent to the new interchange whose land increases in value; 3) the non-user, who benefits from the traffic diverted from existing facilities; and 4) future tenants of the property adjacent to the new interchange who enjoy a larger market because of their accessibility. The challenge is to find ways to distribute the costs of a new facility equitably among all of these groups.

To induce the private sector to participate in jointly-funded projects, packaging together certain incentives such as development rights, impact fee credits, zoning concessions, and density bonuses may spur interest. The goal is to create a pricing structure and a regulatory system that benefits the landowner and the public sector simultaneously.

A sample financing strategy may include several of the following components:

1) **User Financing.** Such a plan would contain the toll-revenue elements which could include toll revenue serial bonds as debt, a premium toll rate, an escalating toll rate to keep pace with inflation, an automated vehicle identification system (AVI) for toll collection, and an automated enforcement system for violators of unmanned toll booths. This approach would reduce the need for state funds.

8 Excerpted from "Policies for Maximizing Tollroad Revenue Using Value Capture and Privatization," a presentation given to The International Bridge, Tunnel and Turnpike Association by Craig Miller, Vice President, Kimley-Horn and Associates, Inc., Fort Lauderdale, Florida, 1989.

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2) **Value Capture.** This allows for easy collection of revenues necessary to pay for roads. Specifically, it would create special districts, called interchange enterprise zones (IEZ), around each interchange. Within these districts a number of revenues could be collected, including a special assessment set to recover a percentage of the value of the property increase created by the toll road, a transportation utility fee, and a traffic impact fee.

3) **Private Financing.** This would take advantage of the substantial real estate development activity generated in the private sector near road construction. Real estate development franchises would be designed to offer regulatory and development concessions within a certain radius around the road. In return for these concessions, the franchisee would be responsible for using a portion of his or her profits to help finance construction.

4) **Public Financing.** There are a number of forms of government assistance, if required: public credit support for debt; Federal Highway Administration funding; front-end funding for preliminary engineering and feasibility studies; possible state revolving funds or local short-term construction loans; gas tax revenues; and general obligation bonds.

5) **Regulatory Exaction Concessions.** Regulatory incentives are public sector concessions to induce or enhance private participation in a project. One concession that the government might grant is to reduce the one-time impact fee often charged to developers to offset costs of construction. Another concession is to transfer the development rights along the roadway to the private developer. This type of program could also generate revenues through the advanced sale of access rights or traffic “futures” contracts, the prepayment of impact fees to purchase access rights, or to secure a guarantee of certain capacities in an infrastructure project.

6) **Vendor Financing.** Developers that are building a totally private transportation system could finance construction by offering long-term lease arrangements for rights-of-way to vendors and providers of other services. Rights-of-way could include: concessions such as food, lodging, retail, rental cars, parking; passenger trains; oil and gas pipelines; water and wastewater treatment; and telecommunications. Corporations could also issue special facility bonds, tax-exempt bonds like those used by municipalities. In exchange for tax-exemption, they would have to give up depreciation and other write-offs.

7) **Developer-Related Financing.** Projects that would involve the developer would include joint development, special benefits assessments, impact fees, and tax-increment financing. Joint development requires that a developer improve access to transportation as a condition for government approval to construct his building. Special benefit assessments are an annual

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charge to the developer to pay for the construction costs of the road. The assessments would be used to finance bond issues. Impact fees are a one-time government charge to developers to offset the costs of constructing or improving roads.

PRIVATIZING EXISTING ROADS

Privatization of existing facilities offers the prospect for less expensive and more efficient road maintenance, faster and more cost-effective upgrading of the roadway to meet new demands or remove safety problems, and greater opportunities for cost sharing with commercial and residential developments along the road. It does not require resolving as many property rights questions as building new roads, and so it has much more potential for widespread use.

The first determination that must be made when privatizing an existing road is its economic worth. The value of the road is determined by the revenues, such as tolls and perhaps real estate development rights, that go along with ownership minus the associated operating and maintenance costs. To the extent that a private firm has lower costs or can collect more revenue than government, the private firm would be willing to buy the road and the government would benefit from selling it.

The ways to structure a privatization project for existing highways and bridges include:⁹

1) **Unrestricted Sale.** Many public roads serve a very select group of users, such as major manufacturing, storage, or shipping facilities. They often are subject to extraordinary wear and tear and have high maintenance costs imposed by these few users. It may make sense for the government to sell the road to the primary users or to a consortium of users and make them responsible for upkeep, perhaps with the provision of accessibility to other users. This already is common around suburban developments. Similarly, a user group that wishes a road to be upgraded to a level surpassing the public interest or capability could be allowed to buy the road.

2) **Sale — Lease Back.** Local governments may wish to shed some of their road-management responsibilities for even those roads with a diverse collection of users, where tolls may not be feasible. In these cases, the government could sell an existing road to a private firm, which would then receive a regular fee from the government based on the number of vehicles

9 Some of the material summarized from Steckler, *op. cit.*

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using the roadway. This would give the local government up-front cash and shift the risk of future ridership and the cost of maintenance to the private firm. The government fee payment would be conditioned on the private firm's maintaining the road to the conditions specified in the fee contract. In turn, the private firm might be free to seek other revenue sources and upgrade the road.

3) Sale — Toll Conversion. A local government can reap the greatest financial reward from privatization by selling a roadway or bridge with the provision that it may be operated as a toll facility. By selling the road, the government can recover the tax dollars it invested in building the road and avoid future maintenance costs.

The sale price of the road will equal roughly the anticipated net revenues from the toll facility minus anticipated maintenance costs. In addition, a privately owned toll facility may enjoy tax depreciation benefits, as long as it receives no funds from the government. This method of conversion is most valuable for roads and bridges needing significant repairs and maintenance. It may be especially useful where the responsibility for those costs is diffused, such as a bridge or road running through two jurisdictions.

There are about 50,000 miles of controlled access highways that could be converted into privately owned and operated toll roads. An additional 30,000 miles of rural interstate highways could be converted into traditional-type toll roads, and some of the urban sections of these highways already are toll roads. Although these roads account for less than 2 percent of the mileage in the nation's road system, they carry 20 percent of the traffic.

4) Temporary Privatization. Several private corporations such as TRCV's Bridge Corps Program have announced programs to help local and state governments rehabilitate damaged and inadequate bridges by "temporarily privatizing" them. The Toll Road Corporation of Virginia's Bridge Corps Program is such a project. Essentially, the company takes over the bridge and rehabilitates it with private financing. It then operates the repaired bridge as a toll facility until enough tolls have been collected to pay for the repair cost. This probably takes three to seven years. The bridge is then turned back to the government. Such temporary privatization can mean lower total project costs, complete project financing, and shorter project completion time.

5) Transfer to Local Home Owners Associations. About 70 percent of America's road mileage are "local" roads. These basically are residential streets serving as access routes to properties, not as thoroughfares for through traffic. Such roads handle only 14 percent of the vehicle miles of travel and there is no need for them to belong to the city or county

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government. In both condominium and shopping centers it is common for the streets to belong to the property owners who maintain and control access to the roads. Property developers usually build the streets that provide access to their buildings. The property holders should retain joint title to these local roads, and contract with some private sector firm for maintenance and repair. In St. Louis, for example, there are over 1,000 privately owned residential streets for which homeowners are responsible for upkeep and management and receive no government subsidy.

HOW TO ENCOURAGE PUBLIC/PRIVATE PARTNERSHIPS

Though each state has its own laws and regulations regarding potential private sector involvement in roads, some general policy approaches may be of use to all jurisdictions. These include:¹⁰

1) Compare the cost and benefits of privatization with those of publicly owned and maintained roads. Studies would determine the potential benefits of selling expensive roads and bridges to their specific user groups and to private firms. The creation of private toll facilities from existing public roads and bridges should be considered as a way of repairing and upgrading roads by shifting the costs of these to those who will benefit from the improvements.

2) Develop new guidelines for selling existing roads. Guidelines are required by all government levels for selling government-owned roads or bridges to the private sector. A limitation on the amount of time the federal government keeps an interest in the road should be established, or at least a reliable method for determining the length of time. Guidelines also should be developed to determine whether or how the federal government should be reimbursed whenever a federally assisted facility is privatized before the termination of federal interest.

3) Remove federal government procedural barriers to the private provision of roads. The federal government prohibits the sale of roads to the private sector. Road privatization projects that economically would benefit governments, private providers and users fall victim to federal, state, and local regulations as well as unnecessarily slow and restrictive approval processes. Some environmental regulations that do little to protect the environment slow and add costs to private provision of roads. Federal and

10 *Ibid.*

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state laws should be examined to remove unsupportable barriers and streamline the approval processes for privatization projects.

4) Allow a blend of public and private funds on road projects. Federal grant policy generally prohibits the use of private funds in projects receiving any federal monies. This prohibition is particularly evident in the Surface Transportation Act of 1987, which authorized the use of federal matching funds for seven pilot toll facilities on the condition that they be publicly owned and operated. The Administration could ask Congress to amend such legislation to allow private sector participation.

5) Enact state legal changes to streamline private road building. Governments need to clarify, for example, the laws concerning their power of eminent domain under which land is condemned and purchased by the state for public use, including road construction. Cooperative partnerships between the public and private sector should be encouraged to maintain the delicate balance between government oversight and recognition of the financial interests of the private owner. There must also be a willingness among government transportation officials to treat the private sector as a valuable resource for meeting public needs rather than as an adversary.

6) Promote, through the Department of Transportation, the viability and practicality of private ownership of roads. In speeches on transportation infrastructure the Secretary of Transportation should call attention to the market's ability to construct roads. He also should assemble and send to every state's secretary of transportation examples of private road ventures and a list of projects that state governments should urge their Congressmen and Senators to promote at the federal level.

CONCLUSION

Several countries and a few states within the U.S. already have undertaken private and public/private partnerships in road and bridge construction, paving the way for future projects with innovative and successful ventures. Government, the private sector, and the traveling public all can benefit from new roads and bridges and the rehabilitation of existing ones. Government should find private sector involvement a welcome relief from additional financial burdens, and the private sector would hail new business opportunities. Certainly the public would welcome additional routes to satisfy their transportation needs, reducing congestion, commuting time, and frustration.



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Reclaiming Transit for the Riders and Taxpayers

Wendell Cox and Jean Love

America's urban areas face a transportation crisis. Highways grow more congested, rush hours and lines of traffic grow ever longer and commuters waste more hours in transit. And public transportation systems—primarily government-owned and operated buses, subways, and local trains—seem unable to offer commuters adequate and cost-effective transportation.

Today's problem differs from those of the past. Through the 1960s, most daily travel was from suburbs, where many people lived, to central cities, where many people worked. Now the largest percentage of trips are from one suburban location to another. Traffic patterns and the accompanying traffic congestion thus are distributed differently today in metropolitan areas than in the past. To meet urban transportation needs, policy makers hence must employ a different combination of infrastructure improvements and changes than they did in the past.

Subways and light rail are best at handling travel from suburbs to city centers. With the rise of traffic between suburbs, policy makers thus should place less emphasis on rail systems. Yet there is considerable disincentive for them to do this. Under the Urban Mass Transportation Act of 1964,¹ the federal government pays for up to 75 percent of rail and subway systems if local governments or transit agencies pay the rest. This encourages construc-

1 Urban Mass Transportation Act of 1964, as amended, 49 USC. 1601 et seq.

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tion and expansion of rail and subways, even when they are not the most appropriate transport methods.

Because large rail or subway construction projects create jobs, moreover, local policy makers have an added incentive to build such systems. This often leaves insufficient funds for more appropriate and less costly transportation options like buses or special highway lanes for high occupancy vehicles, which may equal or exceed the performance of rail systems.

In situations where public transportation, especially buses, is appropriate, the costs of operation can be extremely high. Cost boosts in the existing public transit systems over the past two decades have outpaced all components of the Consumer Price Index, including medical care services. This is due in large part to the fact that most transit agencies are government monopolies and thus have no competition. Since customers usually have no public transportation alternatives, transit monopolies have little incentive to improve quality and keep down costs.

Continually escalating costs have induced governments to give massive subsidies to public transit systems. And, at the same time, steadily increasing subsidies, more than \$100 billion since 1965, have bloated public transit costs.² However, tight federal, state, and local budgets may reduce the rate of increase in subsidies or may even require cuts in subsidies. Public transit agencies thus should seek ways to cut their expenditures. But these agencies find it difficult or impossible to eliminate one of the primary causes of their financial difficulties: high labor costs.

The Urban Mass Transportation Act of 1964 requires, as a condition for most federal grants, that local transit agencies guarantee transit employees that their interests will not be damaged by activities or changes in the transport system financed by such grants. Unions thus can head off more efficient service delivery options. This special privilege allows unions to drive up costs.

Even in the face of this labor problem some local governments have found a way to cut costs for bus service. A number of cities in recent years have contracted with private firms, chosen through competitive bids, to provide part or all of the bus service in urban areas. Where private firms have competed for bus routes, the costs of providing service have been cut

2 Researchers have demonstrated a positive correlation between the amount of subsidy provided to a public transit agency and the extent of cost escalation. See William F. Shughart and Mwangi Kimenyi, *Public Choice, Public Subsidies and Public Transit*, report prepared for the U.S. Department of Transportation, 1991.

on average by 30 percent below the costs of the service when it was supplied by a public agency. Contracts for routes are periodically rebid. This gives private firms holding a contract a strong incentive to keep costs low or else lose the contract to a lower bidder.

In addition to lower costs, the quality of service on privately handled bus routes often has improved. These results are not surprising. The competitive private bus industry, without government subsidies, already has costs much lower per mile than the public transit industry.

The use of competitive contracting has a ripple effect on the costs of service still supplied by government-owned transit agencies where the conversion to competitive contracting is under the control of independent public agencies, rather than the public transit agency. In this competitive environment, government-owned transit agencies improve their cost performance.

Cities might even consider a more radical cost-cutting measure. They could allow private transit firms to operate without restriction. They might permit private unsubsidized operations that are coordinated with public-sponsored services.

State governments should require local public transit agencies to undertake a conversion to competitive contracting for all bus services. This would result in lower costs. Washington can help local urban governments meet their transportation needs.

First, the 1964 Urban Mass Transportation Act provision requiring as a condition for federal grants that local transportation agencies hold special negotiations with transit unions should be repealed. Second, the share of a local transportation project funded by the federal government should be reduced from 75 percent to no more than 25 percent. This would reduce significantly the incentive for local governments to build costly and often inappropriate rail or subway systems and yet still help local governments that cannot afford the full costs of whatever transport infrastructure they require.

Increasingly, residents in America's metropolitan areas name local transportation problems as their greatest inconvenience. The best way for local transit agencies and the local governments that own them to meet these needs is to bring competition back into the public transit market.

THE HIGH COSTS OF PUBLIC TRANSIT

Public transit systems in America's metropolitan areas have become extremely expensive to operate. Before governments took over most transit systems from the private sector, they were funded fully by fares charged to

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customers and by other operating revenues. Today, government-owned public transport systems cost so much to run that the operating transit agencies fear they might drive off most of their customers if they charged the actual cost per ride. Fares and non-governmental revenues now cover approximately one-third of the cost of operating public transit. The rest comes from taxes on gasoline, general sales, property, and wages.

States and localities provide 88 percent of subsidies for the day-to-day operations of public transit systems. Washington covers nearly 70 percent of the capital costs of these systems, mainly for construction and purchases of equipment.³ Federal funding for public transit has declined relative to inflation in the past decade. Yet the increase in state and local government funding has meant a net real gain in public subsidies.

Government subsidies for urban rail transportation are particularly high. With most base fares at around \$1 for each ride, the taxpayers heavily subsidize rail passengers; subsidies to cover the total costs of capital and operation range from \$5.58 to \$16.44 per rail passenger ride.⁴

Before government began subsidizing mass transit, the costs of operating such systems rose only slightly ahead of inflation. In the three decades since public aid became widespread, transit costs have exploded, rising at nearly five times the previous annual rate, adjusted for inflation. By contrast, costs in the competitive private bus industry, which is not supplied by government agencies or subsidized by government, have declined.

The fundamental problem with public transit is not lack of funding, it is lack of cost control. From 1970 to 1988, public transit operating costs per mile increased 382 percent; the general inflation rate was 189 percent. This is an inflation-adjusted increase of 67 percent per vehicle mile traveled in the public transit system. The rate of increase exceeds all components of the Consumer Price Index, including medical care services and fuel costs.

Illustrating the problem of cost escalation, from 1970 to 1988, public transit consumed \$43 billion more than it would have had increases simply matched the inflation rate. After adjusting for inflation, only 22 cents of each new dollar received by public transit has been used to expand services; the other 78 cents was consumed by cost increases in excess of inflation.⁵

3 Calculated from United States Department of Transportation Administration Urban Mass Transportation Administration (UMTA) data.

4 Based on a forty year life and a 10 percent discount rate.

5 Calculated based upon data from the American Public Transit Association, UMTA Section 15, and The Statistical Abstract of the United States.

More telling, public transit's operating cost per passenger mile exceeds combined operating and capital cost per passenger mile of a private automobile by 7 percent.⁶

Because of public transit's soaring costs, little new public transit service has been provided. Service levels today could be nearly double their present level⁷ if public transit had held its cost increases to the inflation rate.

The \$43 billion that public transit spent in excess of inflation could have funded:⁸

- ◆ 160 new light rail systems equal in cost to Portland, Oregon's new Banfield light rail line, or
- ◆ 16 new heavy rail systems equal in cost to Atlanta's new MARTA system, or
- ◆ The 54 proposed "new starts," rail and busway projects listed in the 1988 Secretary of Transportation's report to the Congress and there still would be \$24 billion left over.⁹

FICTITIOUS BENEFITS

Supporters of public monopoly transit systems often point to benefits that supposedly make subsidies and high costs worthwhile. One purported benefit is energy efficiency. It correctly is claimed, for example, that it takes less gasoline and produces less pollution to transport 50 people ten miles in one bus than in 50 people in individual cars. In practice, however, except for rush hours, few buses carry enough passengers to attain the projected efficiencies. The average public transit vehicle in the U.S. operates with more than 80 percent of its seats empty.¹⁰

6 1987, United States Department of Transportation: Secretary's Report to Congress for 1988 and UMTA Section 15 data, 1987.

7 Assumes that additional new service would have produced 20 percent fare recovery and that additional fare revenues would have been applied to expansion of service.

8 Calculated from data in "Urban Rail in America: Forecast versus Actual Ridership and Costs," Transportation Service Center, U.S. Department of Transportation (report prepared for UMTA).

9 "Status of the Nation's Local Mass Transportation: Performance and Conditions," Report to Congress of the Urban Mass Transportation Administration, U.S. Department of Transportation, June 1988.

10 Analysis of UMTA Section 15 data, 1987.

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Public transit clearly is not energy efficient. In 1985, public transit used nearly 55 percent more vehicles to provide approximately the same number of rides it provided in 1965. Over the same period of time, the number of vehicle miles traveled by each vehicle increased by 22 percent even while ridership remained the same.¹¹

This means that more public transit vehicles are traveling more miles while carrying no more passengers, pouring more pollutants in the air per passenger than in the past. Energy consumption per passenger mile on public transit buses is now greater than that of private automobiles. Thus, as currently used, buses do not save energy compared to automobiles.

It is argued that low-paid Americans, particularly women and minorities who sometimes cannot afford an automobile need government-funded mass transit. Yet the evidence refutes this. While the number of women working outside the home nearly doubled from 1965 to 1985, public transit work trips to work by women increased less than one percent.

CHANGING PATTERNS OF TRAFFIC CONGESTION

Mass transit can be a cost-efficient and time-saving option to private cars in some metropolitan areas. It can carry riders quickly to their destinations and reduce traffic congestion, energy use, and pollution. But this generally is true only if the types of transportation, primarily local trains, subways and buses, the numbers of vehicles and the frequency of operations, are matched to demographic conditions like population density, the number of people living in the urban area, and the distribution of places of employment.

The demographic trends of the past 40 years have made traditional public transit, especially rail and subways, more costly and of less use in alleviating traffic congestion and pollution in many metropolitan areas. Effective use of public transit requires high population densities. Yet since World War II, jobs and retail establishments followed homes from the central city to the suburbs and to neighborhoods adjoining major expressways.¹² Generally, central cities have become markedly less dense, while suburban densities

11 Calculated from American Public Transit Association and UMTA Section 15 data.

12 Even before the market share losses of the 1980s, only 8 metropolitan areas had transit work trip market shares of more than 10 percent, and only one was above 17 percent (New York at 28 percent). Sunbelt cities did worse; Los Angeles had a transit work trip market share of 5.1 percent, Houston had 3.0 percent, and Phoenix had 2.0 percent (source: State and Metropolitan Area Data Book: 1986 (U.S. Census Bureau)).

remain low despite their explosive population growth. While the largest downtown areas have grown in actual employment, their share of the total population and business activity is greatly diminished in virtually all urban areas. Most job creation has been in the suburbs.

These trends have changed urban and suburban travel patterns. Today, most commutes take place between suburban locations. A smaller share of commutes in most urban areas are between suburbs and downtown. Rail and subway systems are appropriate only in the strongest corridors that feed the nation's largest downtown areas.

Emerging suburban employment centers lack the densities sufficient to justify expanded public transit service. Metropolitan areas, with lessened employment concentration and more suburb-to-suburb commutes are tailor-made for the automobile, not for mass transit and especially not for rail and subway travel. Automobiles account for more than 90 percent of daily commutes.¹³ Even a small reduction in automobile usage, the goal of many advocates of mass transit, would require huge additional subsidies for mass transit systems because of the dispersed work force.

THE LABOR PROBLEM

One of the primary causes of the rising costs of public transit is rising labor costs. A 1983 study by economist Don H. Pickrell found that more than 46 percent of the rise in operating costs from 1970 to 1980 is attributable to increases in labor costs above inflation.¹⁴ In 1988, the average public transit bus driver earned on average more than \$41,000 annually including wages and fringe benefits. This is nearly double the compensation of private bus drivers. Public transit bus drivers receive about 65 percent more than the average non-supervisory American worker.¹⁵ Other public transit employees such as administrators, office staff, security personnel,

13 This is not just an American phenomenon. Even in Europe and Japan, with far higher gasoline prices and more comprehensive urban rail systems, reliance on the automobile is growing rapidly.

14 Don H. Pickrell, "The Causes of Rising Transit Operating Deficits," report prepared for the Urban Mass Transportation Administration, July 1983.

15 Calculated using data from UMTA Section 15 (1988) for the 47 largest public transit systems, which account for more than 80 percent of all U.S. public transit service, and from The Statistical Abstract: 1990 data. Both analyses are based upon a 2,080-hour work year.

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and maintenance workers, are paid 70 percent more than the average for all American full-time employees, supervisory and non-supervisory.¹⁶

Declining Labor Productivity

High salaries, of course, are warranted if they reward increased productivity. But while more than 46 percent of the cost increases for public transit, adjusted for inflation, is attributed to rising labor costs, another 33 percent of the cost increases resulted from declining labor productivity from 1970 to 1980.¹⁷ A 1988 study by the Philadelphia consulting firm of Mundle and Associates, Inc., suggests that this trend continued in the 1980s.¹⁸ Average service hours produced by each public transit employee for metropolitan area buses fell from 1,228 hours in 1964 to 1,028 hours in 1985. The decline in productivity was worse for the largest transit agencies, valued at over \$1 million in 1964. The number of service hours produced by each employee fell from 1,205 hours in 1964 to 929 hours per employee in 1985.

Productivity as measured by hours of bus service produced per constant dollars spent on salaries, equipment, and other expenses fell an average of 43 percent from 1964 to 1985; the productivity decline for large transit agencies was 55 percent.¹⁹

Contributing to the decline in productivity is public transit driver absenteeism. A report by Peat, Marwick and Mitchell, a Washington, D.C.-based economic consulting firm, found that in 1980 public transit drivers had an average absenteeism rate of 29 days per year, excluding vacations and holidays; this was more than three times the national average.²⁰ And research indicates that this trend continued into the 1980s.²¹

16 *Ibid.*

17 Pickrell, *op. cit.*

18 Subhash R. Mundle, *Impact of Work Rules on Transit Productivity and Cost* (Philadelphia: Mundle & Associates, Inc., 1988), presented at the UMTA's Fourth Annual Symposium, New Orleans, Louisiana, March, 1988.

19 Calculated from data in Charles Lave, "Measuring the Decline in Transit Productivity in the U.S.," paper presented to the International Conference on Competition and Ownership of Bus and Coach Services (Thredbo, New South Wales, Australia: May 1989).

20 Peat, Marwick and Mitchell, "Study of Operator Absenteeism and Worker's Compensation Trends in the Urban Mass Transportation Industry," report prepared for the Urban Mass Transportation Administration (1980).

21 Mundle, *op. cit.*

Expensive Work Rules

Public transit agencies are saddled with labor contracts that include expensive work rules. Example: most public transit labor contracts severely limit or even prohibit the use of part-time labor, even though part-time labor would be an efficient way to increase transit service during rush hours. Unable to hire part-time workers, transit systems are forced to ensure that enough capacity is available at morning and evening rush hours by keeping full-time drivers on extra-long shifts for which overtime rates are paid. During the day's non-peak hours, of course, these drivers are not needed, yet continue to get paid.

Using part-time drivers for rush hour would mean that fewer full-time drivers would be needed and that both full-time and part-time drivers would be paid only when they work. This is why school bus systems rely on part-time drivers.

In attempts to introduce meaningful numbers of part-time workers in the public transit system, many transit agencies have offered to guarantee current employment and compensation levels to present employees. Still, public transit unions resist such reforms.

Limitations on the use of part-time labor is partly to blame for running near-empty buses during the day. Since labor costs consume nearly three-quarters of transit operating expenses, many transit agencies run buses even when the demand is low since drivers must be paid. This, of course, wastes energy, and adds to air pollution.

Pay for Not Working

Most public transit labor contracts require the employment of "extra boards," which includes drivers who are not assigned to operate buses on a particular day but who wait in the driver's room at the public transit facility until called to substitute for an absent driver. Sometimes extra-board drivers operate buses and are paid for driving; at other times, extra-board drivers are paid to sit and wait. At some agencies, because of the excessive absenteeism of public transit drivers, off-duty drivers employed by transit agencies are paid double-time to work for their absent colleagues. Substitute public transit drivers, with skills that can be learned in a month or less, are paid whether or not they work; substitute public school teachers, who require at least four years of university training, are paid only when they work.

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The net effect of these work rules is that public transit bus drivers work as few as 36 minutes for each hour paid at some large agencies: few work more than 50 minutes for each hour's pay.²² Practices such as these would bankrupt a private company in a competitive market.

PUBLIC MONOPOLIES vs. COMPETITIVE MARKETS

While costs per mile in the public transit bus system increased by 67 percent from 1970 to 1988, adjusting for inflation,²³ costs per mile in the competitive private bus industry declined by 11 percent. Public transit agencies hire workers from the same labor market, require employees with the same skills, negotiate with the same labor unions, and purchase the same fuel, as do private bus firms. All that is different is the competitive structure of the industries. Public transit is spared competition, the private bus industry is not.

Resources are most efficiently allocated in a competitive environment, because competition creates an equilibrium in which consumer behavior determines the quantity and price of products. As government monopolies facing no competition and thus fearing no loss of customers to competitors, public transit systems have little incentive to hold down costs and improve services. The result: transit agencies grant wage hikes to their employees with insufficient concern for gains in productivity, are often overstaffed, have little reason to adopt innovative strategies and in the end require massive government subsidies.

Public transit management and workers have acted in an economically rational manner, given the public transit agency's monopoly status—they have served their own interests. Members of management, whose advancement is tied to the size of staff or budget, have little reason to minimize costs. Public transit labor unions have every incentive to seek huge salaries for minimum work for their members.

In a non-competitive environment, the interest of riders and taxpayers, is subordinated to the internal interests of the transit organization.

22 Analysis of data in 1988 Transit Operating and Financial Statistics for Calendar/Fiscal Year 1987, American Public Transit Association (1988).

23 Actual data for 1988 are not yet available. The 1988 figure is estimated by using 1987 figure, 152 percent, with an adjustment based upon the general inflation rate for 1987 to 1988, which yields in the 160 percent figure. This estimate is considered conservative, since private bus costs per mile typically have increased at less than the rate of inflation.

COMPETITIVE CONTRACTING

Many local governments, facing tight budgets and unable to shoulder the current burden of subsidizing mass transit, much less appropriating even higher subsidies, have sought means to cut costs while maintaining service. Competition in urban transit systems has proved to be the best way to reduce subsidies, control costs, and improve service. The most popular means of bringing market forces to bear on public transportation is for public transit companies to allow private firms to bid competitively to deliver parts of the bus service. Rather than provide the service itself, using its own workers, a public transit agency “buys” the service from private contractors where the same quality and quantity of service can be purchased for less.

Other countries are implementing this approach as well. Example: The British government mandates competitive contracting for all transport services requiring a public subsidy except in London, where 40 percent of bus services are competitively contracted. Example: Sweden is converting to competitive contracting for all subsidized transport services. Example: New Zealand has just converted to competitive contracting for subsidized transport services.

With a competitive contracting policy, the public transit agency determines which services are purchased from the private sector. The agency also sets service standards, monitors service performance, and administers contracts.

To give all private suppliers the best opportunity to compete, public transit authorities usually disclose full information about the services required and give sufficient time for potential suppliers to develop and submit bids.

The length of time that service will be purchased from a supplier under a contract is limited, so that competitors periodically will have opportunities to bid for such contracts. This gives the current holder of a contract the incentive to keep its service standards high and its costs low, since it knows that competitors will have future opportunities to take its business from it if its performance is poor. Further, the number of buses operated under a service contract is limited, so that more than one company will be providing service in a metropolitan area at any given time, and so that large and small private companies alike can compete for services.

There are two basic steps in the competitive contracting process. First, the public transit agency seeks competitive proposals from those who want to deliver a specific quality and quantity of public transit service for a defined period of time. Second, a contract is awarded to the lowest respon-

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sible private company that demonstrates an ability to provide the service at a cost lower than that of the public agency. The public transit agency itself continues to supply the service if the same quality and quantity of service cannot be obtained for less from the private sector.

Contracting with the private sector does not necessarily eliminate the need for subsidies. A private supplier might find that its costs still are not met by fare receipts and other forms of income. In such cases, governments will subsidize the service, paying the private company the difference between its expenses and other revenues. But if the private company provides the service for less than the public transit agency, subsidies can be cut considerably.

DIRECT COST SAVINGS FROM COMPETITIVE CONTRACTING

A number of American cities use competitive contracting for public transit services. The results are impressive. On average, transit costs have been reduced by 30 percent.²⁴ Examples include:

Los Angeles, California: A Price Waterhouse 1990 study documents 50 percent savings on local and express public transit routes in Los Angeles through competitive contracting compared to the costs of the service provided by the public transit agency.²⁵

St. Louis, Missouri: Public transit officials in St. Louis stated in 1989 that a service contract awarded through competitive bidding will cost "about half... (what) it would cost the agency to operate the line itself."²⁶

Snohomish County, Washington: By 1987, Snohomish County was saving more than 30 percent on its express bus service compared to the cost of government-provided service.²⁷

24 Roger F. Teal, Genevieve Guiliano and Edward K. Morlok, "Public Transit Service Contracting," report prepared for the Urban Mass Transportation Administration, 1986.

25 Price Waterhouse, *Bus Service Continuation Project, FY 1988-1989 Evaluation* (Report to the Los Angeles County Transportation Commission: 1990).

26 Mark Schlinckman, "Private Firm to Run Bus Route," *St. Louis Post Dispatch*, July 7, 1989.

27 Wendell Cox, "The Potential for Optimizing Public Transit Service through Competitive Contracting," report prepared for the Urban Mass Transportation Administration: 1987.

Fairfax County, Virginia: This suburban Washington, D.C. county, by 1986, was saving 39 percent on the local bus service contracted to the private sector compared to its public operating costs.²⁸

Houston, Texas: Competitive contracting beginning in 1985 saved more than 30 percent for Houston's park and ride bus services.²⁹

Denver, Colorado: This city has saved more than 25 percent through competitively contracting one-fifth of its transit service, as required by a state law.³⁰ Additional savings are being generated by a resulting reduction in administrative staff.³¹ In the first year of this approach, the savings actually were offset by the need to comply with a labor demand that no jobs be eliminated. This literally meant using part of the savings to pay employees not to work. But this is a one-time expense. Total real savings will result in the following years.

THE RIPPLE EFFECT

One of the most important benefits of competitive contracting is the impact of competition on public costs where competitive contracting is under the control of an independent public agency. The cost of those services still provided by public agencies tends to be reduced as the competition from private firms prompts public transit agencies to control their own costs.³²

There is a single fundamental reason for this ripple effect. When a public transit agency faces a real threat of losing service to a private carrier, it has an incentive to improve its performance so that it has a better chance in the competition.

28 Calculated from Urban Mass Transportation Administration Office of Private Sector Initiatives, Private Sector Briefs, June 2, 1986.

29 Cox, *op. cit.*, and "Houston Metro Picks GLK," *PTI Journal*, September-October 1988.

30 See KMPG Peat Marwick, *Performance Audit of Privatization of RTD Services* (Revised Final Report), 1990.

31 Leroy Williams, "124 Staffers at RTD Accept Severance," *The Rocky Mountain News*, June 8, 1990.

32 The ripple effect has been noted throughout public services as public agencies are subjected to competitive environments. For example, mandatory competitive contracting of municipal services in Britain has reduced internal public costs by 17 percent (see *The Tender Traps*, ASI Research, Ltd, London: 1990).

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The San Diego Transit Corporation (SDTC), demonstrates the ripple effect. Since 1979, public transit officials in San Diego have been increasing the use of competitive contracting. By 1990,³³ some 27 percent of the area's bus service was supplied under competitive contract. These competitively contracted services cost 44 percent less³⁴ than those of the SDTC. Competition, through the "ripple" effect, has lowered SDTC costs as well. SDTC's rate of cost increase was high, comparable to that of the public transit industry nationally. From 1979 to 1989 costs per mile declined 8 percent adjusting for inflation for the services provided by the public transit authority.

The net effect of competitive contracting for some service and cost control at SDTC caused by the ripple effect has been an overall decline in costs per mile in the San Diego area of 16.1 percent adjusted for inflation.³⁵ San Diego's cost savings and resultant service improvements required no layoffs of public transit employees.

In comparison with San Diego, the nation's 51 largest public transit agencies saw an inflation-adjusted cost surge of 30 percent from 1979 to 1988.³⁶ If San Diego's costs had risen at this national public transit rate, it would have needed \$115 million in additional funding—more than the cost of San Diego's first light rail line. Alternatively, if the 51 largest public transit agencies had performed between 1979 and 1988 as well as did San Diego's systems, they would have used \$18 billion less to provide the same service level over the last decade, approximately 20 percent less than actually was spent.

33 The 1990 fiscal year for San Diego ended June 30, 1990.

34 The actual cost difference was greater, since some of the contractors' capital costs are included in the competitively contracted figures, while the public agency costs include no capital costs.

35 Calculated from data in *Metropolitan San Diego Short Range Transit Plan: Fiscal Years 1991-1995* (Metropolitan Public Transit Development Board, 1990). The annual decline in costs per mile was 1.7 percent from 1979 to 1990. The competitive bus industry decline was 1.60 percent annually, an overall decline of 12.9 percent from 1979 to 1987 (latest data available).

36 Calculated from UMTA Section 15 American Public Transit Association data.

OTHER BENEFITS OF COMPETITIVE CONTRACTING

Contracting competitively for bus service yields indirect benefits. These include:

◆◆ Additional Government Revenue

Local governments enjoy new revenues from the taxes and license fees paid by the private companies. This usually equals more than 5 percent of gross receipts of the private service provider. Public transit agencies, of course, are exempt from most taxes and license fees.

◆◆ Beneficial Uses Of Savings

Cost savings from competitive contracting can reduce the demand for higher fares or higher taxes to subsidize the system. In some cases, fares or taxes can be cut. Los Angeles and Fort Wayne used the savings from competitive contracting to reduce transit fares. Kansas City, Chicago and Seattle used savings to increase service. And Los Angeles and Denver used part of their savings to preserve service that otherwise would have been discontinued.

Competitive contracting permitted Fort Wayne to expand service by 60 percent in less than three years. As a result, ridership increased 40 percent. The magnitude of increase for both figures is unprecedented in recent American public transit history. Fort Wayne protected current employees by adding new contract drivers as other transit drivers retired.³⁷

◆◆ Service and Safety

Competitive contracting has resulted in service of equal or better quality compared to that produced by public transit agencies. The private bus industry, meanwhile, has the best safety record of any surface transportation mode in America.³⁸ Private transportation providers have the profit incentive to offer safe service of high quality. Private companies can make profits only if they continue to attract customers or, in the case of a competitive bidding for routes from transit agencies, if they are able, to retain present contracts or win future ones.

37 The bus drivers' union has recently been successful in an arbitration demand that prohibited competitive contracting and made it necessary for Fort Wayne to eliminate a major portion of the higher service level—this despite the fact that employees were guaranteed their positions and would lose no income. The *Fort Wayne News-Sentinel* editorialized that the "union's victory is a loss for everyone else" ("PTC Union's Victory is a Loss for Everyone Else," January 6, 1989).

38 Calculated from U.S. Department of Transportation, National Safety Council and Urban Mass Transportation Administration data.

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While less than 10 percent of all public transit bus services is provided under competitive contract, more than 67 percent of dial-a-ride service for the elderly and disabled is supplied under contract.³⁹

Approximately 30 percent of school transportation is provided under contract.⁴⁰ If the private sector did not provide reliable and safe transportation, it would be evident in these highly sensitive and visible services provided for the most fragile citizens — children, the disabled, and the elderly.

A Price Waterhouse report on competitive contracting in Los Angeles documents improved service quality and safety on the contracted routes.⁴¹ Los Angeles officials commented for the report on the experiment with a private contractor:

[R]idership trends provide an indication of the overall quality of service. During the first nine months of operation, ridership on Commuter express lines steadily increased by 36 percent. Since the routes and schedules are basically the same as those operated by SCRTD [the previous public operator] and the fares were unchanged, increases in ridership suggest improved service quality.⁴²

The city of Los Angeles has reported that competitive contracting of its central city circulator bus service to the private sector resulted in increased reliability, and reduction of overall trip times.

These results are particularly significant since the competitive drivers not only are paid less, but have significantly less experience than public transit agency drivers. This suggests that the freer hand that private managers have compared to their government counterparts yields better safety and service with their workers.

39 Calculated from UMTA Section 15 data (1987).

40 Calculated from School Bus Fleet: Annual Fact Book (December-January 1989).

41 Price Waterhouse, Bus Service Continuation Project FY 1987-88 Evaluation (Report to the Los Angeles County Transportation Commission, 1989).

42 *Ibid.*

INCORPORATION OF PRIVATE UNSUBSIDIZED SERVICES

Another means, in addition to competitive contracting, is to allow private unsubsidized services to operate where they can be coordinated with publicly sponsored services, or where insufficient levels of publicly sponsored services are provided.

Public transit agencies often have opposed this approach, claiming that private operators would take or skim off the most profitable routes and deny the transit agency profits that could be used to offset deficits from unprofitable routes. Yet few public transit routes are profitable in any case because of public transit's excessively high costs.⁴³ Thus the net effect of barring unsubsidized private operations is to preserve the costly, inefficient public transit monopoly.

Private companies have established profitable transit services in dense inner city areas in recent years. Some of these services are legal and authorized by transit agencies and local governments; others are not. The most extensive competitive network is in New York City, where a large number of vans provide public transit services to commuting destinations in Manhattan. Private, unauthorized vans cruise the major New York airports in search of customers.

San Diego public transit officials permit the substitution of an unsubsidized private route for a subsidized, publicly operated route. The transit agency uses the funds it would have spent on that route to increase service on other routes. The privately-run route operates as a part of the regional transit system and is governed by the same fare structure.

FEDERAL FUNDING FIASCO

Many local governments are trying to deal with their public transportation problems through competitive contracting or by allowing private sector suppliers to operate. The federal government, however, is a major cause of the problems experienced by local transit systems and currently discourages or blocks market solutions.

43 It has been estimated that fewer than one percent of public transit bus routes are profitable. See Robert Cervero, *Transit Service Contracting: Cream Skimming or Deficit Skimming?*, report prepared for the U.S. Department of Transportation, 1988.

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Promoting Union Privileges

Special privileges for public transit employees contribute substantially to public transit's high costs. Section 13(c) of the Urban Mass Transportation Administration Act of 1964, administered by the Department of Labor, gives public transit one of the most restrictive labor environments in America. This law, for example, requires public transit companies to pay employees one day's pay for each day they have worked for up to six years if their jobs are eliminated, for example, as a result of efficiency improvements.

This has created a contingent liability that far surpasses the federal funding received by most public transit agencies. Assuming the 1988 annual compensation level of \$41,000 for the average public transit bus driver, legally mandated severance pay could be as much as \$250,000 per worker. This compares to legally mandated severance pay, that is, unemployment insurance benefits, of less than \$5,000 for other American workers.

Section 13(c) also adds to public transit costs and discourages efficiency by giving labor unions special privileges. Before a public transit agency can receive a federal grant the U.S. Department of Labor must certify that special protective arrangements for local transit workers have been made. The Labor Department interprets this provision to require negotiation of special labor agreements between the public transit agency and its union.

Too often, public transit agencies capitulate to union demands because they do not have the financial resources to withstand a long period without federal funding, and are unwilling to permit service to be discontinued until agreement is reached. This second chance at negotiations for benefit beyond regular negotiations has increased the power of public transit unions at the expense of riding public and the taxpayer, who foot the bill for the higher transit costs.

Distorting Local Transit Decisions

Up to 75 percent of the costs for capital equipment and construction, for buses, light and heavy rail lines, terminals, garages, and administrative offices for urban mass transit agencies are borne by the federal government. But the availability of such large blocks of federal funding, and the absence of critical cost effectiveness oversight—indeed, funding for such projects is often earmarked by Congress—leads to inefficient or inappropriate use of public funding.

The allure of federal funding entices local transit agencies to develop capital-intensive projects even when projects not requiring as much capital would be more appropriate to meet for local transport needs. This can lead to projects such as new rail systems that destroy neighborhoods and disrupt existing traffic with years of congestion caused by construction.

Rapid Rail to High Costs

The availability of large blocks of federal funding particularly favors construction of such capital projects as light and heavy rail systems and subways. Rail advocates have touted such systems as the solution to traffic congestion and decaying central business districts. Subsidies for each customer ride on these new rapid rail lines are extremely high. The worst case was the Atlanta system, which had a cost of more than \$29 in subsidies for each new passenger.

By covering 75 percent of the costs of expensive subway and rail construction, the federal government diverts attention and resources from less capital-intensive, yet also less costly forms of mass transit, such as buses and high occupancy vehicle (HOV) lanes on roadways. Buses and HOV lanes often are better ways of handling traffic between suburban locations, which are becoming the traffic patterns dominating most metropolitan areas.

Buses in particular are very flexible. They can change routes to circulate through communities and adapt to changing traffic patterns. By contrast, obviously, subways and rail are very inflexible. Building new, expensive lines, which usually take years to complete, is the only way to extend these modes of transportation.

The special lanes on highways for buses and car pools have been very successful, attracting not only transit and car pool commuters to downtown areas, but also car pool commuters bound for suburban employment centers where rail transport would be too costly. Example: The Shirley Highway busway and car pool lane in Washington carries nearly three times the number of riders as are carried by the most successful new light rail lines in the country. Example: The El Monte Busway in Los Angeles carries nearly twice as many riders any new light rail line.⁴⁴ Even in New York City, which has nearly two-thirds of the nation's commuter rail ridership,

44 Calculated from data in "The Status of the Nation's Local Mass Transportation: Performance and Conditions" and UMTA Section 15.

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buses in the Lincoln Tunnel bus lane carry more commuters into Manhattan under the Hudson River than does any rail line.⁴⁵

With 95 percent of the nation's urban rail ridership limited to six metropolitan areas, and with no serious evidence of consumers shifting from their autos to rail transit for commuting, at least on the new rail systems, the prospect for reducing traffic congestion—and increasing productivity—through the construction of new rail lines is dim. Yet federal funding still promotes this approach.

REFORMING FEDERAL POLICY

Many local government and transit agency officials understand that the transportation problems facing urban areas require new solutions. Some officials have been willing to try innovative approaches. But barriers to change confront and confound these policy makers. To help remove these barriers, several steps should be taken. Among them:

1) States should require local public transit agencies to incorporate competitive contracting. Without competition, costs will continue to escalate and negate any possibility of increasing transit's market share. Publicly produced service should be converted to competitive contracting at the natural employee turnover rate, so that layoffs can be avoided. Further, public transit agencies should be required to incorporate private unsubsidized services where in the public interest.

2) Section 13(c) of the Urban Mass Transportation Act that gives special privileges to transit labor unions should be repealed. By requiring local transit authorities to hold special negotiations with transit unions as a condition for federal assistance, the federal government adds to the high public transit labor costs and often allows unions to block reforms and innovations.

In fairness to American workers not employed in public transit, moreover, transit labor should be brought under the same body of labor law that governs collective bargaining throughout the economy. Government should not provide privileges to one segment of workers at the expense of others. The special "labor protection" granted to public transit employees under Section 13(c) could not conceivably be granted to the rest of American workers without bankrupting the economy.

45 *Ibid.*, p. 164.

3) **The maximum rate of federal match for capital expenditures should be reduced from 75 percent to 25 percent.** The high share of matching federal funds, especially for subway and rail projects, skews local decision-making toward excessively expensive projects of often questionable effectiveness. Transit infrastructure decision should be based upon considerations of real costs and benefits. Local officials should base decisions upon the use of locally raised taxes under the scrutiny of local voters. It is unlikely that many of the costly transit infrastructure projects would have been built if local and state taxpayers had been required to pay most of the bill. Federal funds should not drive local decision making. At most, federal funds should provide some additional assistance to communities that have considered public transit a high enough priority to justify substantial amounts of their own public funds.

CONCLUSION

The problems of traffic congestion and increased travel time to and from jobs are pressing concerns today of urban dwellers. The solutions that worked in the past, especially subways and rail, are not the most appropriate ways of dealing with regions dominated more by suburbs than by city centers. And constraints in the budgets of the federal and local governments make these expensive options even less attractive.

The public has poured billions into mass transit. Yet this aid has not substantially expanded service. Transit ridership is no larger now than it was before taxpayers were forced to subsidize service.

To deal with public transit problems, more government funds are not the answer. What is needed is economic reality. Local public officials should make a real economic decisions about costly transit capital projects — funding should come from local taxpayers, rather than from taxpayers around the nation. Moreover, the supply of public transit service should be subjected to the real economic test of the market. The highest quantity of public transit service should be subjected to the real economic test of the market. The highest quantity of public transit service possible service should be provided in return for whatever level of funding is granted to public transit. Accomplishing this means incorporation of competitive incentives, through competitive contracting and through unsubsidized competitive operation.



The first part of the document discusses the importance of maintaining accurate records of all transactions. It emphasizes that proper record-keeping is essential for the success of any business and for the protection of the interests of all parties involved. The document outlines the various methods and procedures that should be followed to ensure that all transactions are properly documented and recorded.

Section 2

This section details the specific requirements for record-keeping, including the types of records that must be maintained, the frequency of updates, and the methods of storage and retrieval. It also discusses the importance of confidentiality and the need to protect sensitive information from unauthorized access. The document provides a comprehensive overview of the legal and ethical obligations of all parties involved in the transaction process.

Chapter 3

How to Improve Air Travel in America

William G. Laffer III

Since 1978, when airlines were deregulated in the United States, the number of airline miles flown annually has jumped by 68 percent, and the number of passengers flying has increased each year by over 80 percent. At the same time, the government-controlled segments of the air transportation system have not kept up with the private sector's ability to handle the increased demand for air travel. One major example of this government bottleneck is the air traffic control system (see Chapter 4). The other major example is airport capacity, which remains at pre-deregulation levels. No major new airports have been constructed in the U.S. since 1974. As a result, airports are becoming increasingly congested, leading to more delays for air travelers and an increased danger of accidents.

In the face of this growing problem, America must find ways to increase the capacity of its air transportation system while making better, more efficient use of existing capacity. Changing the way that airports charge airlines and private pilots for such services as runway use for taking off or landing, or the use of a gate or a hangar, can help with both objectives. Charging premium prices during hours of peak demand would give airport users an incentive to shift their use to airports that are not as crowded, or to times of the day when the airport is not as busy. Premium fees also would give airports a substantial amount of new revenue with which to finance their own expansion. The result: peak-hour pricing would increase capacity and use existing capacity better.

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Another measure that would improve American air travel is the privatization of airports. This would reduce airport operating costs, increase airport productivity, and increase competition among airlines. And for local governments, which now own almost all major airports, selling them to private owners would be a huge and welcome fiscal windfall.

So long as airports are owned and operated by state or local governments, airports lack the flexibility that private operators have to set prices and manage their operations. They have little incentive to increase service or reduce costs because they are prohibited from making a profit. To overcome these limitations, governments around the world are privatizing the ownership or at least the management of airport facilities. In Britain, for example, seven major airports were sold outright in 1987. Elsewhere, airports are being leased to private companies, or else private companies are being hired under contract to manage airports for the governments that own them.

A number of American cities and counties have expressed an interest in such privatization either in selling or leasing their airports or in hiring private firms to manage them. Others have expressed an interest in changing the way they charge for their services to handle more flights, more passengers, and more cargo. So far, however, such proposals (with the exception of contract management) have met with an icy reception at the Federal Aviation Administration and the Department of Transportation. Depending on how they are interpreted, various federal statutes restrict the ability of airports that are publicly owned or that have received federal grants to modify their landing fees and other charges to take account of factors such as demand or noise. Instead, these airports generally base their fees on such factors as aircraft weight or the historical cost of airport facilities that have already been completed—factors that are economically much less relevant to the actual market value of the services the airports provide. Also, the Department of Transportation provisionally interprets one particular federal statute, Section 511 of the Airport and Airway Improvement Act of 1982, in a manner that makes it almost impossible for state and local governments to sell their airports to private buyers.

The Department of Transportation should reconsider its interpretations of these statutes and adopt a position that facilitates to the greatest extent possible market pricing and privatization. The Department also should consider releasing airports that have received federal airport grants in the past from certain contractual obligations that impede privatization. Finally, to make certain that courts or future administrations do not roll back these efforts to improve air travel, the Bush Administration should seek legisla-

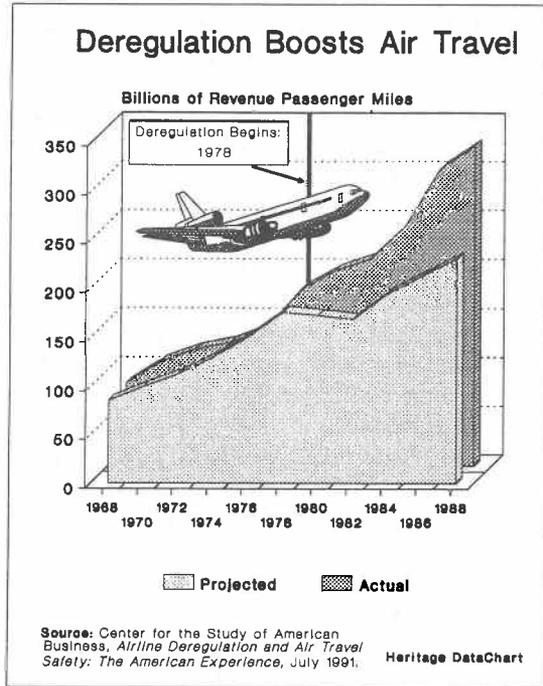
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tion to remove all legal barriers to rational pricing by airports or the sale of government-owned airports to the private sector.

CONGESTION, DELAYS, AND AIRLINE DEREGULATION

America's airports are becoming increasingly congested, due mainly to the enormous increase in the volume of air travel in recent years. Whereas airlines carried only 275 million passengers in 1978, this number grew to 498 million in 1990. This increase is a result of airline deregulation in 1978. In that year, airlines were given the freedom to fly where they wanted, at times and routes of their own choosing, and to charge whatever they wanted to for their services. This resulted in lower fares, which naturally led to an increase in the volume of air travel.¹

Deregulation also has led to the



1 Although the number of people flying annually was rising even before deregulation, studies indicate that traffic measured in total passenger miles is significantly heavier today than it would have been had regulation continued. See, e.g., Richard B. McKenzie, *Airline Deregulation and Air Travel Safety: The American Experience*, Center for the Study of American Business, July 1991; Richard B. McKenzie and William F. Shughart II, *Has Deregulation of Air Travel Affected Air Safety?* Center for the Study of American Business Working Paper No. 107, June 1986, p. 9; Clinton V. Oster, Jr., *The Effect of Deregulation on Airline Industry Employment: Final Report to the U.S. Department of Transportation*, December 1983.

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development of the “hub and spoke” routing system. Under this system, most passengers are routed through a central “hub” airport, where normally they change planes and connect with a flight to their final destination. This routing technique enables airlines to consolidate flights and put more passengers on each flight, resulting in a lower cost per passenger. The airlines pass the cost savings on to their customers in the form of lower ticket prices. One effect of this system is significantly increased traffic at hub airports.

Increased flights have meant increased congestion at airports and delays for air travelers. Many passengers as well as policy makers are inclined to blame these delays on deregulation. But the real problem lies with the failure of government to deregulate the other components of America’s air transportation network — the airports and the air traffic control system. These components were left in the hands of federal, state, and local governments and are subject to sharp regulatory restrictions.

As a result, the basic infrastructure available to handle the increased number of flights remains at pre-deregulation levels. No major new airports have been constructed in America since the opening of the Dallas/Fort Worth airport in 1974.² Similarly, a planned modernization of the federally owned air traffic control system, which would have expanded the system’s capacity through the purchase of upgraded computers and radar, has been delayed significantly owing to federal procurement rules. And federal personnel policies make it very difficult to reassign controllers to locations where needs are greatest owing to increased traffic.³

Given the growth in air travel, policy makers must find ways to increase the capacity of America’s air transportation system, and to make better, more efficient use of existing capacity. Proposals to re-regulate the airlines do not address either of these needs. Such proposals would cut airport congestion by denying consumers the many benefits of deregulation, such as lower fares and increased availability of flights. Congestion thus would be decreased by raising the cost of airfares so that fewer Americans would

2 A new airport in Denver is under construction, and other airports such as St. Louis’s Lambert and Washington’s National are planning major expansions in the number of gates. All of these projects, however, have encountered repeated delays.

3 Although the capacity of the air traffic control system, as well as of the airports themselves, has been greatly taxed by the growth in the volume of air travel, this chapter focuses only on methods for increasing airport capacity. Ways of increasing the capacity of the air traffic control system are discussed in Chapter 4 in this volume.

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be able to travel by air. A better way to cut congestion: retain the consumer benefits of deregulation and expand the air system's capacity to handle flights by granting airports the freedom to charge demand-based prices for their services. Even better: privatize airports completely.

THE PROBLEM IS PRICING

Congestion only occurs at particular airports at particular times of the day. Just like automobile traffic on a highway, air traffic at any major airport has "rush hours." The trouble is that the way airports usually charge for takeoffs and landings⁴ gives airlines, passengers, and private pilots little incentive to shift their use to other airports or to less congested times of the day or days of the week. Under current federal regulations and practices, airports charge the same price for landing regardless of the time of day.⁵ Most airports, moreover, base their fees mainly if not exclusively on weight, charging more for heavier craft. Larger, heavier planes required wider, longer, thicker runways. Today, however, costs do not vary as significantly with the weight of a plane. Indeed, it actually may cost less for a large jet to take off or land if it can get off the runway sooner, making way for another plane. Pricing based primarily on the weight of the plane encourages inefficient use of major airports by smaller planes that could easily land elsewhere at smaller airfields.

If airports were free to charge premium prices to any airplane taking off or landing during "rush hours," or on particularly busy days, then some travelers would choose to fly at other, less congested times when landing fees, reflected in the prices of airline tickets, were lower. Likewise, those who now fly smaller private airplanes into major airports might choose to land instead at nearby smaller airports, where landing fees were lower. Or they could fly on commercial airliners instead of in their own planes; this

4 Under present near-universal practice, airports charge for landings but do not charge a separate fee for takeoffs.

5 Although the emphasis here is on the fact that landing fees and gate rental charges do not vary with time of day, it should be noted that airports generally undercharge for these services at all times of the day, creating a general incentive to overuse the airport system. Because fees are calculated on the basis of historical costs rather than replacement costs, they tend to understate actual airport costs substantially. Thus, present pricing practices entail an enormous implicit subsidy from airport owners to airport users that naturally leads to overuse. See Frank Berardino, "Airport Privatization" (presentation to AAAE/ABA Seminar on Airport Law, October 30, 1990), pp. 7, 16-17.

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would be the air-travel equivalent of taking a bus or subway instead of driving alone in a car.

Such a pricing approach would help alleviate congestion at airports. Currently, the airlines themselves price tickets in part based on the time preferences of passengers and the capacities of their aircraft. During low-traffic seasons, airlines offer discounts on tickets. By allowing airports to charge higher fees during high-use periods, revenues could be collected to finance badly needed expansion of facilities and infrastructure. Demand-based pricing thus would lead to increased capacity as well as to better use of existing capacity.⁶

If airports were to start charging market prices, it is possible that some of them would find that their present physical capacity actually is sufficient to meet the demand without expansion. Yet, the only way to discover whether their existing capacity really is sufficient or not is by charging market prices. The fear that some airports might simply keep the higher fees rather than reinvest them in expansion hardly constitutes a good reason to prohibit them from charging market prices.

In other instances, airports might face physical or environmental limits which prevent further expansion. For example, Logan International Airport in Boston is surrounded by densely populated residential neighborhoods and Boston Harbor. A market pricing system in this case might lead to expansion at nearby airports triggered by airlines seeking lower charges. Charging market prices at Logan, for instance, might give international travelers an incentive to fly through New York's Kennedy or Washington D.C.'s Dulles airports. It also might make it profitable to expand Bradley Airport—located between Hartford, Connecticut, and Springfield, Massachusetts—to serve as a new hub for travelers destined for other locations in New England.

There are several forms of demand-based pricing. Airports, for example, could keep the current system of allowing planes to schedule takeoffs and landings any time they want, but base the fee on the time of day, the day of the week, and even the time of the year.

6 Congress recently enhanced the ability of airports to pay for their own expansion by amending the Federal Anti-Head Tax Act (49 U.S.C. 1513) to allow airports to charge passenger user fees of \$1, \$2, or \$3 per passenger. These fees will be collected by airlines as part of the ticket price. Although the fees do not appear to be designed to vary with the time of day to reflect changing levels of demand, they will give airports greater flexibility in raising revenue for improvements.

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Airports also could lease, or sell rights to take off or land at particular times of the day, every day on an ongoing basis. Users would become owners of particular slots, such as 2:00 p.m. on Saturday, and would be entitled to sell, lease, or trade the slots to other users. Thus, for example, an airline that owned the 11:00 a.m. Monday slot but that did not need it during a particular slow month could lease the slot to a busier airline for one month. If an airline was suffering financial difficulties or loss of passengers, it could raise money by selling a slot to another airline permanently or for the remainder of its lease from the airport. There would thus be a natural tendency for each slot to end up in the hands of whatever airline valued it most, which presumably would be the airline that could attract the most passengers at the given time of the day and week. The result: slots would be allocated in a way maximizing the number of passengers served by the airport in question at any given time of the day or week.

The Federal Aviation Administration (FAA) has allowed some selling, leasing, and trading of landing slots to relieve congestion at four major airports: LaGuardia and John F. Kennedy in New York City, O'Hare in Chicago, and National Airport in Washington, D.C. The FAA estimates that by the end of this century, 58 airports could require some kind of limitations on access due to congestion.⁷

Some cities fear that sales and private ownership of slots could contain the threat of monopoly, if owners refuse to rent unused slots to competitors. But by refusing to rent out a slot, an airline loses money. For example, at the four airports at which the FAA allows a market in slots, the market value of these slots, if they were sold, is estimated to be about \$400,000 at National, \$300,000 at O'Hare, \$200,000 at LaGuardia, and \$100,000 at Kennedy.

If monopoly over slots is a fear, airports could auction the use of a slot for limited periods of time, say six months. This would mean that an airline not making the best use of its slots would lose money and periodically would face competition for its slots.

Whether airports are publicly or privately owned, it is important to allow them the freedom to experiment with different pricing approaches, methods, and strategies. Through trial and error airports can discover what arrangements work best. By contrast, locking all airports into a single government-

⁷ See Apogee Research, Inc., *The Nation's Public Works: Report on Airports and Airways* (Report by the National Council on Public Works Improvements, May 1987), p. 32.

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mandated formula for congestion pricing of airport use would lack the flexibility of a market approach, and ultimately could lead to the same sort of inappropriate charges as are found in current, government-mandated weight-based prices. After all, government bureaucracies have no special knowledge of what prices are best at what times or what airports.

Pricing freedom could have other advantages. Airports in Britain, for example, charge a premium for noisier jets and give a discount to quieter ones.⁸ This gives airlines an incentive to switch to quieter jets while raising funds with which to compensate local victims of “noise pollution” or to buy noise easements on neighboring property. Pricing freedom also would allow airports to experiment with the use of other kinds of charges besides landing fees, such as takeoff fees, gate rental, aircraft parking fees, and per-passenger service charges.

THE PRIVATIZATION OPTION

While pricing freedom would go a long way to help relieve congestion at airports, America’s air travel infrastructure would still suffer a major flaw. Most major airports in the U.S. are owned and operated by state or local governments. This imposes significant restrictions on the airport’s ability to manage its operations, to hire and fire personnel, to procure needed supplies and equipment, to expand facilities, and to finance its operations. Yet there is no more reason why airports should be government-owned than there is for any other enterprise.

Other countries are experimenting with privatizing the ownership or management of airport facilities. In 1987 the British government sold its British Airports Authority (BAA), which owns seven major airports, to the public. In the U.S. some airports are being leased to private companies, or private companies are being hired to manage them. Airports in Morristown, Teterboro, and Atlantic City, New Jersey, for example, are leased by private firms, and Burbank Airport in California is privately managed. Companies such as Lockheed Air Terminal, Pan Am World Services, Avco International Services (a division of Combustion Engineering), and Air Terminals Inc. and Airports UK (both subsidiaries of BAA) lease or manage airports in the U.S., Canada, Europe, and elsewhere.⁹

8 Robert W. Poole, Jr., “Airport Privatization: What the Record Shows,” Reason Foundation *Policy Study* No. 124, August 1990, p. 19.

9 *Ibid.*, pp. 5-7; Robert W. Poole, Jr., “Privatizing Airports,” Reason Foundation *Policy*

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Privately owned airports would have a number of important advantages over publicly owned facilities. These include:

1) **Maximum Pricing Freedom.**

As long as an airport is publicly owned, it will be politically difficult to remove all controls on pricing and fees. Even an airport enjoying relative freedom to price its services might be subject to future government controls. For example, many current regulations are the result of Department of Transportation and court rulings limiting both the kinds of charges that can be imposed and the amounts that can be charged.

By contrast, existing law would give private airport owners greater flexibility to experiment with different pricing arrangements and to charge prices that reflect demand. Moreover, private owners in any industry tend to be more innovative than government managers. This is because a government manager, no matter how competent, can never have the same incentive that a private owner has to improve the enterprise's bottom line. Innovation profits private owners directly, but profits government managers hardly at all. This is especially the case under current federal laws that prohibit state and local governments from making a profit on the airports they own and operate. If airports were to charge prices that fully reflected the demand for their services, their total revenues likely would increase significantly. Since government-owned airports are severely restricted in the uses to which they legally could put these increased revenues, they have relatively little incentive to search for an optimal pricing formula. This is one of the principal reasons why most major airports do not institute some form of congestion or peak-hour pricing.

2) **Better Management.**

Private owners and operators are not hampered by government employment or procurement regulations. This means they have greater flexibility and can respond more quickly to consumer demands and market changes. They also have a greater incentive to manage efficiently, to increase service, and to reduce costs. Contrary to the predictions by privatization's opponents, private airport owners have invested heavily in their airports. The annual level of capital investment by BAA in Britain more than doubled by the third year after privatization. Much of this investment has been in such "landside" activities as hotels, restaurants, retail stores, and the construction of a rail line from Heathrow Airport to downtown London. Similarly, the

companies operating the Morristown and Teterboro, New Jersey, airports have invested heavily in runway resurfacing, new hangars, a new lighting system, and other renovations and improvements.¹⁰

Privatization can lower operating costs and increase productivity. For example, at BAA's airports, both revenues generated and passengers handled per employee have increased. Operating expenses per passenger have fallen. In the U.S., Burbank Airport handles significantly more passengers per employee annually than other comparable airports.¹¹

Private management too can reduce greatly the cost of improvements by shortening the planning and construction periods. Example: by completing a \$100 million project in three years rather than in the four years the government might take, a private operator would save approximately \$12 million by not having to pay an extra year for money borrowed at a 12 percent interest rate. Private firms often take only half the time the public sector takes to plan and construct facilities.¹²

3) Increased Competition Among Airlines.

Some critics of airline deregulation fear that because some cities and routes appear to be dominated by a single carrier, these carriers might overcharge customers or provide poor service. This has not been a real problem and airport privatization would help head off any chance of it becoming one. Privatization would increase both the incentive for and the ability of airports to expand. By increasing the number of gates and terminals and perhaps even airports in a city, there would be more room for other carriers to serve these cities, denying any single carrier a monopoly.

A related worry sometimes cited is that under private ownership the airports themselves, in contrast to the airlines, might abuse their local monopolies by overcharging their customers. Yet, the "monopoly" status of privately owned airports is not likely to be a problem because of competition between airports. Chicago, Dallas, Houston, Los Angeles, New York, Washington, and many other cities are served by more than one airport. Even in cities with only one major airport, any attempt by that airport to exact monopoly profits would stimulate the expansion of other airports in the area. Many travelers, moreover, are not ultimately destined for a city

10 Poole, "Airport Privatization: What the Record Shows," pp. 8-10. James L. Gattuso, "Privatization of Britain's Airports: A Model for the U.S.," Heritage Foundation *International Briefing* No. 17, January 23, 1989, pp. 5-6.

11 Poole, "Airport Privatization: What the Record Shows," pp. 11-16.

12 *Ibid.*, pp. 2, 22-23.

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with a major airport but for a location somewhere between such cities. Travelers to or from New Haven, Connecticut, for example, can choose airports in Hartford or New York.

Airports used as hubs by major airlines, meanwhile, such as Dallas/Fort Worth, Hartsfield in Atlanta, and O'Hare in Chicago, compete with each other even though they are far from each other. Passengers readily can use one hub as well as another, and airlines easily can relocate their hubs from one airport to another, if a host airport charges more than its competitors. Similarly, airports such as Washington's Dulles and Boston's Logan compete with each other for international traffic.

Some critics of privatization fear that where only one major airport serves a particular city, it might be in the interest of the airport deliberately to give a single airline a monopoly or a near-monopoly on gates in exchange for a share of the airline's monopoly profits.¹³ However, such an arrangement would be extremely difficult in practice. To begin with, most airports want to be selected as hubs because hubs handle a much greater volume of business than other airports. However, when an airport is a hub, competition from other hubs constrains ticket prices for most flights. Any attempt by its "dominant" airline to extract monopoly profits from passengers results in a loss of business to other hub airports. Thus, the only potential targets for price gouging would be travelers flying to or from the city in question. However, exploiting these travelers would require the airline to engage in price discrimination that would be difficult to sustain as well as illegal, charging more or less for a seat on a given flight depending on where each passenger's trip began and ended.¹⁴

Another way to ensure maximum competition and to avoid a monopoly is for the federal government to repeal the so-called cabotage laws. These laws prohibit non-U.S. airlines from carrying passengers between American cities unless they are traveling to or from a foreign destination. Thus a plane

13 Although doing so would make the airline a monopsonistic purchaser of the airport's services, the airport would not weaken its bargaining power vis-à-vis the airline by giving the airline a monopoly on gates because the airport would retain the ability to terminate the airline's monopoly at any time. Therefore, one would expect the airport to capture most of the monopoly profits under such a collusive arrangement.

14 In practice, such price discrimination may be difficult to detect—especially if the ticket price differentials involved are relatively small. How does one distinguish among: 1) genuine price discrimination, 2) a legitimate volume discount given to a passenger for taking more than one flight, and 3) a legitimate premium charged for the convenience of direct, non-stop service?

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belonging to a foreign airline originating in London can land in New York City to drop off passengers and then go on to Washington to drop off more of its original travelers from London. But it cannot pick up passengers in New York and take them to Washington. Allowing foreign airlines to operate between U.S. cities would give Americans more choice on carriers and would allow more competition between airports. If the airport in one city, dominated by a single airline, did not want foreign competitors picking up or dropping off other passengers between other U.S. cities, that foreign airline likely would drop that city from its routes. The city then would have less air service overseas.¹⁵

4) Increased Safety.

Market pricing or outright privatization of airports and open market entry to all competitors would add to airport capacity and reduce congestion. This would reduce the likelihood of collisions.

Moreover, private ownership of airports, and the threat of competitors, would give airport owners an added incentive to make safety a primary concern. In a competitive environment customers with an option could choose to avoid airports, especially as transit points to other destinations, that have a reputation for being unsafe. Such losses of business occurred at European airports, especially in Athens and Rome, as a result of their bad reputations in dealing with another threat to passenger safety: terrorism. Those airports tightened security in an attempt to regain both reputation and customers. If private airports do not receive government assistance, an airport with a poor safety record would see its profits go elsewhere with its customers. Such airports could be faced with shutdown and takeover by more competent owners.

5) Increased Government Revenues.

The government entities that own and sell the airports would receive the sale proceeds. These could be substantial. Robert Poole, President of the Santa Monica, California-based Reason Foundation, estimates that the Port Authority of New York and New Jersey would receive some \$2.23 billion for the sale of New York's Kennedy and LaGuardia Airports.¹⁶ BAA was initially sold to the public for approximately \$2.5 billion in 1987; its market

15 See James L. Gattuso, "Status Report: Airline Competition and Concentration Since Deregulation," Heritage Foundation *Background* No. 717, June 30, 1989.

16 Robert W. Poole, Jr., "Selling LaGuardia and Kennedy Airports," Reason Foundation *Policy Study* No. 208, May 1990, pp. 13-14.

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value is now around \$4 billion.¹⁷ Once an airport is no longer owned by the government, moreover, it becomes subject to local property taxes. In most major cities, the local major airport represents the largest single piece of real estate in the area. Thus, the potential revenues to be derived from airport privatization are enormous, and they make privatization especially attractive to state and local governments, because current federal laws prohibit these governments from making a profit on the airports they own and operate.

OBSTACLES TO PRICING FREEDOM

The principal obstacle to the rational pricing of airport services is the federal government. Examples:

◆ Section 1113 of the Federal Aviation Act of 1958 limits states or other political subdivisions that own or operate airports to collecting “reasonable rental charges, landing fees, and other service charges from aircraft operators for the use of airport facilities.”¹⁸ This provision applies only to publicly owned airports.

◆ Section 511 of the Airport and Airway Improvement Act of 1982 requires any airport seeking a federal grant to assure the Secretary of Transportation in writing that the airport will be “available for public use on fair and reasonable terms and without unjust discrimination.”¹⁹ This provision applies to any airport, public or private, that has received a federal airport grant.

The Department of Transportation is studying the question of whether landing fees based on such factors as demand or noise should be considered fair, reasonable, and nondiscriminatory, or at least not unjustly discriminatory, for purposes of these two statutes. It has not yet taken a firm position on these matters.

The Department, however, disapproved what was probably the boldest pricing experiment undertaken to date. In 1988, the Massachusetts Port Authority (Massport), which operates Boston’s Logan Airport, adopted a new formula for calculating landing fees that put less emphasis on weight. This formula included a new operations fee that was the same for all planes regardless of size. This new formula raised landing fees for smaller planes

17 Poole, "Airport Privatization: What the Record Shows," p. 4.

18 49 U.S.C. 1513(a) and 1513(b).

19 49 U.S.C. 2210(a)(1).

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while decreasing slightly or holding steady the fees for larger planes. The Department of Transportation, however, ruled that the new formula unjustly discriminated against smaller aircraft and that this violated Massport's federal grant assurances. It ordered Massport to discontinue the program or lose its federal funding. Massport appealed the ruling but lost in court.²⁰

Although the Department of Transportation's rejection of the Massport experiment is discouraging, there were two encouraging aspects of its decision. First, although the Department faulted Massport for putting too much emphasis on factors other than weight, the Department did not say that weight was the only factor that could be considered in setting takeoff and landing fees. Just how much emphasis must be put on airplane weight and how much may be put on other factors is not clear. Second, and perhaps even more important, one of the factors the Department mentioned as a basis for its decision was the fact that Massport's landing fee formula did not include peak-hour pricing. The Department thus implicitly endorsed peak-hour pricing, or at least appeared to do so. However, the Department needs to make its position much clearer than it has so far.

OBSTACLES TO AIRPORT PRIVATIZATION

The major legal obstacle to the privatization of government-owned airports is Section 511 of the Airport and Airway Improvement Act of 1982. This provision says that airports receiving federal funds must assure the Secretary of Transportation in writing that "all revenues generated by the airport, if it is a public airport,...will be expended for the capital or operating costs of the airport, the local airport system, or other local facilities which are owned or operated by the owner or operator of the airport and directly and substantially related to...air transportation."²¹

This language raises two difficulties for airport privatization. First, the phrase "revenues generated by the airport" might be construed to include the proceeds from the sale of an airport. If sale proceeds constitute "revenues generated by the airport," then they must be put back into the airport, notwithstanding the fact that the government no longer owns the airport. The government, in effect, would have to hand the sale proceeds

20 *New England Legal Foundation v. Massachusetts Port Authority*, 883 F.2d 157 (1st Cir. 1989).

21 49 U.S.C. 2210(a)(12). This is the statute that prevents state and local governments from making a profit on the airports they own and operate.

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right back to the buyer. Of course, if the government owns several airports, it could reinvest the proceeds into facilities that it still owns.

A second potential difficulty is that, even if the phrase “revenues generated by the airport” refers merely to operating revenues, an airport that has received any federal grants in the past, as virtually all public airports have, may still be subject to requirements imposed by past grant assurances to the Department of Transportation, depending on how the assurances are worded. If so, then while a public authority may sell an airport and keep the proceeds, the buyer may still be required, by contract if not by statute, to reinvest “all revenues generated by the airport” in the airport for the duration of the grant assurances (usually twenty years from the date of the most recent grant) whether such investment is necessary or not. Such a requirement would reduce severely the value of an airport to a buyer and hence diminish the amount any buyer would be willing to pay for an airport in the first place.

However, regardless of which interpretation is correct, the Secretary of Transportation has all the legal authority he needs to eliminate this obstacle to airport privatization. While the Secretary may not approve an airport development grant to a public airport unless he has first received a reinvestment assurance, there is nothing that prohibits the Secretary, acting on behalf of the U.S. in its capacity as a party to the contract, from subsequently waiving compliance with this particular assurance after a grant has already been approved, paid and used, if doing so would be in the public interest.

Waiving compliance with a particular airport’s reinvestment assurance to facilitate privatization would not in any way circumvent the will of Congress. After all, when it enacted the Airport and Airway Improvement Act of 1982, Congress chose to make privately owned airports eligible to receive federal airport grants, something that had not been the case under prior law. By doing so, Congress implicitly recognized that privately owned airports can serve the purposes of the grant program. However, Congress did not choose to require private airports seeking federal grants to provide a reinvestment assurance to the Secretary. Section 511’s requirement that the Secretary receive a written assurance that “all revenues generated by the airport...will be expended for the capital or operating costs of the airport” only applies “if it is a public airport.”²² Significantly, of all the required

22 49 U.S.C. 2210(a)(12). Under the statutory definition, only an airport that is “under the control of a public agency, the landing area of which is publicly owned” is considered a

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written assurances set out in Section 511 (there are seventeen in all), this is the only one that contains such a limitation. All the others apply to public and private airports alike.

The Department of Transportation is examining both the scope of the phrase "revenues generated by the airport" and the extent of the Secretary's authority under the Airport and Airway Improvement Act to waive compliance with revenue reinvestment assurances, and it has not yet reached any firm conclusions on these issues. In the meantime, however, the Department has resisted all proposals for selling or leasing airports, including the repeated efforts by Albany County, New York. After its initial proposal to sell its airport was rejected in 1989, the County submitted several new proposals involving either leasing or contract management. This time, although the Department did not reject the contract management proposals, it did reject a proposal to lease the airport, telling the County that it could only lease the airport to another government entity.²³ Since there are no other governmental entities to whom Albany can profitably lease its airport, and since the contract management proposals were not nearly as attractive financially, the County has given up on its plans to privatize its airport.²⁴

Although there has been little or no change in the Department's position since Albany County submitted its initial privatization proposal, one recent development suggests that the Department of Transportation's position soon may change. The Department traditionally has based the tentative opposition to airport privatization on its belief that privatization might violate the terms of an airport's federal grant assurances. In other words, the Department doubted its own legal authority to say "Yes" to privatization. However, in a recent legal opinion requested by Transportation, the Department of Justice's Office of Legal Counsel (OLC), the in-house legal referee for the entire executive branch, categorically rejected Transportation's interpretation of Section 511(a)(12) and the assurances required thereby. According to OLC, the sale to a private buyer of a government-owned airport that has

"public airport." Airports which are used for public purposes but which are privately owned are called "public-use airports." See 49 U.S.C. 2202(a)(17), 2202(a)(18).

23 Letter from Leonard L. Griggs, Jr., Assistant Administrator for Airports, Federal Aviation Administration, to James Coyne, County Executive, Albany County, New York, December 6, 1990.

24 See Warren Brookes, "Plans to Privatize Forsaken?" *The Washington Times*, December 28, 1990, p. F1.

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received federal airport grants would not violate the airport's grant assurances.²⁵ OLC has advised the Department of Transportation that the decision of whether or not to approve such a sale is purely a policy matter for the judgment and discretion of the Secretary.

RECOMMENDATIONS

In his *Statement of National Transportation Policy*, Secretary Samuel Skinner explicitly recognized the "need to give greater attention to the potential for capacity-enhancing pricing techniques in transportation, such as peak-period or congestion pricing," calling such techniques an "important way to encourage the most effective use of existing facilities" that also "can generate significant revenues to support capacity enhancements and expansion."²⁶ In regard to privatization, he said:

Private firms that own and maintain transportation infrastructure and provide transportation services are a vital part of the Nation's transportation system....For the transportation system to sustain performance and accommodate increasing traffic, continuing and substantial infusions of private capital will be needed, even in areas that have traditionally been entirely within the public sector in this country. Government bodies at all levels must encourage and welcome private participation and investment in transportation....[T]he private sector can be a major source of much-needed additional transportation capacity.²⁷

Secretary Skinner explicitly included airports in his list of "areas where increased private sector participation in transportation offers significant benefits."²⁸ The Secretary has it in his power to take major steps toward both these goals. If airport congestion is to be alleviated through rational pricing and privatization, the following four actions should be taken:

25 Memorandum for C. Dean McGrath, Jr., Acting General Counsel, U.S. Department of Transportation, from J. Michael Luttig, Assistant Attorney General, Office of Legal Counsel, U.S. Department of Justice, February 12, 1991.

26 U.S. Department of Transportation, *Moving America: New Directions, New Opportunities*, February 1990, p. 48.

27 *Ibid.*, p. 58.

28 *Ibid.*

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- 1) **The Secretary of Transportation should announce that takeoff or landing fees or other user charges based on such factors as demand or noise will not be considered unfair, unreasonable, or unjustly discriminatory.**

Charging an airplane the full market cost of its taking off or landing need not be viewed as inherently unfair or unreasonable. Similarly, there is nothing discriminatory about demand-based landing fees so long as the fees are the same for all planes landing at the same time of day, barring relevant differences in aircraft size or noise level. Restrictive interpretations of pricing statutes seem to be at odds with, and certainly are not required by, the statutes' language. Since the price system, moreover, is the key to maximum use of existing airport capacity, the Secretary ought to resolve any doubts by construing these provisions to allow demand-based pricing.

- 2) **The Secretary of Transportation should reconsider the Department's anti-privatization interpretation of Section 511 of the Airport and Airway Improvement Act of 1982.**

Although the precise meaning of the phrase, "revenues generated by the airport" does not obviously and explicitly include the proceeds from the sale of an airport, the term most likely refers only to operating revenues. After all, the sale price represents the price the buyer pays for the right to receive "all revenues generated by the airport" in the future.

- 3) **The Secretary of Transportation should consider waiving compliance with the reinvestment assurances in existing and future grant contracts in order to facilitate privatization.**

The Secretary has the legal authority to waive the reinvestment requirement. This would not contravene the will of Congress and would be in the public interest.

- 4) **The Secretary of Transportation should seek legislation to remove all legal barriers to rational pricing by airports or to the sale of government-owned airports to the private sector.**

To make it unlikely that courts or future administrations will roll back market reform efforts, the laws that impede these efforts should be changed. To make clear that even government-owned airports may charge takeoff as well as landing fees,²⁹ Section 1113 of the Federal Aviation Act of 1958

29 Even if airports choose not to charge a separate fee for takeoffs, a takeoff fee will always be implicit in the landing fee. However, if such fees are to vary with congestion and time of day, then the two kinds of fees probably should be separated to reflect the fact that airport congestion levels can change significantly between the time at which a plane lands

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would have to be amended explicitly to include takeoff fees; this section now only mentions “rental charges, landing fees, and other service charges ...for the use of airport facilities.”³⁰

CONCLUSION

Primarily as a result of deregulation, the volume of air traffic in the U.S. has grown enormously in recent years. At the same time, the basic infrastructure available to handle this increased volume has remained at pre-deregulation levels. Not surprisingly, this results in the congestion which rightly angers many American air travelers. The ways to alleviate the congestion and delay are not by reimposing regulation of routes and fares but by deregulating the rest of America’s air transportation network. Re-regulation would neither increase system capacity nor make more efficient use of existing capacity; what would do both is giving airports the freedom to charge demand-based prices for their services. By charging premium prices during periods of peak demand, airports can give their users an incentive to shift their use to other airports or to other, less congested times of the day. Moreover, by collecting premium fees, airports would derive revenue with which to finance badly needed expansion of facilities and infrastructure.

If airports are to be given maximum pricing freedom, and if the benefits to consumers from airport pricing freedom are to be as large as possible, then airports must be sold to the private sector. Although the benefits of giving airports pricing freedom would be considerable even if the airports remain in government hands, there would be many important benefits from privatizing airports, including reduced airport operating costs and increased safety. If, for political reasons, airports cannot be sold outright, then they should be leased to private operators under long-term leases. If even the idea of leasing airports to the private sector is unacceptable, the governmental entities that own the airports should at least be allowed to hire private contractors to manage and operate the airports for a flat fee or for a percentage of profits or losses generated.

At the same time, while the greatest possible benefits can only be obtained through privatization, many of the benefits of pricing innovation and demand-based pricing would accrue whether or not airports were

and the time at which it takes off again.

30 49 U.S.C. 1513(b).

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privatized. Therefore, even if airports are not privatized, and even if they remain under government management, they should at least be given the freedom to experiment with different pricing arrangements and to charge prices for the various services they sell, such as takeoff or landing slots, gates, hangar space, and so on, that reflect demand.

The *Statement of National Transportation Policy* of 1990 clearly noted the value of demand-based pricing in coping with congestion and the importance of increasing private sector investment and participation in the provision of transportation infrastructure, including airports. The Department of Transportation thus should modify its policies toward demand-based pricing and privatization to give these strategies a chance.



Chapter 4

Restructuring the Air Traffic Control System

Robert W. Poole, Jr.

A decade after the 1981 air traffic controllers' strike, the air traffic control (ATC) system remains a major impediment to the growth of commercial aviation in the United States. Since the airlines were deregulated in 1978, air traffic has grown from 2.5 billion airline miles flown that year to 4.2 billion in 1989, a 68 percent increase.¹ Deregulation has allowed for more flights to more destinations at less cost, giving more Americans the opportunity to fly.

The problem with commercial aviation is that the ATC system, owned and operated by the U.S. government's Federal Aviation Administration (FAA) has failed to keep pace with the growth in travel. Unable to handle the increasing number of flights, the ATC system is causing increased delays at airports, inconveniencing passengers and offsetting some of the savings of airline deregulation. More serious is the increased danger of accidents due to an obsolescent ATC system.

There are a number of specific causes of the current air traffic problems. A shortage of fully trained controllers means manpower spread out too thinly or overworked. The ATC wage structure system does not reward controllers working in the most stressful jobs or regions of the country. Since the ATC system is governed by federal civil service practices, there is less

1 Data from the Air Transport Association.

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flexibility in hiring and rewarding the best workers. And government procurement procedures restrict moneysaving practices. Further, the Federal Aviation Administration, which is in charge of promoting air transport, also oversees the safety of the ATC system. These two roles sometimes conflict. All of these problems have a more general cause: air traffic control basically is a government monopoly with only limited private sector involvement.

It need not, however, remain a government agency. Over the past decade, a number of countries including America have experimented with contracting out air traffic control functions to the private sector or privatizing parts of their ATC systems entirely. These have had promising results and suggest that free market reforms would be the most efficient means to deal with the problems of the ATC system.

Federal policy makers thus should consider reforms to increase the private sector's involvement in air traffic control.

First, they should accelerate the current federal Contract Tower Program that allows private firms to perform some ATC services.

Second, they should extend this program to more complex Level II towers.

Third, they should allow larger airports to own and operate their own air traffic control towers rather than force them to accept this service from the federal government.

Fourth, if the ATC system remains in public hands, it should be organized as a corporation, like Amtrak, the Tennessee Valley Authority, or the United States Postal Service, rather than as a government agency. This would mean that it would run more like a business, with hiring and firing practices, selection and purchase of equipment, and day-to-day management not governed by wasteful and cumbersome federal regulations.

PROBLEMS WITH THE ATC SYSTEM

In the decade following Ronald Reagan's firing of striking air traffic controllers in 1981, the ATC workforce slowly has been rebuilt. By 1988, in gross numbers, it finally exceeded pre-strike levels (see Table). Yet in 1989 only 61 percent of that workforce was rated as at a "full-performance level" (FPL), that is, capable of handling all controller operations. This compares with 81 percent at that level before the strike. And this less-capable workforce is handling 68 percent more traffic than in 1978, the year the airlines were deregulated. Hence, as Figure 1 illustrates, controllers are still stretched more thinly than prior to deregulation.

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Nor has automation come to the rescue, as many had hoped. In 1982 a \$12 billion, ten-year FAA National Airspace System Plan (NAS Plan) was launched to introduce new technology into the ATC system. At the start of 1991 this plan was six to seven years behind schedule and billions of dollars over budget.

Air Traffic Controllers and Air Traffic in the United States

Fiscal Year	Air Traffic Controllers			Airliner Miles (millions)
	FPL	Total	Percent	
1980	13,170	16,234	81%	2,816
1981	4,745	6,474	72%	2,703
1982	5,493	12,117	45%	2,699
1983	6,746	12,118	51%	2,808
1984	7,580	13,714	55%	3,114
1985	8,315	13,998	59%	3,320
1986	9,528	14,803	64%	3,728
1987	9,798	15,433	63%	3,988
1988	9,858	16,436	60%	4,141
1989	10,232	16,832	61%	4,193

Note: FPL = Controllers at Full Performance Level

As a result of the shortcomings in the ATC system, air travelers experience serious problems. In 1987 the Air Transport Association, the trade association of the major airlines, reported that delays cost airlines some \$2 billion in wasted fuel, additional crew hours, and other losses. This is more than the combined profits of U.S. airlines in any year and contributed to their financial weakness as well as to higher prices for airline tickets.²

² "Airline Group Reports ATC Delays Cost Carriers \$2 Billion in 1987," *Aviation Week & Space Technology*, May 30, 1988, p. 124.

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Including the value of passengers' lost time, as well as increased airline costs, the Department of Transportation puts the total cost of airline delays at \$5 billion per year.³

As with Soviet agriculture, the FAA sometimes blames poor performance on bad weather. But America's weather has not worsened appreciably over the past decade. And today's state-of-the-art avionics technology can keep air traffic moving in most bad weather. Far too often, that technology is not in use within the ATC system.

Safety is another serious concern of air travelers. The mid-1980s witnessed an alarming rise in near-midair collisions, though the trend reversed slightly by the end of the decade. Investigations of such incidents by the National Transportation Safety Board (NTSB) frequently cite as a cause serious lapses in the ATC system. In Southern California in 1989, for example, NTSB found that grave deficiencies had been identified and documented by the FAA at the Coast Terminal Approach Control facility over a three-year period, yet the FAA "failed to address and correct the problems." Among the problems cited were "inadequate controller staffing, excessive use of overtime... and inadequate size and poor physical condition of the operational quarters"—including the use of obsolete rotary telephone equipment.⁴

A 1989 FAA review of the air traffic control in the northeast corridor, resulting from a 1988 near-collision of a commuter aircraft and the Presidential aircraft Air Force One, documented numerous deficiencies. These included:

- ◆ Difficulty in recruiting experienced controllers to New York;
- ◆ Poorly designed airspace boundaries, that increase workload and stress on controllers;
- ◆ A lack of experienced maintenance technicians;
- ◆ Inadequate controller training;
- ◆ Poor working relationships among ATC facilities;
- ◆ Poor communications between pilots and controllers.⁵

3 Kenneth Labich, "Airport 2000—A Horror Story?" *Fortune*, June 18, 1990, p. 104.

4 Eric Malnic, "Jets' Narrow Miss Blamed on FAA Laxity," *Los Angeles Times*, May 25, 1989.

5 James T. McKenna, "Crash Renews Questions About ATC System's Safety," *Aviation Week & Space Technology*, February 5, 1990, p. 80.

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This last item figured in the January 25, 1990, crash of Colombia's Avianca Airlines Boeing 707 on Long Island, New York. The pilot was unable to make controllers understand that the plane was about to run out of fuel. On the evening in question, the Coastal Terminal Approach Control had a shortage of controllers, according to the NTSB investigation.⁶

More recently, two fatal collisions have occurred on the ground at major airports due to inadequate or obsolete ground radar equipment. In December 1990, two Northwest Airlines jetliners collided in the fog at Detroit Metro Airport. This busy hub airport lacks ground radar that would allow controllers to keep track of the position of taxiing aircraft; only 14 U.S. airports have such equipment. In February 1991, a USAir 737 jet collided with a commuter aircraft at Los Angeles International Airport. Although Los Angeles does have a ground radar, it is of an obsolete design and was inoperative at the time of the crash.

Numerous General Accounting Office reports over the past decade have documented the serious problems of a controller work force stretched too thin, and trying to make do with obsolete, unreliable equipment. Air traffic continues to grow at least as fast as the FAA's ability to make improvements, leading to continuing concern about the system's margin of safety.

In short, today's ATC system is short of qualified controllers and is plagued with obsolete equipment. Those problems lead to massive, costly delays and diminished margins of safety for air travelers.

SOURCES OF ATC PROBLEMS

Flight delays and thin safety margins are thus not the problem; they are symptoms of basic, structural deficiencies in the way that ATC services are provided. To begin with, the ATC system is chronically under-funded. Most FAA funding comes from so-called aviation "user taxes," primarily the 10 percent federal tax on airline tickets. Revenues from these user taxes are earmarked for the Aviation Trust Fund, which can only be spent on aviation infrastructure. Yet both revenues and expenditures from the Trust Fund are taken into account under the 1985 Gramm-Rudman-Hollings Budget Act budget deficit-reduction calculations. Thus, if the Fund takes in revenue but spends less, the surplus is used to offset part of the general budget deficit. In practice, therefore, the Administration and Congress each seek to maximize Trust Fund revenues while minimizing Trust Fund expenditures since

6 *Ibid.*

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this allows them better to meet budget targets. The result: there is little incentive to spend money to improve the ATC system and an accumulation of unspent IOU's in the Fund.

Lack of funding is only a part of the ATC problem. Another is the complex, time-consuming federal procurement regulations which FAA, as a government agency, must follow. For an airport to acquire an upgraded radar system from the FAA takes four to seven years under current procurement practices. The FAA's own systems-acquisition capabilities also are in question. In April 1990 the General Accounting Office reported to the House Appropriations Subcommittee on Transportation major examples of "inadequately justified general-purpose procurements." The General Accounting Office, for example, found that the need for the \$5 billion Advanced Automation System, which will replace the 1960s-era ATC computers and software, for the \$1.7 billion Mode-S transponder program, and for the \$1.5 billion Computer Resources Nucleus program were not adequately justified. It was not clear that the systems which were chosen would meet the needs of the general ATC system in a cost-effective manner.⁷

Poor Employment Policies

As a federal agency, FAA also is governed by federal civil-service regulations. The ATC system thus lacks the flexibility to assign controllers to locations where they are most needed and to pay them adequately. Consequently, there is overstaffing in some locations and understaffing in many others, difficulties in terminating unsatisfactory employees, and rigid, military-type systems of personnel management.

Controller and technician compensation, moreover, generally is uniform nationwide, despite the much higher workloads and higher costs of living in areas like New York, Chicago, and Southern California. To address this problem, Congress enacted a measure in May 1989 to permit 20 percent pay differentials for controllers at eleven ATC facilities. Yet since the differential applied to en-route control centers between airports and terminal approach control facilities, but not to actual control towers at the airports, personnel in those many high-stress airports as Chicago's O'Hare and New York's LaGuardia National Airport and Kennedy International Airport have been excluded.⁸

⁷ *Ibid.*

⁸ Robert D. McFadden, "New York Air-Traffic Control: Pressure and Gains," *New York*

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A 1988 General Accounting Office report criticized the FAA's recruitment and training efforts.⁹ It found that the FAA does not actively recruit the best candidates for the ATC system. The report also discovered inconsistencies in hiring policies among the FAA's various regions. Overall, the agency was found to be attracting fewer high-quality candidates than in earlier years. And it tends to assign controller school graduates to ATC facilities inappropriate to their performance in school. Some 41 percent of low-scoring graduates were assigned to busy en-route centers in the two most recent fiscal years, rather than to less demanding posts.

Another problem for the ATC system is micromanagement. FAA operates in a fishbowl, with numerous supervisory bodies looking over its managers' shoulders, often giving contradictory directives. Several congressional oversight committees, the Office of Personnel Management, the Office of Management and Budget, the White House, and the Office of the Secretary of Transportation are all in some sense the "boss" of the FAA, directing it as it attempts to run the demanding, high-tech business of air traffic control. In a 1986 report, the National Academy of Public Administration, a non-profit consulting group, identified this well-intentioned oversight as a major barrier to effective management and decision-making.¹⁰

Conflicting Goals

Troublesome too are the conflicting goals of the FAA. The Federal Aviation Act of 1958 gives the Agency twin missions of promoting civil aviation and regulating air safety. FAA thus is the only federal safety regulatory agency charged with advancing the economic interests of the industries that it regulates. This is much like the former Atomic Energy Commission, whose conflicting functions of promoting nuclear power and overseeing safety and compliance regulations at nuclear facilities were separated in 1975 with the creation of a separate Nuclear Regulatory Commission. Former Transportation Secretary James Burnley and former National Transportation Safety Board chairman James Burnett both have

Times, February 4, 1990.

9 Paul Proctor, "GAO Cites Deficiencies in FAA's Traffic Controller Recruitment," *Aviation Week & Space Technology*, October 10, 1988, p. 112.

10 *The Air Traffic Control System: Management by a Government Corporation*, Washington, D.C.: National Academy of Public Administration, March 1986.

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cited the FAA's conflict of interest as potentially endangering the safety of the traveling public.

In sum, the ATC problem cannot be solved by tinkering with the system, or by increasing the so-called user taxes. Meeting the needs of a fast-growing, high-tech service industry simply is not possible within the constraints of a government bureaucracy, hobbled by civil service and federal procurement regulations.

EXPLORING REORGANIZATION

Many experts have concluded that the ATC system's major problems are structural. In 1975, for example, aviation consultant Glen A. Gilbert proposed spinning off the entire FAA from the Transportation Department and converting it into a government corporation, funded 50 percent by user taxes and 50 percent by general tax revenues.¹¹

While presumably exempt from federal civil service and procurement regulations, the newly structured FAA still would have been as much a part of the federal government as the Postal Service or Amtrak. It also would have retained FAA's safety-regulatory functions and the inherent conflict of interest between promotion and regulation.

In 1985 the Air Transport Association proposed spinning off the ATC functions of the FAA, the Aviation Trust Fund, and the airport grant program to a new agency to be called the National Aviation Authority (NAA).¹²

Safety regulation would have been retained in a reorganized FAA, thereby resolving the conflict-of-interest problem. The NAA would have been a federal corporation, but unlike in the 1975 Gilbert proposal, it would have been fully funded by user fees. It would also have been exempt from civil service and procurement regulations, but not from congressional oversight. Legislation to achieve this was introduced in 1986, but made little headway.

The National Academy of Public Administration (NAPA) in 1986 reviewed the NAA plan. Modifying the original proposals, NAPA favored spinning off the entire FAA, including the safety regulation functions, into a user-funded federal corporation, with an administrator reporting to the

11 Glen A. Gilbert, *The United States Air Traffic Services Corporation*, Executive Summary (Washington, D.C.: Glen A. Gilbert & Associates, October 1, 1975).

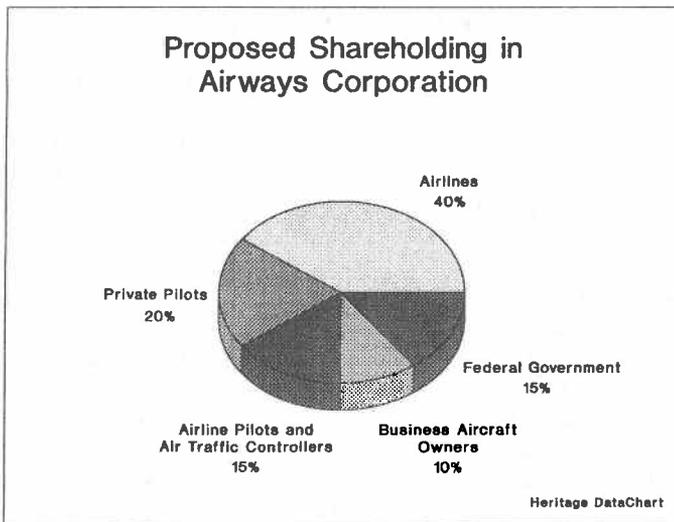
12 *Federal Corporation Approach to the Management and Funding of the Air Traffic Control System* (Washington, D.C.: Air Transport Association, September 1985).

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Secretary of Transportation.¹³ A similar “independent FAA” plan was recommended two years later by the 1988 Aviation Safety Commission.¹⁴ Legislation along these lines was introduced that year by Senator Wendell Ford, the Kentucky Democrat, passed by the Senate, but not acted upon by the House.

The Reason Foundation, a Santa Monica, California-based free market public policy institute, in 1986 recommended spinning off ATC as a non-profit, user-owned and user-funded corporation.¹⁵

This proposed “Airways Corporation” would be federally chartered, with safety regulated by the redefined FAA. The user ownership approach was inspired by Aeronautical Radio, Inc., a not-for-profit corporation owned by airlines and other aviation users to provide communications services. Owners of a private ATC system would include airlines, general aviation groups, airline pilots, controllers, and the federal government, whose 15 percent share would reflect military and other federal usage of the civilian ATC system.



¹³ *Op cit.*, note 12.

¹⁴ *Aviation Safety Commission, Vol. I: Final Report and Recommendations* (Washington, D.C.: Government Printing Office, April 1988).

¹⁵ Robert W. Poole, Jr., "Privatizing the Air Traffic Control System," Reason Foundation, November 14, 1986.

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The Reason Foundation's proposal was endorsed by then-Transportation Secretary Burnley. Legislation to create an Airways Corporation was introduced in 1988 by Representative Joe Barton, the Texas Republican, but made little headway.

The President's Commission on Privatization in 1987 heard extensive testimony on various proposals to privatize airports and air traffic control. A spokesman for Aeronautical Radio, Inc., (ARINC) testified that an analogous user-owned not-for-profit corporation was a feasible approach for air traffic control. The Office of Management and Budget testimony generally supported privatizing the ATC system. And the commercial firm, Air Transport Holdings, proposed that FAA sell the entire ATC system, to be run as a for-profit business, presumably with some form of regulation to guard against potential monopoly abuses. In the end, the Commission recommended only privatizing airport control towers and flight service stations, and possibly contracting out some activities at en-route control centers.¹⁶

PRIVATIZATION APPROACHES TO ATC

The idea of ATC services being provided by some sort of corporate entity is not new. In fact, the very first ATC services in this country were supplied by Aeronautical Radio, Inc., which was created in 1929 to provide joint communications and navigation services for several airlines. In 1935 and 1936, ARINC created the first ATC centers, with services paid for by user transaction fees.¹⁷

But in mid-1936, in a bid to help the struggling airlines, the federal Bureau of Air Commerce took over responsibility for ATC services, which were subsequently provided without charge.

ARINC continued and expanded its communications functions. Today it provides extensive air-to-ground communications services, telecommunications linking airline computer systems, and standard-setting for avionics activities. The FAA contracts with ARINC to provide air traffic control communications for international flights. After World War II, ARINC helped set up Radio Aeronautica de Mexico, S.A. (RAMSA), as a

16 David F. Linowes, *Privatization: Toward More Effective Government*, Report of the President's Commission on Privatization, March 1988.

17 Paul Goldsborough, "A History of Aeronautical Radio, Inc. from 1929 to 1942," July 2, 1951 (unpublished ARINC manuscript).

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private, non-profit corporation to provide ATC and communications services to Mexican airlines. And it set up a similar company in Cuba. The latter was nationalized by the Castro government in the early 1960s, and the former was nationalized in 1978 by the Mexican government. Until then, both Cuba and Mexico had private, user-funded ATC systems.

Privatization in Britain

Britain has moved gradually toward ATC privatization. In 1972 the British government's equivalent of the FAA—the Civil Aviation Authority (CAA)—was made into a Crown corporation. This means that it was required to become self-supporting through user fees. CAA has a board of directors appointed by the government. Three-fourths of its personnel work for its ATC division, National Air Traffic Services (NATS), while another 10 percent perform CAA's safety-regulation function. NATS operates the en-route ATC system, charging user fees which cover the full costs of operation. Because NATS is structured as a joint civil/military partnership with its chief reporting to both the CAA and the Defence Ministry, it has not been considered a candidate for full privatization.¹⁸

Airport control towers in Britain generally are the responsibility of each airport, rather than the CAA. Airports may operate the towers themselves, as does Luton Airport near London, or they can contract with other firms to do this. The two principal competitors for tower operations contracts are NATS and the private firm International Airadio Ltd. (IAL). Controllers working for the private contractors or for the municipal airports that operate their own towers are licensed by the CAA and must meet the same standards as NATS controllers. Both the CAA and IAL operate controller training schools. The CAA regulates safety in control towers. In some cases, it is regulating its own personnel. But because NATS organizationally is a separate division of CAA, that conflict of interest has not been a serious problem in Britain.

Privatization in New Zealand

New Zealand has advanced the British model several steps. In 1987 it spun off its ATC system from the Civil Aviation Division (CAD) of the New

18 "Britain's Civil Aviation Authority," in Carol T. Crawford, "The Federal Aviation Administration and Opportunities for Privatization" (Washington, D.C.: Office of Management & Budget, December 1, 1987).

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Zealand Transport Ministry, creating the independent Airways Corporation. But unlike Britain, where safety regulation remained part of the corporate operation, in New Zealand safety regulatory functions remained with the CAD, at arms-length from the new Airways Corporation. Thus, Airways Corporation employees are supervised by the CAD in the same way as the airlines and airports.

Airways Corporation has a commercial-type board of directors, follows normal business accounting practices, and is expected to support itself from user charges. The New Zealand government holds all of the company's stock, but the sale of some or all of the shares remains a possibility, with airlines, airports, and employees being future possible shareholders. In July 1988 Airways Corporation introduced a new system of user fees, which require payment for ATC services for the first time from some private, corporate, and small commercial operators.

Airports in New Zealand also have become independent corporations. And at the time of Airways Corporation's creation, the airports were allowed to buy control tower and fire-protection services from private vendors. So far, the major airports have contracted with Airways Corporation for control tower operations. Under the new user-pays principles, military aircraft are charged for using civilian ATC services. In fact, at New Zealand's Ohakea Air Force base, all ATC personnel are Airways Corporation employees, providing services under contract.¹⁹

Privatization in Switzerland

Until 1988, ATC in Switzerland for decades has been provided by a non-profit branch of the government-chartered corporation called Radio Schweiz. But because the company's principal function is nonaeronautical telecommunications, there were some concerns that it would not keep pace with the growth of Swiss air traffic. In 1988, therefore, the Swiss government spun off the ATC company and created SwissControl, allowing aviation users to become part owners. Minority owners include the two largest airlines, the two largest airports, air traffic controllers, and general aviation interests.

As the majority owner, the Swiss government names at least six of the eleven members of the company's governing administration committee.

¹⁹ Annual Report 1989, Airways Corporation of New Zealand, Wellington, NZ: Airways Corporation, undated.

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Ownership of the facilities and equipment remains with the government, and the government covers all operating costs out of ATC user charges, as had been the case prior to 1988. Thus, the company bears no entrepreneurial risk.

Two government agencies played a significant role during SwissControl's first two years. The Department of Traffic and Energy appointed the six government members of the administrative committee, while the Office of Civil Aviation (OCA) regulates air safety. In addition, OCA's director served as president of SwissControl's administrative committee, while two of OCA's department heads for infrastructure and legal affairs were appointed as two of the other six committee members. Thus, the conflict of interest involved when the same agency provides both safety regulation and ATC services was built into the initial structure.

Several studies of the first two years of operation noted that user representation, particularly, of the major airlines and airports, provided incentives for efficiency which had been lacking in the previous RadioSchweiz organization. But the conflict between OCA and SwissControl was recognized as a problem. In addition, labor relations has remained a problem area. SwissControl is supposed to guarantee that ATC operations are not interrupted by strikes, lockouts, or other labor disputes, but strikes are not forbidden by law, which means they could still occur. In addition, some political groups have questioned the constitutionality of the government delegating the ATC function to a private organization.²⁰

Europe-wide ATC Privatization

During the past few years, the inadequacies of the European ATC system have been documented by several studies.²¹

The system comprises 22 national ATC entities, operating 42 en-route control centers as well as airport control towers. These systems use different, often incompatible, equipment. And because Greece, and several other countries' tracking equipment is technically primitive, the standards for separation between aircraft under radar control vary from 5 nautical miles

20 "Report on the Inspection of the Federal Office for Civil Aviation," in *Auszug aus dem Bundesblatt*, Number 22, Band 11, June 6, 1989, pp. 354-378 (provided by SwissControl, translated by Harold Weinbock).

21 Two recent studies are "The Crisis of European Air Traffic Control: Costs and solutions," by Germany's Planungsburro Luftraumnutzer, and the ongoing studies by SRI International commissioned by the International Air Transport Association.

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to as much as 60 nautical miles. Inefficient routing, due to extensive areas of restricted airspace, old-fashioned point-to-point navigational techniques, and national boundaries waste an average of 320,000 flight hours per year.²²

Delays due to inadequate ATC capacity, meanwhile, have increased each year during the past decade, and are forecast to get much worse as European air traffic doubles over the next ten to fifteen years. Altogether, the added costs from inefficiency and delays was estimated at \$4.2 billion per year by a 1989 study commissioned by the Association of European Airlines (AEA). A subsequent study by SRI International projected this cost to increase to \$10 billion a year by the turn of the century.²³

To solve the problem, the AEA study calls for a fundamental restructuring of the system and thus rejects partial remedies. The study proposes creation of a single European ATC system, to be managed by a Central Holding Corporation (CHC), a non-profit, public-private company, deriving its revenues from commercial user fees. The user-owned CHC initially would contract with the existing 22 national ATC entities. Over time, however, these entities and their en-route centers would be combined into a smaller number of geographically appropriate centers, independent of national boundaries.

As proposed by the AEA, the CHC would have a board of directors composed of two members from each participating country; one representing the existing national ATC entity, whether public or private, and the other representing the country's airlines. This large board would set overall policy, but would delegate day-to-day management to a small executive board. The CHC would set the system's performance standards, harmonize controller training standards, establish the budget and user charges, raise the needed funds in the capital markets, and direct investments to those points in the system needing it. Member countries would collect the user fees through the existing Eurocontrol organization and turn them over to CHC. This assured revenue stream would be the basis for raising funds in the capital market.

The national ATC entities would operate with budgets set by CHC, hiring and compensating their own staffs on a commercial, non-civil-service basis.

22 *Towards A Single System for Air Traffic Control in Europe* (Brussels: Association of European Airlines, August 1989), p. 18.

23 "Resolving Europe's ATC Tangle," *AviationWeek & Space Technology*, June 25, 1990, p. 9.

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The national ATCs would provide day-to-day management of the en-route centers, purchase equipment not critical to the integrity of the overall ATC system, and propose long-term investment proposals for CHC's approval.

The AEA report stresses that CHC should operate as a normal private-sector company. But because not all smaller European airlines and non-European carriers would be directly represented on its board, and because the ATC system would be a monopoly, the report recommends that CHC be operated on a not-for-profit basis.

The International Air Transport Association issued a report in 1990 reaching similar conclusions, and British Airways endorsed the idea of restructuring ATC as proposed by the AEA. In June 1990 the European Civil Aviation Conference set up a task force to determine how to harmonize the ATC systems of its 25 member countries.

Contract Towers in the United States

The only privatization of ATC functions in the U.S. has been the contracting to the private sector of small, visual-flight-rules (VFR) control tower operations at some two dozen small airports. The first private U.S. control-tower firm, Barton ATC, based in Murfreesboro, Tennessee, began operations in 1969, offering its services to airports unable to obtain an FAA control tower. The 1981 air traffic controllers' strike led FAA to shut down 80 of its smallest (Level I) towers, leading to much dissatisfaction in the affected communities. By 1982, although the FAA had reopened a number of those towers, seven private firms had expanded their operations to seventeen airports.²⁴

The operating cost of the typical contract tower was found to be about one-third that of an FAA tower at a comparable-sized airport. All controllers in the private towers hold FAA licenses.

The existence and cost-effectiveness of the private control towers led Senator Pete Domenici, the New Mexico Republican, to propose legislation amending the Airport and Airway Improvement Act of 1982 to permit the FAA to contract out the operation of ATC facilities. That measure led to creation of the FAA's contract tower program.

An initial 1983 pilot project hired private firms to operate towers in Farmington, New Mexico, and Owensboro, Kentucky. After a 1984 FAA study concluded that contract towers operate at about half the cost of direct

24 John Doherty, "Towering Entrepreneurs," *Reason*, May 1983, pp. 23-29.

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FAA operation, the agency announced a ten-year "Phase II" program that could involve as many as 200 towers. But after awarding only fourteen contracts by 1985, the FAA put the program on hold for several years. Two factors had intervened to cause problems. First, a mid-1980s liability insurance crisis put the cost of premiums at very high levels for certain airports. Second, the Department of Labor ruled that larger contractors would have to pay their controllers the same wages the FAA paid, thereby reducing the potential cost savings from contracting out.²⁵

In 1987, the Phase II program was reactivated, with new national guidelines on insurance and liability protection, and a revised expansion plan. As of January 1, 1990, there were 22 FAA contract towers in addition to several dozen other airports with either city-operated or contractor-operated towers not paid for by FAA. The FAA plans to add seven to ten more towers per year, until all 125 Level I VFR towers are contracted out, as well as some non-FAA towers at small airports.²⁶

There are no plans to expand the program to the 157 larger Level II towers that are equipped for some degree of instrument-flight rules (IFR) operations or to the more complex Level III and Level IV towers.

GUIDELINES FOR A PRIVATIZED ATC SYSTEM

The review of ATC privatization activity reveals several trends:

- 1) All the recent examples of privatization, as well as the proposed European ATC restructuring, are based on direct user payments for ATC services, rather than tax funding.
- 2) All feature a corporate form of organization, in which normal business procedures are followed with respect to personnel and procurement rather than more costly and restrictive government procedures.
- 3) Several feature at least partial user ownership on a nonprofit basis as a way of making certain that the ATC entity serves the needs of users despite its monopoly status.

25 Frank Burnham, "Contract-Tower Program Hurt by Insurance, Funding Shortages," *Airport Services Management*, October 1986, pp. 46-50.

26 "Status of the Low Activity (Level I) VFR Control Tower Program" (Washington, D.C.: Federal Aviation Administration, April 2, 1990).

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Other privatization themes include management of control towers by airport operators and separation of safety regulation from ATC operations.

Unfortunately, many recent proposals for restructuring America's ATC system omit elements common to most of the successful privatized systems.

There is a near-consensus among those who have studied ATC problems that shifting primary responsibility for air traffic control from a government agency, dependent on tax funds and hobbled by civil-service and federal procurement constraints, to a user-funded corporate entity is essential to solving the fundamental structural problems plaguing ATC. Only a few instances of ATC being provided on a for-profit basis have been identified, and these were cases in which airports or national governments have contracted with private firms to provide ATC services for limited periods of time. Since a corporate ATC entity would be a not-for-profit monopoly, there is a strong case for user representation on its governing body, to make sure that the corporation is responsive to the needs of its users.

ATC privatization experience worldwide shows that it is not essential for airport control towers to be part of the same corporate organization that provides ATC services. Such centralization is not required in Britain, New Zealand, or Switzerland, nor will it be part of the planned Central Holding Company in Europe. If spinning off some or all of the control tower responsibilities to airports under common FAA safety certification and regulation makes the resulting restructuring more feasible, then such a provision could be included in any reform plan.

Finally, there are good reasons for taking advantage of the restructuring of ATC services to eliminate the current conflict of interest between safety regulation and ATC operations, as has been done in New Zealand and in parts of Europe. A commercial ATC corporation ought to be regulated at arms length by an independent safety regulator, just as the corporations that manufacture aircraft are so regulated. Likewise, air traffic controllers should be licensed by the FAA as employees of corporate ATC providers, just as pilots and mechanics are licensed.

PRIVATIZING THE AMERICAN ATC SYSTEM

The lessons of private sector involvement in ATC worldwide point clearly to a series of reforms that can make the American ATC system less costly and more efficient. Among them:

- 1) The Secretary of Transportation should accelerate the FAA's current Contract Tower Program.**

The ATC system still is woefully short of fully qualified controllers. Accelerating the current conversion of Level I towers to contract operations

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would bring more private controllers into the ATC system. If some of the 795 FAA controllers now working in Level I towers would not work for the private contractors, they could transfer to other facilities to help relieve current shortages.

2) The Secretary of Transportation should direct the FAA to extend the Contract Tower Program to Level II Towers.

There are 157 Level II control towers, which employ some 1,800 controllers. Were the contract tower program to include these towers, many more FAAC controllers potentially would be made available for transfer to other parts of the ATC system. In addition, operating the more demanding Level II towers would enable the private contractors to develop increased levels of skill and expertise. The private firms would draw on a large pool of trained personnel, primarily current and retired military controllers, as well as some portion of the former Professional Air Traffic Controllers Organization (PATCO) work force.

3) The Secretary of Transportation should permit large airports to own and operate their control towers.

Under the Domenici amendment to the Airport and Airway Improvement Act of 1982, the FAA is permitted to contract with the private sector for the provision of ATC services. Under this authority, the FAA could contract with municipal airport operators to provide the control-tower services at their airports. A number of major airports, such as Chicago's O'Hare International Airport and New York's John F. Kennedy International and LaGuardia National Airports, are seriously short of tower personnel, primarily because the FAA pay scale is too low to attract sufficient people to work in those high-stress positions in cities with a high cost of living. The FAA could pay the airport operators an annual lump sum for tower services, which the airport operators would then supplement with their own funds, for example, from the new passenger facility charges, to permit payment of competitive wages.

4) The national ATC system should be reorganized as a corporate structure.

A far-reaching step toward privatizing the ATC would be to spin off the FAA's ATC operations to a user-funded corporation, regulated at arms-length by a reorganized FAA. Models for such a corporation include Britain's National Air Traffic Services, New Zealand's Airways Corp., and Europe's planned Central Holding Company. In each case, funding comes from direct payments by users for airways use and similar services rather than from indirect user taxes, such as the present federal tax on airline tickets and general aviation gasoline tax.

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A U.S. ATC corporation, too, should be funded on this genuine user-pays basis, a policy endorsed by the Department of Transportation's National Transportation Policy.²⁷

America's ATC needs are too critical to be held hostage to federal budget constraints. Aviation users are willing to pay for a state-of-the-art ATC system; they should be permitted to do so. Those general-aviation users who do not use the system should not be forced to pay for it.

Some form of indirect user tax may be necessary to fund a continued program of airport-improvement grants for small-town and reliever airports. This program should be entirely separate from the ATC system's funding and operations. A commercial ATC corporation should not be in the business of awarding projects to favored congressional districts. This is strictly a governmental function and should remain within the government.

Whether the federal government should own 100 percent of the ATC corporation, as is the case currently with NATS and Airways Corporation of New Zealand, or some smaller percentage as in Switzerland, is a matter for further debate and discussion. But this is a detail, not a fundamental problem. The important priority is to remove this vitally needed commercial service from the stultifying embrace of government.

CONCLUSION

The increased availability and lower costs of flights due to airline deregulation benefits the American consumer greatly. Yet the ATC system, which remains in government hands, has failed to modernize and expand to keep up with the growing number of flights. This causes delays for the flying public and makes accidents more likely.

Subjecting the ATC system to market forces, through contracting or other forms of privatization, can help deal with these problems. Privatizing the air traffic control system means a rapid increase of qualified air traffic controllers to relieve today's critical shortage. There would also be a much-improved ability to finance and carry out the large-scale technological modernization which the FAA has failed to accomplish, at great cost, wasting millions of taxpayer dollars. These changes would lead to a major reduction in air travel delays and to significant improvements in the margins of air safety.

²⁷ *Moving America: New Directions, New Opportunities* (Washington, D.C.: U.S. Department of Transportation, February 1990), p. 56.

Chapter 5

New Strategies for Financing Water Clean-Up in the 1990s

Stephen Moore

Local governments soon could find themselves unable to provide cost-effective and efficient treatment and cleaning of wastewater before it is returned to America's lakes and rivers. State and local governments, under tight budget constraints, will be hard-pressed to find funds to construct necessary wastewater treatment facilities. To provide even minimal service, according to the latest estimates by the Environmental Protection Agency (EPA), the monthly water bills of millions of American homeowners could double over the next ten years.¹ These rate hikes are a result of a combination of factors: tougher clean water standards, a surge in commercial and residential development in many regions of the country, and the growing obsolescence and disrepair of existing municipal wastewater treatment plants.

These cost increases are coming at a time when the federal government is ending its twenty-year, \$55 billion program to subsidize construction of local wastewater treatment facilities. Funding is scheduled to be eliminated completely after 1994.

¹ Environmental Protection Agency, "A Preliminary Analysis of the Public Costs of Environmental Protection: 1981-2000," May 1990.

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This federal funding, in fact, has caused many of the current problems. Thus, its withdrawal is long overdue. The Congressional Budget Office, the General Accounting Office, and the 1982 President's Private Sector Survey on Cost Control, also known as the Grace Commission, as well as independent investigators consistently have criticized the grants program for promoting grossly inefficient investment in new plants. The federal government's "worst first" policy rewards the most irresponsible municipal polluters with large federal checks. Further, as federal grants have increased, local spending on water cleanup has been reduced. There has been little net increase in funds for wastewater treatment. The lure of "free" federal dollars, however, combined with the lengthy procedures necessary to obtain them, has delayed considerably proper sewage treatment. Many environmental groups, including the American Clean Water Association, an organization of public and private wastewater treatment enterprises, and the National Commission on Water Quality, a private environmental organization that monitors water quality, have applauded the reduction of subsidies as in the best interest of environmental protection.²

Nonetheless, this scheduled termination of federal subsidies could impose new fiscal strains on America's local governments, many of which already are squeezed by federally mandated spending and face their own budget deficits. The EPA calculates that \$83.5 billion in outlays are required for capital improvements just to bring all municipal sewage plants into compliance with existing minimum federal clean water standards.³ Cities and counties will be hard-pressed to raise even a significant fraction of these needed funds without the aid of innovative financing approaches.

In the face of this funding crisis, privatization of municipal wastewater treatment plants offers an attractive financing alternative for many local governments: Privatization involves the private ownership and/or operation of a community's wastewater treatment plant. Homeowners pay the private firm for the service through their monthly water bill, with rates typically regulated by the local government.

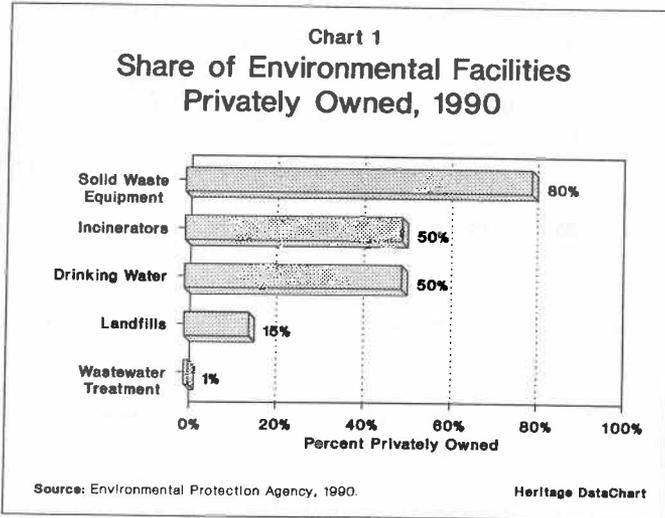
Privatization saves local governments money by relieving them of the burden of raising millions of dollars in start-up capital in the bond market for constructing a new public facility. Private management can reduce plant

2 See, for example, Larry Silverman, "Buckling Pipes," *The New York Times*, November 14, 1983, editorial page.

3 EPA, 1990, p. 3.

New Strategies for Water Clean-Up

operating costs. Mount Vernon, Illinois, for example, which has become a privatization showcase, will cut its costs by 30 percent, or \$3 million, over twenty years. The private owners had the facility operational in 1988, two years sooner than would have been the case under municipal ownership. This ensured timely compliance with federal clean water standards and opened new opportunities for commercial development. These favorable results have been duplicated in the handful of other pioneering cities.⁴



Wastewater treatment privatization, however, remains rare in the United States. Chart 1 compares the percentage of various environmental services that are supplied privately in U.S. cities. Although over half of solid waste collection, incinerators, and drinking water facilities are privately provided, more than 99 percent of facilities treating wastewater before it is dumped back into lakes and rivers are municipally owned and operated. Incredibly, more than 16,000 communities are serviced by private drinking water facilities while fewer than two dozen have private wastewater plants. There are 150 publicly owned wastewater facilities operated under contract by

4 Average cost savings for contracting out wastewater treatment plants have been estimated at between 20 percent and 50 percent. See, Steve H. Hanke, "Privatization: Theory, Evidence, and Implementation," in C. Lowell Harris, ed. *Control of Federal Spending* (New York: The Academy of Political Science, 1985).

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private firms. Some critics allege that the private sector cannot be entrusted with wastewater treatment, which affects the public safety. Yet, drinking water plays a far more direct role in maintaining public health and safety than does wastewater treatment.

In the area of wastewater treatment, the federal government historically has steered cities away from innovative private sector alternatives. Federal funding of local government construction of wastewater facilities has made it nearly impossible for the private sector to compete. Restrictive federal as well as state regulatory policies meanwhile have served as de facto prohibitions against privatization. And federal tax code changes in 1986 discriminate against private providers to the advantage of public ownership and operation of sewage plants.

To meet the clean water funding challenges, federal, state, and local governments must adopt new policies that encourage rather than punish private sector investment. Six steps should form the pillars of this new financing strategy:

- 1)End all federal wastewater treatment construction subsidies as scheduled.**
- 2)Continue the EPA's successful Public-Private Partnership Program.**
- 3)Eliminate federal grant and State Revolving Fund (SRF) loan regulations that inflate wastewater treatment construction costs.**
- 4)Revise federal regulations that restrict private ownership of facilities that have received federal funds.**
- 5)Change the law to allow private firms to compete with the public sector in the wastewater treatment area.**
- 6)Allow states to experiment with innovative wastewater permitting schemes that would reduce water pollution and lower compliance cost.**

New Strategies for Water Clean-Up

Over the next decade, the realities of new government budget constraints on the one hand and the public's demand for stepped up environmental protection on the other appear to be on an unavoidable collision course. In no area is this more evident than in wastewater treatment.⁵

A significant portion of the expenditures needed in the nation's multi-billion dollar water clean-up campaign can come from the private sector, which is ready and able to enter this market. This will not occur, however, until lawmakers and water administrators begin to recognize the private sector as a partner, rather than a competitor, in the national effort to eliminate water pollution.

RE-ASSESSING THE FEDERAL ROLE IN WASTEWATER TREATMENT

Massive federal involvement in local wastewater treatment efforts began with the 1972 Clean Water Act, which sought to "restore and maintain the chemical, physical, and biological integrity of the nation's waters." To hasten local compliance with new, ambitious clean water standards, the 1972 Act authorized federal funding for most of the cost of building new local wastewater facilities. To date more than \$50 billion has been spent helping to build over 5,500 sewage plants serving some 94 million Americans.⁶ The annual level of this federal aid peaked in 1976 at roughly \$9 billion. Federal funding in fiscal 1991 is \$2.3 billion.

Federal funding had been scheduled to end in 1992, but Congress in 1987 approved the Clean Water Act Authorization bill, extending wastewater construction funding through 1994. After that year, all forms of federal subsidies will be terminated. As of 1990, the bill replaced all traditional construction grants with federal contributions to state-run revolving loan funds for wastewater treatment programs. Each state would use its revolving fund as a line of credit, to direct funds to specific projects. As the loans are repaid by the appropriate enterprises or agencies, the money would be directed to meet other wastewater needs.

5 For more details of this conflict, see: Jerry Taylor, "Meeting the Challenge of Water Pollution: State Wastewater Recycling Strategies for the 1990s," American Legislative Exchange Council, *Issue Analysis*, 1990.

6 Ralph Sullivan, "EPA and Municipal Wastewater Treatment: 1972-1987," Environmental Protection Agency, 1987.

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Many of the state and local groups that endorsed the 1987 Act now are urging Congress to renege on the agreement by extending and even raising spending levels for the program.⁷ Yet virtually all of the evidence suggests that for environmental and economic reasons, federal wastewater construction grants should be abolished.

Federal spending on wastewater treatment has increased the amount of total funds going into these programs only marginally. In most cases, more federal dollars have been offset by an almost dollar-for-dollar reduction in local spending on water pollution control. According to Congressional Budget Office (CBO) figures, local capital spending in 1984 dollars for wastewater treatment peaked at \$5 billion in 1972, the year before federal construction grants began. As federal funding increased over the following eleven years, real local capital spending fell to \$1 billion per year.⁸ Research by economists James Jondrow and Robert Levy published in 1984 in the *American Economic Review* revealed that for every dollar of federal spending on wastewater treatment, cities slashed their own outlays by 70 cents.⁹

This shift in spending on wastewater treatment to federal taxpayers has also led to higher construction costs. Until 1985 the federal government reimbursed cities for up to 75 percent of the cost of building a sewage treatment plant. The CBO reports that when cities paid only 25 percent of construction costs for federally funded wastewater projects, total costs were at least 30 percent higher than when local governments paid the costs entirely themselves.¹⁰ Similarly, the General Accounting Office has reported that because many cities paid such a small share of the cost, they built expensive facilities with far greater capacity than their communities ever could need.¹¹ This has come back to haunt many cities: They now are saddled with massive operating expenses.

7 "EPA Raises Cost of Upgrading Sewage Facilities," *The Washington Post*, February 15, 1990.

8 Congressional Budget Office, "Efficient Investment in Wastewater Treatment Plants," June 1985, pp. 4-5.

9 James Jondrow and Robert A. Levy, "The Displacement of Local Spending for Pollution Control by Federal Construction Grants," *The American Economic Review*, May 1984, pp. 174-8.

10 CBO, 1985.

11 General Accounting Office, "Costly Wastewater Plants Fail to Perform As Expected," 1980.

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The environmental consequences of the two-decade-old federal grants program are troubling. In 1981 an estimated 90 percent of the plants built with federal funds failed to meet national effluent, that is, clean water, standards.¹² Performance problems at these plants continue. There is an average of one major accident causing raw sewage to be dumped into a lake or river at each wastewater plant every year. Furthermore, the CBO reported in 1985 that the grants program actually may have slowed water clean-up because it “has created a system in which localities line up and wait for federal assistance” — a practice that delays construction of wastewater facilities and thus delays local compliance with national effluent standards. Concludes the CBO: “While communities wait for federal subsidies, their wastewater discharges remain in violation of Clean Water Act mandates and the quality of local rivers and streams shows little improvement.”¹³

FEDERAL PARTICIPATION IN STATE REVOLVING LOAN FUNDS

Recognizing many of the problems with the existing system, Congress passed the Water Quality Act of 1987 to terminate direct funding grants for wastewater treatment in 1990 and created in their place state construction revolving funds (SRFs). Under this planned temporary program, federal funds are added each year to accounts, usually with state funds included, to provide seed money for wastewater facilities. Communities may take out low interest twenty-year loans from a state SRF and use the money to build or improve a sewage plant. As local governments repay these loans to the state, the repayment money is used to finance future loans, thus perpetually recycling the original federal and state loan start-up funds. In 1994, federal contributions are scheduled to expire. The states then presumably will have enough cash in the SRF to keep the program self-financing.¹⁴

By all accounts the SRF program is a significant improvement over the construction grants program for several reasons. First, states and cities have much freedom over how to spend the funds; localities thus can tailor facilities better to meet particular local needs. Second, because the funds

12 "Rebuilding Our Infrastructure," in Randall FitzGerald, ed., *When Government Goes Private* (New York: Pacific Research Institute for Public Policy, 1988).

13 CBO, 1985.

14 A comprehensive review of the new state revolving loan program is contained in: Beth L. Starr, *Funding Wastewater Treatment Facilities: The Complete Guide to the New State Revolving Fund Program*, Bureau of National Affairs, 1988.

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must be repaid and are not “free,” the former incentive for wasteful investments and “gold-plated” facilities is largely averted. Finally, because of the repayment feature of the SRF program, state and federal contributions can fund far more projects than could be assisted with the same level of dollar assistance under the grants program. The CBO estimates that roughly \$60 billion in new plants can be built through the year 2000 if the states and the federal government each put \$2.4 billion into the SRF accounts for five years.¹⁵

The SRF program, however, suffers from several defects. One is that federal mandates and regulations apply to all projects financed with the first round of loans from SRF pools, just as they apply to grants. Cities receiving SRF loans must comply with sixteen federal requirements carried over from the old construction grants program, plus 22 other federal statutes and orders. These include some of the most burdensome forms of federal red tape; high wages mandated by the 1931 Davis-Bacon Act, the Age Discrimination In Employment Act of 1967, the Endangered Species Act of 1973, and the Wild and Scenic Rivers Act of 1968, and requirements that special consideration be given to women and minority owned contractors.¹⁶ Altogether, these regulatory strings typically inflate construction wastewater plant costs by 30 percent to 50 percent according to several studies.¹⁷

As a result, city managers and local water administrators are beginning to question whether these low interest loans are much of a bargain. Roberta Savage of the Association of State and Interstate Water Pollution Control Administrators maintains that “The combination of all these social goals is weighing this program down in such a way as to be unattractive to state and local government officials, which may force a decision not to participate.”¹⁸ Mayors have complained that the grants do not save the cities money because of delays, regulations, and the lack of flexibility. Speaking off the record, a New Jersey mayor whose city recently turned down an SRF, said that “We found that in the long run the SRF program doesn’t save you anything because there is no flexibility.”¹⁹

15 Congressional Budget Office, “The Federal Budget for Public Works Infrastructure,” July 1985, p. 64.

16 A list of these regulations is contained in Starr, *op. cit.*, pp. 15-17.

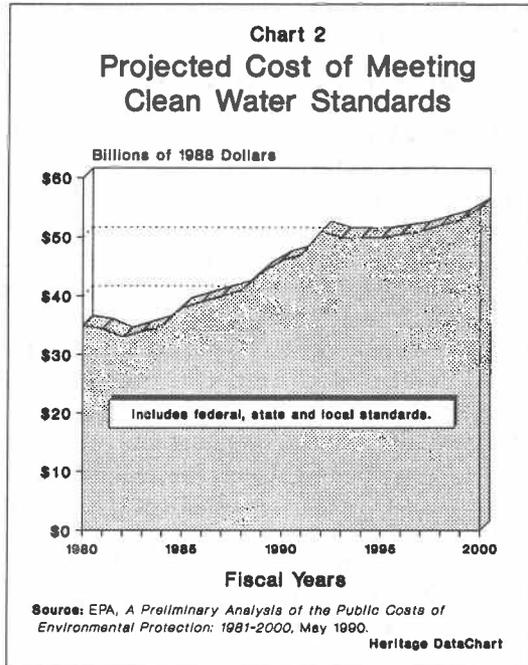
17 The Davis-Bacon Act alone has been estimated by several sources to add roughly 30 percent to federal construction projects.

18 As quoted in Taylor, *op. cit.*

WASTEWATER TREATMENT FUNDING IN THE 1990S

Local governments will face growing financial difficulties in the 1990s as they attempt to provide adequate wastewater treatment. There are several reasons for these cost escalations. One is that clean water standards are becoming more stringent as a more affluent America continues to place a higher premium on environmental protection. Chart 2 shows the most recent EPA projections for the cost of complying with federally mandated clean water statutes through the year 2000. By the end of this century the cost will be \$21 billion per year, roughly 25 percent higher in constant dollars than spending this year. The EPA estimates that this alone accounts for roughly \$2.6 billion per year in added expenses through the year 2000.²⁰

Another reason for escalating costs is the rapid expansion in residential development in large metropolitan areas like Los Angeles, Seattle, Tampa, and in smaller cities. This strains the capacity of existing capital infrastructure. According to the EPA, for instance, some \$83.5 billion will have been spent simply to bring wastewater plants up to existing standards to meet increased water treatment demand.



¹⁹ *Public Works Financing*, January 1989, p. 5.

²⁰ EPA, 1990.

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Finally, many of the sewage plants built at the start of the federal grants program two decades ago are nearing the end of their useful life, thus requiring a new large infusion of capital funds for renovation and expansion.

The implications of these rising cost trends for local governments are clear. With the withdrawal of federal funding by 1994, according to the EPA, local governments will be forced to appropriate \$6.7 billion per year above what is now being spent on wastewater treatment. For homeowners, this translates into average water bills rising by 50 percent to 100 percent in the absence of new funding sources.

THE PRIVATIZATION OPTION VS. FEDERAL RESTRICTIONS

Wastewater treatment privatization refers to the participation of private firms in the financing, design, construction, operation, and/or ownership of a sewage treatment facility. In some 150 municipalities, publicly owned wastewater treatment plants are operated under contract by private firms. Even without private ownership, this approach can save money. For example, Fort Dodge, Iowa, reports that it has reduced its water treatment bills by \$1.4 million a year through contracting out the entire operation and management of its sewage facility, a 40 percent drop in its costs.²¹

The most ambitious form of wastewater privatization is outright private ownership of a facility. Under this arrangement, a private firm agrees to finance, build, own and operate a new sewage plant under contract to the local government at regulated or guaranteed rates. In the mid-1980s Auburn, Alabama, and Chandler, Arizona, opted for privatization. The results have been impressive. Auburn, for example, made a 25-year deal with a private owner that is saving the city an impressive \$25 million over previous water costs or around \$1 million per year.²² Chandler will save \$1 million on a \$23 million operation over the life of the facility.

21 According to Fort Dodge Mayor Richard Nielson, prior to contracting out: "When a storm hit, sewage literally flowed across the parking lot of the sewer plant down to the river." These accidents have been stopped through contracting out. See, "Fort Dodge Follows Sioux City Lead By Cutting Costs with Private Sewers," *Des Moines Register*, October 7, 1984, p. 31.

22 "Privatization of Wastewater Treatment: Auburn, Alabama, *Privatization Review*, Fall 1985, pp. 38-47.

FEDERAL TAX DISCRIMINATION

The 1986 Tax Reform Act imposes substantial tax penalties against privately owned wastewater facilities. First, the Act severely restricts the use by local governments of tax-exempt bonds for privately owned facilities. Second, the Act eliminates accelerated depreciation allowances for private environmental facilities. Third, the act abolishes the 10 percent investment tax credit for these projects. Since local governments do not pay taxes, the elimination of these tax incentives in effect raises the costs of privately owned wastewater treatment plants relative to the costs of using tax-exempt public facilities. These tax changes were meant to eliminate such local government abuses as using tax-exempt industrial development bonds to build private hotels and sports stadiums. But according to a 1987 report by the Private Sector Advisory Panel on Infrastructure Financing, a state-appointed task force of distinguished public and private officials, there were legitimate public purposes that had been served by the tax exemption, such as hospitals and prisons. The panel argues that the 1986 Act “greatly constrains state and local autonomy and threatens the loss of financing for projects whose function is clearly to serve the general public.”²³

The biggest obstacle to private facilities is the explicit federal government prohibition of privatization when federal funds are involved. Any wastewater treatment project that has received even a dollar of federal funding support thus must be publicly owned. This is decreed by OMB Circular A-102, a presidential directive issued in 1977. It prohibits mixing federal government and private sector funds for capital infrastructure projects, not only at the time the facilities are built, but for their useful life. The intent of this requirement is to protect the federal taxpayer’s investment in infrastructure from fraudulent private uses. In practice the ban on mixing private and federal funds for infrastructure projects has the effect of locking out private investment in environmental cleanup altogether.

Federal regulations also hinder private sector assistance to wastewater treatment plants that were originally built with partial federal funds, but which now are in need of renovation, expansion, or modernization. Since these plants have a useful life of two to three decades, in the next decade thousands of communities with facilities built in the early 1970s will begin investigating how to finance necessary capital improvements. Current

²³ Private Sector Advisory Panel on Infrastructure Financing, EPA White Paper, 1987. See also *Congressional Record*, April 5, 1989, pp. S3354-3357.

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federal rules prohibit private investment for such capital improvements unless the private firm reimburses the federal government the full amount of the original federal grant or loan. This is a considerable disincentive for privatization because after twenty years the market value of the existing plant has substantially depreciated from the amount of the original federal investment.

Some states have experimented with different practices and conditions allowed under government-issued permits for wastewater treatment that have improved substantially the cost-efficiency of wastewater clean-up. Yet in many cases these promising innovations have been stifled by federal regulatory barriers.

One useful practice, called seasonal permitting, recognizes that anti-pollution standards often need to be more stringent in summer when stream flows are low and temperatures high, but less stringent in winter. Seasonal permitting can improve the cost-effectiveness of anti-pollution efforts by allowing municipalities and industries to vary their sewage discharge flows by season. A 1985 study by the North Carolina Water Resources Research Institute estimates this could save North Carolina towns and industry about \$3 million annually.²⁴

Another cost-efficient reform which should be allowed and encouraged by the EPA is interplant trading permits. These permits reward municipalities for reducing water pollution levels below the minimum required standards. Permit trading allows two or more communities using the same water resources to meet jointly the permissible level of pollution discharged into a shared lake or stream. Under this system, municipal water users decide among themselves how to meet these standards at the lowest cost. In this way, municipalities with high-cost wastewater plants can purchase additional discharge rights from communities with low-cost plants, who would agree to clean their sewage beyond the minimum standards. The Congressional Budget Office has found this to be a cost-effective way for a group of communities to maintain the overall cleanliness of streams and lakes while cutting monthly water bills.

Most permitting schemes are outlawed under current federal regulations. But where they have been tested, results have been favorable.²⁵ According

24 North Carolina Water Resources Research Institute, "Benefits and Costs of Seasonal Effluent Limits in North Carolina," Raleigh, North Carolina, 1985.

25 Congressional Budget Office, "Environmental Regulations and Economic Efficiency,"

to a Congressional Budget Office investigation of community wastewater treatment programs: "Results of permit innovations vary, but they usually provide net cost savings for dischargers, compliance with minimal standards, and maintenance of water quality standards consistent with anticipated stream use."²⁶

WASTEWATER PRIVATIZATION IN PRACTICE

Even with substantial regulatory and tax handicaps, wastewater privatization is continuing to emerge as an alternative financing technique, though at a slower pace than during the period immediately preceding the 1986 tax code changes. In the past three years, several private wastewater treatment plants have been completed. Noteworthy examples include:

Hamilton Lakes, Illinois. Perhaps America's most innovative wastewater privatization experiment is at Hamilton Lakes, a private 270-acre development west of Chicago. The development brought on line one of the nation's first wastewater recycling plants using entirely private financing. The facility was built in six months; typically it has taken seven years for other Illinois towns to apply for a federal grant, receive federal funding, and build the facility. The cost was roughly 30 percent below that of public construction. Unlike at the public plants, treated sewage at the Hamilton Lakes facility is not dumped back into a lake or stream. Rather, it is treated, disinfected in air-filtered reservoirs and then used for irrigation and other commercial purposes. According to Jack Sheaffer, formerly of the EPA and the developer of what he calls the Land Treatment Technology at Hamilton Lakes, "It is far more efficient and environmentally sound to use wastewater as a resource rather than to try to dispose of it."²⁷ Some fifty other private developments now use this recycling system.

March 1985.

26 Congressional Budget Office, "Efficient Investments in Wastewater Treatment Plants," 1985.

27 Stephen Moore, "Converting Wastewater into a Resource Through Privatization," *Privatization Watch*, Reason Foundation, February 1990.

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Mount Vernon, Illinois. Mount Vernon, a small coal town in southern Illinois, was the first city to adopt privatization after the 1986 tax changes. In 1987 the Environmental Management Corp., a private firm, agreed to construct a plant with a guarantee to the city of twenty years of operation at a total price \$3 million below the lowest cost public-ownership option. The plant was built in less than a year, or about one third the turn-around time for a typical public plant. Prior to privatization, commercial development in the city had come to a standstill as a result of a moratorium on new sewer connections at the old, low-capacity plant. According to City Manager James Bassett, since the new private plant began operations, the city has attracted \$300 million of new business and industrial development projects.²⁸

Edgewater, New Jersey. In 1988 Edgewater contracted with a private firm, Lotepro, Inc., to build a six million gallons-per-day secondary wastewater facility for \$9.9 million, or \$6 million less than the pricetag for design and construction of a similar plant using EPA funds. As with Mount Vernon, a primary reason city officials opted for the fast-track privatization alternative rather than awaiting an EPA loan was that real estate development in the fast-growing town had bumped up against sewer connection bans. Now 2,100 new homes and businesses have been connected to the new private system. Mayor Bryan Christianson boasts that with privatization, the facility was completed on time and on budget.²⁹

These case studies highlight four primary advantages to wastewater treatment privatization:

- ◆ It reduces the local government's up-front capital expenditures for building a new facility, thus freeing municipal funds for other purposes;
- ◆ It lowers operating expenses because of the superior expertise and specialization of private firms;

²⁸ *Public Works Financing*, 1989.

²⁹ *Ibid.*; and "Public-Private Partnerships for Environmental Services: Anatomy, Incentives and Impediments," Apogee Research, Inc., report prepared for the U.S. EPA Office of the Comptroller, Bethesda, Maryland, October 1988.

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- ◆ It protects the environment by bringing cities into compliance with national water standards sooner and by permitting more rapid adoption of new, less expensive environmental technologies, such as the Land Treatment recycling process;
- ◆ It enables rapid project completion of wastewater treatment plants, because private owners can bypass costly and burdensome regulatory requirements imposed by state and federal governments.

PRIVATIZATION STRATEGIES FOR THE 1990S

Although direct federal participation in financing wastewater treatment plants will expire in 1994, Washington will continue to play a critical role in determining the future direction of state and local wastewater treatment programs and the extent to which privatization can occur. The federal government will continue to influence local spending priorities through regulatory policies, changes in the federal tax code, and the EPA's educational and advisory support to states and cities. To encourage privatization and other cost-efficient strategies in local wastewater spending, the federal government should take the following steps:

1) End all federal wastewater treatment construction subsidies as scheduled.

State and local water administrators are pressuring Congress to extend federal funding for local wastewater treatment programs for a fourth time. This would be a mistake. The evidence clearly shows that these subsidies have raised sewage treatment costs, encouraged inefficient spending decisions, thwarted local flexibility and innovation in meeting clean water standards, and actually delayed the construction and operation of much-needed facilities. By requiring the locality to pay only a small portion of the true cost of publicly constructed projects, the subsidies have also priced private firms out of the market, even in cases when the private sector is capable of financing and constructing lower cost facilities. From the perspective of environmental protection these programs have had the perverse effect of shifting the burden of paying for water clean-up from the shoulders of polluters to the shoulders of federal taxpayers by shifting the compliance costs from local sources to the national EPA. This has encouraged wasteful usage of America's water resources.

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2) Continue the EPA's successful Public-Private Partnership Program.

In 1988 the EPA launched its Public-Private Partnership program (P3) with the goals of "increasing private investment in providing environmental services and eliminating barriers and developing incentives for alternative financing techniques."³⁰ The low-cost program raises local awareness of and interest in privatization. It holds conferences to encourage private provision of environmental services funding demonstration projects involving privatization, publishes "how to" materials for local officials, and has established a public-private Financial Advisory Board to investigate barriers to privatization. This educational and advisory role of EPA's P3 program is an appropriate and effective way to stimulate privatization initiatives at the local level.

3) Eliminate federal grant and State Revolving Fund (SRF) loan regulations that inflate wastewater treatment construction costs.

The goal of public funding for wastewater treatment construction should be to ensure clean water, not to promote unrelated social policy goals. Currently localities receiving federal grant or SRF loan funds during the first round of loan pool funding must comply with nearly forty separate regulations ranging from Davis-Bacon wage requirements to wetlands preservation laws. Each of these has nothing to do with ensuring clean water but substantially raises construction costs and thus impedes environmental protection.

4) Revise federal regulations that restrict private ownership of facilities that have received federal funds.

Federal programs should leverage limited federal dollars to attract increased private sector dollars. The best way to do this is for EPA to seek a waiver to OMB Circular A-102. This regulation requires government ownership of wastewater treatment facilities receiving federal money. This has been interpreted by federal regulators to mean that a facility must be 100 percent government-owned, that there can be no intermingling of government and private funds. The rationale for this waiver is that since federal taxpayer support is ending, local governments that have received

30 For details of the (P3) program, see, Environmental Protection Agency, "Public-Private Partnerships," Office of Administration and Resource Management, 1990.

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federal subsidies in the past should now be free to meet federal clean water standards in whatever way they deem most economical. The optimal way to protect the past federal investment in the wastewater area is to enforce strictly clean water standards and to levy fines against cities not in compliance. Whether cities comply by treating their water through publicly or privately owned plants is immaterial to the public policy objective these funds were meant to achieve.

If a broad waiver is not issued soon, then the EPA should revise its interpretation of “public ownership” requirement. In the past, based on OMB Circular A-102, the EPA has defined public ownership as meaning 100 percent government-owned. If public ownership were interpreted to mean “majority public ownership,” this would open opportunities for creative public-private partnerships in wastewater treatment. Example: the private sector might take a minority ownership interest in a facility and assume the responsibility for construction and management; in return, the private investor could receive regular payments by the locality for its equity interest. This might reduce substantially public capital expenditure requirements for new infrastructure projects in the future.

EPA should investigate other methods for allowing cities to comply with the spirit of the public ownership requirement without stifling private investment. One approach would be to allow any city receiving a federal grant or SRF loan funds to use these dollars to make lease-purchase payments to the private owner of a wastewater facility so that after twenty to thirty years the local government would take over ownership of the plant. A second approach would be to allow cities serviced by new private wastewater plants to receive grant or loan funds to be placed in an interest-bearing escrow account for twenty years. At the end of this period, the city could tap this account to purchase the private facility.

The EPA also should require that the private firm reimburse the federal government only the “fair market value” when purchasing a publicly owned wastewater facility that originally was built with federal funds. Currently the EPA requires reimbursement for the total amount of the original federal investment without any allowance for the depreciation of the asset. This change would rejuvenate private interest in financing improvements in wastewater facilities.

5) Change the law to allow private firms to compete with the public sector in the wastewater treatment area.

The current tax code gives substantial tax advantages to public over private ownership of wastewater treatment facilities. Examples: local

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governments can issue tax-exempt bonds while private owners are restricted in their ability to do so; the public sector does not pay property taxes and other land taxes, though the private owner does; and private owners pay corporate income taxes on any return they make on their investment.

To reduce these inequities private industry has urged Congress to consider restoring tax-exempt bond financing for privately owned environmental facilities that serve a public purpose. This tax exemption originally was eliminated in 1986. Lawmakers felt that local governments were abusing the exemption, using it, for example, to help finance private hotels and sports stadiums. A reinstated exemption might explicitly exclude such projects.

One cost-effective way of financing private wastewater treatment facilities is by reinstating the accelerated depreciation allowances for privately owned public-use capital infrastructure. Senator Pete Domenici, the New Mexico Republican, and a supporter of this approach, explains that "The cost recovery periods for sewage treatment facilities and water supply facilities have been made so long by the Tax Reform Act that the private investment option is virtually foreclosed."³¹ Reinstating the construction Investment Tax Credit for private wastewater treatment plants would promote investment in physical infrastructure in general and would be a low-cost method of attracting substantial increases of private financial investment into the wastewater treatment area.

6) Allow states to experiment with innovative wastewater permitting schemes that would reduce water pollution and lower compliance costs.

Such practices as allowing sewage discharge flows to vary based on seasonal conditions or the trading of discharge permits between municipalities or industries can meet local clean water standards at less cost. Congress and the EPA should allow these practices with effective monitoring to avoid abuses.

CONCLUSION

The combination of a more environment-conscious public, state and local government fiscal strains, steep reductions in federal subsidies, and huge spending requirements to keep the nation's rivers and lakes pollution-free

31 *Congressional Record*, April 5, 1989, pp. 3354-3355.

New Strategies for Water Clean-Up

promises to make privatization an increasingly attractive alternative in the 1990s. Local governments will need to improve services at less cost. This means they will have to seek more efficient means of treating wastewater. Out of fiscal necessity, local governments increasingly will turn to private financing options of wastewater treatment. The alternative for many growing communities may be huge boosts in monthly water bills, probably igniting voter outrage.

In anticipation of this impending fiscal squeeze, local officials already have begun to bemoan shrinking federal subsidies for new local wastewater treatment facilities. Their anger is misdirected. Past experience has demonstrated that “free” federal dollars have arrived only at a huge cost to the communities they supposedly assist, ultimately catching them in a web of costly federal regulations and smothering all local innovation.

What is needed from Washington is not more money but immediate reformulations of outdated federal environmental policies that virtually have shut out the private sector from the wastewater treatment area. The federal government must conduct a comprehensive review of its regulatory, tax, and subsidy structures in the wastewater area and devise new strategies to encourage rather than punish privatization and other economical low-cost financing options. It must recognize what dozens of pioneering cities have learned: wastewater treatment privatization can be mutually favorable to the taxpayer and the environment.



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Chapter 6

How the Free Market Can Clean Up America's Solid Waste Mess

Lynn Scarlett

Out of sight, out of mind. Until the mid-1980s, this had been the predominant attitude of most Americans toward their garbage. By 1989 this had changed. The problem? Existing landfills are reaching their capacity. New landfill capacity is not coming on line to meet continued solid waste disposal needs. And states and localities seeking to site facilities face political obstacles—the not-in-my-backyard or NIMBY syndrome. This, in turn, has fostered a parochialism, with states unwilling to accept outside garbage.

These problems with solid waste disposal coincide with the mounting interest in environmental issues. In 1989 alone, for example, over 125 laws on recycling were enacted in 38 states and the District of Columbia. In addition, some cities and states have sought to ban plastic fast food containers, disposable diapers, and other products that they believe harmful to the environment. Federal legislators, too, have begun focusing on solid waste management, gradually tackling issues once left to local policy makers. And the Environmental Protection Agency (EPA) is formulating new, strict regulations for landfill operations, and resource recovery and incineration facilities as well as establishing recycling requirements.

Yet many of the proposed and recently enacted laws and regulations at all levels of government impose significant and unnecessary costs on consumers and industry without promising real benefits. In some instances,

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these policies do little to improve overall resource conservation or to ease solid waste disposal problems. And in other instances, the new policies actually are counterproductive, exacerbating the solid waste problem and wasting some scarce resources.

In many cases, proposed solid waste policies are based on a misunderstanding of the nature of the problem. Despite the contention of some critics, for example, the current problem is not fundamentally the result of wasteful consumption and production patterns. American patterns of consumption and production, in fact, do not differ strikingly from other societies with comparable income levels and resource availability. Americans are not exceptionally wasteful. Nor is the problem the result of a lack of land space suitable for landfill sites. There is plenty of room in America for additional landfills. America is in fact one of the least densely populated of all industrialized countries. Gonzaga University Professor A. Clark Wiseman in a report prepared for Resources for the Future, a Washington, D.C.-based group that researches the economics of natural resources, calculates that all of America's trash for the next 1,000 years could fit in a landfill 44 miles square and 120 feet deep—totalling less than 0.1 percent of the land space of the continental United States.¹

The problem results largely from past and current government policies. Many municipalities and counties, for example, charge low fees for garbage collection, often below the real costs of collecting and disposing of the waste. Trash cans are put out during the day, the trash is collected, and no direct fee is paid for the service. The citizen sees no clear relationship between the service provided and the price paid. Government subsidized garbage collection and disposal distorts signals to individual garbage “producers,” giving them little incentive to recycle, change buying habits, compost yard waste, or reduce their disposal costs in other ways.

Federal, state, and local governments are seeking solutions to current solid waste problems. Yet it is these very governments that have created many of the difficulties that stand in the way of solutions. Local governments, responding to public sentiment, often effectively prohibit the creation of new landfills. Local laws requiring that certain materials be recycled, while well-meaning, often cost communities more and do little to clean up the environment. States then attempt to restrict or ban the disposal of solid

¹ A. Clark Wiseman, “U.S. Wastepaper Recycling Policies: Issues and Effects” (Washington, D.C.: Resources for the Future, 1990), p. 2.

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waste from other states. Further, state and local governments often fail to recognize the private sector as a cost-effective alternative to public collection and disposal systems.

Since solid waste disposal is basically a state and local matter, and since any solution must be tailored to the various local conditions, most federal involvement tends to make collection and disposal more costly and less efficient. Proposals to ban certain products would do little or nothing to ease the solid waste disposal problems. Mandating the use of biodegradable materials usually makes no contribution to a cleaner environment since, for public health reasons, most landfills are sealed nearly air-tight so that virtually all material degrades very slowly, if at all.

Solid waste management policy does deserve attention. It is necessary to remove government incentives that encourage waste and to ensure that waste disposal does not pose health hazards. Moreover, it is important to consider the relative costs, implementation constraints, and anticipated benefits of different solid waste disposal solutions.

The Federal Role. Though there is no main federal role for solid waste policy, Washington could help deal with the waste disposal problem in several ways, including:

- 1) Develop environmental, health and safety standards for waste disposal facilities;**
- 2) Develop federal guidelines to facilitate interstate transport of solid waste;**
- 3) Revise federal government procurement policies to encourage the use of products made from recyclable materials.**

The State Role. State and local governments can do a number of things to promote the safe and efficient disposal of solid waste. Among these steps:

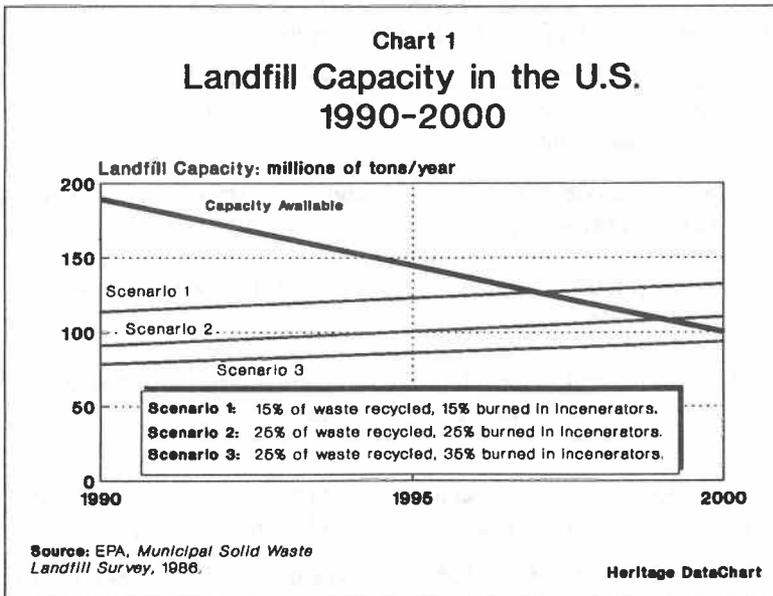
- 1) States should ensure that solid waste disposal facilities pose no health and safety hazards.**
- 2) States should eliminate public utility style rate regulation of solid waste disposal services, which limits the ability of service providers to charge market prices and expand services.**

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- 3) States should require local governments to use full cost accounting for solid waste services, including collection operations and solid waste disposal.

THE LANDFILL PROBLEM

In 1990, some 76 percent of all municipal solid waste in the U.S. ended up in landfills. The number of landfills now receiving this trash is shrinking. In 1989 there were 7,379 operating landfills, down from 7,924 in 1988, and by 1990 some 6,600 landfills still accepted municipal waste.² Over the past decade more than half of the 18,500 landfills that existed in 1979 have closed. And the Environmental Protection Agency estimates that only 4,000 landfills will remain open by 1993.³ Even with various levels of recycling or other methods to reduce the amount of trash produced, there still will not be enough landfill capacity by the turn of the century. (See Chart 1)



- 2 See Donald A. Norman and Judy M. Perkins, "Nonhazardous Solid Waste Landfill Policy," unpublished draft working paper prepared for the American Petroleum Institute, December 1990.
- 3 Reported in *Waste Age*, November 1989, p. 28.

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Landfill Capacity

Two factors primarily are responsible for the closure of many landfills. First, some landfills simply are reaching full capacity. Second, more stringent regulations on landfill operations have forced closure of some old landfills that allegedly posed health hazards as a result of groundwater contamination.

The costs of opening new landfills also are rising. The National Solid Waste Management Association (NSWMA), a trade association of private and public solid waste managers, estimates that the costs of constructing new landfills that meet tighter environmental standards range from \$65 million to \$100 million for a 100-acre landfill site.⁴ Expanding existing sites, which requires upgrading to meet the tighter new health standards, could cost \$12 to \$25 per ton of added capacity, representing fivefold increases in per ton disposal costs in some instances.

In addition to these cost constraints, political factors have contributed to the landfill shortage in many areas. The so-called NIMBY (not-in-my-back yard) syndrome has delayed or altogether prevented the opening of new landfills to replace those now reaching capacity. People favor more landfills as long as they are not in their neighborhood, city, state, or country.

As William Rathje, a University of Arizona solid waste expert, points out, some of the capacity shortfall is the consequence of "an 'artificial shortage' brought about by the reluctance of local officials to allow additional landfill construction. In many states, this reluctance amounts to a *de facto* moratorium on expanding safe disposal capacity."⁵ Rathje notes that "the customary formulation of the problem we face...is that 50 percent of the landfills now in use will close down within five years. As it happens, that has always been true—it was true in 1970 and 1960 because most landfills are designed to be in use for only about ten years....The problem is that old landfills are not being replaced."⁶

A recent NSWMA report notes that just a decade ago, some 300 to 400 new municipal landfills came on line each year. By the 1980s, the number of new landfills coming on line had fallen to between 50 and 200 per year.⁷

4 Neil Hamilton and Robert Wasserstrom, "Solid Waste Disposal in the United States: Rate Regulation Is Not The Answer" (Washington, D.C.: National Solid Waste Management Association, 1989), p. 8.

5 William Rathje, "Rubbish!" *The Atlantic Monthly*, December 1989.

6 *Ibid.*, p. 101.

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Though numbers of landfills are declining, actual capacity is not decreasing as much as the numbers might indicate, since the average size of new landfills is four times larger than the older ones they are replacing. Still, the U.S. is experiencing a net loss of capacity of around five million tons per year, representing three percent of the annual municipal waste stream. As a result, some states are facing a serious shortfall in landfill capacity.

Scarcity of landfill capacity can be traced in part to poor public policy. Example: New Jersey's 1976 Solid Waste Utility Control Act regulates solid waste collection and disposal rates as if waste disposal were a public utility. As such, solid waste disposers can charge customers only for immediate costs of services. And solid waste disposers cannot include in their prices the costs of investing in new landfill sites. The full costs of the service plus costs of future improvements thus are not borne by the customers.

Because the costs of the services are understated, there is little incentive for private operators to invest in new facilities, including landfills. Perversely, the attempt to cap costs instead has resulted in soaring disposal costs for New Jersey municipalities that now must haul garbage out of state. Disposal costs have reached over \$130 per ton, compared to a nationwide average of just over \$30 per ton.

Most states are faced with soaring disposal costs, or what experts call "tipping fees." This is the fee charged by landfill or incinerator operators to receive trash. In the 1970s, many communities paid as little as \$2 per ton in tipping fees at landfill sites. By 1982, a NSWMA survey showed that the average fee had climbed to \$10.80 per ton, and by 1988 the average had doubled to \$20.36 per ton. According to *City & State* magazine, as stricter EPA landfill regulations take effect, even cheap landfills in rural areas will have to charge an additional \$30 per ton, more than doubling the current costs virtually overnight.⁸

DO AMERICANS WASTE TOO MUCH?

Some critics maintain that a lack of new landfills and high disposal costs are not primarily responsible for the solid waste problem. Rather, they blame increased amounts of garbage produced by consumers. A 1988 study prepared for the EPA by Franklin Associates, a private, Prairie Village, Kansas-based research firm, estimates that Americans produce 180 million

7 Hamilton and Wasserstrom, *op. cit.*, p. 4.

8 See *City & State*, June 18, 1990, GM4.

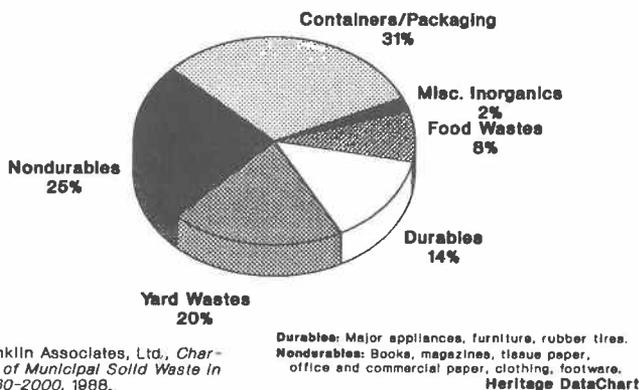
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tons of solid waste annually, compared to 81.7 million tons in 1960.⁹ This is approximately 3.5 pounds per day of trash per person. By contrast, each American produced 2.7 pounds per day in 1960.¹⁰

Those who believe that the solid waste problem is due to "overconsumption" by Americans often suggest policies to force more frugal lifestyles on the public. They believe that the best way to deal with solid waste is not to produce it in the first place.

Yet drawing conclusions from estimates of solid waste production is fraught with difficulties. For example, the higher amount of solid waste produced in urban centers results in part from the concentration of commercial and light industrial activities in these areas. Figures on municipal solid waste generally include this waste in per person estimates of garbage production. Figures for suburban areas, by contrast, are more likely to

Chart 2
Municipal Solid Waste in the U.S.
1986



⁹ Franklin Associates, *Characterization of Municipal Solid Waste in the United States* (Washington, D.C.: Environmental Protection Agency, 1988).

¹⁰ These figures cover all municipal solid waste, which includes not only household waste but commercial, institutional and light industrial waste as well.

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include primarily residential waste. And in high-density urban settings, individual residents produce little or no yard waste, a major component of suburban U.S. waste.

Methods of "counting" waste, moreover, are not uniform. Waste handled privately, that does not go to a community landfill or incinerator but which is burned on site, for example, is not counted in overall waste estimates.¹¹

Critics of American consumer habits argue that other industrialized nations produce far less garbage per person than the U.S. Some estimates suggest that Japan produces only 76 percent of the amount of garbage per person as is generated in the U.S., France only 60 percent of the amount of garbage, and Germany only 40 percent as much waste per person.

Yet, such cross-cultural comparisons pose problems.¹² Moreover, resource availability varies country-by-country. Because Japan lacks timber resources for paper production, for example, the high cost of paper gives the Japanese very strong incentive to reuse and conserve paper. And high population density in Japan makes the landfill option much more costly and much less practical than in the U.S. Income level also has a strong impact on resource conservation and product reuse. People in poorer countries essentially cannot afford to discard glass, plastic, and metal products.

Solid waste statistics also ignore the fact that some new packaging and products actually prevent the production of what earlier was waste. Says solid waste expert William Rathje:

11 Few cities have actually measured or weighed their municipal waste regularly, if at all, so most per capita figures are based on estimates, not on hard data. U.S. Chamber of Commerce solid waste policy expert Harvey Alter has actually concluded that "per capita generation [of waste] from 1970 through 1984 was statistically constant." See Harvey Alter, "The Future Course of Solid Waste Management in the U.S.," *Waste Management & Research* 9 (1991).

12 Jerry Taylor, a policy analyst at the Cato Institute, a free market-oriented think tank in Washington, D.C., points out that "we are comparing apples and oranges when we contrast American versus European of Japanese waste data." See Jerry Taylor, "Municipal Solid Waste Management: An Integrated Approach" (Washington, D.C.: American Legislative Exchange Council, 1991), pp. 6-7. The Office of Technology Assessment, supports this conclusion in its report, *Facing America's Trash*. The report notes, "In the United States, post-consumer materials that are recycled are generally included in the definition of MSW [Municipal Solid Waste]. In contrast, Japan and many European countries...define MWS as including only materials sent to waste treatment or disposal facilities. Office of Technology Assessment, *Facing America's Trash: What Next for Municipal Solid Waste?* (Washington, D.C.: U.S. Government Printing Office, October 1989), p. 78.

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What we forget is everything that is no longer there to see. We do not see the 1,200 pounds per year of coal ash that every American generated at home at the turn of the century and that was usually dumped on the poor side of town. We do not see the hundreds of thousands of dead horses that once had to be disposed of by American cities every year. We do not look behind modern packaging and see the food waste that it has prevented, or the garbage that it has saved us from making.... Consider the difference in terms of garbage generation between making orange juice from concentrate and orange juice from scratch; and consider the fact that producers of orange-juice concentrate sell the leftover orange rinds as feed, while households don't.¹³

Nor is it true that all packaging is becoming more cumbersome and wasteful. For example, the Council for Solid Waste Solutions, a Washington D.C.-based association representing certain plastic manufacturers, points out that a plastic milk jug weighed 95 grams in the early 1970s, while the same jug today weighs 60 grams. Likewise, plastic grocery bags, which were 2.3 mils thick in 1976, were only .7 mils thick by 1989, the result of new technology that enabled the bags to have the same durability and strength with less thickness.

Rathje concludes that "studies of actual refuse reveal that even three pounds of garbage per person per day may be too high an estimate for many parts of the country, a conclusion that has been corroborated by weight-sorts in many communities.... Americans are wasteful, but to some degree we have been conditioned to think of ourselves as more wasteful than we truly are—and certainly more wasteful than we used to be."¹⁴

THE "GOOD PRODUCT" VERSUS "BAD PRODUCT" DEBATE

Some critics claim that the kind of trash Americans produce is a major cause of the solid waste problem. Some products are depicted as villains contributing to "excess" waste. Non-biodegradable products invite special criticism. For example, modern plastic packaging has been targeted by some critics as a key contributor to the solid waste disposal problem. What the criticism ignores is that this packaging often extends the shelf-life of foods,

¹³ Rathje, *op. cit.*, p. 101.

¹⁴ *Ibid.*, p. 102.

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thereby reducing food waste and ensuring higher quality, uncontaminated food. Critics of American consumer habits often highlight environmental concerns while dismissing, or altogether ignoring, the relevance of such values as convenience, safety, and cost.

Clean, energy-efficient plastic. Two recent studies illustrate why it is difficult to label products as “environmentally good” or “environmentally bad.” A report of the Midwest Research Institute in the 1970s compared reusable glass beverage containers with plastic ones, and concluded that the oft-maligned plastic containers use fewer raw materials, consume less energy, and use less water to produce than their glass counterparts. The same study also finds that plastic containers generate less cubic feet of solid waste per million than do half-gallon bottles. A more recent study of plastic packaging by a German research organization, GVM, found that replacing plastic packaging with alternatives would result in a fourfold increase in packaging waste, since the alternatives typically are bulkier and heavier.¹⁵

A 1990 study by Arthur D. Little, Inc., a national research and consulting company, explores the environmental costs of cloth and disposable diapers. The study concludes: “neither disposable nor reusable diapers are clearly superior in the various resource and environmental impact categories considered in the analysis.”¹⁶

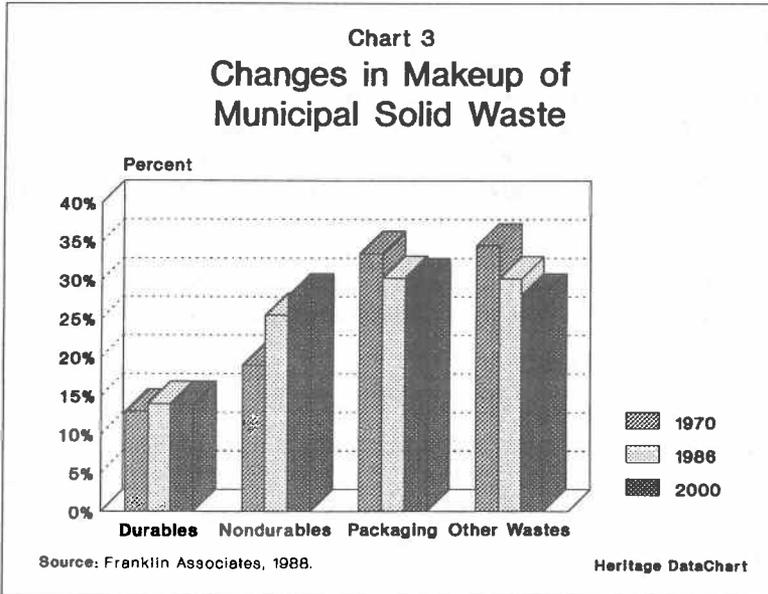
Contrary to popular assumptions, containers and packaging represent a smaller portion of the waste stream than they did two decades ago. Since overall consumption has increased, but the amount of packaging is declining, this suggests that packaging is becoming more efficient—lighter in weight, and less bulky, not “excessive,” as so many proponents of packaging restrictions have argued. This means that such containers are not the principal reason that landfills are reaching their capacity. It also means that reducing the production, use, and subsequent disposal of such containers would not have as great an impact on reducing trash production as many critics suppose. A 1988 Franklin Associates study reveals that containers and packaging represented 30.3 percent of the solid waste stream in 1986 compared to 33.5 percent in 1970.¹⁷ The study concludes that this decline is “apparently due to the increasing replacement of relatively heavy

15 GVM, “Packaging Without Plastics” (Weisbaden, Germany, December 1987).

16 See report of Arthur D. Little study in John Holusha, “Diaper Debate: Cloth or Disposable?” *Los Angeles Times*, July 14, 1990.

17 Franklin Associates, *Characterization of the Municipal Waste Stream in the United States*, 1988.

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materials such as glass and steel, with lighter materials such as aluminum and plastics.” Plastics packaging, often cited as especially problematic in the solid waste stream, accounts for only 4 percent of the total waste stream.

Other critics attack products that are not biodegradable, arguing that they contribute significantly to the refuse problem, especially given America’s heavy reliance on landfills for disposal. This assumption, however, is flawed. As William Rathje notes, “the notion that much biodegradation occurs inside lined landfills is largely a popular myth....Some food and yard debris does degrade, but at a very, very slow rate (by 25 to 50 percent over ten to fifteen years). The remainder of the refuse in landfills seems to retain to its original weight, volume, and form.”¹⁸ In fact, for environmental and sanitary reasons, most solid waste dumps are sealed virtually airtight so that biodegradable products remain intact for decades. Thus, making diapers or containers that are more biodegradable would not help solve the solid waste problem.

¹⁸ Rathje, *op. cit.*, p. 102.

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In some cases, banning products can pose risks to consumers. For example, Maine recently banned the sale of aseptic packaging used for small juice boxes. The boxes are compact, easy to handle, lightweight, and nonbreakable—all features that have made them standard fare in childrens' lunchboxes. The ban now restricts the choices of parents with the perverse result that children may now have to use breakable glass containers. By contrast, the ban does virtually nothing to conserve landfill capacity or reduce disposal costs. Moreover, a 1990 study by Franklin Associates found aseptic packages require less energy to produce and have less adverse environmental impact than many other packaging alternatives.

THE PRICING PROBLEM

The solid waste problem is a result neither of scarcities of landfill sites nor of historically high rates of garbage production per person. It is in part a problem of public policies that hamper efficient and effective solid waste management and waste reduction goals. One such policy is the subsidies paid for waste collection and disposal.

Economist Peter Mennel of the University of California, Berkeley, explains that historically the cost of refuse removal and disposal services "are typically borne only indirectly by way of a fixed disposal charge on an annual property tax assessment."¹⁹ Even where user fees are charged, rates frequently are unrelated to the amount of garbage actually collected from each household. In a February 1990 survey of 246 cities with populations ranging from 5,000 to 1.75 million, the City of Worcester, Massachusetts, found that 39 percent of the cities did not charge any user fees for garbage collection.²⁰ Of those charging fees, about half imposed flat rates regardless of garbage volume or weight collected. Thus, over two-thirds of the cities surveyed did not have pricing mechanisms by which to charge individual households the full costs for disposing of their garbage.

This failure to charge for garbage collection and disposal costs gives consumers little incentive to recycle their refuse. Equally important, consumers have little incentive to take into account refuse disposal costs in their purchasing decisions, which in turn gives manufacturers little incentive to

19 Peter Mennel, "An Incentive Approach to Regulatory Municipal Solid Waste," John M. Olin Law and Economics Seminar, Georgetown University Law Center, Washington, D.C., February 22, 1990, p. 3.

20 "Survey of Solid Waste Charges," City of Worcester, Massachusetts, February 1990.

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develop products that are readily recyclable or whose disposal is less expensive.

Even where residents pay collection and disposal charges, the fees often cover only the direct operating and maintenance costs of municipal landfills. Traditionally, many jurisdictions do not incorporate into their calculations landfill closure and post-closure maintenance costs. And land costs are calculated at historic or past costs, not replacement costs. Inadequate accounting methods used by municipal governments also have meant that collection charges have not included such real costs as worker benefits and retirement expenses, equipment depreciation, and other standard business outlays.

Until recent decades, moreover, few attempts were made to construct landfills that would not contaminate groundwater or contribute to other environmental and nuisance problems. Thus landfilling costs based on past practices are unrealistically low. The result: landfilling has been viewed as a much cheaper disposal option relative to other options, including recycling.

The Fallacy of Front-End Control of Solid Waste

Many environmental groups push for "front-end" management. This would ban certain products, reducing overall waste output, and promote recycling. This assumes, of course, that American consumers are especially wasteful. It also assumes that source reduction, which would reduce the amount of garbage generated, combined with recycling, would diminish significantly the need for landfilling or incineration. In addition, it assumes that landfills and plants that convert waste into energy pose significant environmental problems and should be used only as a last resort. Finally, front-end management proposals generally assume that continued use of landfilling and incineration reduces incentives to recycle or to reduce the amount of waste generated by each household. A corollary to this assumption is the view that recycling and source reduction should be pursued regardless of costs relative to other disposal options.

THE EFFECTIVENESS OF DISPOSAL OPTIONS

Historically, human communities have had four basic options for disposing of trash: bury (landfill), burn, or recycle trash, or produce less trash. Today's options remain essentially the same, though specific technologies for burying, burning, recycling, and reducing garbage are increasingly sophisticated. Today, the following are the primary facilities used to dispose of solid waste:

Landfills. Much public opposition to landfills results from concern over dangers to human health and the environment. Potential problems include: 1) pollution, or more technically correct, migration of leachate or material from the original garbage mixture into the groundwater; 2) runoff of pollution into lakes, rivers, and other surface water, and 3) emission into the atmosphere of volatile gases from decayed refuse. Whether such problems occur depends on the waste entering a landfill, the rate of decomposition, hydrogeological conditions at the site, amount of rainfall, distance to aquifers, and types of liners, covers, leachate, runoff and emissions collection systems, and other controls at the site.

Old Landfills. Earlier generations of landfills posed some hazards. Until the 1980s, “open dumping” remained fairly common, while sanitary landfills used fewer pollution controls than today. According to the Office of Technology Assessment (OTA), a U.S. government research organization, some 70 percent of existing landfills are older facilities that lack many pollution control features or are located in areas that could cause pollution problems.²¹ The OTA report points out that “open dumping often resulted in unsanitary conditions, methane explosions, and releases of hazardous substances to groundwater and the atmosphere.”²² Yet the actual environmental or health hazards of these landfills are difficult to assess. Few landfill sites, until recently, actually monitored groundwater to determine whether any contamination had occurred.

An EPA study, cited by the OTA report, of 163 sites found potential for groundwater contamination in most of the landfills.²³ However, the EPA study did not determine the actual degree to which hazardous substances had entered the groundwater. Moreover, it is unclear just what risk such contamination might pose. Critics suggest that the EPA’s models overestimate risks from possible contamination.²⁴ A National Solid Waste Management Association study, for example, concluded that the total cancer risk from all chemicals in municipal solid waste leachate is less “by one to two orders of magnitude than from chemicals in industrial leachate.”²⁵

21 Office of Technology Assessment, *op. cit.*

22 *Ibid.*, p. 271.

23 *Ibid.*, p. 285.

24 *Ibid.*

25 *Ibid.*, pp. 288-289.

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New Landfills. New landfills are much more environmentally sound than old landfills. The 1979 federal Resource Conservation and Recovery Act, Subtitle D, prohibits open dumping. New landfills incorporate a variety of design and operational controls to prevent leachate from entering groundwater or surface water supplies. Many states, moreover, impose strict health and safety regulations that, among other things, prohibit locating landfills in areas with permeable soils or shallow water tables, or near wetlands. The state regulations also require leachate collection systems and liners and landfill covers. When properly sited and managed, landfills are not likely to pose a threat to the environment.²⁶ Ironically, efforts to prevent the siting of new landfills may actually result in expansion and prolonged use of older, less environmentally sound facilities.

Where real risks of pollution might exist, it is possible to reduce the hazardous components entering landfills. Since two-thirds of all lead in landfills, for example, comes from automobile batteries, eliminating lead batteries from landfills could minimize lead contamination problems. Mercury batteries traditionally have accounted for much of the mercury entering landfills. Yet use of mercury in batteries is declining and the service life of batteries,²⁷ according to the OTA, has increased some 30 percent in recent years.²⁷ In any case, hazardous household wastes from landfills, now account for less than one percent of municipal solid waste. In fact, case studies of selected cities show that hazardous waste represents as little as 2 percent of total municipal solid waste.²⁸

Incineration Facilities. Like landfills, incineration of solid waste has met with public opposition, usually due to environmental and health concerns over air emissions and ash disposal or reuse. Both potential hazards, according to a 1989 report of the U.S. Conference of Mayors, can be mitigated through use of state-of-the-art construction, operation, and control technologies and practices. The report concludes, "Clearly, the technology exists to carry out, monitor, and control the processes of incineration of municipal solid waste (inclusive of ash residue management) in such a way as to confidently ensure that potentially harmful constituents are not

26 Office of Technology Assessment, *op. cit.*, p. 288

27 *Ibid.*, p. 106.

28 *Ibid.*, p. 87.

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expected to pose risks to humans and/or the environment which would normally be of regulatory concern."²⁹

The evidence suggests that air emissions effectively can be reduced to levels that do not threaten health and the environment. Incineration, like all combustion processes, produces some carbon monoxide, carbon dioxide, and particulates resulting from incomplete combustion. Depending on the content of municipal solid waste and combustion conditions, incinerators also emit some nitrogen oxides. Dioxin and furan, considered potential carcinogens, may also be present in incinerator emissions.

Use of dry scrubbers, electrostatic precipitators, and fabric filters can remove 95 percent of gases from incinerator air emissions. Most modern plants have such devices. In any case, incineration emissions represent a small percentage of overall air emissions in America. Indeed, even if 100 percent of America's solid waste were incinerated, the air emissions from such facilities would compose less than .5 percent of all combined emissions. And carbon dioxide emissions would amount to only 2 percent of the levels generated from the combustion of all other fossil fuels.³⁰

Dioxins and furans, the focus of particular attention among critics of incineration, can be eliminated from air emissions by burning municipal solid waste at the high temperatures that destroy these compounds.³¹ A study of a Connecticut plant finds emission levels of dioxins are only one thousandth of the allowable state maximum levels.³² A Pittsfield, Massachusetts plant, moreover, lowered by 99 percent its total dioxins emissions. In fact, a World Health Organization report found that the natural "background" presence of dioxins and furans in the atmosphere is greater than the concentrations in the emissions from incinerators.³³

Nitrogen oxide emissions are harder to control with antipollution equipment than other air emissions. Yet chemical neutralization techniques in the combustion process have reduced these emissions. Reducing certain kinds of waste entering incineration facilities, particularly eliminating yard was-

29 U.S. Conference of Mayors, "Incineration of Municipal Solid Waste: Scientific and Technical Evaluation of the State-of-the Art," Report of the Expert Panel (Washington, D.C.: U.S. Conference of Mayors, February 1, 1990), p. 8.

30 *Ibid.*

31 National Solid Waste Management Association, "Resource Recovery in the United States," Special Report (Washington, D.C.: NSWMA, September 1, 1989), p. 6.

32 *Ibid.*, p. 6.

33 Taylor, *op. cit.*

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tes, such as leaves and branches, can significantly reduce nitrogen emissions.

Remaining air emissions at incineration sites must be put into perspective. The American Legislative Exchange Council, in a 1989 report on plants that burn waste to convert it to energy, notes that the "odds were 1 million to one that a man, sitting in a chair directly above the smokestack of an old municipal waste combustor without controls for all of his 70 years, would contract cancer—the equivalent to his contracting cancer from drinking one liter of tap water . . . and even this is based on risk assessments that are questionable."³⁴ In a particularly colorful comparison, the Environmental Hearing Board of Pennsylvania concluded that "the risk of a child getting cancer from one peanut butter sandwich per month for 15 years is 500 times greater than the risk of cancer from emissions" from a waste-to-energy facility reviewed on April 28, 1989.³⁵ At that hearing, findings suggested that the maximum cancer risk to an individual due to inhalation at the point of maximum exposure is between .43 to .55 chances in 1 million.

Incinerators also produce ash. According to one report, U.S. incinerators produce 4 million tons of ash annually, with ash generation projected to rise to 19 million tons per year by the year 2000.³⁶

The combined ash, which must either be reused or disposed of in landfills, equals about "1/10 to 1/20 of the original incoming solid waste by volume and about one quarter by weight."³⁷ The fact that ash takes up so much less space than garbage makes incineration an attractive option. Incineration can reduce the volume of garbage by 85 to 90 percent, thus reducing the need for more landfill.

The potential for ash leachate to migrate into groundwater or surface water, however, prompts some criticism of incineration. Also troubling some critics is the possibility that ash particles, in their handling, storage, and transport, could become airborne, with possible adverse health effects. The presence in ash of such metals as lead and cadmium is of particular concern. Yet, actual leachate data indicate that "heavy metals are soluble at current ratios less than the regulatory limits for classifying [ash] leachate

34 *Ibid.*

35 See report of hearings in *Waste Age*, November 1989.

36 Jonathan Kiser and Edward Repa, "Managing Municipal Combustion Ash," *Environmental & Waste Management World*, January 1989, p. 1.

37 *Ibid.*, p. 2.

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as a hazardous waste."³⁸ And three recent studies found that the concentrations of heavy metals in leachate from sites devoted exclusively to disposal are below EPA limits.³⁹

Using stringent laboratory testing procedures, California officials concluded in 1990 that ash "possesses mitigating physical and chemical characteristics rendering it insignificant as a hazard to human health and safety, livestock, and wildlife."⁴⁰ Like uncombusted municipal solid waste, ash can be disposed of safely in landfills using currently available landfill technology and operating systems. Indeed, the U.S. Conference of Mayors report on resource recovery advises that "ash residue can be presently managed in a manner which is safe from the point of view of the protection of human health and/or the environment."⁴¹ The report also notes that safe alternatives to ash disposal are becoming available. In Europe, for example, ash is used for secondary road construction and is vitrified, which turns the ash into nonhazardous glass. Costing \$100 per ton, vitrification in Europe is more costly than using landfill disposal. But in America, Westinghouse Electric Corporation developed a vitrification process that costs \$77 per ton; other recent advancements may make the procedure economically feasible.

RECYCLING AND SOURCE REDUCTION: PROSPECTS AND PROBLEMS

Proponents of recycling and source reduction, usually referred to as "front-end" management, as the primary waste management tool assume that these approaches can divert enough waste from landfills or incinerators to reduce their use to a minor role in waste management. This assumption underlies legislation requiring mandated recycling and those proposals to ban specific products.

38 *Ibid.*, p. 3.

39 See EPA, "Characterization of MWC Ashes and Leachates from MSW Landfills, Monofills, and Co-Disposal Sites," Office of Solid Waste and Emergency Response, Washington, D.C.; see also O. Hjelmar, "Leachate from Incinerator Ash Disposal Sites," presented at the International Workshop on Municipal Waste Incineration, Montreal, Quebec, Canada, October 1987; and see M. Goldman, "Waste-to-Energy Ash: Hazardous or Nonhazardous Waste?" presented at the 81st Annual Meeting of ACPA, Dallas, Texas, June 1988.

40 Reported in *Waste Age*, April 1990.

41 U.S. Conference of Mayors, *op. cit.*, p. 7.

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Whether front-end management makes good policy sense depends on two key considerations. First, how much waste reduction and diversion from landfills and incinerators realistically can be expected from recycling and source reduction? Second, to what extent do such approaches make economic sense?

Estimates of the amount of the solid waste stream that could be diverted through recycling vary from as little as 25 percent to as much as 80 percent.⁴² The range of 25 percent to 30 percent is most commonly assumed, though several state and local mandates aim at recycling 50 percent of the waste stream. At a 1988 meeting of the Council of Northeast Governors, the median estimate was that 34 percent of the municipal solid waste stream could be eliminated through recycling.⁴³ Widely varying estimates of the effectiveness of recycling result from inconsistent definitions of what part of the waste stream constitutes the starting point of measurement, and varying assumptions about the relevance of recycling costs.

Costs are often dismissed by proponents of recycling and source reduction as less important than achieving environmental goals. This ignores the roles that prices play in conveying information about the relative scarcities of different resources, including labor, time, natural resources, and environmental values. Thus, recycling in some circumstances may make sense if the ultimate goal is to conserve landfill space. In doing so, however, consumption may increase of other resources, like energy, labor, and so on. The net result could be that more overall resources are consumed than if the waste were simply buried. If recycling programs require more public resources than alternative disposal options, moreover, other public needs may go unsatisfied. Charging households for these additional costs similarly will mean that individual residents must divert more of their income toward garbage disposal, even when more cost effective environmentally sound approaches are available.

To the extent that some costs of solid waste collection and disposal are not now reflected in the prices communities pay, they should be incorporated into pricing structures. This is different from setting uniform recycling standards to apply under all circumstances at the federal, state, or local

42 See, for example, Franklin Associates, *Characterization of Solid Waste in the United States: 1990 Update* (Washington, D.C.: Environmental Protection Agency, 1990); see also Alter, *op. cit.* Higher estimates come from statements by the Audubon Society and local environmental organizations.

43 See *Waste Age*, January 1990.

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levels. The former is an attempt to eliminate existing subsidies of solid waste disposal. The latter is an attempt to impose conservation of landfill space as a public goal that should supersede other competing goals, including energy or water conservation, product safety, product convenience, and so on.

Economic and Legislative Constraints

"All garbage is treasure," says an old Chinese proverb. To which can be added: "But some treasures are better than others." This is especially true in the world of recycling, where some post-consumer waste is a highly valued commodity and other waste is unwanted. From a technical standpoint, materials such as glass, plastics, paper, aluminum, ferrous metals, and yardwaste can be recycled. Moreover, for manufacturers, use of recycled materials often makes economic sense, reducing product costs.

However, many curbside recycling programs result in increased solid waste management costs. A 1989 survey of Rhode Island communities, for example, found that recycling collection costs ranged from \$49 to \$162 per ton.⁴⁴ A preliminary assessment of curbside recycling in Chicago showed costs running over \$600 per ton of materials collected, compared with costs under \$200 per ton for regular solid waste collection and disposal. While Chicago is an extreme example, recycling costs typically range from \$100 to \$200 per ton, while standard waste collection and disposal service ranges from \$80 to \$150 per ton.

In general, recycling programs are labor-intensive, with labor costs representing from 35 percent to 85 percent of operating costs. Actual costs depend on such factors as housing density, road conditions, labor productivity, and household participation rates in recycling programs. Participation rates include not only the absolute number of households recycling, but also how regularly they participate, and how thorough they are in separating recyclables. Costs too are influenced by the number and types of materials targeted for recycling, the kinds of trucks used, and the total fleet size.

To date, curbside recycling programs have increased overall garbage collection and disposal costs for most jurisdictions. Thus, even taking into account those costs avoided by reducing the amount of garbage disposed of in landfills, recycling programs often fail to save money for municipalities. Even when cities conserve some landfill space through recycling, they do

44 Janet Keller, "Rhode Island Learns at the Curb," *Waste Age*, July 1989, p. 60.

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so by consuming more fuel and other important resources. And they may also be diverting limited tax dollars away from other, more pressing needs.

Waste Age magazine, for example, reports that in the first five months of Phoenix's recycling program in 1990, the city diverted 513 tons of waste away from the dump, avoiding disposal cost of \$3,078.⁴⁵ By 1991, with tipping or dumping fees at \$25 per ton, savings will grow to approximately \$12,825. In addition, the city in the first five months generated \$26,900 in revenues from selling recyclables. When the pilot program is in full operation revenues are estimated to reach \$70,000 in a one-year period. Yet the cost for the pilot program is estimated at \$500,000. Costs should decrease over time since the one-time only expense of purchasing and distributing recycling collection bins comprises much of the initial cost. Nonetheless, the program will continue to cost the city more than traditional collection and landfill disposal.

Many state and local officials continue to require recycling, despite local conditions that make it costly. Between 1988 and 1989, the number of local curbside recycling programs increased 46 percent, from 1,042 to 1,518. By 1991 the number of programs had grown to over 3,000. Currently, about 13 percent of municipal solid waste is recycled. By the year 2000, this figure is expected to double.⁴⁶ Curbside collection has a certain symbolic appeal, since it involves individual citizens in the process. The trouble is that mandated curbside programs are expensive and actually may neither conserve resources nor reduce solid waste collection costs, that is, might waste more energy and create more pollution than other disposal options.

ALTERNATIVE APPROACHES

The optimum mix of recycling, source reduction, landfilling, and incineration will vary from jurisdiction to jurisdiction. Market-oriented policy tools offer the best means of determining the optimum solid waste management strategies for each community. These tools involve charging consumers the full costs of collection and disposal of the waste they generate and privatization to facilitate use of full-cost accounting.

Advance Disposal Fees versus Direct Charges for Waste Disposal Service. Some policy makers favor a front-end "disposal fee" on all products. This could be a tax on each good when purchased to reflect the

45 Reported in *Waste Age*, February 1990, p. 79.

46 See the article by James Bank in *City & State Government Manager*, June 28, 1990.

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cost of disposing of the resulting waste. By paying the full disposal costs of the goods they purchase, consumers would have an incentive to alter their buying habits, recycle, compost, and buy items in less bulky packaging.

Such a tax, however, has serious problems. One problem is that disposal costs of different products vary from area to area depending on such factors as landfill availability, transportation costs, and housing density. Another problem is that the costs can change constantly. Moreover, at the point of purchase of any product, there is no way to know the consumption and disposal path that the product will take, for example, how long it will be utilized, where will it be dumped, and whether it will be recycled.

By contrast, per-can or per-weight collection charges levied by the waste collector can pass along disposal costs directly to consumers, allowing them to incorporate these costs in their purchasing decisions. Such fees do not force recycling, as mandatory programs do, where it is uneconomical and where it is not likely to conserve overall resources. Such fees do force consumers to bear the full costs of their choices.

Recent evidence from several cities suggests that voluntary recycling programs, in conjunction with per-can or per-weight rates, yield levels of participation in recycling as high or higher than do mandatory programs. In 1988, for example, Seattle launched a recycling program in conjunction with use of per-can collection charges for waste garbage. By late that year, the recycling participation rate had climbed to 67 percent, with 3,100 tons per month of garbage being diverted from the landfill. By 1991 over 90 percent of Seattle households participated at least occasionally in the recycling program.

Per-can or per-bag pickup charges have had success elsewhere. High Bridge, New Jersey, for example, recently stopped charging a flat fee for garbage pickup and moved to a per-bag rate system. Billing by the bag reduced residential trash by 25 percent. To reduce their trash bills, people install garbage disposals, recycle, compost, and purchase products that conserve on packaging.

In Perkasio, Pennsylvania, the cost of waste disposal soared from \$8 per ton in 1981 to \$58.95 per ton in 1987. The town started charging citizens per bag of trash commencing in 1988. The result: After a year, some 43 percent of the town's solid waste was being recycled and the total amount of waste and recyclables produced dropped 28.7 percent from the average totals collected in the previous three years. Despite higher labor costs and tipping fees for garbage collection and disposal, the city broke even on the operating costs in the first year of its program.

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Critics of per-can rates complain that such policies could increase illegal "dumping" by citizens to avoid paying for collection of their garbage. This is refuted by the evidence. *Waste Age* magazine reports that a New Jersey Board of Public Utilities study of communities of 5,000 to 500,000 residents shows that illegal dumping escalated after hefty increases in flat rates for collection, but not after the introduction of per can rates. The reason, according to the Board of Utilities: "some citizens were angry because they 'lacked control' over disposal costs" in flat rate situations.⁴⁷

Elsewhere, too there have been few problems with illegal dumping after the introduction of per-can rates. Seattle officials claim that this has not been a major problem. Nor has Perkasio, Pennsylvania, experienced problems with illegal dumping, although Perkasio public officials initially noted an increase in backyard trash burning, a practice subsequently prohibited for nuisance and air quality reasons.

Privatization and Solid Waste Disposal Charges

In addition to charging customers variable rates for disposal, depending on the amount of trash produced, solid waste disposers must be free to pass along to the customer the full cost of operating landfills and incinerators. Government waste management programs often fail to include all collection and disposal costs, for example, costs associated with closing landfills when they reach full capacity and costs to site new landfills, when calculating fee or tax rates to households for that service. By contrast, privately owned landfills traditionally have included in their cost calculations not only operating and maintenance expenses but also depreciation, interest payments, and cost of future expansion. Although Maine has moved to prohibit private ownership of all new incinerators, the evidence suggests that the opposite approach of privatizing landfill and incineration operations better would meet the public's needs.

There are efficiency and environmental reasons for doing so. Private operators are more likely to utilize accounting practices that incorporate full facility costs, including replacement costs, into tipping fee calculations. The environmental record of private operators also is better than that of public operators. Conclude economists Neil Hamilton and Robert Wasserstrom in their study of solid waste disposal, "experience shows that private operators have been far more willing than their public-sector counterparts to install

47 See "The Magic of Volume Reduction," *Waste Age*, February 1990, p. 98.

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liners, leachate collection systems and groundwater monitoring equipments.”⁴⁸ In part, this may simply be the price private operators have had to pay to build facilities in certain locations. Regulators typically have greater authority and clout in gaining compliance from the private sector than with other public sector agencies.

Some critics fear that private companies providing solid waste collection services will become monopolies, out of the control of consumers and regulation. But Seattle and other cities prevent this by specifying in the private contract-bidding process that no contractor can serve more than half of the city. In their report on Seattle’s recycling program, Timothy Croll and Diana Gale argue that “the best thing a city could do is let [companies] compete against each other in a bidding or request-for-proposal process. In the solid waste business, strong competition among collection vendors appears to be more scarce than landfill space! It would be a mistake to specify one system to the exclusion of others....we feel that Seattle is saving hundreds of thousands of dollars a year because of the competition we had for the [recycling] contract.”⁴⁹

THE ROLE OF GOVERNMENT

Solid waste disposal should be primarily a local government concern. Conditions vary substantially even within individual states. Yet recent state and federal laws and proposals would preempt local action. For example, proposals associated with a pending reauthorization of the Resource Conservation and Recovery Act (RCRA) expected by 1992, would mandate specific reductions in the percentage of waste being landfilled or incinerated. A 1991 proposal for comprehensive legislation to reauthorize RCRA would create a product and packaging review board to develop packaging guidelines. Under proposed federal legislation, all states would have to adopt solid waste management plans, with requirements that recycling and source reduction take precedence over landfilling and incineration. States that fail to adopt satisfactory plans could face bans on sending solid waste out-of-state. Conversely, states with approved plans could prohibit the importation of out-of-state waste.

48 Hamilton and Wasserstrom, *op. cit.*, pp. 5-6.

49 Timothy C. Croll and Diana H. Gale, "Seattle: The Best of Both Worlds—Commingled Collection and Multi-material Sorting," unpublished report, Seattle, Washington, 1989.

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Federal lawmakers also have proposed federally mandated fees on solid waste collection and disposal activities; federal deposit legislation for bottles and containers, federal restrictions on interstate shipping of solid waste, and federal product bans or regulations. Lawmakers in addition have discussed imposing fees on manufactured goods that do not meet certain specifications regarding recyclable content.

Such federal proposals limit the ability of localities to address their solid waste disposal problems in the most cost-effective and efficient manner. Nor is such legislation likely to result in reductions in waste, conservation of resources, or mitigation of environmental impacts from waste disposal.

Several key points about America's solid waste disposal problems should underpin solid waste policy-making. First, the U.S. solid waste problem is not primarily the result of rampant consumerism and waste production. Second, landfill and incinerations, though they pose potential environmental problems, can be safely constructed and operated. Third, recycling and source reduction are not likely to absorb more than 30 percent of solid waste produced — higher figures are theoretically possible, but do not make economic or environmental sense. This means that siting of landfills and facilities to convert waste into energy should be a central concern for lawmakers. Fourth, the landfill crisis is not the consequence of diminishing availability of land but of environmental and political concerns of potential host communities. Finally, individual communities face widely varying solid waste collection and disposal costs and constraints.

The Federal Role

There should not be a large federal role in solid waste management, since waste management needs vary significantly among different states and local jurisdictions. Nonetheless, some federal actions may be appropriate. These actions include:

1) Develop environmental, health and safety standards for waste disposal facilities.

Uncertainty within the solid waste industry over what health and safety regulations eventually will apply to landfills and incinerators has stalled some expansion of capacity. The relatively uniform kinds of potential hazards posed by landfills and incinerators suggest that some federal-level performance standards may be justified for air emissions, leachate containment, and groundwater monitoring. The federal government should focus on setting general performance standards rather than on dictating specific technologies to be used in landfills and incinerators.

2) Develop federal guidelines to facilitate interstate transport of solid waste.

In recent years, many state and local governments have put up barriers against disposal of solid waste from other states or jurisdictions. These barriers have ranged from discriminatory landfill pricing policies for out-of-state waste to outright prohibitions on such imports. Federal courts thus far have found state discriminatory policies concerning flows of solid waste to be a violation of the interstate commerce clause of the U.S. Constitution. However, some federal lawmakers have proposed legislation that would allow such discrimination if the states develop solid waste plans to accommodate all or most of their statewide needs.

Yet this emphasis on state or local self-reliance hinders the development of regional solid waste facilities and prevents communities from seeking out the least-cost disposal alternatives. Hence, federal lawmakers should reaffirm that solid waste is a commodity covered by the interstate commerce clause.

3) Revise the federal government procurement policies to encourage the use of products made from recyclable materials.

Total government purchases amount to some 20 percent of the gross national product. The federal government alone consumes two percent of all paper used in the U.S. These figures indicate that government procurement practices can have an important impact on the demand for recyclable materials.

The federal government already has authorized revisions in procurement policies to increase consumption of products with recycled content. However, these policies have not been actively implemented. At a minimum, the federal government should eliminate prohibitions that are still found in some government specifications against the use of recycled materials. Moreover, a review of overspecification in government procurement standards that might inhibit the use of suitable materials with recyclable content should be undertaken.

In addition, the use of multi-product contracts requiring delivery of various products should be reviewed. Such contracts can discourage the use of recyclable products. For example, a contract offer might request bids from firms on a wide array of paper products. Paper products from recycled materials might satisfy performance specifications for some, but not all of the products sought. A manufacturer might not have a line of products to satisfy the part of the order that requires non-recycled paper. Because the contract calls for multi-products and must be bid on as a whole, the manufacturer of recycled paper products might not be able to bid at all.

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It would be a mistake, however, for the federal government to mandate the use of products with recyclable content on the private sector. In many situations, using such materials might not be cost effective and to recycle such materials might actually waste energy and create more pollution than landfilling or incineration.

The State and Local Role

As with the federal government, the state role in solid waste management policy should be limited. The following state actions could be appropriate:

1) Ensure that solid waste disposal facilities do not pose health and safety hazards.

Most states already require permits for the operation of landfills, but many still lack standards that address all health and safety concerns associated with these operations. Such states should develop performance standards governing air emissions, leachate management, runoff into surface water, and post-closure monitoring of such facilities. Regulatory clarification regarding ash and emissions from incineration facilities could enable local governments and the private sector to move forward with plans for new capacity. In this context, ash should not be treated as a hazardous waste. States instead should allow ash to be landfilled under conditions that prevent leachate from entering surface or ground water sources.

2) Eliminate public utility rate regulation of solid waste disposal services in states where such regulation now is in place.

Many states treat solid waste disposal as a public utility, mandating prices and placing many requirements and regulations on operations. This removes market incentives for efficiency. For example, New Jersey treats solid waste disposal as a public utility, regulating landfill pricing and placing many regulations on operations. This removes market incentives for efficiency and actually inhibits the opening of new landfills. One study shows that rate regulation of solid waste operations decreases competition, profitability, and efficiency in the industry. Moreover, it shows that such regulation has deterred private operators from attempting to site much-needed new disposal facilities in the New Jersey case.⁵⁰

50 Hamilton and Wasserstrom, *op. cit.*, pp. 1, 10-11.

3) Require local governments to use full-cost accounting for solid waste services, including collection operations and solid waste disposal.

Use of full-cost accounting is a prerequisite for establishing efficient waste management programs that incorporate the costs of measures needed to reduce environmental damage. Local governments continue to play a predominant role in directly providing waste disposal services, yet they fail to price these services based on full real costs. As E.S. Savas of City University, New York notes, “public officials themselves are also ignorant of the true cost of a particular municipal program.” In several studies Savas has documented that municipal budgets typically understate service costs by an average of 22 percent. These budgets fail to take account of such items as capital costs of refuse collection vehicles, labor costs for vehicle maintenance, costs of fuel, oil tires and other vehicle supplies, interest on bonds, employee fringe benefits, building costs, and liability costs.⁵¹

At minimum, states governments should develop accounting standards for local governments that take account of all waste disposal costs. A further reform would be to establish self-funded government corporations to provide waste disposal services, with all costs of service covered by fees to users. This arrangement provides full cost-accounting. By contrast, services operated out of local government revenues typically fail to account for all costs. The best approach would be to privatize waste collection and disposal services completely, allowing private sector providers to compete for business.

What the States Should Avoid

As is the case with the federal government, the states should avoid policies that limit local flexibility to deal with the solid waste problem. States should not establish statewide local zoning ordinances forcing developers to set aside specific building space for recyclable collection and storage. Such provisions can increase construction costs even though the benefits of universal recycling are questionable. For example, Minnesota now requires that structures over a certain size include “suitable space” for trash separation and storage. Vermont has proposed guidelines along similar

51 E.S. Savas, “How Much Do Government Services Really Cost?” *Urban Affairs Quarterly*, September 1979.

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lines, and California has developed a model zoning ordinance with similar provisions.

In addition, states should not ban certain products, require that products be made of biodegradable materials, or impose high, discriminatory taxes or fees on certain products. In general, such approaches have little real effect on the amount of solid waste production and can actually force people to use alternative products that create even more environmental damage. The only exceptions that could make economic and environmental sense are special requirements for acid-lead batteries or tires.

States should not restrict interregional or interstate flow of garbage. As long as health and safety conditions are met, if a private disposer in one state wants to receive refuse from another, it does not harm the home state of the disposal site. And states should rethink mandates requiring recycling or specific levels of waste reduction. Though 37 percent of state bills introduced in 1989 either required or encouraged recycling and source reduction, such legislation addresses only the symptoms of the solid waste problem, without addressing the more fundamental causes of underpricing and politically constrained capacity.

CONCLUSION

Although a plethora of state and some federal legislation on solid waste management was enacted in the late 1980s, solid waste disposal is, and should remain, primarily a local government concern. Conditions vary substantially even within individual states. For policies to reflect local differences, they are best enacted at the local level. The key to sound local government policy-making is to ensure that use of landfill space is not subsidized and to ensure, through variable rates, that residents and businesses pay fees that reflect full collection and disposal costs. States and localities also should turn to the private sector as much as possible for the most cost efficient waste disposal services.

There need not be a solid waste disposal problem. Proper disposal through burial or incineration is possible with no adverse side effects to the public's health or safety. Health and safety are more likely to suffer and in addition be burdened with higher taxes and suffer from lower living standards if governments follow the failed policies of the past.



Chapter 7

Containing Prison Costs Through Privatization

Dana C. Joel

The rapid rise in America's prison population is creating a crisis within the nation's correctional system. With the number of inmates more than doubling since 1980 and expected to double again by the mid-1990s, officials at all levels of government are grappling to keep pace with the population explosion. Despite the enormous rise in government spending over the past few years to build and operate prisons, conditions actually have become worse. State facilities are operating at between 15 percent and 27 percent over capacity, while the federal system operates at an astounding 51 percent over capacity.¹

The only factor mitigating this crisis is the trend, since the early 1980s, of an increasing number of states and localities trying prison privatization, or contracting with the private sector for the financing of initial construction or operation of adult, security prisons. With approximately 60 facilities privately built, and more than 65 prisons privately managed, there is growing evidence that the private sector builds prisons faster and operates prisons more cost-effectively than the public sector.

While the states and localities have been the pioneers of prison privatization, the federal government has been reluctant to privatize its facilities. Unable to provide prison space rapidly enough to keep up with the expand-

1 *Prisons in 1990*, Bureau of Justice Statistics, U.S. Department of Justice, May 1991.

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ing federal prison population growth — which exceeded even the state prison population growth during the first six months of 1990 — the federal government could benefit enormously from the private sector's speed and flexibility in building and operating prisons.

Prison privatization's critics offer only theoretical reasons why the government should not contract out corrections to the private sector. They argue that it is not possible for private operators to cut costs without jeopardizing prisoners' welfare, or to improve quality without raising costs. They argue too that there are many unanswered questions concerning liability. For example, critics ask whether the government or the private provider is legally responsible if prisoners are harmed by guards or if safety standards are not met?

These objections were voiced in the early 1980s, privatization's early road-test days. They since have been refuted by prison privatization's track-record. Evidence shows that private operators save taxpayers' dollars and improve quality. Similarly, questions of liability are being sorted out through legislation and clarified within the terms of the contract between governments and private providers.

A number of reforms would advance prison privatization at all levels of government. Among them:

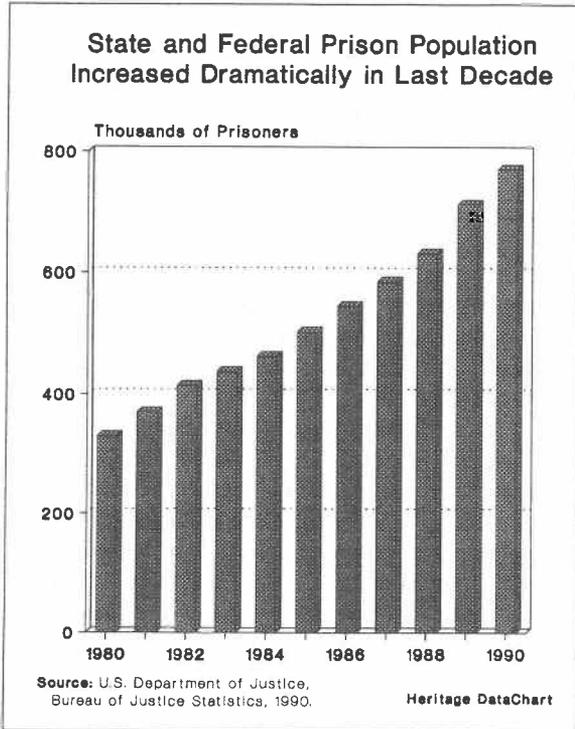
- 1) The 38 states that have not done so should authorize the private financing, construction, operation, and ownership of prisons and jails.**
- 2) The states should adopt fair and accurate accounting procedures to determine the full cost to government of operating prisons.**
- 3) The federal government should authorize tax-exemption for interest earned on state bonds that finance privately operated and owned prisons.**
- 4) Congress should authorize the federal Bureau of Prisons and the Immigration and Naturalization Service to compare the costs of their privately run facilities with their government-run facilities.**
- 5) Congress should authorize the Bureau of Prisons to experiment with the private operation of mainstream facilities by contracting with a private firm to run one of its minimum to medium secure prisons, called Federal Correctional Institutions.**

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AMERICA'S PRISON POPULATION EXPLOSION

The prison population boom of the last decade has created a crisis in America's correctional system. At the end of 1989, federal and state prisons taken together were operating on average between 18 percent and 29 percent over capacity, housing more than 756,000 inmates in a system designed to hold between 586,500 and 641,000.² By mid-1990, federal and state prisons held 755,400 inmates, more than twice the number of a decade earlier.³

From June 1989 to June 1990, more than 80,000 inmates were added to America's prisons, the largest annual increase in recorded history. For 1988, some 800 additional beds were required per week to accommodate new prisoners; for just the first six months in 1990, the weekly requirement had doubled to 1,650.⁴



2 Bureau of Justice Statistics, U.S. Department of Justice, *Prisoners in 1989*, May 1990.

3 Bureau of Justice Statistics, U.S. Department of Justice, press release, "Prison Population Grows 6 Percent During First Half of the Year," October 7, 1990.

4 *Ibid.*

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Crowding is so severe that all but five states have at least one facility under court order or consent decree to limit or reduce the prison population. In nine states the entire prison system is under court order due to overcrowding.⁵

Many states, despite budget constraints, are trying to build their way out of the prison crisis, spending more on prison construction than ever before. California, for example, will spend as much as \$2.7 billion to provide 51,000 more beds between 1990 and 1995.⁶ This will reduce the inmate population from 68 percent to only 30 percent over capacity. States collectively spent \$6.7 billion during 1989-1990 to build and expand facilities, up 73 percent from 1987-1988.⁷ This increase, as well as the rapid rise in operational costs, makes corrections the states' fastest growing budget item except for Medicaid.⁸

But even this surge in spending is not providing cells fast enough. It takes at least 30 months to build a new prison, in addition to the months spent winning legislative and voter approval. Many states turn to the local jails for available space, but the localities, also struggling with a rising inmate population and shortage of funds, do not have the capacity to handle the state's overflow.

In addition to construction costs ranging from \$60,000 to \$80,000 per bed, taxpayers 1989 must provide another \$12,500 to \$18,000 per bed annually for operation and maintenance.⁹

Pressured to relieve crowding, many states opt for a dangerous panacea: they release prisoners long before they have completed their sentences. On average, inmates serve less than half their full sentence.¹⁰ At least sixteen states operate early release programs,¹¹ letting out over 18,600 offenders

5 ACLU National Prison Project in *State Legislatures*, March 1990.

6 Gary Enos, "Prison Crisis Shackles Governments," *City and States*, May 21, 1990.

7 Su Perk Davis, "Survey: Prison Construction Booms in U.S. - Up 73 Percent," *Corrections Compendium*, September-October 1989.

8 National Conference of State Legislatures, *State Budget and Tax Actions: 1990*, September 1990.

9 Bureau of Justice Statistics, U.S. Department of Justice, *Report to the Nation on Crime and Justice*, Second edit., March 1988.

10 Bureau of Justice Statistics, U.S. Department of Justice, *Sourcebook of Criminal Justice Statistics, 1987*, 1988.

11 Camille and George Camp in Charles W. Thomas and Linda S. Calvert Hanson, "Access to Qualified Immunity by Private Defendants in 42 Section 1983 Damage Suits: The Implications for Correctional Privatization" (Unpublished paper presented at the Academy

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per year.¹² Recent studies show an alarming rise in the rate of recidivism, that is, the percentage of ex-prisoners going on to commit further crimes. Releasing prisoners before their sentences are up or before parole officials think they are ready to reenter society can expose the public to considerable, unnecessary danger. The *Orlando Sentinel* reported, for example, that from February 1987 to March 1989, one out of four pre-released inmates in Florida was rearrested.¹³ Similarly in Oklahoma City, government officials attributed a three-month, 36 percent jump in the crime rate to the state's early-release program.¹⁴

Federal prisons have not been immune from the prison population explosion. In fact, the rise in offenders sentenced to federal prisons has begun to outpace the population increase at the state level. Where the states' prison population rose by 5.8 percent during the first half of 1990, inmates under the federal system increased in number by 8 percent. Currently operating at 51 percent over capacity,¹⁵ the Federal Bureau of Prisons predicts that the number of federal inmates will double within the next five years.¹⁶

Federal expenditures to build new prisons meanwhile continue to escalate. In the fiscal 1991 budget, the federal government will spend \$1 billion to build new BOP facilities bringing the total federal corrections budget just under \$1.8 billion. The federal government should follow the lead of the states and localities and utilize the private sector's flexibility, and innovation in managing—and building—adult secure prisons.

THE PRIVATIZATION OPTION

A promising option for dealing with prison overcrowding is prison privatization. Since the early 1980s, an increasing number of jurisdictions at all levels of government have engaged private, for-profit firms to finance,

of Criminal Justice Sciences annual convention), March 17, 1990.

12 National Institute of Justice, U.S. Department of Justice and American Correctional Association, *National Directory of Corrections Construction*, Second edit., April 1988.

13 Sean Holton and Mark Vosburgh, "Special Report: Crime Before Its Time," *The Orlando Sentinel*, August 13-16, 1989.

14 Susan Darst Williams, "Good Time/Early Release: Out Before Their Time," *Corrections Compendium*, July 1986.

15 Bureau of Justice Statistics, *Prisoners in 1990*, *op. cit.*

16 "U.S. Marshals in Huddle on Overcrowding in Jails," *The New York Times*, January 5, 1990.

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construct, and manage prisons. At the state level alone, more than 35 percent of all corrections agencies have privatized facilities.¹⁷ Reports the *New York Times*: "Governments are turning to these private groups because they cannot handle the problem themselves."¹⁸ Less constrained by government bureaucracy and its costly regulations, the private sector is proving to lawmakers throughout the country that it can build facilities faster and operate prisons more cost-efficiently than the government. Lawmakers have various forms of privatization from which to choose.

Contracting Out Services

All but nine states currently buy correctional services from the private sector. This is the most common form of privatization in corrections. The most typical include hiring private firms to provide medical and psychiatric care, food service, drug treatment, staff training, and inmate counseling.¹⁹ Several jurisdictions just over the last few years have contracted with private firms for rehabilitation programs, data systems management, administrative functions, and payroll and accounting.²⁰

The evidence shows that privatized correctional services frequently save money. A 1984 national survey found that of 52 government agencies contracting out correctional services to the private sector, 75 percent reported cost savings. Furthermore, 22 agencies with large contracts to private firms reported that it cost them on average 26 percent less than if the agency itself had provided the same service. Six agencies reported that it cost them on average 17 percent more to purchase private service. But in these cases, most of the private operators were providing services for facilities under court order and were, therefore, under pressure to enhance their services rapidly to meet court imposed deadlines.²¹

17 Touche Ross and Co., *State Government Privatization in America*, 1989.

18 Lisa Belkin, "Rise of Private Prisons: How Much of a Bargain?" *The New York Times*, March 27, 1989.

19 Warren I. Cikins, "Privatization of the American Prison Systems: An Idea Whose Time Has Come?" *Notre Dame Journal of Law, Ethics, and Public Policy*, Vol. 2, No. 2, 1986.

20 Keon S. Chi, "Prison Overcrowding and Privatization: Models and Opportunities," The Council of State Governments, *The Journal of State Governments*, Vol. 62, No. 2, March/April 1989.

21 Camp and Camp in Charles H. Logan and Sharla P. Rausch, "Punish and Profit: The Emergence of Private Enterprise Prisons, *Justice Quarterly*, September 1985.

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Private Construction

With facilities in 43 states under court order to relieve crowding, state correctional agencies are under enormous pressure to make available more prison space as quickly as possible. Eight states have contracted with private companies to build at least 60 correction facilities with a total of 10,750 beds.²² These states recognize that private firms can mobilize resources and staff more quickly than the government.

At the federal level, too, private vendors, when given the opportunity, are proving that they can build prisons faster and cheaper than governments. For example, in 1984, the Corrections Corporation of America (CCA), a leading prison construction and management firm based in Nashville, Tennessee, won the contract with the federal Immigration and Naturalization Service (INS) to build a 68,000 square foot detention center in Houston to hold 350 undocumented immigrants. In only five and a half months, and at a cost of \$14,000 per bed, construction was complete. Based on the average time it then took the INS to construct a facility of comparable size, it would have taken two and a half years to complete at \$26,000 per bed.²³ CCA now operates the facility.

The private sector's innovative response to constructing facilities also adds to the speed at which prison cells can be provided. Unlike the government, private firms must out-perform their competitors to secure and retain contracts. Further, private firms are much less limited by government regulations and procedures. For example, private firms can choose sites for prisons with a minimum of government red tape. Or they can obtain building materials or hire workers for construction without going through costly and time-consuming government procedures. Private firms thus have the freedom and the incentive to provide services efficiently. Example: In 1986, the private U.S. Corrections Corporation (USCC), based in Louisville, met the state of Kentucky's urgent request for a 200-bed minimum security facility. The firm purchased an old seminary in rural St. Mary's county and one week later opened the prison. Assuming ownership and operation of the facility under the terms of a three-year contract, USCC recently renewed its contract with the state to operate a prison, the Marion Adjustment Center, for another three years.²⁴

²² Davis, *op. cit.*

²³ Samuel Jan Brakel, "Privatization and Corrections," Reason Foundation, *Federal*

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Governments have been building and running prisons in the U.S. since the country's founding. Yet the private sector, not government, has been in the forefront of innovative architectural designs and technology for security problems. Example: most of Corrections Corporation of America's facilities contain installed video cameras to monitor prisoners. Motion detectors are placed along fences to sound an alarm in the event of an escape attempt. Recently, CCA placed devices within the cells, so that inmates in emergency situations can immediately contact security.²⁵ Observes Charles W. Thomas, Professor of Criminology at the University of Florida: "...facilities designed and constructed by the private sector using creative facilities designed and technological innovations tend to be less labor intensive and therefore less costly to operate."²⁶

Private Financing: Lease-Purchase Agreements

Besides designing and building facilities, more than a dozen private firms finance prison projects, mainly through lease-purchase agreements. Traditionally, the government finances facility construction by appropriating cash (the pay-as-you-go approach), or by issuing general obligation bonds. The former method places the whole financial burden of construction on the state's annual budget; the latter method requires voter approval and is restricted by debt limitations. By contrast, private financing through lease-purchasing spreads the cost of construction over a long period of time and does not require voter approval.

Under lease-purchasing, a private firm agrees to build a prison which the state will lease for a long period. Construction of the prison is funded, in part, by advance payments of rent by the government. When the lease expires, the government receives title to the facility. The private firm, meanwhile, has benefitted from tax advantages and cash flow from the lease payments. The state government has benefitted from added prison capacity without the lengthy process of voter approval or raising debt limits. In most cases, lease-purchasing must be approved by the state legislatures.²⁷

24 National Criminal Justice Association, "Private Sector Involvement in Financing and Managing Correctional Facilities," *Special Report*, April 1987.

25 Phone conversation with David L. Myers, Vice President of Facility Operations, Corrections Corporation of America, November 6, 1990.

26 Charles W. Thomas, "The Background, Present Status, and Future Potential of Privatization in American Corrections," Private Correctional Services Association, October, 1989.

27 For more on lease-purchase agreements to finance prison construction, see Project Finance

Containing Prison Costs Through Privatization

One of the major constraints preventing jurisdictions from financing prison construction is public opposition. In the 1980s, an average 60 percent of all local referenda for jail-bonds were rejected.²⁸ Although intent on throwing lawbreakers behind bars, the public generally opposes prisons in their backyards.²⁹

Lease-purchasing enables jurisdictions to build prisons without referenda. While opponents argue that this is nothing more than a means to avoid public scrutiny and accountability, in fact, lease-purchasing arrangements are all the more accessible to public view. Explains DePaul University College of Law Professor Samuel Jan Brakel: "Public oversight is preserved in other ways—most notably via a contract that may be more specific and more 'visible' than typical public accounting mechanisms."³⁰

Private Management of Prisons

The private sector's role as manager of correction facilities until recently was limited to operating "secondary" community-based facilities, like halfway houses, detention homes, and holding centers for illegal aliens awaiting deportation. Some 39 states, the federal Bureau of Prisons, U.S. Marshals Service, and Immigration and Naturalization Service, contract with private firms to operate of these non-secure facilities.³¹ Roughly 66 percent of detention centers are privately-run.

In the early 1980s, officials in several states began asking private firms to run the more secure adult prisons and jails. More than sixteen jurisdictions currently are contracting out one or more of these "primary" facilities to the private sector.³² As of June 1990, there were over 65 such facilities

and Development Group, Nixon, Hargrave, Devans & Doyle, "Private Sector Plays Role in Solving Prison Overcrowding," *Finance Alert*, November 1989. Also, William S. Andrews, "Keep Tax Power from Courts," *City and State*, May 21, 1990.

28 Randall Fitzgerald, *When Government Goes Private: Successful Alternatives to Public Services* (New York: Universe Books), 1988.

29 John D. Donahue, *The Privatization Decision: Public Ends, Private Means* (New York: Basic Books, Inc., Publishers), 1989.

30 Brakel, *op. cit.*

31 Charles Ring, *Report Relative to Prisons for Profit*, Legislative Research Council, The Commonwealth of Massachusetts, 1986.

32 This includes fourteen localities, five states, and four departments within the federal government. Charles W. Thomas, "Private Corrections Adult Secure Facility Census," May 1990, Unpublished survey.

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totaling over 16,000 beds, with an additional 4,000 beds approved for operation in the near future.³³

While most of these facilities are minimum security, within the past few years many have begun to house some medium and maximum security prisoners. Five of the eight prisons run by Wackenhut Corrections Corporation of Coral Gables, Florida hold both minimum and medium secure inmates. In summer 1990, Wackenhut signed a contract to manage a medium to maximum security prison for Allen Parish in the state of Louisiana. And Corrections Corporation of America will operate a medium-secure state facility in Louisiana. Similarly, the private U.S. Marion Adjustment Center in Kentucky, although classified by that state's attorney general as a minimum security prison, contains a maximum secure wing for inmates convicted of such offenses as murder and rape.³⁴

FEDERAL PRISON RECORD

Several custodial agencies at the federal level also have privatized a handful of their secure facilities. The Immigration and Naturalization Service (INS), the agency which retains jurisdiction over illegal aliens awaiting deportation, has turned nine of its sixteen secure detention facilities over to private operation, and expects to contract more.

Similarly, the U.S. Marshals Service, which oversees pretrial and presentenced offenders and transports them from the courthouse, in June 1990, awarded a contract to build and finance a facility to the St. Louis-based Corrections Development Corporation. At the same time the Marshal's Service signed a contract with the Nashville-based Corrections Corporation of America operation for a medium and maximum security prison to be located in Leavenworth, Kansas.

Struggling to keep pace with the swelling population of illegal immigrants and pretrial detainees, and no longer able to depend on now overcrowded county jails, the INS and U.S. Marshals Service see the private sector as a means to provide needed space quickly. Private builders are not constrained by the politics and red-tape which impedes government agencies, and are able to open facilities in record time, frequently converting existing buildings into secure institutions.

33 *Ibid.*

34 Charles H. Logan, *Private Prisons: Cons and Pros* (New York and Oxford: Oxford University Press), 1990.

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The federal Bureau of Prisons (BOP), which has custody over all convicted federal inmates has begun to turn to the private sector for prison services, but not as extensively as the INS, Marshals Service, and some state and local correctional agencies. In 1989, the BOP did start a pilot program to construct a prison work camp located in Fairton, New Jersey, using private sector assistance.³⁵ The BOP also is considering privatization of some of its "special-needs facilities," those holding juveniles, women, protective custody, and medical patient inmates. And it has engaged private firms to operate approximately 70 percent of its non-secure Community Treatment Centers and several juvenile detention facilities.

Yet the BOP has been unwilling to privatize secure adult facilities, called the Federal Corrections Institutions. One possible reason for the BOP's reluctance to privatize adult facilities is that unlike the states, the federal prisons are not under court orders to relieve crowding. Furthermore, while the states find it difficult to expand due to budget constraints, the federal government has faced no such limits. The BOP has not found itself in need for the private sector's ability to save taxpayers' dollars.

PRIVATIZATION'S CRITICS

Prison privatization critics fear that increased private involvement in prisons inevitably will lead to a deterioration of prison conditions. They claim that private operators will cut corners to keep costs down, and in turn, lower quality standards and jeopardize the prisoners' welfare. They argue that private operators will develop into a powerful special-interest group, successfully lobbying lawmakers to extend the length of time inmates serve in prison.

Yet over the past decade, private firms have established a record of achievements in the prison sector. General economic theory as well as a number of recent studies highlight the various benefits of private involvement in prisons.

COST SAVINGS

Corrections is the fastest growing state budget item, except for Medicaid. A very appealing aspect of prison privatization, obviously, is the potential cost savings. Based on a 1987 Touche Ross and Co. (now Deloitte and

35 Reason Foundation, *Privatization 1990: Fourth Annual Report on Privatization*, 1990.

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Touche) survey, the majority of government officials listed cost savings as the number one reason for employing the private sector to run prisons.³⁶

Critics of prison privatization argue that it is not possible to be innovative and to cut costs in corrections. They contend that the "basic service," that is, sheltering and feeding prisoners, is the same whether provided by a government agency or a private firm. The number of technological "alternatives" for providing these services, they contend, is severely limited.³⁷ But the large number of private entrepreneurs who employ innovative, cost-saving techniques prove such allegations wrong. These operators use more flexible and creative alternatives to providing a "basic service."

Private operators are able to cut costs because they are not constrained by the cumbersome government red-tape which impedes quick and efficient responses to immediate correctional needs.

For example, Buckingham Security, Ltd. of Lewisburg, Pennsylvania, which operated the Butler County Jail from 1985 to 1988,³⁸ lowered utility costs by using fluorescent light bulbs instead of the usual incandescent bulbs and by routinely checking showers for running water. The firm also saved money by shopping for the best prices for supplies and by purchasing supplies in bulk. Food was purchased from the U.S. Department of Agriculture's surplus stocks at below-market prices. While the county government, when it operated the jail, could have done this, it rejected the idea.³⁹ In the year that it assumed management, Buckingham renovated the high-security facility, employing inmates to do the construction, thus saving the county the expense of high union wages.

Other proprietors save money though labor costs⁴⁰ and frugal purchasing practices. Unlike the government, which acquires materials through the frequently expensive, time-consuming bidding process and pays by credit,

36 Touche Ross & Co., *Privatization in America*, 1987.

37 John D. Donahue, *The Privatization Decision: Public Ends, Private Means* (New York: Basic Books, Inc., Publishers), 1989.

38 Buckingham Security's contract to operate Butler County Jail was not renewed in 1989, due to the political and successful efforts of American Federation of State, County and Municipal Employees to terminate the private operator's contract. The powerful labor union threw state-wide support behind two candidates for county commissioner who opposed prison privatization. As was later agreed by players on both sides of the issue, Buckingham Security was the victim of "labor and county politics." (For a more detailed account of the situation, see Logan, *op. cit.* pp. 36-37.)

39 NCJA, *op. cit.*

40 NCJA, *op. cit.*

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contractors can shop around among discount stores, purchase goods in bulk, and pay directly with cash.⁴¹

Corrections is an extremely labor-intensive industry, with salaries alone accounting for about 80 percent of all prison operation costs. Contractors generally save by reducing overtime and over-inflated benefits typically paid to unionized government workers.⁴²

Critics warn that private operators will attempt to save pennies by reducing key personnel and by cutting back on employees' wages. The evidence does not support this. CCA, for example, increased the number of employees from 58 to 72 after it won the contract to run the Silverdale facility in Hamilton County, Tennessee.⁴³ As a rule, moreover, private workers' salaries remain competitive with government workers'. Buckingham Security's employees received higher wages than the facilities' previous government workers.⁴⁴ The same is true for most of CCA's employees. When CCA assumed operation of Bay County Jail in Panama City, Florida, 75 employees stayed on⁴⁵ and received a 7 percent pay increase, and a \$500 bonus.⁴⁶ CCA also gives employees the option of buying into a stock ownership plan.⁴⁷

In many cases, depending on the contract, the government pays to a private management company a per diem fee for each inmate. Some contracts lower the price for additional prisoners. At the Bay County Jail, for example, CCA charges a daily fee of \$31.01 for each of the first 310

41 Writes University of Connecticut sociologist Charles H. Logan, "Government agencies require bureaucratic controls [red tape] to regulate their purchasing procedures because they lack the more automatic restraints of a profit-oriented firm. With their greater latitude, private prisons can shop more effectively and obtain better prices. Because they can purchase more quickly, they can maintain lower inventories." Logan, *op. cit.* Also, Don Hutto, former Director of Corrections in Arkansas and Virginia and present Executive Vice President of CCA recalls that the corrections department in Virginia bought pencils at twice their price in a local dime store. "You buy things on low bid, but low bid doesn't mean low price." Erik Larson, "Captive Company," *Inc.*, June 1988.

42 Logan, 1990, *op. cit.*

43 Charles Ring, *Report Relative to Prisons for Profit*, Legislative Research Council, The Commonwealth of Massachusetts, 1986.

44 Logan, *op. cit.*

45 *Ibid.*

46 NCJA, *op. cit.*

47 Larson, *op. cit.*

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inmates. For the next twenty inmates, the fee drops to approximately \$10, and for all additional inmates, the price drops to roughly \$7.50.⁴⁸

Regrettably, there have been very few studies comparing the cost of privately run prisons to those run by the government. And those that have been conducted, have lacked enough information to determine their thoroughness and accuracy, according to University of Connecticut sociologist Charles Logan, former Visiting Fellow at the Justice Department's National Institute of Justice and author of the book, *Private Prisons: Pro's and Con's*.⁴⁹

Jurisdictions' cost comparisons typically use government audits and reports to assess the government cost. But, as Logan explains, audits on government operations fail to include certain costs because they do not actually fall within the correctional budget even though they are part of the government operation of a prison. These "hidden costs" include depreciation, debt service, personnel expenses, garbage collection, transportation and other overhead costs. Liability costs generally are paid out of the state or county attorney's budget. Similarly, fringe benefits and pensions usually are paid from a general government fund. These are all costs that must be accounted for by the private contractor.⁵⁰

Despite the lack of a reliable and standardized accounting method to determine actual costs, a growing number of states are requiring private providers to set fees below the "likely full cost to the state" to assure cost savings to the government. Tennessee requires that private firms charge a per diem rate five percent below the government's per diem cost.⁵¹ Texas requires a ten percent cost savings.⁵² Before governments mandate savings, they should devise a more fair and accurate method of assessing what the "likely full cost" actually is.

A 1989 study for the National Institute of Justice, the research arm of the U.S. Department of Justice, attempts to take account of all hidden costs and other accounting discrepancies to compare more accurately private and

48 Eric Larsen, "Captive Company," *Inc. Magazine*, June 1988.

49 Charles H. Logan, "Proprietary Prisons," in Lynne Goodstein and Davis L. Mackenzie, eds., *The American Prison: Issues in Research and Policy* (New York: Plenum, 1989).

50 *Ibid.*

51 Samuel Jan Brakel, "'Privatization' in Corrections: Radical Prison Chic or Mainstream Americana?" *New England Journal on Criminal and Civil Confinement*, Winter 1988.

52 Ira P. Robbins, "'Dungeons for Dollars': Private Enterprise Sees Money in Jails," *Legal Times*, November 27, 1989.

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public costs of prisons. Sociologist Charles Logan and Hamilton County Auditor Bill McGriff compare the costs of the Corrections Corporations of America-operated Hamilton County Penal Farm with the costs that would have been incurred had the county continued to operate the facility. Using conservative county cost estimates, they conclude that the Corrections Corporation of America has saved the government at least 4 percent to 15 percent over three years.⁵³

QUALITY

There is concern that the quality of prisons will deteriorate under private management as a result of attempts to reduce costs. The counter-argument is that quality will improve due to contractors' incentive structure and innovative abilities.

When the government entity chooses to contract out a prison's operation to a private vendor, it issues a formal request for proposal, specifying its performance criteria and the general qualifications it seeks.⁵⁴ "Quality" under a private contractor is satisfactory if it meets those terms.

John Donahue, an assistant professor at Harvard University's John F. Kennedy School of Government, and a critic of prison privatization, has written that the quality of privately run prisons will depend on "the existence of lively and realistic competition...; the degree to which quality can be monitored; and the government's ability and inclination to reward, penalize, or replace contractors on the basis of performance."⁵⁵ Donahue questions whether these criteria can be met under private operation. Yet it is because these elements are inherent in the contractual process that privatization is likely to increase quality. Government operation alone does not create competition or accountability.

Opening the market to competition assures that all proprietors will maximize the quality of service at the lowest possible cost. The present owners and managers of Kentucky's Marion Adjustment Center won their

53 Charles H. Logan and Bill W. McGriff, "Comparing Costs of Public and Private Prisons: A Case Study," *NIJ Reports*, National Institute of Justice, U.S. Department of Justice, September/October 1989.

54 Judith C. Hackett, Harry P. Hatry, Robert B. Levinson, Joan Allen, Keon Chi, and Edward D. Feigenbaum, "Contracting for the Operation of Prisons and Jails," National Institute of Justice, U.S. Department of Justice, *Research in Brief*, June 1987.

55 John D. Donahue, "Prisons for Profit: Public Justice, Private Interests," Economic Policy Institute, 1988.

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contract by out-performing the original winner of the contract. Kentucky rewarded U.S. Corrections Corporation the contract to manage the minimum security prison only after the original successful bidder failed to meet the terms of the contract.⁵⁶

Concerning "the degree to which quality can be monitored," private providers are watched very closely by the government to assure that standards are met. While the process may vary with jurisdictions, most governments require periodic reporting, on-site inspections, and immediate notification in cases of inmate escapes, injuries, illnesses, or deaths.⁵⁷

The duration of contracts vary, although most range from three to five years and almost all require review and annual fee-renegotiations. The Corrections Corporation of America holds a 32-year contract with Hamilton County, Tennessee to manage the Silverdale Detention Center, while the terms of payment are renegotiated every year.⁵⁸ As with most contracts, the county can terminate the contract at any time if officials believe that standards are not being met.

There are numerous documented examples of operators who substantially improved the facility's conditions under private management. For example, the former warden of the Silverdale Detention Center, who now monitors that facility for Hamilton County, reported that CCA made improvements in the physical plant, classification system of prisoners, staff treatment of prisoners, disciplinary system, and medical care.⁵⁹

CCA also upgraded the quality of Florida's Bay County Jail. Under government control, there had been several lawsuits pending against the county for crowded conditions, fire safety violations, and poor medical treatment. Seven months after CCA took over the prisons, the lawsuits were dropped because of the notable improvements, including a new 174-bed work camp and a rehabilitation program at no extra charge to the government.⁶⁰

56 Keon S. Chi, "Prison Overcrowding and Privatization: Models and Opportunities," The Council of State Governments, *The Journal of State Government*, Vol. 62, No. 2, March/April 1989.

57 Hackett, *et al.*, *op. cit.*

58 Logan, 1990, *op. cit.*

59 Samuel Jan Brakel, "Prison Management, Private Enterprise Style: The Inmate's Evaluation," *New England Journal on Criminal and Civil Confinement*, Summer 1988.

60 NCJA, *op. cit.*

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A 1989 study by the Urban Institute compares quality levels at the private Marion Adjustment Center and the public Blackburn Correctional Complex, both in Kentucky. Based on surveys and interviews with prison staff and inmates, and on personal visits and review of agency records, the researchers evaluated the two prisons' physical conditions, escape rates, security and control, inmates' physical and mental health, adequacy of programs, and rehabilitation methods as determined by recidivism rates. The researchers conclude that "by and large, both staff and inmates gave better ratings to the services and programs at the privately-operated facilities: escape rates were lower; there were fewer disturbances by inmates; and in general, staff and offenders felt more comfortable at the privately-operated facilities."⁶¹

Operators also have brought down recidivism rates, mainly through education and vocational training programs for prisoners. Prisor Corporation of Nashville, Tennessee, boasts recidivism rates averaging in the 20 percent range. This compares with the average 45 percent recidivism rate in the nation's public prisons.⁶²

LIABILITY

The question of liability concerns whether the state or the private provider is legally responsible for damage or injuries due to the actions of the operators of the prisons. Liability has been an extremely important component of the prison privatization debate and is rooted in the civil rights and abuse cases that pervade the correctional system. In 1989, 40 states responding to a Criminal Justice Institute survey reported that 18,389 prisoner civil rights suits were filed in federal courts, compared to about 6,600 filed nationwide in 1975.⁶³

Privatization critics fear that allowing private firms to run prisons will expose the government entities to liability charges for actions or situations over which government has no direct control. At first, privatization sup-

61 Urban Institute, *Comparisons of Privately and Publicly Operated Corrections Facilities in Kentucky and Massachusetts*, August 1989.

62 Reason Foundation, *Privatization Watch*, No. 162, June 1990.

63 Telephone interview with Betsy Burnett of the ACLU National Prison Project. Charles W. Thomas and Linda S. Calvert Hanson, "Access to Qualified Immunity by Private Defendants in 42 Section 1983 Damage Suits: The Implications for Correctional Privatization" (Unpublished paper presented at the Academy of Criminal Justice Sciences annual convention), March 17, 1987.

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porters argued that government fears are not warranted because it would be the private operator of the prison, not the government, that would be liable for civil damages. This argument, however, was refuted in 1984 by the decision by the Federal District Court of the Southern District of Texas in the case of *Medina v. O'Neill*.⁶⁴ This involved a prison guard hired by a private firm that had a contract from the Immigration and Naturalization Service to accept custody of sixteen illegal aliens who had escaped from prison and were discovered aboard a ship docked in the port of Houston. The guard had shot two inmates, killing one and severely wounding the other. The court ruled that the private provider was an agent of the government which provides a constitutionally mandated service. As such, "State action" existed, making the federal government liable.⁶⁵

What the court ruling leaves unclear are situations in which a private contractor supplies a service that would not have been provided by the government. University of Florida Criminology professors Charles Thomas and Linda Hanson conclude, "Notwithstanding the United States Supreme Court's widely analyzed efforts to clarify these requirements, the circumstances under which private persons or entities will encounter civil liability for constitutional torts are not easily defined."⁶⁶

Instances in which the government clearly is liable should not deter prison privatization. To protect both potentially liable parties, almost all private providers carry liability insurance. Corrections Corporation of America carries \$15 million in liability insurance for the Bay County Jail, as is required under the terms of the contract.⁶⁷ Similarly, the U.S. Corrections Corporation carries insurance to cover up to \$1.5 million per incident.⁶⁸ In addition, most contracts include indemnification clauses that shift all liability costs to the private contractor. In several states, contractors are required by law to carry insurance and to sign to indemnification provisions.⁶⁹

64 586 F. Supp. 1028 [S.D. Texas, 1984].

65 Brakel, 1989, *op. cit.*, and Ring, *op. cit.*

66 Thomas and Hanson, "The Implications of 42 U.S.C. 1983 for the Privatization of Prisons," *Florida State University Law Review*, 1989. *op. cit.*

67 Fitzgerald, *op. cit.*

68 Logan 1990, *op. cit.*

69 Ring, *op. cit.*

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PRISON PRIVATIZATION IN PERSPECTIVE

Critics of prison privatization warn that the trend of privately operated prisons will create a corrections industry of politically entrenched private operators who will become a strong lobby group pushing for longer sentences. This, of course, would increase the demand for prison services.

Critics fail to explain how private providers of corrections would gain more political power than do the private providers of other public services. Private firms that handle solid-waste disposal in landfills do not lobby against recycling. Or, as E.S. Savas, the Director of the Privatization Research Organization at the City University of New York writes, operators of daycare centers do not lobby against birth-control and abortion.⁷⁰ Private operators, moreover, have no control over the release of prisoners. In almost all cases of release—for furlough, probation, or permanent discharge—decisions are made by the government entity.

The critics assume that private operators will be desperate for inmates to fill their cells. This is very difficult to imagine. The day when there is a shortage of prisoners in America surely is far off. But should growth in the prison population slow, the private operator, more so than the government, could save money by cutting back on staff and eliminating services not necessary with fewer prisoners.

STATUS OF LEGISLATION: STATE AND FEDERAL

A dozen states, Alaska, Arkansas, Colorado, Florida, Maine, Massachusetts, Montana, New Mexico, Oklahoma, Tennessee, Utah, and Wisconsin authorize the private management of prisons.⁷¹ Many other states, including Arizona, California, Georgia, Indiana, Illinois, Michigan, Mississippi, New Hampshire, New Jersey, Pennsylvania, Texas, Virginia, and Wyoming, are considering legislation authorizing prison privatization.⁷² Only Washington explicitly forbids by statute the contracting out of prison management to the private sector.⁷³

70 E.S. Savas, *Privatization: The Key to Better Government* (New Jersey: Chatham House Publishers, Inc.), 1987.

71 Brakel, *op. cit.* and Fitzgerald, *op. cit.*

72 AFL-CIO, Public Employee Department, *Privatization Update*, Winter 1990 and Reason Foundation, *Privatization 1990*, *op. cit.*

73 NCJA, *op. cit.*

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At the federal level, Representative Henry J. Hyde, the Illinois Republican, is sponsoring legislation to allow state governments to issue tax-exempt bonds for financing privately owned and operated prison facilities. Besides providing financing for prisons, this legislation would save money for the states. Interest paid by the government on the borrowed funds would be significantly lower because of the bond's tax-exempt status. The bill was first introduced in May, 1990, and referred to the House Ways and Means Committee, which took no action. The bill was reintroduced in February 1991 by Congressman Hyde.

RECOMMENDATIONS

Prison privatization already saves taxpayers' dollars and improves quality in the states; at the federal level, little privatization has been attempted. To expand privatization efforts policy makers should consider the following at the state level:

1) Introduce legislation authorizing the private financing, construction, operation, and ownership of prisons and jails. Only a few states specifically prohibit private prisons. Many states and counties, despite the absence of enabling legislation, contract with the private sector to finance, build, and operate prisons. To make privatization legal in states where it is not, and to encourage it fully in other states, authorizing legislation should be enacted.

2) Adopt fair and accurate accounting procedures to determine the government cost of operating prisons. A number of states require that a private prison operator charge a per diem fee below the "likely full cost of the state." Yet these states use accounting procedures that underestimate the "likely full cost." States often exclude such costs in their calculations of government-run prisons as pensions and benefits for workers, transportation cost, and debt servicing. To help determine when privatization is the most cost-effective means of providing prison services, states should authorize studies and audits that compare the same cost factors for government and private operation. Audits must include all costs incurred by the private sector, including those which are paid from non-corrections budgets. This is particularly important for states that mandate specific cost savings under private operation.

At the federal level, policy makers should consider the following:

3) Authorize federal tax-exemption for interest earned on state bonds that finance privately operated and owned prisons. Legislation sponsored by Representative Hyde would change the federal tax code to

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allow tax-exempt state bonds to be issued to finance private prisons. This tax-exemption currently applies to state government bonds financing other industrial and public-works projects.

4) The federal Bureau of Prisons and the Immigration and Naturalization Service should conduct studies comparing the costs of a privately run facility with one run by the government. As at the state level, such studies should take account of all costs of federal prison operations.

5) The federal Bureau of Prisons should experiment by contracting out to the private sector one of the agency's minimum to medium secure Federal Corrections Institutions. Engaging a private firm to run one secure facility will provide a base of evidence to be used by the Bureau in future privatization decisions. The case for private management of non-secure facilities is well established at the state level and thus should be started at the federal level as well.⁷⁴

6) Congress should allow the Bureau of Prisons and the Immigration and Naturalization Service to finance prison construction through lease-purchasing and to hire private firms to run existing facilities. A principal advantage to lease-purchasing is the speed of the financing process which, in turn, expedites construction. This arrangement would not place the total construction costs on the annual budget, but would spread it over a twenty to thirty year period. Critics object to lease-purchasing primarily because it by-passes voter approval. However, this would not apply to federal facilities which are financed by appropriated funds and do not require voter approval.

Few existing federal facilities have been turned over to private operation, even though officials at the Bureau of Prisons have expressed an interest in this approach.

CONCLUSION

America's correctional system is rapidly deteriorating. Government spending for corrections is growing faster than ever, yet prisons are not being built quickly enough to house the ballooning inmate population. Meanwhile, states are being pressured by the federal courts to find more prison space. And when they miss court-imposed deadlines to provide such

⁷⁴ The last two recommendations were proposed in the *Report by the President's Commission on Privatization, op. cit.*

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space, they often find it necessary to release offenders before their sentences are over or before they are judged fit to return to society. And the federal government, less able to rely on the bulging county jails to hold federal offenders, also is struggling to find more cell space.

Privatization of prisons can help alleviate this crisis. More than 35 federal, state, and local jurisdictions are tapping the innovations of the private sector, awarding contracts to build, finance, or operate adult secure facilities.

In the early 1980s, during prison privatization's early road-test days, observers questioned whether the private sector could succeed providing service traditionally performed by the government. Opponents predicted that contractors would fail to save the government money, the quality of prisons and inmate care would decline as vendors cut corners to save money, and problems concerning liability would eventually turn agencies away from private operation.

Over the past decade, however, the achievements of private operators have put to rest many of these concerns. Vendors are proving they can save money while improving the quality of facilities. And concerns about liability are being sorted out in the terms of the contracts.

To help improve the condition of the nation's prison system, all levels of government should follow the lead of these jurisdictions and allow the innovative and entrepreneurial "spirit" of the private sector to challenge the traditionally monopolistic government provision of corrections. This can be achieved by encouraging correctional agencies to contract with the private sector, through legislation where none exists, and by removing existing barriers to prison privatization.



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CRITICAL ISSUES

How Privatization Can Solve America's Infrastructure Crisis

America's roads, bridges, airports, and other permanent facilities are wearing out. Repairing and modernizing this infrastructure will cost hundreds of billions of dollars — funds not likely to be available from the cash-strapped local, state, and federal governments that built and operate these facilities. A solid, modern infrastructure, however, is essential to a modern, thriving economy. It is essential too to the health and safety of Americans.

Heading off an infrastructure catastrophe will not, as some argue, require huge new tax increases. Economically, the most effective prescription for America's faltering infrastructure is a dose of private sector creativity and participation.

The private sector can be involved in two broad ways. First, the private sector can provide the facilities or services themselves, charging the users the full cost. These costs are kept low by competition. Second, private firms can compete for government contracts to provide specific goods or services. While governments retain ultimate control, the bidding process keeps costs low and service quality high.

This Heritage Foundation/National Chamber Foundation study assesses how the private sector can build and operate infrastructure facilities. In many parts of the nation, the private sector already is doing this. From the examples assembled by the experts in this volume, local, state, and federal policy makers can find guidance on how they can answer their constituents' demands for quality infrastructure without busting budgets. Businessmen, meanwhile, can find in these examples opportunities to profit while helping to meet these demands. And America can get the new facilities it needs to grow economically and remain efficient.

