

# The Natural Resources Conservation Service (NRCS) Conservation Planning Process

## Water Quantity Scenario

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- Mission statement is “helping people help the land”. Primary way of accomplishing this is by providing conservation planning and technical assistance to producers, private landowners, organizations, etc. who want to voluntarily conserve natural resources.
- Natural Resources
  - Soil
  - Water
  - Air
  - Plants
  - Animals
  - Energy
  - Human Considerations

- Planning Process.—The three-phase, nine-step process used by NRCS to help clients plan and apply conservation treatments.
- The planning process provides the framework for developing a conservation plan.
- A conservation plan is a record of the client's decisions on how they are going to address natural resource concerns.
- Technical and financial assistance programs from NRCS or other sources are used to implement the plans.

# NRCS Planning Process

## Phase I – Collection and Analysis (Understanding the Problems and Opportunities)

Step 1 – Identify problems and opportunities

Step 2 – Determine objectives

Step 3 – Inventory resources

Step 4 – Analyze resource data

## Phase II – Decision Support (Understanding the Solutions)

Step 5 – Formulate alternatives

Step 6 – Evaluate alternatives

Step 7 – Make decisions

## Phase III – Application and Evaluation (Understanding the Results)

Step 8 – Implement the plan

Step 9 – Evaluate the plan



Step 1 – Identify Problems and Opportunities.—Identify existing resource problems and concerns and potential opportunities in the planning area.



Stream serves as primary drinking source for cattle.  
During drought conditions the stream completely dries  
up.



Conventionally tilled crops show signs of stress quickly in drier times. Yields suffer.



Abundance of algae growing in ditch attributed to nutrients being transported from the crop field through the tile drainage system.



Producer would like to look at alternatives to the sprinkler irrigation he is currently using. Has high rural water bills.

Step 2 – Determine Objectives.—Identify and document the client's objectives.

1. Reliable year-around source of water for cattle.
2. Implement management practices on cropland to lessen the negative effect of dry weather conditions on his crops.
3. Manipulate tile drained water to make it available for crops in drier times and to prevent loss of nutrients so they can be available to crops.

Step 3 – Inventory Resources.—Inventory and document the natural resources and their current onsite and offsite conditions and effects.

**Soil**-erosion, compaction

**Water**-*inefficient use of water*

**Air**-emissions of greenhouse gases

**Plants**-*undesirable plant productivity and health*

**Animals**-inadequate feed, *inadequate water*

**Energy**-inefficient energy use

**Human Considerations**-*economic*

**Special Environmental Concerns**-cultural resources, threatened and endangered species



Spring located in pasture field.



Potential pond site.



*Rural Water*

Step 4 – Analyze Resource Data.—Analyze the resource information gathered in Step 3, “Inventory Resources,” to clearly define the existing natural resource conditions. Information from this step will help to further define and clarify problems, concerns and opportunities.

Pastureland-Kentucky Graze

Cropland-Revised Universal Soil Loss Equation 2

Streams-Stream Visual Assessment Protocol



Step 5 – Formulate Alternatives.—Formulate alternatives that will achieve the client’s objectives, solve identified natural resource concerns, and take advantage of opportunities to improve or protect resource conditions.

# Well, Pipeline and Trough



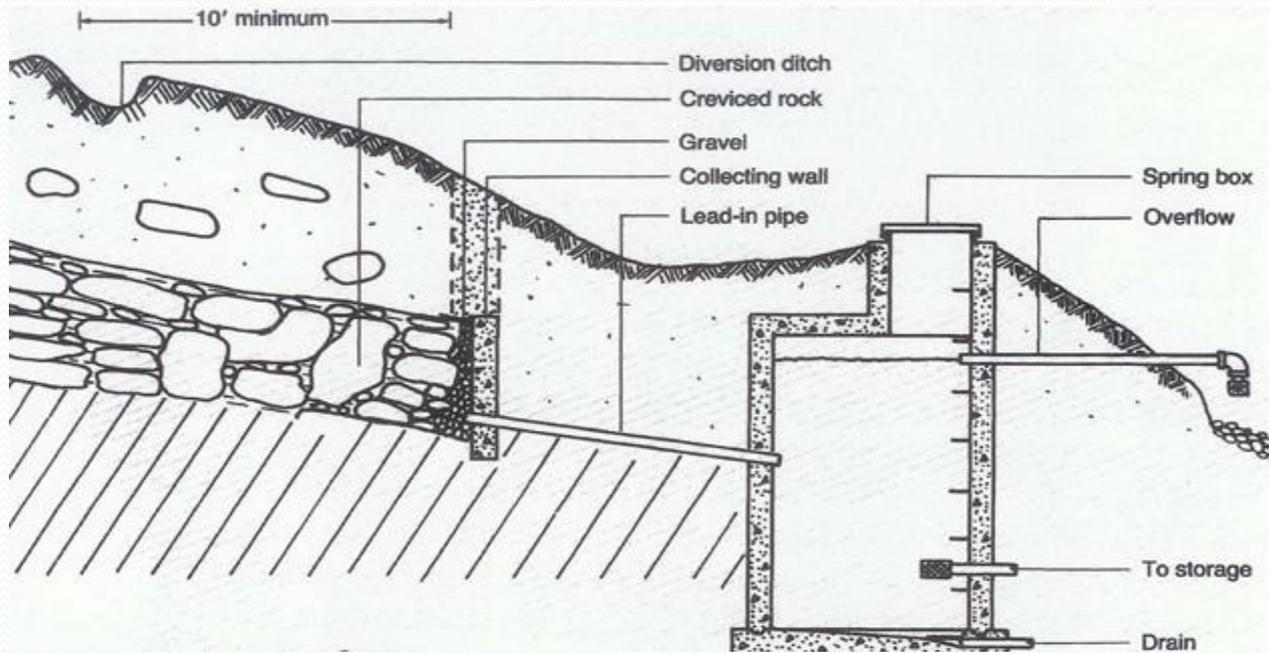
# Rural Water, Pipeline, Trough



# Pond with Livestock Water Access and/or Trough



# Spring Development



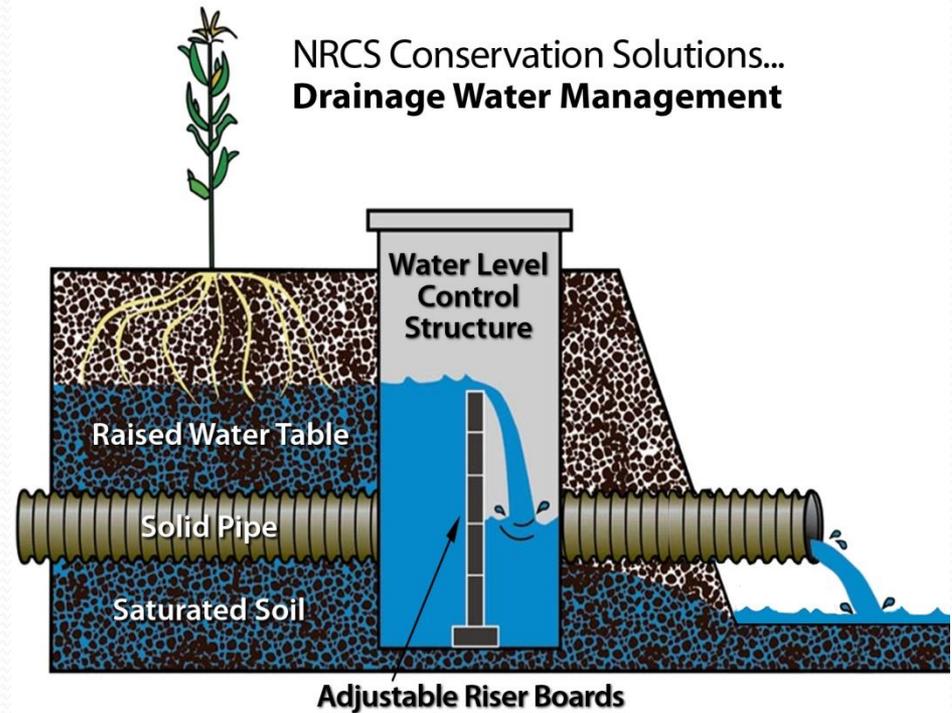
# No-till



# Cover Crop



# Drainage Water Management



# Micro-irrigation





Step 6 – Evaluate Alternatives.—Evaluate the alternatives to determine their effects in addressing the client's objectives and the identified natural resource concerns and opportunities.

# Well, Pipeline and Trough

## Considerations

Site conditions-geology

Quantity of water needed

Initial Cost

## Benefits

Flexibility of system

Allows for expansion

Year-around water (typically)

# Rural Water, Pipeline and Trough

## Considerations

Initial Cost

Post Implementation Cost

## Benefits

Flexibility of system

Allows for expansion

Year-around water

# Pond with Livestock Water Access and/or Trough

## Considerations

Site Conditions

Permitting

Initial Cost

Lack of Flexibility

## Benefits

Volume of water

Recreational use

# Spring Development

## Considerations

Site Conditions

Lack of Flexibility

Susceptible to drought

Maintenance

## Benefits

Free water

Relatively low installation cost

# No-till

## Considerations

Initial Cost-equipment

Change in management-learning curve

## Benefits

Increases soil health-organic matter, soil structure

Increased water holding capacity

Reduces erosion

# Cover Crop

## Considerations

Change in management

Cost

## Benefits

Increases soil health-organic matter, soil structure

Increased water holding capacity

Reduces erosion

# Drainage Water Management

## Considerations

Initial Cost

Change in management

## Benefits

Allows nutrients and water to be available for crops

Improved water quality

# Micro-irrigation

## Considerations

Initial Cost

Change in management

Maintenance

## Benefits

Water cost savings

Water application efficiency

# Financial Assistance Programs

NRCS Environmental Quality Incentives Program (EQIP)

Kentucky State Cost Share Program

Governor's Office of Agricultural Policy-County Agricultural Investment Program (CAIP)

NRCS Regional Conservation Partnership Program (RCPP)???



Step 7 – Make Decisions.—The client selects their preferred alternatives and works with the planner to schedule the conservation system and practice implementation. Planner provides client with conservation plan.

Step 8 – Implement the Plan.—The client implements the selected alternatives. The planner or technical expert provides the client with detailed practice implementation information, including engineered designs. Conservation staff will also provide practice layout, construction inspection, and certification. Each client directs the implementation of each practice.



Step 9 – Evaluate the Plan.—Evaluate the effectiveness of the plan in solving the resource concerns as it is implemented and work with the client to make adjustments as needed.

# Questions?

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