

EROSION AND SEDIMENTATION  
CONTROL STRATEGY  
FOR THE  
UPPER MISSISSIPPI RIVER SYSTEM

Report of the  
Erosion and Sediment Task Force to  
the Upper Mississippi River Basin Association

Adopted by  
Upper Mississippi River Basin Association  
on  
October 17, 1984

## BACKGROUND

The Upper Mississippi River Basin Association published in January 1984 a report titled "Erosion in the Upper Mississippi River System: An Analysis of the Problem." This report attempts to define the scope of the erosion problem in the region and to analyze possible alternatives for its reduction. Not only is soil loss continuing to reduce soil productivity, but sedimentation from upland and streambank erosion is threatening river resources. The Association, however, did not endorse in the report a particular strategy for erosion and sedimentation control. Instead, the Association subsequently established an ad hoc task force to further explore the issue and develop control strategies that are fiscally responsible and implementable.

The task force consisted of representatives with expertise in soil conservation and nonpoint source control from each of the five states. The U.S. Soil Conservation Service, Corps of Engineers, U.S. Fish and Wildlife Service, and U.S. Geological Survey also participated. A list of participants are included on page 17.

The task force reviewed the alternative strategies presented in the Association report, reviewed other proposals submitted by task force members, and reviewed proposed federal legislation on soil conservation and nonpoint source control. Among the alternatives and proposals reviewed are the following: (1) expanded funding of U.S. Department of Agriculture soil conservation programs nationwide and/or regionally, (2) mandatory erosion control compliance, (3) cross-compliance requirements, (4) changes in tax policy, (5) expanded targeting within the region, and (6) federal and state legislation specifically for the Upper Mississippi River System.

The task force concluded that there was no single strategy that could accomplish the needed levels of erosion and sedimentation control to preserve river resources. Any strategy must consider national, regional, and local perspectives. The Association should support national or state policies and programs that provide indirect benefits to the system, but at the same time the Association should aggressively initiate actions tailored specifically toward the system. The strategy outlined in this report contains both elements. In order for the Association to undertake a comprehensive, long-term strategy for erosion and sedimentation control, it must be prepared to react to national initiatives, promote site specific actions, and increase public awareness of the problem. The strategy presented in this report is part of the Master Plan, but it has not been part of any legislation which has up to now been considered by Congress.

This report has five sections. Section 1 details the perception of the task force on the factors involved in designing a strategy to reduce sedimentation in the Upper Mississippi River System. Section 2 discusses the support of national policies and programs as one element in the overall strategy, while section 3 focuses on state and regional programs. Section 4 proposes a specific implementation strategy directed toward the Upper Mississippi River System. This strategy covers upland erosion control, streambank erosion control, and sediment monitoring. The final section summarizes the specific activities the Association will undertake to implement the overall erosion and sedimentation control strategy.

## FACTORS IN DESIGNING STRATEGY

The previous erosion report of the Association, "Erosion in the Upper Mississippi River System: An Analysis of the Problem," adequately describes the effects of sedimentation on the river system. This section does not detail the environmental considerations but rather the political and practical aspects that must be considered to implement any control strategy. The recommended strategy must have public and political support to pass legislation and to implement soil conservation measures that will reduce sedimentation.

The life expectancy of backwater areas of the Upper Mississippi River System is limited under current sedimentation conditions. Prevention of sediment production at the source is the long-term solution for extending the existence of the Mississippi River pools and backwater areas. However, current soil conservation programs are directed toward the maintenance of soil productivity and not necessarily the reduction of sedimentation. Soil conservation measures are designed to reduce erosion to "tolerable" levels. Tolerable erosion levels occur when topsoil is naturally regenerated at the same rate at which the soil is lost from erosion. Generally, tolerable erosion rates range from four to five tons of topsoil per acre per year, but when topsoils are thinner, as in northeast Iowa and southeast Minnesota, tolerable soil losses may be less than one ton per acre per year.

Soil conservation measures designed to maintain soil productivity still result in offsite benefits. Sediment deposition in waterways destroys aquatic habitat, diminishes water quality, impairs recreation use, and increases water treatment and dredging costs. Eroded material can also clog roadside ditches and drainage systems and damage surrounding cropland. Therefore, even though current programs emphasize soil productivity, their implementation will result in sediment reduction in the Upper Mississippi River System. The task force feels that the strategy designed for the river system should rely on the current soil conservation program structure for implementation. However, the Association should support broadening conservation program objectives and targeting efforts to place a greater emphasis on offsite benefits.

Erosion control through existing soil conservation programs ultimately depends on the implementation of soil conservation measures by landowners or farm operators. National policy has traditionally relied on their voluntary cooperation to reduce erosion. Before participating in voluntary soil conservation programs, farmers must be convinced that there is a soil erosion problem and that the practices he must adopt will resolve the problem. Incentives to cooperate are provided by federal and state governments through technical and cost-sharing assistance programs, however, these programs cannot reach every landowner, and often the high cost of structural practices is a deterrent to installation when the benefits resulting from dollars spent today are not evident for some time to come.

While a farmer can appreciate the future advantages of soil stewardship for continual soil productivity, the farmer has less incentive to implement soil conservation measures when offsite benefits are the primary objective. While both onsite and offsite benefits occur as a result of soil conservation, it may be necessary to provide other incentives to control erosion where offsite benefits are emphasized. In recognizing the value of the backwaters of the Upper Mississippi River System, a balance must be struck between public and farmer financing for backwaters preservation.

Any recommended strategy should emphasize the tradition of voluntary cooperation. However, mandatory erosion control ordinances and cross-compliance policies are now receiving increased attention and should be considered in future soil conservation and nonpoint source control policies. Cross-compliance policies encourage farmers to participate in soil conservation programs by requiring participation as a condition of other federal agricultural assistance programs. Since a farmer retains the option to participate in federal agricultural assistance programs, cross-compliance policies are considered voluntary. But the extent to which cross-compliance is applied may be a concern to many farmers.

Mandatory compliance may become necessary as a back-up regulatory component when critical areas are not protected through voluntary efforts. Mandatory erosion control ordinances are already being implemented at the state and local level. The State of Iowa, through an administrative order or court order, can require a landowner or farm operator, whose soil losses result in damage of other's lands, to install soil erosion control practices. The state provides a cost-share rate of 75 percent for permanent soil conservation practices installed under this mandatory program. A number of Minnesota counties, particularly in southeast Minnesota, have or are in the process of enacting a county ordinance. Local government can be an effective mechanism for implementing actions that will control severe erosion problems. Implementation of mandatory measures in the Upper Mississippi River System should be handled through the existing institutional structures for soil conservation currently established in each state. These governmental organizations should seek the necessary authorization to implement mandatory programs if voluntary efforts fail.

Public awareness of the offsite benefits of soil conservation can encourage the implementation of control measures. Unfortunately, widespread public awareness of the offsite damages to the Upper Mississippi River System is probably low. An expanded public information effort could increase public involvement in and support for the preservation of the river system from excessive sedimentation. Better documentation of the effects of sedimentation on the resources of the river is necessary to convince the public and policymakers that erosion and sedimentation control is a vital priority.

In recent years, the Chesapeake Bay Basin has been the subject of extensive environmental review. The task force reviewed the Chesapeake Bay program to determine how it obtained the public and political support for its implementation. The Chesapeake Bay program is a comprehensive water quality program that involves both point and nonpoint source control. The program was included in the President's FY 1985 budget at a funding level of \$10 million to provide technical and financial assistance to Bay area states to further the cleanup effort. The nonpoint source control program is considered a pilot program for the U.S. Environmental Protection Agency. The task force was primarily interested in how this program received federal funding support. It was determined that the primary reason for the federal support was because the public and the surrounding states have had a long history in promoting water quality objectives and research on the Bay. The U.S. Environmental Protection Agency recently completed a seven-year, federally funded study that will be the basis for the program. This study provides data that illustrate the effects of point and nonpoint source pollution on the aquatic environment of the Bay. While the task force felt it was not essential to duplicate the Chesapeake Bay experience, some features such as public and state involvement and a report that has data justifying the need for action were vital for securing federal support.

Comprehensive data that illustrate the effects of sedimentation on the Upper Mississippi River System have not yet been compiled. While a number of research studies have documented water quality and aquatic habitat effects, the data have not been packaged in such a manner as to "sell" the need for sediment control to the public. Current research data should be integrated and published in a report that can attract public sentiment for legislative action for the river system.

Another factor in designing a strategy is the selection of site-specific activities that will be effective. The Chesapeake Bay Research Consortium has expressed concern over the implementation strategy proposed by the U.S. Environmental Protection Agency for that area. If the Chesapeake Bay program does not achieve appreciable improvements in water quality, this could affect future public and political support. Project evaluation including monitoring activities should be conducted in conjunction with any site-specific activity to document benefits. Publicity surrounding successful activities can encourage similar applications in other areas.

Soil conservation and erosion control programs are administered through a number of federal, state, and local agencies and boards. Any strategy for erosion and sediment control must be adaptable to this institutional framework. These agencies and boards must be willing to institute any changes that may be necessary to focus greater attention toward offsite damages to the Upper Mississippi River System. Directing funds to high sediment source areas might prove effective if offsite sedimentation or environmental damages were the only measures of erosion's harm that need to be considered. Currently, maintenance of soil productivity is the highest priority in targeting for "general" soil erosion control programs. (Specific authorities such as P.L. 566, Agricultural Conservation Program special projects funds, and special state programs may use other criteria.) Any shift in emphasis toward the Upper Mississippi River System could conflict with these policies.

States in the Upper Mississippi Region have different programs and funding levels for soil conservation. Although these differences may not be extreme, they can influence the implementation of any strategy. While the strategy could recommend changes in programs, in general the strategy should be adaptable to the current structure in each state. However, it is anticipated that the institutional structure for erosion control in each state will continue to evolve. If current programs are unable to meet state objectives for erosion and sediment control, changes will be necessary. The need to preserve such a vital natural resource as the Upper Mississippi River System as well as other surface water resources can be a catalyst to initiate these institutional changes.

The major factors that should be considered in designing a recommended strategy for erosion and sediment control in the Upper Mississippi River System are the following:

- Emphasis should be placed on voluntary cooperation of landowners, operators, and developers. Some incentives and disincentives could encourage cooperation but a regulatory program component may be necessary in the future to reach sediment control objectives.
- Attempts to increase public awareness of the impacts of sedimentation on the Upper Mississippi River System should be made to elicit support for the proposed strategy.

- Any site-specific activities recommended in the strategy should be carefully chosen and evaluated to document their effectiveness.
- The strategy should as much as possible be adaptable to the federal, state, and local institutional structure and policies for soil conservation. However, the task force recognizes the need to evaluate the effectiveness of that structure in accomplishing erosion and sediment control objectives. Modifications may be necessary to implement an effective strategy.

## NATIONAL SOIL CONSERVATION AND NONPOINT SOURCE CONTROL INITIATIVES

National policies and programs influence erosion control efforts in the Upper Mississippi Region. Greater funding of soil conservation programs or new initiatives that encourage conservation will provide some benefits to the river system. Although these benefits may not be sufficient to halt the sedimentation of backwaters, these initiatives should be considered because they could be an important aspect in an overall strategy to expand conservation. Initiatives that encourage conservation represent an increasing public awareness of the problem and a commitment by the federal government to recognize and deal with that problem. The Association should review any proposed initiative for soil conservation or nonpoint source control programs and adopt a position on its merits. A discussion of an initiative by the states in the Association can lead to a regional perspective and improve coordination during implementation.

During the 98th Congress a number of bills were introduced on soil conservation and nonpoint source control. The task force reviewed these bills and developed position statements on the nonpoint source control amendments to the Clean Water Act and on the "Soil Conservation Act" and its "Sodbuster" provision. The Association subsequently approved the statements and sent them to the five-state Congressional delegation and other key Committee members. The task force feels this review of pending legislation should remain an element of the Association program and should be considered as part of the overall erosion and sediment control strategy. The Association would continue to monitor bills, seek input on the bills from conservation representatives in each state, and develop a common position.

Issues likely to be addressed in the future include:

- a conservation land reserve program, which will encourage landowners to return land to its more appropriate environmental uses through long-term incentive contracts,
- a set aside program, which will permit farmers to practice conservation on sections of their land without being penalized by incurring a cropland base acreage reduction,
- cross-compliance, which will require a farmer to practice proper conservation in order to participate in commodity assistance programs,
- a nonpoint source control program, which will provide assistance toward watersheds that are significant contributors to water quality problems,
- the application of targeting and how it may affect funding availability, and
- budget levels for pertinent federal programs.

The task force has already registered its support for the conservation land reserve and set-aside programs, and the concept of cross-compliance, but further review may be necessary as legislation is proposed. Targeting U.S. Department of Agriculture soil conservation program funds toward significant erosion problems is a recent federal policy now facing closer scrutiny. Nontargeted areas face the prospect of losing federal funding and personnel support. In addition, the targeting formula should emphasize, besides the impact of erosion

on productivity, such other offsite factors as water quality. The Association should review the budgets for U.S. Department of Agriculture and U.S. Environmental Protection Agency and consider supporting appropriate funding levels for soil conservation and nonpoint source control programs.

In addition to federal legislation the Association should review and encourage policies that could lead to accelerated erosion control. For example, federal agencies are often restricted to specific project purposes when studying and developing projects. Greater flexibility would permit federal agencies to consider erosion control alternatives during planning. Specifically, the Corps of Engineers would then be able to evaluate erosion control alternatives as a component of flood control studies in small basins. The Association should initiate actions that could result in an Executive Order which would require all federal agencies involved in studying and developing projects to consider erosion control alternatives during planning.

The Association should express its position when appropriate on actions undertaken nationally that will benefit or be detrimental to erosion and sediment control in the Upper Mississippi River System. Still, to implement an effective strategy for the river system will require specific regional and local actions.



## STATE PROGRAMS AND POLICIES

Regional or state initiatives could potentially have a greater impact on controlling sedimentation in the Upper Mississippi River System than national initiatives. But again most regional actions are not specifically directed toward the river system.

The states of the Upper Mississippi Region have progressive soil conservation programs. The severe nature of soil erosion in the region has forced the states to supplement federal programs to achieve better levels of erosion control. States have initiated their own erosion control cost-share programs, which accounted for 22 percent of the 1983 cost-share funds in the critical sediment producing area of the river system. The levels of cost-share assistance do differ among the states.

Similarly, programs and policies differ among the states. The State of Iowa has more mandatory erosion control policies than the other states. The State of Wisconsin pursues much of its erosion control objectives through its nonpoint source control program.

### State of Iowa

It is the policy of the State of Iowa to provide for the restoration and conservation of the soil resources of the state and for the control and prevention of soil erosion and sediment damages. Legislation in 1973 established a program through which state funds would be made available to landowners and farm operators to pay a part of the cost for the installation of permanent soil and water conservation practices. On July 1, 1984 the state cost-share program or the Iowa Financial Incentives Program (IFIP), as it is called today, will have been funded for eleven years by appropriations totaling approximately \$50 million.

Each year the IFIP appropriation (\$8,644,600 for fiscal year 1984-85) is divided between a voluntary program, a publicly-owned lakes program, and a mandatory program. For the voluntary program 90 percent of the appropriated cost-share funds are allocated to soil conservation districts to provide 50 percent cost-share to landowners for the installation of permanent soil conservation practices. The allocation to each district is based on data contained in the Conservation Needs Inventory. District commissioners set priorities and allocate the cost-share funds to landowners at the district level.

The percentage of the state cost-share appropriation which may be used for the publicly-owned lakes program and the cost-share rate are specified by the legislative appropriation. Currently, 5 percent of the state cost-share appropriation is used to cost-share up to 75 percent of the approved cost of permanent soil conservation practices in watersheds above certain publicly owned lakes and reservoirs that are identified on a priority list established annually by the Iowa Conservation Commission.

Five percent of the state cost-share appropriation is retained for cost-sharing with landowners or farm operators required to install soil erosion control practices to comply with an administrative order or a court order, where such order exists as a result of soil loss limits complaints under Iowa's soil loss limits law. The rate of cost-share for permanent soil conservation practices installed under this mandatory program is seventy-five percent of the

total installation cost to the landowner. The rate of cost-share for temporary soil conservation practices is set by the State Soil Conservation Committee. Any cost-share funds allocated to the mandatory program which remain unobligated at the end of a program year are reallocated to the voluntary state cost-share program.

In addition, Iowa has two different loan programs. One provides low interest loans for installation of permanent soil conservation practices and for purchase of certain minimum tillage equipment. The second loan program has a \$1 million amount for no-interest loans for installing permanent soil conservation structures.

### State of Illinois

The State of Illinois established the Illinois Farm Development Authority in 1982 to provide low interest loans for soil and water conservation practices, and for land and equipment purchases. Since December of 1982, the Authority has approved 46 loans totalling \$1.45 million dollars for conservation practices. A state cost-share program for conservation tillage was initiated in FY 1982; however, the \$500,000 appropriation was discontinued the following year. In addition, the State has developed a comprehensive cost-share program primarily designed to provide financial assistance to farms on which a valid erosion complaint has been filed (under the State Soil Erosion Control Program). The FY 1984 appropriation for this program is \$50,000.

Illinois has a voluntary erosion control program which established erosion loss standards, that are progressively more stringent from the current 4"T" to "T" value for all lands by 2000. Sixteen counties have adopted standards more stringent than the State's. The program is based upon a citizen complaint process, supplemented by a State cost-share program.

### State of Minnesota

The State of Minnesota established a state-funded soil and water conservation cost-sharing program in 1977. Under this program, the state Soil and Water Conservation Board (SWCB) allocates funds to soil and water conservation districts (SWCD) to be used to share in the cost of voluntary implementation of systems and practices for erosion or sediment control or for water quality improvement. The state SWCB must allocate at least 70 percent of available cost-sharing funds (\$1,541,000 in FY 1984) for conservation practices to address high-priority erosion, sedimentation, or water quality problems based on state-wide priorities established by the SWCB and identified in SWCD plans. Seventy-five percent cost-sharing is provided. The State of Minnesota also funds a sediment and erosion control grant program focused on streambanks, lakeshore, and roadside projects. The SWCB provides 50 percent cost-sharing grants for eligible projects. In FY 1984, the Legislature has appropriated \$158,700 for this program.

A 1984 legislative act encourages Minnesota counties to adopt soil loss regulations. If adopted, the ordinance establishes a complaint procedure whereby private landowners or governmental officials can allege that excessive soil loss is occurring. Except in the cases of construction activities over one acre in size or when the required control practices have less than a ten year effective life, cost-sharing must be available to the cited landowner before compliance can be mandated.

## State of Missouri

The State of Missouri initiated its state cost-share program in FY 1983 with a \$1 million general revenue appropriation. This was supplemented later in that same fiscal year with the passage of a bond issue that would provide \$24 million over a 5-year period. However, in August 1984 a state constitutional amendment was passed which could result in \$15 million a year for five years from sales tax revenues. This revenue will replace current revenue sources and become the sole source of funding for the Soil and Water Districts Commission of the Department of Natural Resources.

The Commission proposes to use the largest percentage of the amendment funds to step up current soil and water conservation programs. A smaller share will go to technical planning and program administration. Approximately 50 percent of the revenues will be directed toward the state cost-share program, 13 percent toward the small watershed protection and flood prevention program, and 13 percent toward the low interest loan program for conservation applications. The soil survey program will be also accelerated.

## State of Wisconsin

Wisconsin has two major programs with objectives related to soil erosion control. The first, established in 1978, is the nonpoint source water pollution abatement program, administered by the Department of Natural Resources (DNR). The second program is the soil erosion control program, created in 1982, administered by the Department of Agriculture, Trade and Consumer Protection (DATCP) and the Wisconsin Land Conservation Board.

The programs have independent objectives but share similar planning and implementation policies and strategies. The objective of the nonpoint source program is to protect or improve water quality while the primary objective of the soil erosion control program is to protect agricultural productivity with a secondary objective of reducing offsite erosion damages.

Both programs have planning and implementation components. Under the soil erosion control program, all Wisconsin counties are required to prepare a county soil erosion plan which identifies where excessive soil erosion is occurring and establishes an action plan to deal with soil erosion. The plan is expected to analyze rural and urban erosion problems and will be used as a guide for directing existing county funds, ACP funds and state funds received through DATCP cost-sharing grants. The plan will also be an aid in the selection and implementation of nonpoint source projects. DATCP provides some financial and other assistance to aid counties in preparing erosion control plans.

Under the nonpoint source program, inventories and plans are prepared by county and DNR staff for project areas. These plans identify soil erosion control needs in these areas as well as pollution abatement measures needed to control animal waste pollutants, streambank erosion, and other forms of nonpoint source pollution.

The nonpoint source program and soil erosion control program are both designed to focus state resources into project areas in the areas of the state with the highest priority problems. The programs are coordinated under a memorandum of understanding between DNR and DATCP. Both programs are administered at the county level by county land conservation committees. The nonpoint source

program is currently funded at about \$5,588,000 per year and the soil erosion control program at \$375,000 per year.

Where a state program has been particularly effective, other states in the region might consider seeking the necessary action to institute similar programs. The task force reviewed state programs and policies and feels that the Association should provide a forum to exchange information on conservation programs that have been successfully applied in other states. Information on funding levels, program organization, implementation costs, and benefits accrued can assist states in determining the value of a program and in designing a similar program.

One such program is the nonpoint source control program which the State of Wisconsin established in 1978. The nonpoint program in Wisconsin was the first state program of its kind in the nation. The Association has supported federal legislation which would provide funds to implement similar programs in all states. The task force feels that, even if this legislation fails, the Association and its members should encourage the consideration of state legislation to create a nonpoint control program in the other four states.

Another policy consideration is to broaden the conservation planning aspect to increase the focus on secondary and offsite benefits. Individual farm conservation plans could include measures to improve fish and wildlife resources and reduce nonpoint pollutants as components. Incentives could be provided for their implementation. A filter strip incentive program is an example of a specific measure that could reduce erosion and provide habitat.

The institutional structure for soil conservation will continue to change within each state. The Association should provide information on programs and policies that might assist a state in meeting its conservation objectives.

## SPECIFIC STRATEGY FOR UMRS

National, state, and local initiatives will help soil conservation programs within the basin, but, unless some action is focused directly toward the Upper Mississippi River System, accelerated sedimentation will continue to alter the environmental conditions of the system. An effective erosion and sediment control strategy designed specifically for the river system would require federal legislation, state legislation, local action, and/or the targeting of current programs. The strategy should include actions for upland erosion control, streambank erosion control, and sediment monitoring. The task force recommends that the Association seek the following implementation strategy for the Upper Mississippi River System.

The strategy should focus on the important backwater sloughs and lakes of the river system that are being damaged due to sedimentation. These backwater areas provide vital aquatic habitat outside the main channel. Sediment enters backwater areas through tributaries and/or the main channel. Sediment remains in suspension as long as the flow capacity is sufficient to transport the sediment particles. Once flows and velocities decrease, such as occurs in the backwaters, sediment is deposited. Research in Illinois has shown that "local" bluff watershed drainage systems may contribute much of the sediment to some backwater areas when compared to sediment from the main channel. This observation should be valid for many backwater lakes along the Upper Mississippi River System.

Under the strategy, backwater areas that would benefit significantly from a concentrated erosion control program would be identified and treatment applied in their "local" drainage systems. Rather than undertake a massive systemwide campaign, the focus would be on smaller watersheds that are major sediment contributors to backwater areas. It is much easier to administer an effective erosion control program in smaller watershed areas.

The process to implement the sediment control strategy involves the following steps.

- Identification of selected backwater areas particularly threatened by sedimentation.
- Determination of major sediment sources for those backwater areas.
- Development of a treatment program to reduce sediment loadings.
- Evaluation of the potential for local involvement and for funding sources to implement the program.
- Implementation and evaluation of effects.

The Association in cooperation with the states and federal agencies should determine an identification and classification system for the types of backwater areas that could be either improved or damages reduced as a result of a soil erosion control program. One system currently in use is the U.S. Fish and Wildlife Service's Geographic Information System. This system can identify sensitive areas by combining multiple wildlife use variables. High resource backwater areas could be systematically identified through this analysis. Unfortunately, this system currently covers only the Upper Mississippi River

Refuge, although there are plans to expand it throughout the Upper Mississippi River. Until that time, selection of backwater areas should be based on the expertise of resource managers in each state with assistance from the U.S. Fish and Wildlife Service. The initial list of candidate backwater areas would be the prime resource areas where sedimentation from upland erosion is evident.

After the selection of backwater areas, the major sediment sources for each backwater area must be determined in order to design a specific treatment program. Through the assistance of hydrologists, soil conservationists, and resource managers in each state, and in cooperation with the U.S. Department of Agriculture, the major sediment sources for each backwater area can be delineated and the appropriate treatment program outlined.

The treatment program should include plans to control upland erosion and, where necessary, streambank erosion. In most cases, the treatment program will rely on technical and cost-sharing assistance to the landowner. Since the implementation of treatment measures is voluntary, it is essential to determine the level of cooperation within the "local" drainage basin. A second review would be done by the state and local conservation districts to evaluate the potential for local involvement. Once this review is completed, a list of those potential project areas with strong local support would provide the basis for initiating the specific sediment control strategy in the Upper Mississippi River System.

This initial planning phase can be accomplished through the existing resources of each state. Each state would develop the specific treatment plans without additional financial assistance. Project implementation, however, would be much more difficult to accomplish without additional financial assistance. In some cases, this assistance could be available through such existing sources as P.L. 566 project assistance, Agricultural Conservation Program Special Projects, and state programs. In addition, the passage of legislation authorizing funding for nonpoint source control programs could be another potential revenue source for implementation. However, to sufficiently control sedimentation in the Upper Mississippi River System will require greater levels of funding than existing funding sources can provide.

The Association should seek federal legislation to provide funds for implementation of erosion control treatment projects. The Chesapeake Bay program, previously discussed, and an erosion control program within the Cuyahoga Valley National Recreation Area (H.R. 3739), which was passed by the House but not acted on by the Senate, illustrate that federal support can be secured for erosion control in a specific area. Key components of the legislation could include the following:

- Designation of the Upper Mississippi River System as a nationally significant ecosystem and a nationally significant commercial navigation system, and as a national priority area for receipt of federal grants to protect this area from erosion and sedimentation.
- Federal grants would be provided to each state, and would be administered by an agency designated by the governor of the state. (It is anticipated that local administration would be by the soil conservation district or its equivalent.)

- Grants must be matched by each state, and each state must prepare a plan stating how the funds will be spent. The plan must include an identification and classification of backwater areas, and be developed in consultation with appropriate federal, state, and local agencies.
- Grants must be targeted to high priority areas, and be project-oriented on a watershed basis. Grants could be used for cost-sharing with landowners, for technical assistance, for program administration, and for project evaluation including monitoring.
- Cost-sharing would focus on control of cropland erosion and streambank stabilization.

Some critical backwater areas are not only receiving sediment from upland sources but also from the main channel. Dike construction could be considered to prevent fine sediment from entering isolated areas. These critical areas should receive priority attention for any funds allocated under the Habitat Rehabilitation and Enhancement program if the program is authorized by Congress. The Association should recommend the priority backwater areas for habitat improvement projects.

Project evaluation and sediment monitoring are essential to determine the effectiveness of any control program and to determine which treatment methods offer the best result for reducing sedimentation in an area. The Association should support sediment monitoring as a vital component of the Long-Term Resource Monitoring program, which also requires Congressional authorization. The monitoring effort should be coordinated within both programs and should include the following major components:

- quantification of sediment input to the Upper Mississippi River System,
- physical and biological impacts of sedimentation on backwater areas,
- identification and classification of backwater lakes where resuspension could be a problem, and
- assessment of the effectiveness of erosion control programs in reducing sedimentation in backwaters.

The specific strategy outlined in this section targets sediment control efforts toward key resource areas particularly threatened by excessive sedimentation. Treatment programs would be implemented incrementally based on resource value, types of treatment, and degree of cooperation from local landowners. Without sufficient financial assistance, however, implementation may proceed too slowly to have a significant effect systemwide.

The final section summarizes specific actions the Association will undertake to implement a comprehensive sediment control strategy.

## SUMMARY OF ASSOCIATION ACTIONS

The overall strategy presented in this report covers actions that the task force recommends the Association undertake to support national and state programs and policies and to establish a specific sediment control program for the Upper Mississippi River System. This section highlights those actions that the Association will initiate.

- A. The Association will continue to monitor national initiatives that would expand soil conservation and control erosion and sedimentation. Specifically, the Association will undertake the following:
- Review federal legislation and policies and provide commentary on the regional impacts and merits of proposed initiatives and develop position statements when appropriate.
  - Review the budgets for U.S. Department of Agriculture and U.S. Environmental Protection Agency as recommended by the President, National Association of Conservation Districts, or any other group involved in budget analysis and consider supporting budget levels for various programs within those federal agencies.
  - Seek to include the recognition of offsite effects of soil erosion control as criteria in targeting U.S. Department of Agriculture programs.
  - Seek an Executive Order that would require all federal agencies involved in studying and developing water resource projects to consider erosion control alternatives during planning.
- B. State programs and policies also effect sediment control efforts in the Upper Mississippi River System. It is anticipated that the institutional structure for erosion control in each state will continue to evolve if current programs are unable to meet state objectives for erosion and sediment control. One option is for appropriate local units of government to develop ordinances to address specific control problems, as needed. The Association will provide a forum for information exchange on programs and policies in states that might have application elsewhere and prepare periodic issue/analysis papers on appropriate erosion and sediment control topics. The Association and its members will encourage consideration of state legislation to create a nonpoint source control program similar to the State of Wisconsin's in the other four states.
- C. The Association will actively initiate the specific strategy for the Upper Mississippi River System. The strategy depends on support from state and federal agencies, local soil conservation districts, landowners who must implement treatment measures, and Congress who must pass legislation to provide financial support. The Association will undertake the following specific steps to implement this strategy.
- Establish a cooperative state and federal effort to identify prime backwater areas threatened by excessive sedimentation from upland erosion in "local" drainage systems.
  - Work with hydrologists, soil conservationists, and resource managers in state agencies and the U.S. Department of Agriculture to identify major sediment sources of these backwater areas and design a treatment plan.



- Evaluate with the assistance of the appropriate state agency the potential for local involvement in implementing the plan.
  - Implement projects as much as possible through available funding sources.
  - Seek federal legislation to provide grants for implementing the strategy.
- D. The Association will attempt to increase public awareness of the damages of sedimentation to the Upper Mississippi River System. This could facilitate the implementation of the specific conservation plans for the backwater areas and help in the passage of federal legislation. The Association will consider preparing a report that provides data on the sources and causes of backwater sedimentation and on the effects of sedimentation on the river system and developing a slide show that describes the scope of the problem and possibly the strategy proposed by the Association.

TASK FORCE PARTICIPANTS  
(Chairman: Lee Tischler)

State of Illinois

Marvin Hubbell  
Department of Conservation  
Paul Niedernhofer  
Department of Transportation,  
Division of Water Resources

State of Iowa

James B. Gulliford, Director  
Department of Soil Conservation  
William Nicholas  
Department of Soil Conservation

State of Minnesota

Ron Nargang, Director  
Soil and Water Conservation Board  
Greg Larson  
Soil and Water Conservation Board

State of Missouri

Don Wolf, Director  
Soil and Water Districts Commission  
Sam Orr  
Department of Natural Resources

State of Wisconsin

John Konrad  
Department of Natural Resources  
Leonard Johnson  
University of Wisconsin,  
Agricultural Extension Service  
James Arts  
Department of Agriculture, Trade,  
and Consumer Protection

U.S. Department of the Army,  
Corps of Engineers

Helmer Johnson  
Pat Foley

U.S. Department of the Interior,  
Fish and Wildlife Service

Richard F. Berry  
Jerry Schotzko

U.S. Department of Agriculture  
Soil Conservation Service

J. Michael Nethery  
Mike Schendel  
Jon DeGroot

U.S. Department of the Interior,  
Geological Survey

Mark Have  
Dan Bauer  
Mike Burkart  
George Carlson