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United States  
Department of  
Agriculture  
  
**Soil  
Conservation  
Service**

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**National  
Watershed  
Manual**

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**Part 502**

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**Project Purposes and  
Measures**



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# Part 502

# Project Purposes and Measures

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**Subpart 502A General****502.00 Introduction**

This part provides detailed guidance on eligible project purposes, project measures, qualifications for assistance, and available cost sharing. The policy applies to watershed projects planned and implemented with Public Law 83-566 or Public Law 78-534 assistance. Policy differences will be noted as appropriate. Watershed projects may be developed for one or more of the purposes authorized by the Act. The purpose(s) for which a project is formulated determines its eligibility for and rate of assistance. Project measures include land treatment, nonstructural, and structural measures.

**502.01 Descriptions of the eligible purposes****(a) Watershed protection**

Watershed protection is the onsite treatment of watershed areas for the primary purpose of reducing offsite soil and water related resource problems associated with floodwater, erosion, sediment, and agriculture related pollutants. It is the element that distinguishes the watershed program from other Federal or federally assisted programs for the conservation and development of water and related resources.

**(b) Flood prevention**

Flood prevention includes the measures installed to prevent or reduce damages caused by floodwater. Flood prevention is further defined as the control and disposal of surface water caused by abnormally high direct precipitation, stream overflow, or floods aggravated or caused by wind or tidal effects.

**(c) Agricultural water management**

Agricultural water management is defined as the agriculture-related phases of the conservation, development, utilization, and disposal of water. These phases are described in the following paragraphs.

**(1) Irrigation**—Measures installed to make more efficient use of water on cropland, grassland, and woodland and to obtain the maximum practical benefits for existing investments in irrigation.

**(2) Drainage**—Measures installed to increase the efficiency of land use on farms or ranches by the rehabilitation of existing drainage systems or the construction of new ones to lower the water level in areas where a naturally high water table, normal precipitation or normal tidal action, seepage, or excess irrigation water limits agricultural production.

**(3) Rural water supply**—Measures installed for the establishment of group water supplies primarily for agricultural use in rural areas. These measures can include all uses of water in rural areas to meet the needs of households, farmsteads, small firms, or community facilities. Rural areas are those areas where residents live on farms, in unincorporated settlements, or in incorporated villages or small towns and where agriculture (including woodland activities) and extractive industries (including seafood harvesting) provide the primary employment base. The service area for rural water supply shall not include any area in any city or town that has a population of over 10,000 inhabitants according to the latest decennial census of the United States.

**(4) Water quality protection and improvement**—Measures installed for the primary purpose of reducing water quality impairments by trapping or reducing pollutants primarily from agricultural sources.

**(5) Water conservation**—Measures installed to increase the efficiency of the use of agricultural water so that more is available for other uses.

**(6) Other agricultural water management**—Measures installed to provide group water supplies and distribution systems primarily for agricultural use in rural areas. Measures for salt water intrusion control, stabilization of annual streamflow, or other means for rural community use, livestock, orchard and crop spraying, and other similar agricultural purposes are also included under this purpose.

**(d) Nonagricultural water management**  
Nonagricultural water management includes measures for fish and wildlife and for public recreation.

**(1) Fish and wildlife**—This includes the measures installed to improve the habitat or environment for the breeding, growth, and development of water-based fish and wildlife or to provide opportunities for public

use, or both. Restoration of wetlands to benefit fish and wildlife is included in this category.

**(2) Public recreation**—This includes the measures installed to provide opportunities for the general public to participate in water-based recreational activities.

**(e) Ground water recharge**

Ground water recharge includes the measures installed to recharge aquifers. Practices include storage of water in impoundments, recharge devices along natural watercourses by diversion, or other water-spreading techniques.

**(f) Water quality management**

Water quality management is primarily storage of water in reservoirs for release to regulate streamflow thereby reducing problems caused by impaired water quality.

**(g) Municipal and industrial water supply**

This includes the incorporation of additional storage in a reservoir to supply water for municipal and industrial use.

installed and operated and maintained with agreements with the land administering agency, project sponsors, and the SCS.

**(c) Nonstructural practice**

Conservation practices that reduce the susceptibility of properties to damages. They also include the acquisition of real property rights needed to perpetuate, restore, and enhance the natural capability of wetlands and flood plains to retain excessive floodwaters, improve water quality and quantity, and provide fish and wildlife habitat.

## 502.02 Description of project measures

**(a) Land treatment practice**

Installed conservation practices that are of the size, complexity, and cost that individuals or small groups of land users would normally include them in their conservation plans and install, operate, and maintain them through ongoing local or Federal programs or under Public Law 83-566 through long-term contracts.

**(b) Structural practice**

Conservation practices that are of a size, complexity, and cost that group action is required to plan, install, and operate and maintain them. An individual land user would not normally install the practice with assistance provided through other ongoing local or Federal programs. Structural practices are installed, operated, and maintained by project sponsors. The sponsors are responsible for acquiring the real property rights to install and maintain structural practices on private land. On Federal land, these practices are

## Subpart 502B Watershed protection

### 502.10 Project measures

Project measures for watershed protection consist of land treatment practices installed by land users to reduce soil and water resource problems. They should be considered alone and in combination with structural and nonstructural measures in formulating watershed projects. Financial or technical assistance, or both, may be provided for planning and installing accelerated land treatment practices when funds from other USDA programs and State and local sources are not adequate to solve severe problems in a timely manner.

Accelerated technical and financial assistance may be used to address specific problems that warrant immediate action. Public Law 83-566 funds are to accelerate ongoing programs and are not to be used to replace funding from other programs or to compete with them.

### 502.11 Required land treatment

Land treatment required by Federal or State statutes or USDA regulations shall be considered an interdependent part of the structural or nonstructural measures.

#### (a) Above reservoirs

The Act requires that local organizations shall “obtain agreements to carry out recommended soil conservation measures and proper farm (conservation) plans from owners of not less than 50 percent of the lands situated in the drainage area above each retention reservoir to be installed with Federal assistance” (Sec. 4(5)). USDA policy requires installation of land treatment practices necessary to ensure that at least 50 percent of the land upstream from any retention reservoir is adequately protected before beginning construction of the dam.

“Proper farm plan” for non-Federal and Federal lands shall mean a conservation plan that provides for the essential treatment to protect the resource base to assure the proper functioning of the structural

measure. The plan will be developed in accordance with the Field Office Technical Guide.

The required acreage must be determined to meet the above requirements. The required acreage is the land within the structure’s drainage area not including the land under the structure site or its retention reservoir.

#### (b) Above channels

Plans are to provide for installation of land treatment necessary to ensure a stable channel without excessive sediment accumulation. Stream dynamics should be carefully considered in determining the amount of land treatment needed. Because of the delicate balance of the carrying capacity of a stream, the agronomic and geologic characteristics of the watershed should be taken into account. The amount of land treatment needed to ensure a stable channel should be considered an interdependent part of the channel work.

### 502.12 Associated land treatment

Associated land treatment includes those practices necessary to ensure realization of benefits used in the evaluation of structural measures. Onfarm practices installed during the project installation period with assistance from the ongoing program are considered as nonproject associated measures and will not be included. Onfarm practices installed with Public Law 83-566 program technical assistance are considered as project associated measures and will be shown in Table 1, Estimated Installation Cost, of the project plan (fig. 504–8).

### 502.13 Assistance available

The need for accelerated technical and/or financial assistance to install land treatment practices in watershed protection and water resource projects is to be determined on a project-by-project basis. Public Law 83-566 cost sharing should only be used when the ongoing programs fall significantly short of reducing severe problems and meeting the major land treatment needs within a reasonable time frame.

The system of practices established in the selected plan will serve as the basis for determining technical and financial assistance to be provided through Public

Law 83-566. Financial assistance to implement practices in the recommended plan will be limited to enduring practices. Non-cost-shared practices included in the recommended system will be included in the contract.

Any practice or combination of practices listed in the National Handbook of Conservation Practices may be considered for inclusion in the system(s) of practices included in the selected plan. The watershed plan must describe the system of practices included in the selected plan and designate those eligible for cost sharing.

Public Law 83-566 financial assistance (cost sharing) is limited to the installation of enduring land treatment practices planned for the primary purpose of addressing public (offsite) problems. Enduring practices are land treatment practices that, when properly installed and maintained, remain on the land and continue to function without reconstruction or reestablishment for a minimum of 5 years. They may need to be supplemented with management practices.

The treatment of critically eroding areas that significantly affect the design of structural measures is eligible for cost sharing if

- the erosion or sediment from the eroding areas significantly increases the cost of the structures,
- the treatment is the most cost-effective, and
- the land user cannot reasonably be expected to install the treatment without assistance.

Public Law 83-566 funds may be used to accelerate technical assistance for the planning and installing of land treatment practice(s) included in the selected plan, "associated" land treatment installed during the project installation period, and "required" land treatment.

The cost of installing, operating, and maintaining land treatment on Federal land will not be paid from Public Law 83-566 funds. (For flood prevention projects, this restriction does not apply to the use of Public Law 78-534 funds on National Forest System lands.). Any supplementary funds needed to install and maintain land treatment will be sought by the land-administering agency through its usual budgetary process.

## 502.14 Cost-sharing rates

Public Law 83-566 funds may be used to pay up to 65 percent of the construction cost of each enduring practice in the selected system of practices. Projects benefiting low income groups may be eligible for increased Federal cost sharing with prior approval from the Director, Watershed Projects Division. The Public Law 83-566 cost share rate cannot exceed the existing rate for ongoing national programs.

The average cost method (AC) should be used as a basis for payment for the installation of the selected system of practices. If special conditions exist, an appropriate alternative method may be used as defined in 120-GM-404.30.

Alternative systems of practices other than the system in the selected plan may be cost shared if the alternative system of practices will achieve the same or greater results. The Public Law 83-566 cost sharing will be limited by the lesser of (1) the cost sharing percentage established for the practices in the recommended plan, or (2) the cost-share amount that would have been received if the recommended system were installed.

No more than \$100,000 of cost-shared Public Law 83-566 funds may be paid to any one individual, family, corporation, or combination of these where the party has an interest in the land regardless of where the land is located.

Public Law 83-566 cost sharing on class VI through VIII croplands will be limited to permanent conversion to grass or trees. This does not apply to unique lands used to produce specialty crops that are not surplus and for which commodity payments are not available. However, significant offsite benefits must be present.

All practices needed to assure that the selected system of practices will function and produce the projected benefits must be included in the cost estimates and long-term contracts. This includes practices for which financial assistance to implement is not provided.

The cost of accelerated technical assistance needed to install the recommended system of practices may be provided by SCS without charge to the land user. Project administration costs will be borne by the party that incurs them.

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## 502.15 Implementation

All financially assisted land treatment measures will be installed using long-term contracts between the landowners or operators and the SLO or SCS. All long-term contracts must be signed within the first 5 years of the installation period. Permission to extend the sign-up period must be approved by the Director, WPD. Long-term contracts cannot be entered into if the land involved is within a unit that is under another program using contracts for conservation land treatment. Part 507 provides more guidance on implementing land treatment.

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## Subpart 502C Flood prevention

### 502.20 Project measures

Project measures for flood prevention consist of land treatment, nonstructural, and structural measures that reduce or prevent floodwater damages by reducing runoff, erosion, and sediment; modifying the susceptibility of improvements in the flood plain to damage; or reducing the frequency, depth, and/or velocity of flooding. In addition, project measures for flood prevention include watershed management features that prevent encroachment into the flood plain.

Because watershed plans represent a total resource planning effort, the plan must contain provisions for flood plain zoning for present and future urban and built-up areas as a requirement for assistance. Section 402 of Public Law 99-662 requires that, before construction of any project for local flood protection, the non-Federal interests agree to participate in and comply with applicable Federal flood plain management and flood insurance programs.

### 502.21 Land treatment measures

Land treatment practices for flood prevention are those practices that protect the watershed. They reduce the rate and/or amount of runoff and erosion, thereby resulting in the reduction of downstream flood peaks, sedimentation, and the delivery of other damaging material carried by floodwater. Section 502.13 provides policy for land treatment practices for flood prevention.

### 502.22 Nonstructural measures

Nonstructural measures alleviate flood losses by modifying the susceptibility of land, people, and property to flood damage or by modifying the impact of flooding. Nonstructural measures include, but are not limited to, flood warning, flood proofing, acquisition, relocation, and dikes around individual properties. Nonstructural measures can also be used to acquire, perpetuate, restore, and enhance the natural capability

of wetlands and flood plains to retain excessive floodwaters, improve water quality and quantity, and provide fish and wildlife habitat.

**(a) Relocation of existing flood plain properties**

Relocation of residential, commercial, industrial, and farm buildings may be the most economically, socially, and environmentally acceptable means of reducing or preventing flood damages. Relocation of existing flood plain properties is intended to reposition buildings in flood-free areas of the landowner's property or on other flood-free land. Land that is evacuated for relocation must have some type of deed restriction to prohibit building on that land. Where State law prohibits building on flood plains, deed restrictions are not required. Actual repositioning and related costs shall be based on replacement in-kind and are eligible for cost sharing. This is an NED cost to be used in benefit-cost comparisons. Costs of measures taken to allow the relocated property to meet decent, safe, and sanitary requirements are eligible for cost-sharing at the relocation cost-share rate, but are not to be included as an NED cost. The cost of additional improvements beyond decent, safe, and sanitary requirements is a nonproject cost ineligible for assistance under the Act.

**(b) Flood warning system**

Wherever properties remain in a flood-prone area, a flood warning system may be used in conjunction with other measures to reduce flood damages. A flood warning system may include monitoring of weather or stream conditions coupled with a projection of anticipated flood depths. An alert or warning system may be included to notify flood plain occupants in time to protect property from damage, to evacuate the area, or both. An effective forecasting and warning system must be supported by an evacuation and emergency action plan. Federal cost-sharing assistance could include such items as design of the system, stream and rain gauges, the communications network, and the warning system. Costs of monitoring the flood warning system, training personnel, and testing are to be included as part of operation and maintenance. Cost sharing is not applicable to systems receiving assistance from another Federal agency.

**(c) Flood proofing**

This work is on individual buildings. It includes blocking off low-level entrances and windows, installing one-way valves in drains, strengthening walls and

foundations, installing protective walls, and elevating the building or contents to minimize flood losses. A dike protecting an individual property is considered a nonstructural measure.

**(d) Flood plain and wetland acquisition**

Flood-prone lands in developed areas may be acquired with program cost sharing assistance. Developed land is defined as areas that have existing residential development, commercial development, or both. Land that has been improved for urban use with existing streets, sewers, and waterlines, or where local authorities have granted permits for such improvements before applying for assistance under Public Law 83-566, is considered developed land. Flood plain lands developed after planning was authorized for a watershed are not eligible for cost sharing assistance.

Perpetual easements on flood plains and wetlands in undeveloped areas may be acquired with program cost sharing assistance to perpetuate, restore, and enhance the natural capability of wetlands and flood plains to retain excessive floodwaters.

Tracts of land acquired as a nonstructural measure may be used for public benefit, such as recreation and fish and wildlife habitat preservation. Such land should be acquired by fee title or perpetual easement. Facilities for public use on this land may be eligible for Federal cost sharing if they are consistent with existing program requirements. Land acquired as a nonstructural measure may also be used for other public purposes if the following conditions are met:

- The land is unsuitable for public recreation or fish and wildlife habitat, or additional public land for these purposes is not needed.
- The proposed use is compatible with remaining flood hazards and project purposes, and land use regulations will be adopted to maintain such use.
- Federal cost sharing is limited to the value of the development rights. This value is defined as the difference between the current appraised value and the value under restricted use.

## 502.23 Structural measures

**(a) Structural measures**

Structural measures for flood prevention reduce floodwater damages by controlling the floodwater and

associated erosion, sediment, and other damages. Structural measures for flood prevention include, but are not limited to floodwater retarding structures, channel work, levees and dikes, floodways, floodwater diversions, sediment basins, grade stabilization structures, and streambank stabilization.

**(b) Land stabilization measures**

Land stabilization measures are those used to stabilize critically eroding areas. They may be a grade stabilization structure or a vegetative measure. The measures are eligible for Public Law 83-566 cost sharing at the rate provided for structural measures for flood prevention. Beneficial effects must exceed the adverse effects.

Where vegetation is used, it will not be harvested except for management purposes for the estimated life of the project as specified in the operation and maintenance (O&M) agreement.

The SLO must obtain title to or easements on and access to the land to be treated, install the measures in accordance with the terms of a project agreement with SCS, and operate and maintain the works of improvement in accordance with the terms of the O&M agreement with SCS.

## 502.24 Assistance available

**(a) Land treatment**

Available cost sharing is discussed in subpart 502B.

**(b) Nonstructural**

In developed areas, the Public Law 83-566 share for the installation of nonstructural measures for flood protection will be 75 percent of the total installation costs, excluding relocation costs. Relocation payments will be computed in the same way as payments are computed for structural measures. In undeveloped areas Public Law 83-566 funds may pay up to 50 percent of the cost of acquiring perpetual easements on flood plains and wetlands that are needed to reduce or prevent downstream flood damages.

**(c) Structural**

Public Law 83-566 funds are used to pay 100 percent of the construction costs of structural measures allocated to flood prevention. In addition, Public Law 83-566 funds may be used to pay for engineering and project administration costs needed to design and inspect structural measures. These funds may also be used to pay a pro rata share of relocation payments. Public Law 83-566 funds may also be used to pay up to 50 percent of the cost for acquiring real property rights needed to mitigate damages to fish and wildlife habitat. Other than Public Law 83-566 funds must bear the entire cost of acquiring real property rights to install and operate structural measures for flood prevention.

## Subpart 502D Agricultural water management

### 502.30 General

Agricultural water management includes irrigation, drainage, rural water supply, water quality protection and improvement, water conservation, and other water management methods. Measures installed for these purposes are installed on non-Federal land by responsible local organizations to serve groups of landowners. These measures ordinarily require group action for their installation and maintenance and always require group benefits for their justification. Measures on Federal land are installed and maintained in accordance with mutually satisfactory arrangements among the SLO, the land administering agency, and SCS.

### 502.31 Irrigation

#### (a) General

Irrigation projects include measures planned primarily to increase the efficiency of water use on cropland, grassland, and woodland and to obtain the maximum practical benefits for existing investments in irrigation. Such projects involve watershed or subwatershed areas composed partly or totally of lands irrigated or proposed to be irrigated. The area may be a water problem area whose boundaries may or may not coincide with surface drainage divides.

#### (b) Project measures

**Land treatment practices** are the practices needed to assure that the irrigation benefits are realized. They include those needed for onfarm irrigation (associated land treatment), to reduce erosion and sedimentation of structural measures, and channels installed to supply irrigation water (required land treatment).

**Nonstructural measures** do not normally apply to irrigation.

**Structural measures** for irrigation include, but are not limited to

- water supply reservoirs,
- diversion dams,

- pumping plants,
- sluices,
- canal headworks,
- canal and laterals,
- main distribution system pipelines to convey project water to each farm unit or noncontiguous tract within a farm unit,
- canal lining and lining or sealing storage reservoirs,
- appurtenant sediment control and stabilization measures,
- measuring devices, and
- other measures needed to conserve and efficiently use present and potential water supplies and to convey them to individual farms with the least practical loss.

### 502.32 Drainage

#### (a) General

Drainage projects include measures planned primarily to increase the efficiency of land use on farms or ranches by the rehabilitation and improvement of existing drainage systems or the construction of new drainage systems to serve cropland, woodland, and grassland. Drainage is accomplished by lowering the water level in areas where a naturally high water table, normal precipitation, normal tidal action, seepage, or excess irrigation water limit agricultural production. Drainage projects include measures planned for surface drainage, subsurface drainage, or both.

Surface drainage is the removal of excess water above the surface of the ground. Subsurface drainage is the removal of excess ground water below the surface. Such projects are in watershed or subwatershed areas composed in part or totally of lands that have been drained or proposed to be drained. The area may be a water problem area whose boundaries consist of artificial barriers that prevent the inflow of water originating outside of the area. Drainage facilities are primarily for rural areas.

#### (b) Project measures

**Land treatment practices** consist of those practices needed to assure that the drainage benefits are realized. They include practices needed for onfarm drainage (associated land treatment) and to reduce erosion and sedimentation of project channels (required land treatment).

**Nonstructural measures** do not normally apply to drainage.

**Structural measures** for drainage include, but are not limited to, the construction or rehabilitation of artificial channels (open drains) or covered (tile) drains and the rehabilitation and improvement of natural channels. The drains may have gravity outlets or may convey drainage water to pumping plants for disposal.

### 502.33 Rural water supply

Project measures normally consist of structural measures to provide a dependable water supply to meet existing needs. Normally land treatment and non-structural practices will not be included as part of a rural water supply project. Measures include providing storage capacity in surface reservoirs, intake structures, and associated diversion works and transmission lines to the treatment plant. Although treatment facilities and transmission lines from the treatment plant need to be considered in developing the proposal, they normally are considered as associated measures.

### 502.34 Water quality protection and improvement

#### (a) General

Project measures consist of land treatment, non-structural, and structural measures installed for the primary purpose of reducing water quality impairments caused by pollutants, including sediment, primarily from agricultural sources.

#### (b) Project measures

**Land treatment practices** are those practices used to reduce the movement of pollutants from agricultural land to offsite locations.

**Nonstructural practices** generally consist of the protection of flood plains and wetlands that contribute to the purpose of preventing or reducing water quality impairments caused by pollutants from agricultural land.

**Structural practices** include, but are not limited to, practices that trap those pollutants primarily from agricultural land so that water quality impairments are decreased.

### 502.35 Water conservation

#### (a) General

Water conservation measures include those planned primarily to increase the efficiency of the use of agricultural water so that more is available for other uses.

#### (b) Project measures

**Land treatment practices** consist of those practices needed to assure that water conservation benefits are realized. They include land leveling, gate structures, modern water conveyance techniques, and other measures.

**Nonstructural and structural measures** do not normally apply to water conservation.

### 502.36 Other water management

#### (a) General

Other agricultural water management may include group water supply and distribution systems used primarily for agriculture in rural areas, recharge of ground water aquifers, saltwater intrusion control, and stabilization of annual streamflow through phreatophyte control or other means for use by rural communities, livestock, orchard and crop spraying, and other similar agricultural purposes.

#### (b) Project measures

**Land treatment practices** for this purpose generally consist of those practices needed to assure the realization of the beneficial effects or to protect the structural measures.

**Nonstructural practices** generally do not apply to this purpose.

**Structural measures** for other water management include, but are not limited to

- water supply reservoirs,
- group distribution systems,
- measures for control of saline water intrusion,

- eradication of excessive water consuming plants,
- water spreading systems and other measures to recharge groundwater, and
- other measures needed to conserve and efficiently use present and potential water supplies for planned agricultural or nonagricultural purposes.

### 502.37 Assistance available

#### (a) Land treatment

Available assistance is discussed in subpart 502B, section 502.13.

#### (b) Nonstructural

Public Law 83-566 cost sharing is limited to providing technical assistance to install nonstructural measures for agricultural water management except for the acquisition of conservation easements on wetlands or flood plains acquired to reduce water quality impairment. Public Law 83-566 assistance can be used to pay up to 50 percent of the cost of acquiring easements on flood plains and wetlands for the purpose of water quality improvement.

#### (c) Structural measures

Public Law 83-566 funds can be used to pay up to 100 percent of the technical assistance costs and 50 percent of the construction cost. To be eligible for assistance, project measures must provide measurable benefits to two or more beneficiaries or to the general public. The SLO must pay 100 percent of the real property acquisition cost with other than Public Law 83-566 funds.

Public Law 83-566 financial assistance for construction of rural water supply is currently not allowed.

## Subpart 502E Nonagricultural water management— Water-based recreation and fish and wildlife

### 502.40 General

Measures installed to provide recreational opportunities or to improve the habitat or the environment for the breeding, growth, and development of fish and wildlife can be included in watershed plans that are developed for the purposes of flood prevention, agricultural water management, or watershed protection.

### 502.41 Project measures

The project measures for recreation or fish and wildlife purposes that improve or create a water resource and the associated measures that facilitate the use of the resource can be included in a watershed plan. The measures can be associated with any water body including a lake or well defined reach of a perennial stream.

#### (a) Land treatment

Land treatment measures are those practices that contribute to the stated purposes of recreation or fish and wildlife improvement. Subpart 502B provides guidance on land treatment practices for these purposes.

#### (b) Nonstructural measures

Nonstructural measures include the acquisition of wetlands for the purposes of benefiting the fish and wildlife resources.

#### (c) Structural measures

Structural measures may include any practice that creates or improves a water resource for recreation or fish and wildlife improvement and the associated facilities necessary for the intended use of the water resource. Examples include:

- Storage capacity in reservoirs, water level control structures, fish ladders, and fish shelters.

- Stream channel work, such as sloping, riprapping, vegetative plantings, channel deepening, and water level control structures.
- Marsh and pit development to provide fish pools in marshes and breeding and nesting areas for migratory waterfowl and aquatic mammals.
- Recreational facilities needed to realize the recreational potential of the water area. Facilities will provide for use, enjoyment, and safety. Recreational facilities include picnic areas, sanitary facilities, fishing piers, shelters, grills, parking areas, swimming beaches, access roads, water, and trails. Also included are practices to provide needed access, water, and power.

## 502.42 Assistance available

### (a) General

Technical and financial assistance are available to implement practices for the purpose of recreation or fish and wildlife when they are part of either a "water resource improvement" or a "water resource project development."

A **water resource improvement** creates or improves a water area for all forms of recreation associated with water or creates or improves a water area for the preservation, production, or harvest of fish and wildlife. Basic facilities are not included.

A **water resource development** applies either to recreation or fish and wildlife and consists of a "water resource improvement" and "basic facilities" necessary for the public to use the development.

The number of water resource improvements in a project is not limited; however, Public Law 83-566 limits the number of developments as outlined in section 500.20 of this manual.

Public Law 83-566 financial assistance for recreation and fish and wildlife in any project may not exceed 30 percent of the total estimated Public Law 83-566 installation cost.

Financial assistance for recreational facilities will be limited to the minimum basic facilities necessary for

its intended use. This would include parking, sanitary, and other facilities needed to accommodate the public.

### (b) Land treatment assistance

Land treatment assistance is described in subpart 502B.

### (c) Nonstructural measures

Public Law 83-566 funds can be used to pay up to 100 percent of the cost of technical assistance and 50 percent of the cost of acquiring perpetual easements on flood plains and wetlands for the purpose of fish and wildlife improvement.

### (d) Structural measures

**(1) Technical assistance**—Public Law 83-566 funds can be used to pay up to 50 percent of the technical assistance and engineering costs associated with recreational facilities and 100 percent of the technical assistance and engineering costs of the other practices.

**(2) Real property rights**—Public Law 83-566 funds can be used to pay up to 50 percent of the cost of acquiring real property rights needed to install and operate the practices when they are part of a water resource improvement or a water resource development.

**(3) Construction costs**—Public Law 83-566 funds can be used to pay up to 50 percent of the construction costs of all eligible practices.

## 502.43 Limiting conditions

The improvement must be available to the general public (not limited to certain classes or organized groups) unless the improvement is for fish and wildlife propagation, preservation, or protection. This includes real property rights that guarantee public access to the entire reservoir area and access corridor(s) of adequate width and quality to safely accommodate public use of the site to one or more locations on the reservoir perimeter. It also includes real property rights to provide space for parking areas and sanitary or other facilities needed to accommodate the public.

Adequate sanitary facilities must be provided to serve the public use contemplated. If public use is not contemplated, adequate provisions should be made to

exclude the public, if necessary, to prevent the creation of unsanitary conditions. The provisions for water pollution control set forth in Executive Orders 11507 and 11514 must be satisfied. In the absence of adequate local standards, those recommended in the Department of Health and Human Service's Publication No. (HSM) 72-10009, "Environmental Health Practices in Recreational Areas," will be used as a guide for planning, design, operation, and maintenance.

Recreation facilities are eligible for Public Law 83-566 assistance if they are part of a project development. Only those facilities to be owned, operated, and maintained by the SLO are eligible for cost sharing. This includes parking areas and the sanitary or other facilities needed to accommodate the public. Landscaping and other vegetative treatment measures to preserve and protect the area of use by people or fish and wildlife also are eligible.

All recreation facilities for which Federal cost sharing is provided shall be designed and constructed to ensure accessibility and usability by physically handicapped people in accordance with Public Law 90-480. Guidelines are in 36 CFR 1190, "Minimum Guidelines and Requirements for Accessible Design." The facilities must comply with appropriate health standards.

Construction of private facilities within the minimum real property rights boundary is prohibited. The exception to this is for essential service facilities that are constructed or operated by private concessionaires on a controlled permit basis to serve the planned use of the improvement or development.

#### 502.44 Private developments

If the SLO grants permission to any individual, group, corporation, or other interest to add storage capacity to a reservoir for which Public Law 83-566 financial or credit assistance was given for such purposes as private recreation or nonagricultural land value enhancement, the SLO must acquire the real property rights. This is necessary to

- Permit access to the entire reservoir,
- Provide adequate access corridors(s) to safely accommodate public use of the site at one or more locations on the reservoir perimeter, and

- Provide space for parking areas and sanitary and other facilities needed to accommodate the public.

In addition, the SLO must obtain water rights as required by State law for the planned use; provide public access without discrimination; provide an adequate parking area and boat launching ramp, where needed, to accommodate the public; and provide and maintain adequate public sanitary facilities in compliance with local and State safety and health regulations.

The SLO must be responsible for all costs for additional storage, facilities, and access. They must also limit admission charges and use fees to the amount necessary to amortize costs and provide adequate operation and maintenance; prohibit construction of private facilities on public use areas, and prohibit construction of any facility on the dam and appurtenances thereto. In addition, they must limit installation of private facilities on periphery of the reservoir to those meeting SCS criteria established to ensure proper functioning of the structure and to protect the environment.

#### 502.45 Potential use

The SLO must protect the water quality and the health of individuals where incidental recreational use of project works of improvement may occur. The plan should indicate which sites, if any, have potential for incidental recreational use. Where this potential exists, sanitary facilities that meet State and local health requirements must be provided to protect the water quality. If there is no reasonable assurance of such protection, the SLO must agree to prohibit use.

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## Subpart 502F Ground water recharge

### 502.50 Project measures

Project measures consist of land treatment and structural measures. Eligible practices include reservoirs, terraces, diversions, or other recharge devices that will result in recharging an underground aquifer and reducing a problem associated with a shortage of water.

### 502.51 Assistance available

Public Law 83-566 funds for land treatment practices are discussed in subpart 502B. They can also be used to pay for the technical assistance and up to 50 percent of the construction cost of structural measures for ground water recharge.

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## Subpart 502G Water quality management

### 502.60 Project measures

Project measures consist primarily of reservoirs to store water for the purpose of reducing a water quality impairment by releasing sufficient water to meet established standards.

### 502.61 Preconditions

Storage of water in a reservoir for the purpose of reducing a downstream impairment shall not be provided as a substitute for adequate treatment or other methods of controlling waste at the source. Any solutions developed for water quality management shall be consistent with standards adopted by the Water Resources Council.

### 502.62 Assistance available

Public Law 83-566 funds may be used to pay for technical assistance and an equitable share of the construction costs allocated to water quality management if the plan has been approved by the Environmental Protection Agency. A cost share rate has not been established for this purpose by the Secretary of Agriculture.

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## Subpart 502H Municipal and industrial water supply

### 502.70 Project measures

#### (a) Land treatment

Land treatment practices that contribute to the purpose of municipal and industrial water supply generally consist of practices that protect the watershed area and reduce sediment and other pollutants being carried into a reservoir or stream. Guidance on land treatment is in subpart 502B.

#### (b) Nonstructural measures

Nonstructural measures include such practices as metering, leak detection and repair, regulations on use (plumbing codes), education programs, and drought contingency plans.

#### (c) Structural measures

Structural measures generally include providing additional storage capacity in a reservoir to increase the availability of water for present and future municipal and industrial use. Also, needed outlet works and pipelines to convey water from the reservoir or other water supply to the existing or proposed treatment facilities or water system are considered project measures. Wells should also be considered as a potential source of water when formulating the municipal and industrial aspects of a plan.

### 502.71 Assistance available

#### (a) Cost sharing

OMB has not authorized the Secretary to cost share on municipal or industrial water supplies.

#### (b) Loans

Public Law 83-566 watershed loans are available for municipal and industrial water supplies through the Rural Development Administration. Repayment of these loans must be within a 50-year time period.

#### (c) Advances

Public Law 83-566 funds may be advanced to the SLO to pay for storage capacity in reservoirs to meet anticipated future needs for municipal and/or industrial water supplies. The amount of the advance is limited to 30 percent of the total cost of the structure. The advance must be repaid in full with interest within 50 years after the retention reservoir is constructed, or a shorter period if required by law. Interest will not be charged until the water supply is first used or until 10 years after the date of the completion of the structure, whichever is earlier. Outlet works are eligible for advances when such works are a part of the structure.

#### (d) Ineligible works of improvement

Wells, water treatment plants, distribution systems, and electric generating, transmission, and distribution facilities are ineligible for assistance from Public Law 83-566 funds.

## Subpart 502I Real property rights

### 502.80 Definition

Real property acquisition includes obtaining needed land, water, mineral, and other subsurface rights, and required Federal, State, and local permits or clearances for installation of the planned measures. Acquisition of rights may be obtained with the use of fee simple title, easements and rights of way, or by permits and clearances as required by applicable State regulations. Refer to 7 CFR, Part 651 (9/10/79) for specific guidance for acquisition of real property.

### 502.81 Responsibilities

Acquisition of real property is a major step in project implementation. It is one of the most important responsibilities of the SLO and requires firm scheduling, attention to details, and follow up.

The Act does not provide authority for land acquisition by the Federal Government. The SLO must acquire all rights needed for investigations, surveys, installation, operation, maintenance, and inspection of works of improvement to be installed with Federal financial assistance on non-Federal lands. No cost sharing will be provided for engineering, legal, or administrative costs incurred by the local organizations for acquiring real property rights. The exception is for real estate appraisals in connection with cost-shared real property rights acquisition, including direct costs associated with appearing as an expert witness in condemnation proceedings on the agency's behalf.

Water rights are the responsibility of the SLO. To fulfill their obligations, the SLO must present satisfactory evidence that water rights are held or can be obtained by landowners or their organizations or associations for the quantity, seasonal use, and storage of water, if required, to supply contemplated need. Before the project agreement is signed, the SLO must obtain the water rights necessary for the proposed measure to function effectively.

The SCS is responsible for providing real property acquisition maps showing the minimum area and rights needed for each project measure. Details are in the National Contracts, Grants and Cooperative Agreements Manual, section 511.10. These maps should not be distributed to the SLO until the plan has received all approvals.

State conservationists are to approve in writing all real property acquisition maps and all subsequent changes required by SCS. Changes are to be made only after consultation with the SLO.

### 502.82 Requirements

#### (a) Dams

The SLO should be made aware that during a storm of some frequency water may reach an elevation equal to or greater than the top of the dam. On privately owned lands, real property rights must be acquired for the structure, spillways, and reservoir area; areas adversely affected by changed water flow, including, but not limited to, areas for spillway discharge; areas for environmental and protective features; and areas needed for other activities. The other activities include design, operation and maintenance, construction, spoil disposal, borrow, entry and exit, and diversion of water. If the structure has an emergency spillway, the state conservationist will require real property rights upstream from the dam for at least all the area below the higher elevation of either (1) the crest of the primary emergency spillway, or (2) the maximum elevation of the water surface attained during passage of the 100-year, 24-hour storm flow through the structure. This elevation shall be known as the flowage line. If the dam does not have an emergency spillway, the state conservationist will require that real property rights be acquired up to an elevation at least equal to the top of the dam.

On publicly owned lands, the SLO must acquire special use or occupancy permits from the appropriate land managing agency before any planning or implementation of structural works of improvement are undertaken. The SLO must apply for permits with sufficient lead time to ensure an orderly installation of the project.

In determining real property rights needed for the structure, the state conservationist will consider all

pertinent circumstances including present and likely future land use and the extent of potential damage from flooding. The state conservationist shall not authorize Public Law 83-566 construction assistance for the structure if it could endanger human life by flooding a residence or public roads.

Fee simple title or term easements (evaluated life of the project) are required for the dam, spillways, ingress/egress routes, and pool areas. Flowage easements in lieu of fee simple title may be obtained for the flood pool (temporary water storage) only. Temporary easements in lieu of permanent rights-of-way may be obtained where needed to install measures to mitigate unavoidable adverse landscape resource effects.

Additional criteria for dams are in section 502.82(c) of this manual. These criteria must be met before installing any structure where the installation could result in flooding of railroads, highways, public roads, dwellings, buildings, water sources, public utilities, burial sites, and historic sites or monuments .

## **(b) Channels**

**(1) Real property rights**—The state conservationist will ensure that the minimum area for real property rights acquired for the channel work will include:

- areas within the channel's designed top width and berm width necessary on each channel bank to ensure stability of the channel, channel banks, and side slopes;
- areas needed for installation, inspection, design, operation and maintenance, ingress and egress, and disposal and diversion of water;
- areas needed for environmental protection features; and
- other areas adversely affected by changed streamflow characteristics or induced flooding.

Fee simple title or term easements are to be acquired for the channel itself; appurtenances; any needed diversions; and areas needed for ingress, egress, and travelways to allow for operation and maintenance of the works of improvement. In addition, fee title or easements are needed for any additional areas, including downstream areas, that may be subjected to adverse effects by changed streamflow characteristics, such as extended flooding of low-water crossings and more than negligible flood damage to property.

**(2) Term easements for construction performance**—Term easements are to be acquired for areas in addition to those covered above as needed for construction performance. These areas include those for construction ingress and egress, equipment staging, and parking lots.

**(3) Permit or term easements for other areas**—Permit or term easements are to be acquired for areas in addition to those covered in (1) and (2) above as needed for surveys and investigations and for one-time operations, such as spoil spreading areas.

## **(c) Induced flooding**

**(1) Flooding of roads and railroads**—Highways and public roads may not be flooded below the elevation of the flowage line except when the highway or public road is closed for a brief period and an alternate all-weather route can be used with a minimum of inconvenience. A written right or permission to flood the highway or public road must be obtained from the State, county, or agency having jurisdiction over the highway or public road. The written right or permission may be an easement, court order, or, if those cannot legally be given, a permit. The written right or permission must be accompanied by a citation of the applicable State statute or a written opinion of the State attorney general stating that the State, county, or agency granting the permission has legal authority to allow the road to be closed by flooding.

Dwellings affected by the temporary closing of the flooded road must be accessible by an all-weather road that will not flood more frequently than it did under preconstruction conditions. If a road providing the only access to a dwelling is at a lower elevation than that of the flowage line, a historical record of preconstruction flooding is to be developed and documented in the case file.

In exceptional cases, public roads may be located at the same elevation as the flowage line (such as in the case of a road located in or across the emergency spillways of dams) if

- Because of the nature of the terrain adjacent to the dam area (such as in mountainous areas), the road must be located so that one or more points of the road crown is at or near the flowage line.

- Natural flooding of one or more points along the road above or below the project area would make the road impassable before any flooding caused by the structure would take effect, and State law permits flooding of roads under those conditions.
- Flow through the emergency spillway is at a lesser frequency than that at which the road flooded before construction of the structure.

Railroads that are to remain in use may not be flooded.

**(2) Flooding of buildings**—The state conservationist may not allow dwellings, including basements, or any other buildings that contain valuable property or that may be used as permanent or seasonal living quarters, to remain in the area requiring flowage rights unless they are flood proofed or otherwise protected from damage by the storm event used to establish the flowage right elevation. Before financial assistance is made available to the SLO, the dwelling or building must be demolished, relocated, raised, or protected by a flood wall. This must be done so that drainage is adequate and ponding of water is not unreasonable.

If requested by the SLO and approved by the state conservationist, other buildings, such as barns and garages, may remain in the flowage easement area. Approval for flooding buildings of this type generally is not granted if the building is used for the storage of feed, regulated chemicals, perishables, supplies, equipment, or other items that would be substantially damaged by flooding. This also applies to any building used for other purposes if flooding would cause an interruption or delay of operations carried on in the building or if a death or damage to the building's contents could occur.

**(3) Flooding of water sources**—Flooding of water sources, such as springs, wells, or stream diversions, or the interruption of delivery, conveyance, and disposal systems will not be allowed until the SLO have complied with State laws, ordinances, and regulations relating to water sources.

**(4) Flooding of utilities**—Public or private utilities may not be flooded unless the utility company or owner has determined that the function of the facility will not be affected adversely and a subordination agreement has been obtained.

**(5) Flooding of burial and historical sites**—Burial sites, such as cemeteries and private family plots, may not be flooded unless disinterment and reburial has been accomplished in accordance with State law.

Historical sites or monuments may not be flooded until compliance with procedures for such property has been completed. The state conservationist is to assist the SLO in obtaining permission to survey for or recover archeological or historical resources in accordance with the General Manual 420-401.

**(d) Recreation and fish and wildlife improvements and developments**

Fee simple title is required for all privately owned land acquired for recreation and fish and wildlife purposes in a water resource improvement or a project development when Public Law 83-566 cost sharing assistance is provided. Fee simple title is preferred for all non-Federal public land needed; however, if it is not feasible to obtain this title, the granting of a perpetual easement generally will suffice. An acceptable permit from the agency administering the land will be sufficient for real property rights required on Federal land.

Real property rights required for developments include the dam site, emergency spillway and its flow area, and land in the reservoir area up to at least the crest of the emergency spillway, maximum water elevation reached during passage of a 100-year frequency storm or 100 feet horizontally from the perimeter of the designed permanent pool, whichever is greater. Acquisition by fee title, however, may be terminated 200 feet upstream from the head of the beneficial pool in each arm of the reservoir. Additional real property rights may need to be acquired to install recreational facilities.

At least one access road must be provided to all principal recreation areas. Rights-of-way required for public utilities, such as power lines and pipelines needed to service recreation or fish and wildlife developments, must be acquired by at least a perpetual easement.

**(e) Wetland or flood plain conservation easements**

Cost sharing assistance may be provided to enable sponsors to acquire perpetual wetland or flood plain conservation easements to perpetuate, restore, and enhance the natural capability of wetlands and flood

plains to retain excessive floodwaters, improve water quality and quantity, and provide habitat for fish and wildlife.

**(1) Wetland easements**—Land eligible for cost sharing for perpetual wetland conservation easement will be identified during the formulation of the plan. The land to be included in the permanent easements will be the wetland area and a buffer not to exceed 100 feet from the defined wetland. The minimum wetland size to receive cost share assistance is 4 acres.

In cases where structures are used to restore drained wetlands, the provisions described in Section 502.82(d), Recreation and fish and wildlife improvements and developments, will be used to determine minimum requirements.

**(2) Flood plain easements**—Flood plains eligible for conservation easements are those areas within the 100-year flood plain limit where no development has occurred.

Cost sharing is not allowed in areas within the flood pool of planned or existing structures built by Public Law 83-566 or others. Provisions for those areas are described in Section 502.82(a), Requirements for dams.

Double payment is not allowed in cases where wetlands exist on flood plains.

## Subpart 502J Costs and provisions for financing

### 502.90 Definition of costs

#### **(a) Program cost**

Program cost includes all expenditures from appropriations made under authority of Public Law 83-566.

#### **(b) Planning cost**

The cost of planning services includes all expenditures from Public Law 83-566 and other funds for surveys and investigations and preparation of plans prior to authorization of assistance for the installation of works of improvement.

#### **(c) Project installation cost**

Project installation cost includes all Public Law 83-566 and other costs for installing the works of improvement to be incurred after the project is authorized for installation. Included are the costs of work required to comply with mandatory Federal and State laws or regulations.

#### **(d) Technical assistance**

The cost of technical assistance includes all Public Law 83-566 costs and other costs for personnel and contracted services for soil surveys and for planning and applying land treatment measures on non-Federal land needed to achieve the objectives of the project.

#### **(e) Engineering services**

The cost of engineering services includes the direct cost of engineers and other technicians for surveys, investigations, designs, and preparation of plans and specifications for structural and nonstructural measures including the vegetative work associated therewith, and preparation of operation and maintenance plans. Also included as engineering services are costs related to the review of engineering plans and specifications prepared by others and necessary quality assurance during construction to ensure that measures are installed in accordance with the plans and specifications. It does not include the cost of similar services for real property rights, obtaining permits, or contract administration for the project.

**(f) Water rights**

The cost of water rights includes the actual cost or the value of water rights (based on appraisals) acquired by local interests for carrying out, operating, and maintaining the project.

**(g) Real property**

The cost of real property includes all costs for the following items, including elements of works involving planning, design, acquisition, construction, mitigation for fish and wildlife habitat losses, and administrative services directly associated with real property.

- All expenditures made in acquiring needed real property rights and other interests in land in accordance with Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (42 U.S.C. 4601 et. seq., as implemented by 70 CFR 21).
- Removal of buildings, improvements, or timber for salvage or relocation, or the construction of dikes or other protective works in lieu thereof.
- Salvaging, moving, or reconstruction of fences not needed for the proper operation, maintenance, public safety, or inspection of the works of improvement.
- Changes of existing telephone, power, gas, water, and sewer lines, or other utilities, but not including changes to existing irrigation or drainage facilities made necessary by the works of improvement.
- All new roads and changes of existing public roads or private roads, or railroad bridges, culverts, and other crossings, including approaches, except reinforcing, underpinning or reconstructing existing bridge piers and abutments of public roads and railroads necessitated by modification of the channel. This does not include cost for the excavation and installation of a closed conduit crossing of a public road or railroad when it is an integral part of an overall closed conduit structural measure.
- All modifications and changes of roads and railroads that are to remain serviceable after project installation.
- Premiums for construction liability insurance when someone other than the construction contractor is made the principal.

**(h) Relocation costs**

These costs are the Public Law 83-566 costs and other costs associated with the requirements of the Uniform Relocation Assistance and Real Property Acquisition Policies Act of 1970 (Public Law 91-646). Relocation payments include moving and related expenses for a displaced person, business, or farm operation as well as financial assistance for replacement housing for a displaced person who qualifies and whose dwelling is acquired because of the project. Items eligible for inclusion in relocation payments are detailed in the SCS Property Management Regulations 104I - 71.503.3. Costs over and above replacement in kind are treated as nonproject costs.

**(i) Construction cost**

Construction costs are those of constructing structural and nonstructural measures. They include any or all of the following:

- Reinforcing, underpinning, or reconstructing existing railroad and public road bridge piers and abutments necessitated by modification of the channel or the replacement of a closed conduit crossing of a public road or railroad that is an integral part of a closed conduit system. These costs are limited to those required to provide a facility comparable in quality and performance to the existing bridge or culvert.
- Clearing of sites for project purposes including the cost of removing buildings, bridges, fences, or other improvements that the local organization desires to abandon.
- Construction of pumping plants and pressure conduits, gates, or other structures to carry interior drainage through dikes or flood walls.
- Construction of diversion dikes and practices for conducting surface water to project outlets or pumping plants for interior discharge.
- Construction of necessary structures to provide controlled inlets for drainage from adjacent fields and internal ditches into the project measure.
- Flaggers and protective devices, such as barriers or lights, required to protect workers or the public during construction.
- Alteration, modification, or reconstruction of existing irrigation or drainage facilities made necessary by project works of improvement.

- Providing needed maintenance access, including necessary culverts and fords.
- Borrow material obtained from land purchased by the SLO for the specific purpose of obtaining borrow material. The cost may not exceed the difference in land value before and after borrow removal or the actual cost of acquiring the borrow materials (without purchasing the land) whichever is the least cost.
- Construction of catwalks, handrails, fences, gates, and other such features needed for the proper functioning of the structural measures and for the operator's and public's safety. This also includes any safety features needed for public recreation or fish and wildlife in a project.
- The disposal of waste spoil in accordance with sound engineering and environmental principles, giving consideration to (1) customary practices in the area; (2) width and planned land use of flood plain; (3) wildlife and environmental values of contiguous oxbows and vegetation; and (4) wetlands, cultural resources, and threatened and endangered species. Agreement on the specifics of spoil disposal will be reached in the planning stage.
- Premiums for construction liability insurance when the construction contractor is made the principal.
- Provision for fire prevention and suppression made necessary by project construction activities.
- Establishment of vegetation or other protective cover on all construction sites and in areas disturbed during construction to prevent erosion, improve stability, and restore or maintain wildlife habitat and the landscape quality. Such establishment includes herbaceous and woody plantings for erosion control, wildlife food and shelter, walkways, and screening or improving the appearance of structural measures.
- Identification signs and plaques, if desired by the SLO, as long as there is reasonable assurance that these signs will not be vandalized.
- Any of the above features adopted to mitigate losses attributed to structural measures.

**(j) Land treatment financial assistance costs**

The cost of installing land treatment practices other than technical assistance, engineering services, and project administration.

**(k) Project administration**

These are the Public Law 83-566 and other administrative costs associated with the installation of financially assisted measures including the cost of contract administration, government representatives, any permits needed to install the works of improvements, relocation assistance advisory services, and administrative functions connected with relocation payments.

**(l) Operation and maintenance costs**

These costs are for the materials, equipment, services, and facilities needed to operate the project and make repairs and replacements necessary to maintain structural measures in sound operating condition during the evaluated life of the project. Included are the cost of repairs, replacements, or additions and an appropriate charge for inspection, engineering, supervision, custodial service, and general overhead.

**(m) Associated costs**

These costs are for the measures needed over and above project measures to achieve the benefits claimed during the analysis period. An example is the cost of irrigation water supply laterals and onfarm irrigation and drainage systems required to produce the increased outputs on which the benefits were computed.

**(n) Other direct costs**

These costs are for the resources directly required for a project or plan for which no financial outlays are made.

**(o) External diseconomies**

These costs are uncompensated economic losses caused by the installation, operation, maintenance, or replacement of project measures. An example is increased downstream flood damages caused by channel modifications or dikes.

**(p) Nonproject installation costs**

These include costs that will be incurred at the time of project installation for features not required for project purposes. These costs are not eligible for assistance under the Act. They are not included in cost tabulations or accounts, nor are they considered a part

of the local organizations' contribution to the installation cost of a project, but should be incorporated into tables 1 through 6 in the plan (figs. 504–8 through 504–18).

### 502.91 Allocation of costs

The Act provides that costs be allocated to the various purposes and that the basis of such allocations be shown. Where a single work of improvement is planned to serve more than one purpose, costs shall be allocated so that each of the purposes share equitably in any resulting savings. The method or basis of such allocations shall be described in the plan. Guidance in allocating costs to purpose are in section IX of "Economic and Environmental Principles and Guidelines for Water and Related Resources Implementation Studies" (P&G).

#### (a) Multipurpose sites

Paragraph 1.9.2(a) of the P&G indicates that the separable costs are the differences between the cost of the multipurpose structure and the cost of a structure with that purpose omitted. Separable costs must be determined in accordance with this paragraph to conform with the P&G. Consistency must be established in the treatment of constituent costs. In the Separable Cost-Use of Facilities Method, the percentage use of each purpose must be uniformly applied to the allocated joint cost for each constituent.

The P&G [1.9.3(b)] states that "Joint cost may be allocated in proportion to the use of facilities, provided that the sum of the allocated joint cost and separable cost for any purpose does not exceed the lesser of the benefit or the alternative cost for the purpose." This is interpreted to mean the total cost for that purpose and not to each constituent cost.

Sediment storage in a multipurpose structure will be considered a joint use storage when allocating joint costs by the use of facilities option stated in paragraph 1.9.3(b) of the P&G. The designated storage capacity for a specific purpose will be used to determine its proportional use of the facility.

Mitigation costs will be separated into the cost of the feature and the cost of land components. The cost of the land will be a real property rights cost, while all other costs will be construction costs. This will be

done when determining the cost of the multipurpose structure, the cost of the structures used to estimate separable costs, and the cost of the single-purpose measure used to determine alternative cost estimates.

The single-purpose measure used to determine the alternative cost for a purpose does not need to be physically located at the site of the multipurpose structure.

Instances where a structure with high construction costs relative to O&M costs displaces an alternative method with low installation costs relative to O&M costs for achieving the same or equivalent benefits will occur. These situations will be handled on a case-by-case basis with combined input of the NTC and the NHQ.

#### (b) Multipurpose channels

For multiple-purpose flood prevention-drainage channels, the cost allocation will be 50-50 in all instances (P&G 2.3.8(c)).

