FAILURE OF THE PUBLIC MARKET -- A FRAMEWORK FOR COST SHARING POLICY RESEARCH

By

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Introduction and Summary

Cost sharing policy should fit a rationale for federal, state, local and private roles in water resource investment. Thus the first part of this paper reviews the intergovernmental relations context for cost sharing in water resources programs. Government in the United States is structured into at least three completely overlapping layers, each generally responsible and responsive to the needs of its citizens. Such duplication has served us well in that we provide ourselves with a greater variety of timely and high quality public services, more closely tailored to a variety of preferences and needs than we might achieve with a simpler structure. /Ostrom, 1975 ; Bish and Ostrom, 1973/ Voters and interest groups have chosen at least three sets of public officials that have to compete for their support. Our national faith in competition has not been misplaced. But we can certainly find ways to improve the results. Cost sharing arrangements offer an opportunity that has been neglected far too long.

Note that different competing interests have different degrees of access to these different levels of government. Thus, a key part of the research framework may be an explicit recognition that cost sharing provides an opportunity for constructive bargaining between levels of government to more effectively accommodate these different interests. The goal should be to structure such bargaining to achieve greater overall social efficiency in the use of water resources.

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Once this context is established, market failure concepts familiar to economists will be reviewed to identify how they may be useful. Economists have long used such concepts to justify public intervention into the market behavior of private individuals and firms. But the market that allocates water resources is dominated by public providers of services. Pretending that a market exists for water services has a long and useful history in benefit-cost analysis. Water provision has been usefully characterized as an industry /Ostrom, 1972; Hirschleifer, et. al.,1960 Of course, the analytics drawn from welfare economics in the form of benefit-cost analysis have been highly developed to evaluate and formulate investment plans. Proxies for market values are used to estimate most benefits in planning. Market structure, behavior and performance concepts, among others, have also provided a basis for criticism and some guidelines for reform. However, market failure concepts have not been fully explored for what they have to say about who should pay and may provide many useful insights. Notions about externalities, public good and common property characteristics, divergencies between discount rates and other factors reflecting varying perceptions of risk and time preference have served as arguments that governments should be the providers. Now we must examine these concepts more closely to discover guidelines for fiscal relations among governments as well as between government and private parties.

Then it should be useful to make a first cut at applying this rationale to the familiar functional categories in water resources planning, ie., the purposes now recognized in cost sharing between the federal government and others. Flood control displays a rich set of characteristics of failure in the public market for water resource allocation. It is generally recognized that incentives for governments to manage the occupation of the flood plain (an integral part of the water resource) are grossly inefficient. To what extent can cost sharing rules change these incentives? Municipal water supply and hydropower may exhibit fewer of these market failure characteristics, but they are anything but absent. A frequent concern, for example, is that only supply management alternatives are seriously considered in planning. Conservation or demand management is seen as holding much more promise than is achieved by present rare and tentative experimental efforts. Surely we should look beyond proposals for user pricing schemes to consider restructuring intergovernmental incentives as well.

Pervasive throughout the water resources industry is cost sharing between governments for only certain kinds of means to solve problems. Sewage treatment plants, large sewers, dams, dikes and channel works, and other capital costs are eligible for cost sharing but often not operating and maintenance costs. The biases that this introduces for high capital, low administrative content solutions is suspected but poorly understood.

Intergovernmental Relations -- The Context for Cost Sharing

The Local View

Local interest provides most of the fuel for the engine of water resources policy /Allee and Ingram, 1972/. Federal agencies such as the Corps of Engineers, the Soil Conservation Service, and the Bureau of Reclamation depend upon local support working through the Congress. The sewage treatment plant program of the Environmental Protection Agency is not much different -- mayors provide an important part of the support. The joint EPA-state regulatory programs hopefully influence the demand for sewer grants and that effort is supported by national environmental groups. But much of the clout of the environmental groups seems to be tied to the successful growth of local environmental organizations. This is especially true where they have the capacity to generate creditable local dissent and concern over local environmental issues /McCluney, 1973/.

Of course, local governments are important purveyors of water services, independently and in cooperation with federal and state agencies. The local special district is a feature in the collection of non-federal cost sharing funds in program after program. Local governments may be even more significant in the future than they have been in the past. The flood insurance program depends upon local land use controls for its effectiveness in reducing values at risk in the flood plain. Management of non-point sources of pollution, especially silt control, through EPA's 208 program will probably succeed only to the extent that local agencies make it work. The greatest threat to water-based fish and wildlife habitat is the slow, gradual erosion by land use changes, often more influenced by local governments than state and federal agencies. Urban sprawl has been aided and abbetted by the common interests of the land development industry and local officials. Regional rationalization of urban water sustems will depend heavily on successfully dealing with this alliance.

As the size and complexity of state and federal programs has increased, the burden of coordinating them falls more heavily upon the local interests and local governments. In states like New York and California and at the federal level, the capacity of agencies to take advantage of the gains from cooperation and integration of their individual specialized efforts is probably decreasing. It is a gross understatement to observe that the capacity of local governments to deal with state and federal agencies also varies a great deal from place to place. More frequently than not, local interests cannot and do not expect local officials to represent them. They take up the task of influencing state and federal agencies directly.

The State View

States provide the constitutional framework for both local and federal governments, but to watch them operate you might not guess it. Indeed, to assume that there is any significant master-servant or boss-employee relationship between levels of government is to misunderstand.

A competitive relationship is probably a more accurate one to expect. Federal agencies sometimes write and talk as if the other levels of government weren't there -- or if they are recognized, it is as adversaries. State and local governmental organizations do the same. Less frequently they will emphasize a cooperative role; sometimes they even stress complementary specialized roles, where each contributes to the achievement of the mission of the other. Cooperation between levels of government is almost as much hard work and effort as between agencies in a single level of government.

The experience of comprehensive river basin planning is instructive /Allee and Ingram, 1972/. The federal agencies with their capacity to concentrate professional staff and long commitment to detailed technical analysis have dominated the process. As the demands for more and more thorough evaluation of alternatives and consequences have mounted, the comprehensive basin planning process was looked to for help. But it hasn't quite met the needs as yet. Federal agencies certainly filled their files with data they needed and were able to work out common interests. But planning at the level of detail needed to obtain funding commitments from the prospective participants has always been reserved to the agencies and planning at the project level. The states, even with some federal funds for the purpose, and local interests in particular, have had difficulty generating and sustaining interest. Projects and other tangible results seem too remote from the process of comprehensive basin planning as it has been carried out. One result is that plans have been collections of tentative proposals, not decisions to do anything. Not only has it not proven a way to attract support for projects; it has not diffused the eventual conflict over them. Only in the last few years have many basin groups seen themselves as mechanisms to encourage innovations in agency projects that would more successfully accommodate conflicting interests. The ability of basin agencies to draw more support from the states and the Congressional delegations may explain such independence. It remains to be seen if this change has come in time to revitalize the basin planning process /Water Resources Council, 1977/.

Basin commissions have had some success in helping state and local interests coordinate federal agencies. Helping local interests deal with the many agencies at both the other levels has also happened. Given the frequent inability of the federal and state agencies to coordinate their programs with each other, the social gains may be significant from giving basin groups a role to play in determining project cost sharing. The basin is presumably the unit within which many of the market failures will be transmitted. Water runs downhill and in so doing transmits externalities and public goods and bads. The basin contains the system that is the common property. If incentives are to be adjusted to meet local circumstances, the basin may be as good a physical management unit as any. The political problems of the basin as a unit are substantial, particularly in providing evenhanded representation for all of the interests in water. Evenhanded representation is necessary for the basin agency to be seen as a creditable arena for inter-interest negotiation and accommodation. Until that happens, the focus for conflict will continue to be the Congress, the courts, the governors, and the local government boards.

The point is that new cost sharing rules may have less effect on the results than might be expected unless they facilitate at least some modest shifts in the bargaining power of the various interests involved. The "golden rule" of American politics is that those who have the gold set the rules. But money is not the limiting resource -- agreement and support are. Thus, rules that affect agreement are the point.

The Inter-Interest Bargaining View

Different interests have different degrees of access of different levels of government. Different levels of government have different histories of responsiveness to these different interests. Municipal and industrial water supply interests are strongest in their links to local government. Irrigators have forged strong links at every level, but the federal, state, local mix differs from East to West and within each part of the nation. Fish and wildlife interests have strong local organizations but tend to have strongest links to state agencies which in turn are linked to the federal agencies. Environmental groups probably have the oldest links at the federal level and their recent gains in many states and some localities are impressive. Obviously, these linkages are concerned with many more policy questions than cost sharing. The results of these linkages underly several relevant generalizations about intergovernmental relationships and in particular about some differences between grants and direct financing.

Grants are often seen as "sweeteners" that make other policies more acceptable /Ingram, 1977/. To the extent that is so this may limit the ability of the granting agency to require behavior that achieves the stated purposes of the grant. Title III of the Water Resources Planning Act which provides funds for state water planning has been characterized in this way. It gained agreement for more federally oriented basin planning commissions than might have been agreed upon otherwise. Grants for municipal treatment plants have been viewed as allowing acceptance of more vigorous enforcement of water quality standards. New York's grants for sharing in operation and maintenance costs of sewage treatment plants also encourages acceptance of enforcement both against municipalities and their citizens /DEC, 1976/.

Also it has been argued that grant programs by one level of government can represent an interest that was not strong enough to get what it wanted at another level of government, but could not be ignored similarly at the level giving the grant /Moneypenny, 1960; Ingram, 1977/. Likewise, a grant program that provides funds to another government to do something is a weaker result than getting either government to provide the service directly. This initial weakness in the demanding interest may be reflected in performance for some time to come because of the inherent limitations in a grant as a bribe to change behavior. It is only one stimulus among many.

The point is that grants and options to participate in the funding of projects directly financed and carried out by the federal government offer an opportunity for bargaining. They do not buy compliance to

federal objectives. The extent of success in implementation is closer the more federal and state objectives and interests converge. The federal agency rarely is given significant sanctions and has many reasons to not use the ones it has. Those indications of compliance easiest to monitor (eg., personnel with particular skills or assignments) will be stressed over the accomplishment of particular outcomes (eg., adoption of a state plan).

The circumstances of the benefiting state or local agency that affect their bargaining power -- their capacity to bargain; their orientation to the outcomes sought -- will need to be understood before realistic and effective cost sharing policies can be designed. For example, Ingram's evaluation of Title III of the Water Resources Planning Act classified states into three groups. Low interest states, typically where water policy has low salience, seldom attempted a state plan and spent the federal funds on discrete planning projects often carried out by outside consultants. Full capability states usually already had plans and a program to produce them. Title III funds provided a cushion to ease fluctuations in state appropriations. Only in institution-building states such as Delaware, Maine, Massachusetts, South Carolina, Utah and Wyoming did the funds play a crucial and catalytic role. State appropriations responded dramatically. Funds from both sources were used to add permanent staff rather than hire outside consultants.

Should the grant terms under Title III have been different for the different circumstances of the states? What would have increased the bargaining capacity of the administrators of the funds to achieve more of the results hoped for by the Congress? Such questions need to be asked for each area of governmental financial participation in water management. The research to answer them must be cast in terms of the concurrence of objectives, the other resources involved in obtaining agreement and support, and the arena for decisions. If we know how all of this relates to the stake that participants see in the decisions, then the scope for changing those stakes through changes in cost sharing rules can be appraised. Shifts in stake might then be identified which encouraged support for the development and implementation of the more efficient and equitable plans.

Market Failure and the Politics of Closing the Commons

Garret Hardin in his seminal article, "The Tragedy of the Commons," emphasizes the problem of social control but doesn't capture the full essence of the political problem involved. He concludes that the society that values its freedom too much will proceed to its own self-destruction by overexploiting its common resources. He proceeds to a plea for holding population to the carrying capacity of the natural resource base. But why doesn't a society find it easier to regulate itself in the face of the apocalypse? To argue at the level of human survival, Hardin uses a very prosaic example. Let us turn to that example for insights that may be useful at our more modest scale of policy analysis.

Consider Hardin's herdsman adding one more cow to the common pasture already used at capacity. He expects to gain all the benefits of the added cow and has much less incentive to consider the loss that will be spread out over the cattle already pastured. The sum of the losses exceeds the value of the gain. This will continue until the incremental return is equal to the incremental cost borne by any herdsman. Consider the political problem by assuming that at any one time there are only a few herdsmen that want to add cattle, and one of them appears before the village council for permission seeking a permit. He might well dispute the analysis that indeed the capacity of the commons has been reached. His evidence for his own potential gains is relatively tangible, immediate and easy to understand. Most important the potential gain represents a large share of his current income. The concept of the loss is subtle, more conjectural, in the future. And, most important, the loss will mean only a little bit to many people. Mancur Olson has developed this argument in detail /Olson, 1974/.

The other herdsmen with plans to expand can be seen to have incentive to organize and be politically effective in support of their fellow. The expansionists have more incentive than do those that will bear the burden of the cost, even though the sum of the costs exceeds the sum of the benefits. It is quite likely that one of the herdsmen not interested or able to expand will, for the gratification of a public spirited act and the fun of appearing before the Council, speak on the behalf of the potential losers. And if the council is made up of anti-expansionists he might prevail. But the next election to Village Council may change things. A cost sharing program from a higher level of government offers an opportunity to introduce some new resources into the bargaining. It is quite conceivable that the anti-expansionist point of view can at least get a grant program and some expertise in the subtleties of carrying capacity from the higher level of government. Now, how can the particular interests, the expansionists in this case, be bribed most effectively to take into account the diffused interests? Remember that the bribe offers an opportunity for a shift in the resources involved in bargaining on a wider policy front. That is the challenge to research on cost sharing policy.

The common property problem is a familiar one in range use, fish and wildlife management and groundwater use. Colin Clark has developed some of the theory involved /Clark, 1976/. It is certainly not the only way in which spillovers are generated and where local governments find themselves unable to deal with the values and complexities involved. Public goods left to the provision of individuals will be underprovided because the individual who feels he will get them anyway has an incentive to "let George do it." The problems of accurate revelation of preferences and holdouts operate with respect to governments as well, individuals with some added complexities.

A public agency rarely has the luxury of operating in a fully comprehensive, evenhanded manner /Ingram, 1973/. Obtaining the budget, expertise and effective political authority to do so is impossible. A large agency, for example, will have relative advantages in system, skill, consistency, momentum and follow-through. Its disadvantages may be in

tunnel vision combined with so much inertia. Innovation may have to fight a substantial review structure with a stake in the old ways, the familiar and safe. The ability to sense a change in the environment may be dulled by well entrenched information screens. Like the dinosaurs, adaptations that meant survival before may mean destruction if changes in the environment are not met with new adaptations.

On the other hand, an agency of wider geographic responsibility can be expected to internalize externalities not even perceived by an agency of smaller jurisdictions. It can also push for innovation on the part of those smaller jurisdictions. The EPA "208" water quality planning program can be viewed as an effort to encourage local governments and regional agencies to innovate non-point pollution control arrangements. This is not a bad strategy when no one is sure what the problem is and how to attack it.

Myopia is a concept worth exploring. The divergence of the discount rate between the sum of individuals' actions and the actions of a group is a case in point. Would a set of individuals organized as a group agree to value the future differently than they do in their individual behavior? Much of the debate over a proper discount rate to be used in planning water investments seems to hinge on that particular question /Mishan, 1971/. And there seems to be no reason why the federal government, the states and local governments should not also diverge in their degrees of myopia. Welfare economists have long argued over the divergence between public and private rates and whether it would lead to underinvestment. The same issue applies to levels of government and would seem to differ between classes of investment. Consider the complications of the politics of closing the commons.

An important aside is the trap that many economists have talked themselves into. As Henry Caulfield has pointed out, economists have elaborated the "willingness to pay" basis for estimating benefits. Then this is sometimes equated with a feeling that beneficiaries should so pay for their benefits. /Ingram, Roefs and Allee, 1973/ This has played an important role in giving benefit-cost analysis more creditability. The consent and support of many participants not directly affected by a project is enhanced if they feel that the efficiency test has been evenhandedly applied. But willingness to pay is what others agree it would be rational to consider as the benefit to the beneficiary -- not at all what the beneficiaries in fact perceive they should pay. In fact, if they did perceive the benefit in that magnitude, much of the market failure argument for public intervention would be destroyed. We can't have it both ways.

Biases in the perception of benefits and the link to cost sharing policy is not limited to economists and their preference for the results the market would produce if there were a market. Perhaps the most obvious example lies in the perception of the chances of natural disaster or good fortune. How many farmers have put land to the plow during a sequence of wet years only to be wiped out by drought? Did they bear the full costs of their decisions? Are we likely to devise regulatory solutions without complementary cost sharing incentives? Likewise, how

many that live in the hundred year flood plain -- in which the recurrence of a flood appears to be more frequent than every hundred years -- have an accurate perception of the risk they face? It would seem that the divergence between public and private perception is also systematically repeated between levels of government. The recent history of the National Flood Insurance Act is a ready-made laboratory for the study of such perceptual biases and the relatedness of cost sharing rules to other approaches to demand management. Recent droughts provide more opportunity.

Public agencies would appear to have a lack of symmetry in the incentives with which they approach problems. This could be suggestive of reforms if better understood. One persistent example is that faced by managers of supply works. Excess capacity and under capacity provide very different rewards and burdens which are in part tied to the perceptions of the clientele and their relationships to those managers. A community may well be able to absorb the costs of a drought or a flood more cheaply than paying for the idle capacity needed to avoid either in the intervening years. But the public manager of those works is not likely to appreciate the wisdom of such a fact during the howls for his head when a flood or drought occur. Both problems of changes in perception over time and between groups are at work.

Another example concerns cost sharing for capital investments as opposed to operation, maintenance, and replacement costs. Almost exclusively in the water field, funds from federal and state agencies are available only for capital investments. Where operation and maintenance and replacement funds are available, they are harder to secure and to assure. The result is that it is everyone's advantage -- everyone involved, that is -- to seek designs that minimize the operation and maintenance and replacement component. This is compounded by budget processes that treat each project as if it were independent from every other one; ie., where the opportunity cost in terms of other projects is not clear to the participants. To compound the problem even further the review and control process is greatly simplified if the rules spell out the technology to be cost shared. Sewage treatment plants and large sewers, dams and dikes become the way to deal with a problem. Not only is the preference for supply management enhanced but particular supply techniques are easier and quicker to get approved. Further, the federal interest in the level and timing of OM&R is largely abrogated with no cost sharing. If failure in the public marketplace justified federal intervention at the project initiation phase, it would seem reasonable that there would be a federal interest to protect in the operational phase in many cases.

Consider that demand management techniques are apt to have high operation, maintenance and replacement costs as well as one time burdens that are not anything like spending money for bricks and mortar. Affecting flood plain occupancy is a good case in point. How can the demand for flood plain locations be discouraged? Any regulatory approach requires constant institutional maintenance costs which local governments clearly do not have adequate incentive to provide. Yet local governments have and will continue to hold veto power over land use controls. Existing landowners are bound to suffer significant capital losses as a

result of any effective demand management approach. In terms of achieving consent and support within the "politics of closing the commons" these capital losses must be considered well beyond the interpretations of the taking issue by the courts. The experience in urban renewal would seem a fruitful place to look for relevant experience in how the "bribes" will have to be handled. Certainly the federal stake in reducing a particular flood risk should not be difficult to estimate. Payments after a flood should not be difficult to document and relate to the existing techniques for flood loss estimation. This gives the pool from which "bribes" could efficiently be drawn.

Applying the Tragedy of the Commons to Cost Sharing

Table 1 displays current cost sharing experience (FY 1974) among the various purpose categories for federal water resource programs. The composite rate standardizes over programs and projects that use different rules for capital versus operation and maintenance, different reimbursement schedules and interest charges for federal financing of the non-federal share. For the first time we have available an essentially comprehensive and consistent data set for a single year. In response to the Congressionally directed study the Water Resources Council and the Office of Management and Budget offered competitive recommendations for standards to be applicable to all programs. The Water Resources Council percentages were offered as targets or floors towards which agencies would move in their bargaining with non-federal sponsors. Note that OMB recommended a much simpler approach with a flat full assumption of operations and maintenance by non-federal sponsors. Cost sharing on capital would be at 50 percent in most cases with 100 percent non-federal reimbursement for power, municipal and industrial, non-point pollution and irrigation, and 25 percent for point source pollution. This was before the Culver Amendments to P.L. 92-500 placed federal cost sharing for land treatment measures for non-point pollution control at a 50 percent federal minimum share, with higher shares negotiable in return for the potential water quality improvement achieved.

One aspect of the cost sharing question is vendability. The concepts of common property and public goods hang on the ability to exclude those who do not pay and on whether one person's "enjoyment" of a good (or bad) affects the ability of another to do so. Knowing that a wilderness is there and protected is a good whose use is neither excludable nor rival. Direct use up to a point of crowding may also be most difficult to price. On the other hand, water once captured and placed in a municipal system is much easier to price. A meter and a municipal fee (collectable as taxes if not paid) turn water into an excludable and rival good. The vendability scale in Table 1 is an attempt to capture the relative ability to make the goods (or bads) in each category excludable and rival. The presumption is that the more vendable a purpose is, the less likely that levels and forms of investment will be distorted. The more vendable, in other words, the less the need for bargaining between levels of government to insure that the interests of all those affected by the choices made are adequately protected. Higher federal cost shares do not insure this protection but should merely open more opportunity for it to be sought.

Table 1.
Summary of Recommended Effective Non-Federal Cost Sharing Percentages and Two Evaluation Scales

Purpose Category	Current (FY '74) Composite	SRC Recommended Composite	Vendability Scale 1=High 5=Not Vendable	Public Market Failure Scale 1=Low 5=High	OMB Recommendation Capital	OMB Recommendation O&M
Urban Flood Damage Reduction	20	10+	4	5	50	100
Rural Flood Damage Reduction	11	10+	4	4	50	100
Drainage	45	50+	3	2	50	100
Agricultural Water Supply Irrigation	19	25+	2	2	100 +	100
Erosion & Runoff Control	34	10+	3	3	50	100
Aquacultural Production	8	10+	4	4	50	100
M&I Water Supply	64	100	1	1	100 +	100
Water Quality Management Point Source	64	*	3	4	25**	100
Water Quality Mgt. Non-Point Source	3	*	5	5	100***	100
Recreation -- Gen.	19	20+	3	1	50	100
Fishing & Hunting	14	20+	4	4	50	100
Boating -- Berthed & Launched	38	20+	2	2	50	100
Natural Areas	4	0	5	4	50	100
Historic & Cultural Sites	0	0	4	3	50	100
Ecological Systems	26	0	5	5	50	100
Navigation	7	10	3	3	50	100
Hydroelectric Power	64	100	1	1	100+	100
Area Redevelopment	60	60	4	3	50	100

* No decision on this.
** Removes costs for land easements and rights of way.
*** No current federal program. Not a federal funding responsibility under P.L. 92-500.

Source: Percentages adopted from Table 9-1, U. S. Water Resources Council, Options for Cost-Sharing -- Alternative Cost Sharing Proposals -- Part 9, Washington, D. C. December 1976. Scales represent the judgment of the author.

Rivalness, excludability and institutions to achieve them are probably not the whole story in vendability. But they certainly are not the whole story in the ways that failure in the public market can come about. Thus, a more comprehensive public market failure scale is presented in Table 1. Only a few of the purposes shift more than one level in the one to five scales. Note that even in the category with the lowest degree of public market failure, there is some scope for the use of cost sharing to shore-up other approaches to deal with the opportunities presented.

Municipal and industrial water supply offer opportunities for demand management, both conservation to reduce average use and drought response strategies to deal with the occasional low points in natural supply. Rural water supply facilities are not likely to meet national standards of safety, reliability and affordability without federal subsidy. General recreation facilities for water based activities have some problems of excludability and rivalness that are not likely to be overcome without a federal bargaining presence. Under-provision, particularly for low income groups, is likely. Historically hydroelectric power has been the basis for rural electrification and other social goals. Federal leverage for the future may be more justified on energy policy and environmental grounds. Federal cost sharing is probably needed least for this purpose, however.

At the other end of the scale, urban flood damage reduction needs hardly any defense for its high public market failure ranking. The need to shift incentives is substantial. This is not to say that present programs and traditional project measures should continue to dominate the mix, but that substantial federal leverage will be required to meet the objectives inherent in the purpose. Rural flood damage reduction receives a lower rating because farmers appear to have a far more accurate perception of flood risks than other land users. Rural communities also may be somewhat less biased in their perceptions than their larger urban cousins.

Non-point pollution -- by definition -- presents a far more difficult public management challenge than point-source pollution. For example, the amount of offending nutrient reaching an overly algae laden lake is a very small fraction indeed of all the nutrients being cycled through the biosystem in its watershed. That system is subject to such fragmentation and diffusion of interest and is so poorly understood by anyone, let alone those who must support a management institution, that progress will be slow in coming. Silt is a little better understood by expert and layman alike and has the benefit of over 40 years of institutional development to deal with it in a land conservation context. No regulatory scheme has much chance of impacting this problem very greatly in the near-term. The need for a cost sharing approach while we generate experience and understanding is substantial.

It would be tempting to place point source pollution control in the highest category. But PL 92-500 turned the bargaining context around and appears to be making it stick. Instead of the enforcer proving a case against the polluter on the basis of stream standards,

now the polluter must prove that he should not have to adopt the hardware and technology standards of the enforcer. /Mann, 1975 and Holden, 1965/ By being able to vary the standards with the age of the plant, in the case of industrial polluters, the bargaining is made more manageable. In time the streams may show the effects; if they do not, more fiscal incentives may be necessary.

Least sure are the rankings given to the ecological systems, natural areas and historic and cultural site categories. To date, they do not bulk very large as water program purposes. Ecological systems would seem to be more diffused in benefit and less amenable to management devices other than acquisition. Natural areas connoted something more akin to recreation sites. Similarly with historic and cultural sites which also sometimes have the opportunity of multiple use along with preservation.

The simple averages of the composites for the existing situation and the Water Resources Council Recommendations are presented in Table 2. Note that there is a rough correlation between the Public Market Failure Scale and current practice. Since the WRC recommendations were intentionally only incremental shifts from current practice, it is perhaps not surprising that there is not much change -- but at least in cases the changes are in a direction consistent with the scale.

Table 2.
Current Effective Non-Federal Cost Sharing Percentages and Water Resources Recommendations Grouped by an Evaluation Scale

Public Market Failure Scale 1=Low 5=High	Simple Mean of the Current (FY '74) Composite	Simple Mean of the WRC Recommended Composite
5	15	10
4	22	10
3	23	27
2	34	32
1	49	73

The scale used here is admittedly a very subjective, gut level sorting of the purposes. Future research should be able to provide a much more convincing basis for such an analysis at both this general level and at the individual project level.

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