

costs of Coast Guard services, for example, the federal budget will forgo some \$1.05 billion over the course of 1984 (see Table 1). Roughly half that sum will also be forgone for deep-draft navigation services, and roughly the same amount again will go toward the inland waterway system. Obviously, recovery of such outlays would help narrow the federal deficit, which is now projected to stand at about \$185 billion at the end of fiscal year 1984. Federal borrowing (though not the budget deficit) would likewise be curbed by recovery of the \$2.0 billion to be spent this year to fill the Strategic Petroleum Reserve. 4/

#### LIMITATIONS OF USER FEES

User fees apply only in programs with identifiable beneficiaries of federal services. When services provide public goods--benefits shared by the entire nation, such as national defense--funding from general revenues is appropriate. Within this general principle, several other limitations to user fees bear consideration.

#### Existing Subsidies to Competitors--"Second Best" Solutions

If competing industries all receive subsidies or other assistance on a comparable footing, then continued subsidies may not be harmful from an economic standpoint. Indeed, continuing subsidies on this so-called "second best" basis may cause less economic distortion than requiring one industry to support itself while its competitors receive public help. For example, federal aid to mass transit can be supported on grounds that users of its prime competitors--private cars--underpay, since drivers do not pay for the road congestion and delay they cause for other travelers. Similarly, barge industry representatives argue that federal aid to railroads justifies federal construction and operation of locks and dams.

#### Infant Industries

New industries that face high initial costs, either because of technological changes or because of the lack of a supporting infrastructure, may need temporary public help until they become self supporting. For example, federal aid was provided during the start of the commercial aviation industry. These subsidies have now been eliminated in favor of a program financed by user taxes. Currently, below-cost rates for space

---

4. Expenditures for filling the SPR are not included in the federal budget.

shuttle services is one way that the federal government might encourage the commercial use of space.

### Previously Invested Capital

Much federal spending for public services long predates the current Congressional interest in user fee financing. A major share of that past investment still serves economic activity today. For example, about one-third of all Bureau of Reclamation dams are more than 50 years old, yet they still provide irrigation water to farm communities. Economists generally do not favor attempting to recover such "sunk costs"--that is, both past capital investment and operating expenditures. Inclusion of sunk costs could force fees so high as to depress use of a facility capable of providing additional service at low economic cost. With sunk costs included in fees, the extreme result could be abandonment of a formerly serviceable resource--in the end, eradicating the economic value of the initial investment.

### Legal Constraints

In some cases, legal constraints might inhibit the immediate imposition of user fees. For example, many farmers hold long-term contracts with the Bureau of Reclamation under which they receive irrigation water at very low rates. Based on interest-free repayment of the Bureau's capital costs, these terms effectively subsidize all but perhaps one-tenth of the water's cost. Should the federal government wish to eliminate this subsidy, it would encounter the legal barrier of the contracts--some with terms as long as 40 years--under which it has agreed to furnish water at stipulated prices. Thus, increased water rates might have to wait for such contracts to expire. Alternatively, however, other policy changes might offer economic incentives for contract holders to renegotiate terms. For example, farmers now receiving subsidized irrigation water could be allowed to resell that water if they entered into new contracts providing for full-cost recovery. When the market price is well above cost, this could provide a strong incentive not only to conserve water but also to pay higher rates.

**A TYPOLOGY OF USER FEES.** As used in this paper, the term user fee encompasses the four types of federal and nonfederal charges described below. In terms of who pays them and when, they range from universal to very precise; the descriptions are ranked in that order.

*SYSTEMWIDE FEES.* Taking the form of a federal **tax** or a **tariff** on a service or commodity, a systemwide fee raises money from a universal levy to finance an entire network of services under one program. Also called a **benefit tax**, the systemwide fee is levied at a uniform rate and does not reflect different costs of different parts of a system. Examples include the ticket tax that finances aviation services and the motor fuel tax that pays for federal highways. Though easy to administer, systemwide fees may entail a cross-subsidy, such as payment for construction and maintenance of locks and dams along the Tennessee-Tombigbee waterway from fees collected from users of the Mississippi and Ohio Rivers.

*SPECIFIC FEES.* These **taxes** or **tolls** are varied to reflect the particular costs of separate facilities within a system. Collections from a given set of facilities go only to that set, avoiding the problems of both general taxpayer subsidization and of user cross-subsidization. Examples include the tolls commonly collected at bridge and tunnel approaches. Such specific fees permit rates to be low at low-cost waterways and high at high-cost ones, yielding a good indication of users' willingness to pay and thus of the soundness of a federal investment.

*SPECIAL FACILITY OR SERVICE FEES.* Refinements of the above, special levies or **surcharges** can recover the specific costs associated with a particular facility or service from only those parties who use it. In being imposed at the occasion of each use of certain facilities, **incident-specific fees** can assure that users pay in precise proportion to the costs they impose on a system. These instruments, levied commonly by nonfederal managers such as port authorities, could be applied effectively for such federal investments as Coast Guard safety inspection services or the deep-draft dredging that would benefit the large coal-carrying ships that require extra-deep harbor channels.

*TWO-TIER FEES.* These would superimpose on a systemwide fee a specific charge for the extraordinary costs of any particularly expensive service or facility. Two-tier fees are commonly used by such private-sector enterprises as utilities. Electric service, for instance, is paid for by a **fixed rate** for consumers' access to service, plus **metered rates** for power actually used. Public-sector applications could include **peak-hour surcharges** for use of crowded airports at the busiest times of day over and above the flat-rate tax imposed on all commercial tickets, or **congestion fees** on top of normal fuel taxes for use of particularly heavily trafficked inland waterways.

## ISSUES AND CHOICES IN THE ADMINISTRATION OF USER FEES

Several difficult issues arise in the course of designing user fees to suit different situations.

- o **Systemwide versus specific fees**--Should fees be uniform throughout a system or tailored to reflect the costs of separate segments?
- o **Market pricing versus cost recovery**--On what basis should correct fee levels be calculated?
- o **Cash-flow versus amortized financing**--Should capital investments be financed on a cash-flow basis or extended over the anticipated life of a project?
- o **Financial linking versus fiscal control**--How can the possible conflict between earmarked receipts channeled through trust funds and Congressional control of spending be resolved?

The forms of user fees possible range from a uniform tax for an entire system, termed a "systemwide" charge, to a toll on a single facility, termed a "specific" charge (*see text box at left*). The current 9 cents per gallon tax on motor fuel that supports the federal highway system is an example of a systemwide fee; it is levied at a uniform rate and is unadjusted for disparities of cost or use among roads in the system. Specific fees, in contrast, can reflect differences among parts of a system. The toll for a road or bridge is an example. Both approaches can be combined in a two-tier system in which one fee covers systemwide costs and a second accommodates a recurring special situation.

### Systemwide Versus Specific Fees

Imposition of user fees can force a tradeoff between the greater efficiency of specific fees and ease of administration of systemwide fees. A broader fee can be simpler to administer, because it avoids the difficulty of identifying the various users and establishing separate charges for the components of a complex system. Thus it allows low administrative costs. At the same time, though, it permits the low-cost components of the system to subsidize the high-cost ones, thus sacrificing some of the gains in fairness and efficiency.

Conversely, specific fees are often more difficult and costly to administer. But by linking user payments directly to particular projects or system segments, they encourage more cost-effective investment in and

economic use of those services. Further, in allocating costs to individual users, they can safeguard against the inequities of cross-subsidies.

Three interrelated factors appear particularly important in managing the tradeoff between ease of administration and economic efficiency: sizes of fees, cost variations within a system, and numbers of component parts.

Fee Size. If fees are small relative to other costs that users face, then achieving a precise match between costs and fee payments may not be an overriding concern. For example, the motor fuel tax is small compared to the costs of operating a vehicle. In such cases, systemwide fees may be acceptable in the interest of administrative ease, even though cross-subsidies among segments of the highway system certainly exist.

Cost Variation. If a program finances a relatively small number of projects with sharply different cost characteristics, then direct project-specific charges could be both appropriate and feasible. In such cases, specific fees could be tailored to reflect the costs of particular facilities. Users of high-cost facilities would pay their full share of program costs, and users of low-cost ones would do likewise, leading to elimination of cross-subsidies. In extreme cases, fees for high-cost services might discourage use to the point that the service would close. Demand might be diverted to low-cost alternatives, in turn reducing the cost per user still further. In economic terms, this represents a gain in efficiency. Moreover, if the number of projects were small, such a specific fee system might not pose extraordinary administrative costs.

For example, the cost of constructing, operating, and maintaining the nation's ports varies widely. Heavily used ports with deep natural channels (such as Los Angeles, New York, and Seattle) incur dredging costs of only a few pennies per ton of cargo, while costs at less heavily used ports with naturally shallow channels (such as Savannah, or Portland, Oregon) incur costs of more than \$0.75 per ton. Were a uniform fee imposed across the nation's entire harbor system, users of low-cost ports would pay more than their share of total costs, the excess going to subsidize users of high-cost ports. But if the costs were recovered from users on a project-specific basis, then each facility would pay its own way. Although the charges at low-volume high-cost ports could be very high, forcing some to close, the effect would be to route traffic through the more efficient ports, offering a net gain for the economy as a whole.

Number of Components. The number of components on a given system can influence the choice between the efficiency advantages of specific fees and the administrative ease of systemwide fees. A system with numerous separate facilities can make the imposition of specific fees

cumbersome. If the cost disparities among those facilities are not great, the gains inherent in specific fees may be overwhelmed by the administrative burdens of collecting those fees. Numerousness of facilities may be less problematic, however, in areas of service in which nonfederal authorities also impose their own levies. Local governments already have an administrative structure for collecting landing fees at airports, docking fees at water ports, and safety inspections for recreational boaters, for example. Thus, imposing specific federal fees on users of such services would require little new administrative structure.

### Market Pricing Versus Cost Recovery

New or increased user fees can be guided by one of two basic approaches: market pricing, or full recovery of federal costs. Many federal services have clear counterparts in the private marketplace. For example, the Federal Reserve collects and sorts checks for commercial banks much as those banks do for their customers. Similarly, the government leases federal land for cattle grazing and mineral exploration much as private landowners lease property for the same purposes. In such cases, market prices can suggest the economically correct level of federal fees. But more federal services lack private-sector counterparts than have them; for such programs, full recovery of the government's cost would be the appropriate gauge.

Full-cost recovery would include construction costs, operating and maintenance costs, and interest charges at the government's cost of capital. Sunk costs would not be included.

### Cash-Flow Financing Versus Amortized Capital Costs

A decision to pay for new projects out of user fee collections would raise a choice between payments over the life of the project with costs amortized, or payments as the actual expenditures are made. Cash-flow financing of capital costs is most practicable in a program with a systemwide fee collected over a broad network of numerous parts. The present highway and airport systems offer good examples. Both pay for new investment on a cash basis (through trust funds) from user fee collections. In both, current income pays for current investment, with one year's receipts approximately covering the same year's construction outlays. The process is usually one of cross-subsidization. Current users of highways and airports benefit from facilities paid for by previous drivers and airline passengers. These current users, in turn, pay for facilities that succeeding generations will use. Similarly, some regions may be net donors to the

system, while others are net recipients. For example, Florida pays more in federal highway taxes than the highway aid it usually receives, while Wyoming receives more than it usually pays.

Specific fees cannot, as a practical matter, support such a cash-based system for financing of capital investment. Money must be available long before services can be provided and user fees charged. In addition, a concern with fairness suggests that spreading costs over the useful life of a project--thus dividing the burden over time among all users--is appropriate. The amount to be invested must be generated over the life of the project, much as though fees were dedicated to amortizing a bond. For public projects, the capital to be invested would come initially from general tax revenues or government borrowing with repayment to come from user fees over time.<sup>5/</sup> Private firms, such as utility companies, amortize capital costs, as do public authorities that finance such projects as toll roads with revenue bonds. In general, the more capital-intensive and long-lived a project, the more suitable it is for an amortized-cost approach. Thus, many irrigation and navigation projects appear to be good candidates.

The annual collections required to defray a project's capital costs would depend on the length of time over which the initial costs were to be amortized, and on the interest rate applied. Recent Administration proposals for user fees for ports and inland waterways call for amortizing costs over 50 years, charging interest at the prevailing Treasury rate. Though lower than rates available in private financial markets, these terms are nonetheless far closer to market rates than those applied to many previous government investments, notably power and irrigation projects.

Interest rates set too low effectively continue subsidies and thus can defeat the purpose of user fees. For example, amortizing a project over 40 years at zero interest is current practice for the Bureau of Reclamation irrigation projects. Even though users eventually repay all construction costs, the federal government must borrow at the market rate to provide the up-front cash for construction. Thus, total federal costs are far greater than the construction costs alone. At a 10 percent cost of capital, the actual cost to the federal government over the 40 years would be four times the costs of construction. Thus, if project-specific user fees were based on amortization of capital costs, full-cost recovery would require that government borrowing costs be reflected in the fees. Otherwise, the fees would still mask substantial federal subsidies.

- 
5. Such an approach was originally proposed for the Interstate Highway System in the 1950s, but the Congress selected the more fiscally conservative cash-flow approach embodied in the Highway Trust Fund.

## Financial Linking Versus Fiscal Control

Two considerations dominate management of user fee collections: linking receipts to the area of expenditure that occasioned them, and Congressional control of spending.

From the standpoint of users themselves, linking collections to specific types of services, or even to specific facilities, can be particularly important. Commercial enterprises and individuals, if required to pay for services they had once received cheaply or even free, would reasonably hope to see their payments go for the services they use and not for other federal purposes. This link can be important from the perspective of sound federal investment as well. A direct correspondence between receipts and expenditures can clarify signals about the types and levels of service that are valued. Collections that cover the costs of a particular service can both finance that service and verify that it is economically desirable; inadequate collections can do the opposite. This link is strong with project-specific fees and weak with systemwide fees.

Trust funds are a common way to establish this linkage. The federal government already maintains trust funds in two of the areas studied in this paper (aviation services and inland waterways), and most states finance their highway programs through trust funds. Strictly applied, this financial mechanism can ensure not only the direct dedication of user fee receipts but also their adequacy for full recovery of program costs. Though these assurances can help improve the acceptability of user fees to parties likely to pay them, trust funds also limit the government's budgetary control and its ability to direct fiscal policy. 6/

Newly created trust funds could hamper the Congress' efforts to reorder federal priorities when setting budgetary policy. 7/ They could also

- 
6. For discussion of the pros and cons of different types of trust fund financing versus the use of general revenues, see Congressional Budget Office, Transportation Finance: Choices in a Period of Change (March 1978).
  7. Language in the Congressional Budget Act of 1974 placing limits on the establishment of new trust funds would not proscribe the creation of such funds as are considered here. Indeed, the Budget Act provides that trust funds that receive 90 percent or more of their revenues from user fees may create contract authority and thus be exempt from prior appropriations--as are the highway and the airport and airway trust funds.

place more federal spending outside the reach of fiscal policy, increasing the government's difficulty in controlling overall economic conditions. Thus, the advantages of trust funds must be balanced against the need for spending budgetary control.

Achieving such a balance is difficult but possible. One compromise could take the form of a trust fund subject to normal Congressional appropriations. Money from such a trust fund could be held unavailable for spending each year until it was appropriated. (This would differ from practice in the Highway Trust Fund, under which contract authority to spend is granted by the authorizing legislation, and funds are normally apportioned to the states without any appropriation.) A trust fund subject to appropriation would not guarantee that any particular year's spending follow a planned course, inasmuch as annual appropriations could adjust the amounts to reflect prevailing budgetary and fiscal conditions--possibly at odds with program demands. Nevertheless, by separating the accounts for receipts and expenditures for each special service and its associated user payments, any temporary dislocation of expenditures caused by broader budgetary or fiscal concerns could be corrected later, as budgetary or fiscal conditions changed. Thus, a long-term balance between receipts and payments could be achieved while the Congress retained fiscal control.

#### Intergovernmental Cooperation in Fee Collections

The federal government need not be the sole provider of services nor the sole collector of user fees. Nor must the agency providing a service be, by definition, the only suitable collector of fees. Already, one federal agency--the Internal Revenue Service--is the collector of the funds going to support most other agencies' services.

Convention, more than law or practicality, has established the pattern in which, for example, the Corps of Engineers, operates and finances inland waterway and certain harbor services, the Bureau of Reclamation its irrigation services, and the Coast Guard its safety inspection services. Each of these functions, though provided by federal agencies, actually operates within a local sphere, and not uncommonly, in areas in which nonfederal and private authorities also offer services. At ports, for example, the Corps' dredging services complement the landside facilities furnished by local port authorities and private firms. Many of the same ports also have representatives of the U.S. Customs service present to collect duties on incoming cargo. Thus, an administrative structure to collect reimbursement for the Corps' dredging services is already largely in place--in some cases, in several forms. Use of these nonfederal authorities might be particularly appropriate for the collection of specific fees. These could be linked most

directly with their purposes by being gathered at the site of each facility and on the occasion of each use.

In some instances, nonfederal administrative agencies might serve in the collection of systemwide levies. Most states, for example, charge fees to license and inspect the boats used for recreation. Federal fees designed to cover the costs of the Coast Guard's search and rescue operations could conceivably be collected by the same state agents. In fact, a federal portion could be built directly into the states' licensure and inspection charge, permitting one-time collection of a dual fee and keeping additional administrative overhead to a minimum. Any additional costs incurred in separating collections and passing on the federal share could be incorporated in the fee itself.

Where benefits are local in character, nonfederal governments could be required to pay a larger share of total project costs. This would give them flexibility either to impose user fees of their own or to furnish local subsidies in return for local economic benefits provided by a project. This approach closely resembles a proposal for deep-draft ports now before the Senate, S. 1739, which would require a substantial nonfederal match for ports of more than 45 feet in depth while authorizing local authorities to collect user fees from ocean-going vessels. A higher nonfederal cost share would have wide application to many projects of a local nature. 8/

#### THE TRANSITION FROM SUBSIDY TO USER FEE FINANCING

Any change in user fees could impose significant costs on whole industries or individual classes of users of public services. Thus, the Congress would face questions of just how great the difficulties of transition would be and what steps it could take to ameliorate them.

#### The Costs of Transition

Many of the user fees considered in this paper would not add greatly to the cost burden of users. To cover the costs of Coast Guard expenditures

- 
8. See Congressional Budget Office, Public Works Infrastructure (April 1983), Current Cost-Sharing and Financing Policies for Federal and State Water Resources Development (July 1983), and Efficient Investments in Water Resources: Issues and Options (August 1983).

for the benefit of recreational boaters, average annual fees of less than \$20 for each boat would suffice. In other cases, fees would be low relative to other operating costs. Compared to the multimillion-dollar purchase price of a small jet plane, for instance, a tax equivalent to roughly \$1 per gallon of fuel to cover each general aviation users' share of the costs of air services would seem small. Likewise, in the context of the overall costs of a coal-carrying ship, a fee of \$1.70 per ton of coal toward financing deep-draft port dredging would add only marginally to coal shipping costs--in this case, an investment likely to be offset by savings. Even the largest sum considered here, the \$2.3 billion to be raised from oil users to finance the Strategic Petroleum Reserve, would translate into only a little more than a penny per gallon of motor fuel.

For some groups, however, the burden of user fees would be harder to bear. In the areas considered here, for example, the fishing and barge industries would face among the highest percentage increases in costs attributable to user fees--10 percent and 23 percent respectively. Neither industry is now operating at peak profitability, and both would face transition difficulties if full-cost recovery were imposed immediately. Similarly, many individuals are likely to face hardships substantially worse than implied by the industry-wide averages discussed here. Some farmers, for example, depend on federal irrigation water more than others do and may have fewer options for changing their farming practices.

In addition, many private-sector investment decisions are based on the existence of public subsidies, and user fees to reduce these past subsidies could create special difficulties. Such may be the case for farmers receiving subsidized irrigation water. While some of these farmers have continuously received subsidized water for long periods, others have purchased their farms only recently and may have paid premium prices to obtain land with an allotment of low-cost water. To enact a higher user fee for the water at this stage would, in effect, charge such farmers twice: once when they paid the premium purchase prices for their land, and again when they actually used the water. Though the government has no legal obligation to ensure citizens against policy changes, such situations appear unfair in imposing hardship on particular users--in this case, recent purchasers of farms. Similarly, increased user fees for ports or inland waterways could create hardships for the shippers and carriers who have invested in docks, warehouses, or loading facilities on the expectation that these subsidies would continue.

#### Easing Special Transition Problems

Gradual rather than abrupt imposition of user fees could help such users adjust to new cost conditions. Fees phased in over a period of years

could allow users to accommodate new operating costs. The federal government has already applied this concept in the new waterway and truck taxes. For adaptations that would require private capital investments with long-term economic benefits to follow--such as water-conserving crops and farming methods--the federal government could offer special financial assistance. To avoid perpetuation of the subsidy, however, such aid could be made temporary, with users sharing costs.

Another approach for easing transition difficulties could take the form of so-called "grandfather provisions" exempting current or long-time users from fees. As of a fixed effective date, only new users would be charged for the government's services. Over time, however, the newcomers would come to dominate the population of users, and thus, full-cost recovery would gradually be realized. While this approach would mitigate the cash-flow problems of current users, it could also reduce the value of past investments they have made. For example, the rise in the price of irrigated farmland would slow to reflect the reduced value of the federal water to new purchasers.

The drawback to this and other measures designed to ease the burden of transition is the delay they imply for recovering federal costs and realizing gains in equity and economic efficiency. The Congress could decide, however, that delays may be a worthwhile short-term price to pay for a net long-term gain for the economy.



---

## CHAPTER II. DEEP-DRAFT PORTS AND HARBORS

---

*A systemwide fee of 27 cents per ton of cargo paid by commercial shippers could defray the U.S. Army Corps of Engineers' 1984 outlays of \$570 million on routine port construction and maintenance. Covering the additional costs of adapting certain harbors to the special deep-draft needs of large coal-carrying vessels could require further annual Corps expenditures of \$100 million to \$200 million. These latter amounts could be recovered by a specific fee to operators of colliers averaging \$1.66 per ton. At coal ports, the result would be a two-tier fee system, with all shippers paying the systemwide fee and coal shippers paying a surcharge to finance the service only they require.*

In 1984, the U.S. Army Corps of Engineers (the Corps) will spend some \$570 million on building and maintaining the nation's 200 deep-draft ports--harbors with depths of 14 feet or more. The Corps' responsibilities include construction and maintenance of jetties and breakwaters, channel deepening and widening, and construction of anchorages. But by far the largest share of the Corps' resources goes for maintenance dredging. The cost of this dredging varies considerably from port to port, ranging from less than one cent per ton of cargo to hundreds of dollars per ton, with a nationwide average of about 22 cents per ton.

The Corps performs construction work and maintenance dredging without reimbursement, and its activities are financed by the general taxpayer. The Corps began providing these services in 1826, to promote economic development and provide for national defense. Today, associated expenditures represent roughly one-half of total port costs. Most landside facilities, such as docks and storage installations, are provided--for fees--by private firms or local port authorities.

Continued maintenance of the nation's port system remains essential to the economic well-being of the country. Between 1972 and 1981, foreign commerce increased at an annual average rate of 3.9 percent. Over the same ten years, total foreign and domestic cargo passing through U.S. ports

increased at an average annual rate of 3.2 percent. In 1979, the value of all U.S. exports totaled \$182 billion, of which 55 percent (\$100 billion) passed through U.S. ports. In 1981, the latest complete year of record, about 1.3 billion tons of cargo, valued at about \$106 billion, passed through the nation's deep-draft harbors, with the ten most active ports in terms of cargo tonnage accounting for 40 percent of the total.<sup>1/</sup> In addition, port commerce contributes to local and regional economies.

#### THE POTENTIAL FOR FULL-COST RECOVERY

Conditions that might justify institution of federal fees for Corps services seem to exist. The shippers who benefit from the federally subsidized navigation services constitute a readily identifiable group engaged in commerce. Because users--that is, shippers--would be unlikely to support projects requiring fees higher than the expected savings in shipping costs, federal fees would help promote more effective selection of new dredging or construction projects. Equity would also be promoted: users, not general taxpayers, would pay the cost of the services to commercial enterprises.

If fees, taking the form of tonnage taxes, were set on a uniform, systemwide basis and not tailored to reflect the varied costs of different port operations, a levy of about \$0.27 per ton of cargo would defray the Corps' full \$570 million 1984 outlay. By the end of 1988, these collections would total about \$3.2 billion, assuming the volume of tonnage shipped continues to grow at 2.5 percent annually, somewhat below the historical rate of 3 percent to 4 percent a year (see Table 3).<sup>2/</sup> This sum would suffice to cover the costs of Corps maintenance and construction services if no new projects were undertaken. Of the total, 84 percent would go for operation and maintenance and 16 percent for the Corps' ongoing construction activities. If capital costs were amortized, user fees could be somewhat smaller over this period, though larger in later years. Fees set to cover the costs of operation and maintenance only and not construction

- 
1. These ten ports, in descending order of tonnage, are Baton Rouge, New York, Houston, New Orleans, Sabine (Texas), Los Angeles, San Francisco, Tampa, Corpus Christi, and Duluth. For additional detail, see U.S. Army Corps of Engineers, "Deep Draft Navigation Cost Recovery Analysis," Office of the Chief of Engineers (September 1982).
  2. In 1978, total shipping volume through U.S. ports came to roughly 1.84 billion tons. Since that year, total tonnage has risen at an annual rate of 3.4 percent.

TABLE 3. PROJECTED COLLECTIONS OF USER FEES SET TO RECOVER FULL FEDERAL COSTS OF DEEP-DRAFT PORT CONSTRUCTION AND MAINTENANCE, TO 1988 (In millions of current dollars)

Cost Item	1984	1985	1986	1987	1988	Five-Year Total
Construction	90	100	106	112	119	527
Operation and Maintenance	<u>480</u>	<u>508</u>	<u>538</u>	<u>571</u>	<u>605</u>	<u>2,702</u>
Total	570	608	644	683	724	3,229

SOURCE: Congressional Budget Office.

would net about \$480 million in 1984 from a fee of about \$0.22 per ton. By 1988, tonnage fees would increase to about \$0.31 per ton for full-cost recovery, or \$0.26 per ton for recovery of operation and maintenance expenditures only (see Table 4).

TABLE 4. PROJECTED SYSTEMWIDE USER FEES SET TO RECOVER FULL FEDERAL COSTS OF DEEP-DRAFT PORT CONSTRUCTION AND MAINTENANCE TO 1988 (In current cents per ton of cargo)

Cost Item	1984	1985	1986	1987	1988	Five-Year Average
Construction	4.4	4.6	4.7	4.9	5.0	4.7
Operation and Maintenance	<u>22.3</u>	<u>23.1</u>	<u>23.9</u>	<u>24.7</u>	<u>25.6</u>	<u>23.9</u>
Total	26.7	27.7	28.6	29.6	30.6	28.6

SOURCE: Congressional Budget Office.

New projects, such as port deepening for coal shipping, would ultimately require additional receipts, but if construction costs were amortized, receipts would fall short of outlays during the construction period. For example, if the total project cost of deepening the port of Baltimore--estimated at about \$361 million<sup>3</sup>--were amortized over 50 years at 10 percent interest, annual revenues from user fees would increase by about \$36 million. On the other hand, outlays during the typical seven-year construction period could total about \$52 million each year (not reflecting inflation). For three other deepening projects--Mobile, Norfolk, and New Orleans--additional annual user fees paid to the federal government would total about \$37 million, \$42 million and \$44 million, respectively.

### RECENT PROPOSALS

Several proposals introduced in the 97th and 98th Congresses have been superseded by omnibus water resources bills, introduced subsequently both in the Senate (as S. 1739) and in the House (as H.R. 3678).

#### S. 1739

Under the Senate bill (Title X of S. 1739), local sponsors of port construction or deepening projects (states, cities, or port authorities) would pay a portion of total expenses, depending on port depth and anticipated defense-related use. The nonfederal share of the cost of construction of general cargo harbors (less than 45 feet deep) would be 30 percent. This share would have to be met with an annual cash contribution during the period of construction. The value of land, easements, and rights-of-way provided by the local sponsor would be credited toward the nonfederal share. In addition, the nonfederal payments would be reduced if part of the project benefitted national defense.

Nonfederal interests would pay 100 percent of costs for deepening a harbor beyond 45 feet, though they would not be asked to provide investment capital for such projects. Sponsors would have a 50-year period to repay the federal government, with a market rate of interest applied. These payments would be virtually the same as paying for a 50-year bond to finance the port deepening. One way to raise local payments would be with user fees. If fees were paid only by the very large colliers that required the

- 
3. In 1982 dollars. See Report of the Senate Committee on Environment and Public Works to accompany S. 1692, National Harbors Improvement and Maintenance Act of 1981 (December 15, 1981).

deeper draft, those ships would initially pay the following additional user fees: in Baltimore, \$1.12 per ton, in Mobile, \$3.91 per ton, in Norfolk, \$0.93 per ton, and in New Orleans, \$0.67 per ton. As the volume of deep-draft traffic grew, fees could be reduced by about two-thirds over 50 years.

Another provision of the Senate bill would allow the federal government to guarantee local loans or bond issues to help nonfederal interests secure repayment at the start of a project, rather than over time. As with general cargo harbors, the local share of deep-draft port construction might be met in part with the value of land, easements, and rights-of-way, and might be offset by that portion of project costs allocated to meeting national defense needs.

The Senate bill would also establish a National Commission on Harbor Maintenance, which within two years would recommend a plan for dividing port and harbor operation and maintenance costs among the federal government and nonfederal interests. Until such a recommendation were made, the bill would limit operation and maintenance obligations by the Corps to \$350 million each year. <sup>4/</sup> Over this period, the federal government would pay the full cost of maintenance for all harbors with depths of less than 45 feet. Nonfederal interests would pay half of the incremental maintenance costs for deep-draft harbors beyond 45 feet. These annual incremental costs would range from about \$1.9 million for the port of Baltimore to about \$145 million for New Orleans. <sup>5/</sup> Under the Senate proposal, coal traffic at four deep-draft ports would pay the following additional fees to cover incremental operation and maintenance costs: \$8.43 per ton in New Orleans, <sup>6/</sup> \$0.34 per ton in Mobile, \$0.06 per ton in Norfolk, and \$0.03 per ton in Baltimore.

- 
4. This sum is roughly equal to the Corps' historic spending level for deep-draft port maintenance if considered on a current dollar basis.
  5. For details, see U.S. Department of Energy, Port Deepening and User Fees: Impact on U.S. Coal Exports (May 1983). Similarly, annual incremental operation and maintenance costs for Mobile and Norfolk would run about \$3.2 million and \$7.1 million, respectively.
  6. This fee is high relative to the fee in other coal ports, because the volume of coal traffic in New Orleans is low--only about 5 percent of total traffic. If all traffic paid incremental operation and maintenance costs, the fee at New Orleans would be reduced to \$0.36 per ton.

## H.R. 3678

The House has also taken up port development in Title I of H.R. 3678. For harbors less than 45 feet, this bill would not impose any user fees--either for construction or for operation and maintenance. For deep-draft ports in excess of 45 feet, however, the bill would authorize nonfederal interests to levy user fees sufficient to pay 50 percent of the additional construction or operation and maintenance costs incurred in dredging beyond 45 feet. Such fees could be applied only to users that required such depths.

The House bill would authorize construction of six deep-draft ports and 27 general cargo harbors at an estimated total cost of about \$2.6 billion (1982 dollars). Federal outlays for these 33 projects could total about \$260 million between 1984 and 1988. The total nonfederal share over this period could come to about \$100 million. <sup>7/</sup>

## ISSUES IN APPLICATION

Key issues that would arise in evaluating user fees to recover Corps expenditures for ports include provision of local flexibility to levy fees, the merits of port-specific versus systemwide fees, and the treatment of small ports versus large ones.

### Local Flexibility

User fees could be implemented most efficiently if they were administered by local port authorities, and if they took account of local economic conditions, traffic volume, and commodity mixes. For example, a port authority could levy fees on the basis of tonnage, value of cargo, mooring time, or any other measure of facilities' use or accrual of benefits. Such specific fees would allow each port to choose the fee basis best suited to its peculiar traffic and regional economic conditions. If certain local industries received particular benefits from healthy port activity, they too could share in the burden of maintaining the ports. If port activity benefitted mainly local economies, local taxpayers could be asked to help pay for port maintenance with dedicated local tax payments.

- 
7. For details on this estimate, see Congressional Budget Office, "Cost Estimate for H.R. 3678," prepared for the House Committee on Public Works and Transportation (November 1, 1983).

A two-tier fee would be well suited to the recovery of deep-draft port expenditures. All users could pay a uniform fee to cover annual operation and maintenance costs. The cost of deepening a port to accommodate large coal-carrying ships could be repaid with a second-tier fee. Just those ships requiring specially deepened channels--primarily super colliers--would be charged the extra fee.

### Port-Specific Fees

Project-specific fees, as noted in Chapter I, are best suited to systems with relatively small numbers of facilities and wide variations in costs. Such is the case with deep-draft ports.

Though port-specific fees would promote economic efficiency and equity, large ports could benefit to the detriment of some small and medium-sized ports. The current situation regarding deepening for coal ports illustrates this point. Deepening to 55 feet to accommodate super colliers could result in savings of about \$6 per ton of coal in transatlantic shipping costs. Projections of U.S. port capacity and world coal demand indicate, though, that only a few such deep ports would be necessary to satisfy future demand for U.S. coal exports.<sup>8/</sup> If all 13 major U.S. coal ports handling more than 10 million tons a year were to expand their export capacity by deepening, capacity would exceed projected demand by about 2.5 times. Only a few of the large ports would be able to offer fees low enough to permit expansion, while smaller ports (that is, those handling less than 100,000 tons a year) might find themselves unable to compete in the coal exporting market. Ultimately, some smaller ports could be forced out, but the result could be a more efficient port system.

This suggests that port-specific fees would better suit large ports, while medium-sized and small ports might fare better with a uniform national fee schedule. Under a uniform fee, shippers would pay the same tonnage fee regardless of their port of entry. This means that large ports with typically low actual costs per ton of cargo would, in effect, cross-subsidize smaller ports with higher costs per ton. An additional drawback, however, is that uniform fees would provide little economic guidance for selecting the most cost-effective ports for new construction or deepening. At some price to the general economy, however, some local economic benefits would result from forestalling the closure of small ports.

---

8. See for example Robert C. Major, "U.S. Steam Coal Exports: Who Will Benefit?" Data Resources, Inc. (November 1981).

## ECONOMIC EFFECTS

Impacts on shippers, on regional economies, and on the U.S. position in world trade would vary considerably with the level and form of fee imposed. As illustrated above, full-cost recovery using port-specific fees would affect ports of different size unequally. Small ports would have to charge fees far higher than would either medium-sized ports or large ports. On average, small ports would require about \$10 per ton to recover all operation and maintenance costs. Medium-sized ports could charge an average of about \$0.59 per ton, while large ports could charge an average rate of only \$0.12 per ton.

Such fees would have to be assessed in the context of other charges now paid by shippers and carriers. These include payments for wharfage, dockage, stevedoring, and harbor transfers. Nationwide, these charges in 1981 averaged \$16 a ton for containerized cargo, \$4.26 a ton for grain, and \$2.20 a ton for coal. For small ports, user fees would mean a very large increase over any of these current fees--enough to force many to close. For medium-sized ports, an additional \$0.59 would represent a 4 percent increase per ton of containerized cargo, a 14 percent increase per ton of grain, and a 27 percent increase per ton of coal. For large ports, an average user fee of \$0.12 per ton would add less than 1 percent to current port fees for containerized cargo, 3 percent for grains, and 5 percent for coal. The increase in costs of delivered cargo would be much smaller. For medium-sized ports, for example, a \$0.59 per ton fee would add only about 1 per cent to the cost of coal delivered to European ports.

Within each size class, some ports would have to charge fees significantly higher than the average for their class (see Table 5). Accordingly, these ports would be affected more than would other ports in the same class. The large ports identified in Table 5 would pay fees substantially higher than their class' average of \$0.12 a ton--though at less than a dollar a ton, rates would still be less than at most medium-sized ports. Similarly, some medium-sized ports listed would have to levy user fees higher than \$3 a ton, many times the class average of \$0.59 a ton. In addition, six small ports would face charges of more than \$1,000 a ton to recoup all operation and maintenance costs. Under full-cost recovery with port-specific fees, many small ports, including those listed, would have to forgo the benefits of Corps expenditures and limit traffic to small vessels, possibly sacrificing commercial operations altogether.

One way to preserve some of the benefits of port-specific fees but avoid certain economic hardships they could impose would be to cap user