

PART 510 - PLANNING

510.00 General

Planning for the conservation and sustained use of natural resources will often require engineering input which should be provided early in the planning process. Planning should be in sufficient detail to ensure that decisions by the landuser or sponsor can be implemented without extensive changes in scope, purpose, or cost. All plans shall be formulated with consideration for their completeness, effectiveness, efficiency, and acceptability. Additional guidance on specific NRCS planning procedures can be found in the National Planning Procedures Handbook (NPPH).

510.01 Planning scope

(a) The approach taken during a planning study will vary according to the size and complexity of the issues involved.

(1) A simple practice, involving just one individual, may possibly proceed rapidly through planning, design, construction, and operation. However, even these measures must be planned with due consideration for their impact on the larger system or the plan for the area.

(2) More complex issues, involving a number of people and/or ecological components, require more intense planning and input from a number of individuals and organizations. For these complex issues, several approaches and multiple alternatives within those approaches may need to be developed and evaluated.

(b) The planning guidance in the NPPH is applicable to planning for all NRCS programs. Plan content and criteria may vary for each individual program or funding source.

(c) Preliminary engineering work may be needed during phases I and II of the planning process outlined in the NPPH. The land user or sponsor must understand the size, economics, and

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operational obligations for the alternatives being considered before significant engineering resources are expended in more detailed studies.

(d) Site investigations conducted during planning for engineering measures are often less intense than those required for final design. Final design investigations may reveal some adverse conditions not identified during planning. Land users or sponsors should be informed by NRCS staff that it is possible that agreements reached on the details of planned measures, needed landrights, and estimated costs in the planning phase may require revision during final design and construction. Upstream and downstream development that takes place after planning can also greatly affect design.

(e) The data collected and the resulting analyses are to be detailed adequately to aid in selecting alternatives. Engineering job classes should be identified early to establish proper engineering job approval authorities and an appropriate review process. An individual having engineering job approval authority for the practices being considered shall be consulted during the planning process and shall sign the engineering plan.

(f) Expertise from all appropriate disciplines associated with natural resource management should be involved as early as possible in the planning process.

510.02 Documentation

Engineering investigations and analyses are to be documented. Computations and other data supporting engineering decisions are to be checked for accuracy and reasonableness by personnel with adequate levels of expertise. Documentation provides for expediting reviews, allows the work to progress smoothly into final design and construction, and aids in post reviews. The degree of supporting data should be commensurate with the specific situation and the type of project planned. The data are to be documented and filed in such a way that later investigations for detailed design can build on and not repeat

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investigations and analyses accomplished during the planning phase. All supporting documentation shall include the project name and location, who performed the work, who checked the work, the date of the work, and be initialed as being checked.

510.03 Engineering data to support plans

a) Sufficient engineering analysis shall be performed to ensure that all engineering measures will function properly and produce the planned results. Surveys, investigations, and preliminary designs are to be detailed enough to prepare necessary cost estimates, landrights requirements, etc.

(b) The size and complexity of planned actions will dictate the detail required for the engineering report. The format and content of the report will be designed to fit the needs of the client. The report should clearly describe the problems, investigations, alternatives, and conclusions. Graphics are to be used as necessary to provide a clear understanding. The final planning report should be tailored to meet program requirements as appropriate. In all cases, the report must be sufficient to document decisions in a professional manner.

(c) Review and approval is required for planning reports containing engineering data and analysis. This review and approval includes technical approval of the overall system of engineering measures to ensure that they perform their planned functions.

510.04 Criteria

(a) Current engineering standards and procedures are to be used for planning all measures. The individual having engineering job approval authority is to ensure that the engineering measures included in the plan will function as planned throughout their design life expectancy.

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(b) If revisions or modifications of plans are made, the current criteria shall be used for at least the following:

(1) New structural measures not included in the original plan.

(2) Structural measures modified enough to require a supplement to the plan.

(3) Structural measures included in the approved plan that, if built according to original criteria, would endanger either new structural measures, existing structures, or ones that are to be modified.

510.05 Cost estimates

All costs are to be determined, including installation costs and expected periodic costs. Costs are to be current according to the latest available information. The costs of engineering measures generally include the following:

(a) Engineering. The direct cost of engineers and other personnel for surveys, investigations, design, preparation of plans and specifications, preparation of the operation and maintenance plan, and the cost of inspection during construction.

(b) Landrights. The actual cost or value of land required for construction and operation of the measures, including changes to fixed improvements.

(c) Water rights. The actual cost or value of water rights required by local interests for carrying out the measure.

(d) Contract Administration. The expected cost of administering the contracts, cost of permits, and any legal costs.

(e) Construction. The expected cost of constructing the measure. Construction estimates during planning should include

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specific estimates for all the identifiable components. Contingencies should be included to allow for unforeseen conditions and costs that are likely to be identified during the final design and construction phases. Contingencies are established according to the detail of planning. Higher contingencies should be allowed for less detailed planning.

(f) Operation, maintenance and replacement. The cost required to operate and maintain the measure including necessary inspections and repairs for the planned life of the project. Any items to be replaced during the evaluation period must be included.

510.06 Post Design Life Considerations

At the end of their design life, some practices may create safety, health and environmental concerns. Those issues should be considered when alternatives are formulated and discussed with the land users and/or sponsor. Costs for replacement, rehabilitation, or decommissioning of these practices should be anticipated, estimated to the extent possible, documented in the plan report, and communicated to the landowner or sponsor.