VERDE NRCD 5 Year Conservation Implementation Strategy

Description

Adequate water supply has become one of the major challenges facing the farming community in the Verde NRCD. Landowners on irrigated cropland compete for irrigation water with many users of this precious resource. The Verde NRCD wishes to provide landowners an opportunity to improve irrigation efficiency and improve crop productivity by converting existing inefficient irrigation systems to highly efficient irrigation systems. The goal will address 370 acres over the next five years, starting the funding and implementation strategy in 2014. The priority focus area will be lands irrigating with surface water in and near Camp Verde, Arizona. Water quantity is our primary resource concern with surface water conservation being considered as the first priority concern. Increasing irrigation efficiency will conserve surface water, reduce irrigation induced erosion, improve water quality, and improve stream flows for threatened and endangered species in the Verde River.

Overview/Background Information

- (*Surface Water*) The Verde River downstream from the confluence of Oak Creek and the Verde River has 42 irrigation ditches that deliver water to 5582 acres. Typical ditch diversions are push-up dams maintained by local ditch associations. There are five major ditch diversions in this area.

Problem Statement

Yavapai County is one of the fastest growing counties in the United States. With the population of Yavapai County expected to double by 2050, water quantity will become even more pertinent for the Verde NRCD. Groundwater pumping, drought, and inefficient and overuse of water have caused low flows in the Verde River and its tributaries, which has resulted in inadequate supply for surface water users. Additionally, these low flows have a negative impact on critical habitat for threatened and endangered species. With increasing demand and decreasing river and stream flows, Verde NRCD's Local Working Group (LWG) has focused on on-farm irrigation efficiency as the top priority concern, along with restoration of habitat for fish and wildlife. Stakeholders and the LWG have placed the irrigated lands in and near Camp Verde as a primary area to focus our efforts and funding. Addressing on-farm irrigation efficiency in the Verde Valley downstream from the confluence of Oak Creek and the Verde River will make the biggest impact for the identified resource concerns. Increasing irrigation efficiency will conserve our precious surface water and improve stream flows for healthier watersheds and waterways.

Goals & Objective

- The objective of the strategy is to convert as many on-farm inefficient irrigation systems to highly efficient irrigation system to save water and energy using EQIP funding, landowner commitment, and partner contribution in order to have plentiful water for irrigation needs.
- Leave more water in the stream system for healthy streams for fish and wildlife habitat.
- Provide technical and financial assistance to encourage farmers to address inefficient irrigation systems and show the economic benefit to their farming operation.

Alternatives considered

1. *No action*. Outcome: Surface water will continue a declining trend creating more restrictive measures to be placed on water and continue the overall decline.
2. Ground water recharge areas. Outcome: Ground water levels would increase.
3. Irrigation Water Management only: Outcome: This would help, but converting inefficient irrigation systems would address the problem in a shorter time period.
4. Chosen alternative: Convert inefficient irrigation systems, along with IWM would give the quickest results to addressing the resource concern of water quantity issues within the identified area.
5. (**NEPA Considered**) As part of NRCS job requirements, all practices chosen for implementation will meet NEPA requirements. Cultural reviews clearance will be obtained and T & E species within the specific planned unit will be addressed under a Biological Evaluation, with no consultation foreseen.

Proposed Solution & Actions

The strategy solution will target irrigated lands within the Camp Verde focus area to implement conservation practices to improve irrigation efficiency, save water, and help restore river and stream flows within the identified focus area. Partner participation will play a critical role in meeting the objectives of the project. Using EQIP funding and partner

funding along the timeline will be to the advantage of reaching our end goal of increasing ground and surface water, plus improving river and stream flow for fish and wildlife.

Practices that need to be implemented within the priority area to address specific resource concerns to achieve our desired outcome to save water are:

Irrigation System, both Sprinkler & Micro, along with Irrigation Water Management.
Irrigation Water Conveyance may be necessary along with the Pumping Plant and (VFD's) in specific situation where it is applicable.

Partnerships & Funding Sources

Partners:

- OK Ditch Association
- Eureka Ditch Association
- Diamond S Ditch Association
- Verde Ditch Association
- Yavapai-Apache Nation
- US Fish and Wildlife Service
- Arizona Game and Fish Department
- Arizona Department of Water Resources
- Arizona Department of Environmental Quality
- Technical Service Providers
- Friends of Verde River Greenway
- The Nature Conservancy

Funding Sources:

- The Nature Conservancy
- US Fish and Wildlife Service "Partners for Fish and Wildlife" Program
- Arizona Game and Fish Department Heritage Grants
- Yavapai County Resource Advisory Council
- NRCS conservation programs:
- Environmental Quality Incentives Program (EQIP)
- Regional Conservation Partnership Program (RCPP)
- Working Lands for Wildlife Program

Partnerships and other Funding Sources

- The main partners that will help implement this strategy will be landowners who participate with matching funds in an effort to solve the problem within the Camp Verde focus area. The ditch associations and their shareholders who are active in irrigation practices will be critical partners and will be the point where we will achieve our desired outcome of saving water.
- NRCS staff, Verde NRCD staff and Technical Support Providers will work together as a team to outreach, inventory, and write conservation plans within the focus area.

Implementation and Progress towards Desired Conditions

This strategy will target irrigated farms within the Camp Verde focus area to implement conservation practices to improve irrigation efficiency. Primarily provide an irrigation funding request to implement planned practice using EQIP funding and client match and participation. Eligible landowners in the priority area will be given an opportunity to improve irrigation efficiency and improve crop productivity by converting existing inefficient irrigation systems to highly efficient irrigation systems. In order to assure applications will be available through-out the five years of the implementation strategy, consideration will be given with application priority in order to implement priority conservation practices.

1. Address 370 acres of water conservation over the next five year starting implementation funding in 2014 and end EQIP funding 2018.
    - Highest priority (1) is surface water irrigation provided to farms by the ditch associations in the Camp Verde focus area.
    - Highest priority (2) is surface water irrigation provided to non-farm landowners by the ditch associations in the Camp Verde focus area. These landowners comprise a large portion of the shareholders served by the ditch associations and typically are the least efficient surface water users in the focus area. Their inefficient irrigation practices have a direct negative impact on farmers during peak summer demand periods; times when water demand often exceeds supply.

Solving the problem will take education and outreach to show the outcome in water savings and resource benefits of maintaining and improving our surface water shortage concerns. Additional outcome will be increasing surface water flows for improved stream habitat for threatened and endangered species. Economic outcome showing the benefits of converting inefficient irrigation system to highly efficient irrigation systems that will help to sell conservation practice for saving water after we have reached our budget timeline.

2. Conserve water and energy by converting inefficient irrigation systems to highly efficient irrigation systems.
    - Applicants will apply for assistance from Technical Service Providers to expedite practices to see on the ground results faster to achieve outlined timeline.
    - Implement approved practice within the priority area to address a specific resource concerns to achieve our desired outcome to save water
        a) Irrigation System, Sprinkler
        b) Irrigation System, Micro
        c) Irrigation Water Management
        d) Irrigation Water Conveyance
        e) Pumping Plant (VFD)

Budget / Timelines

	2014	2015	2016	2017	2018
Equip FA $	$160,000	$180,000	$250,000	$350,000	$350,000
Partner FA $	$40,000	$50,000	$50,000	$50,000	$50,000
Partner TA $	$2,000	$2,400	$7,000	$7,000	$7,000
Partner Equipment	$1,000	$1,000	$1,000	$1,000	$1,000
Output	2 pilot projects	2 projects	5 projects	5 projects	5 projects
NRCD Staff Needs	$0	$15,000	$30,000	$30,000	$30,000
Irrigated Acres	30	40	100	100	100

Marketing & Outreach

- Verde NRCD will develop a targeted mailing list to high-priority landowners with the help of the ditch associations in the focus area.
- Marketing effort with the help of the ditch associations in the focus area will drive the program for landowners to participate.
- Stakeholder meetings will be held in the strategic focus area to promote the priority practices that address the priority resource concern of saving water.
- Press releases will be developed with project success stories.
- Word of mouth by landowners with a common desire to protect water resources will be encouraged.

Evaluation & Monitoring

- Progress will be reported in numbers of plans written on irrigated cropland with conservation applied to improve irrigation efficiency.
- Progress will be evaluated through an annual evaluation by the Local Working Group for priority area applications of all programs.
- Monitoring and evaluation for our progress will occur with the help of our ditch association partners. They will help monitor progress by providing water quantity data obtained from flow measuring devices on irrigation delivery systems.
- Operators working with NRCS will help monitor and evaluate practices that have been installed that benefit their farming operations. This monitoring and evaluation will be in acre inches water saved from the conversion of inefficient irrigation systems to highly efficient irrigation systems.