F I S C A L I M P A C T R E P O R T

SPONSOR Harden **DATE TYPED** 03-02-05 **HB**

SHORT TITLE Central Curry Soil & Water District **SB** 903/aHBIC

ANALYST Woods

APPROPRIATION

Appropriation Contained		Estimated Additional Impact		Recurring or Non-Rec	Fund Affected
FY05	FY06	FY05	FY06		
$74.0				Non-Recurring	General Fund

(Parenthesis ( ) Indicate Expenditure Decreases)

Relates to the appropriation to New Mexico State University in the General Appropriations Act.

SOURCES OF INFORMATION
LFC Files
New Mexico Department of Agriculture (NMDA)

No Response Received From
New Mexico Commission on Higher Education (CHE)

SUMMARY

Synopsis of Bill

Senate Bill 903 – Making an Appropriation for the Central Curry Soil and Water Conservation District – appropriates $74,000 from the general fund to the Board of Regents of New Mexico State University for expenditure in FYs 05 through 09 for the Central Curry Soil and Water Conservation District to perform an underground drip study to analyze and promote the most efficient means of irrigating crops. Any unexpended or unencumbered balance remaining at the end of FY09 shall revert to the general fund.

Significant Issues

NMDA indicates that the majority of water usage will shift from agriculture to municipal consumption as human populations increase steadily, particularly in the dry areas of the western U.S. With reduced amounts of irrigation water available to producers, it is imperative that maximum water use efficiency be achieved for growers to maintain a level of productivity necessary for continued feed and food supply. Subsurface drip irrigation (SDI) systems may help in this regard. It is well documented that SDI is highly efficient (> 95 percent) at supplying water to

plants, even more so than Low Energy Precision Application (LEPA) modifications used with many center pivot systems. Subsurface drip irrigation systems are so efficient because they supply water directly to the root zone of plants, thereby minimizing evaporative and runoff losses from the soil surface. This is particularly important in arid regions, where evaporation can result in significant water loss. Increased efficiency allows for slow water application rates and in turn, uniform distribution of water to the root zone. In addition, SDI systems allow application of nutrients more efficiently to plants and reduce incidence of certain weeds and diseases that are prominent with traditional surface irrigation methods. Subsurface drip irrigation makes accounting for applied water easier and more accurate. In short, SDI has the potential to be more productive while using less water than conventional irrigation systems. Unfortunately, SDI systems are relatively expensive and high installation costs prohibit wide utilization among producers. High value crops such as alfalfa and vegetables may be able to offset the initial costs of subsurface irrigation. The increase of water and pumping costs will help justify use of SDI in the future.

This program was not included in the CHE's *2005-2006 Higher Education Funding Recommendation*.

PERFORMANCE IMPLICATIONS

NMDA advises that proposed research efforts include implementation of a subsurface drip irrigation system to be used for agronomic crop production experiments. These experiments would evaluate the growth and economic potential of corn and sorghum, both grain and forage types, as well as other crops that have feed value for livestock. Alfalfa, sudangrass, and sorghum-sudangrass hybrids have feed and grazing potential and will be part of these water use studies at the Agricultural Science Center at Clovis. Forage crops should be the focus of research efforts because of existing beef cattle operations and the ever-increasing dairy industry moving into the region. Initial (first year) small plot experiments will evaluate which crop(s) have the best potential for use in SDI systems. Subsequent years will include experiments that assess varying amounts of irrigation water and fertilizer inputs on the chosen crop(s).

FISCAL IMPLICATIONS

The appropriation of $74,000 contained in this bill is a non-recurring expense to the general fund. Any unexpended or unencumbered balance remaining at the end of FY09 shall revert to the general fund.

CONFLICT, DUPLICATION, COMPANIONSHIP, RELATIONSHIP

Relates to the appropriation to New Mexico State University in the General Appropriations Act.

OTHER SUBSTANTIVE ISSUES

NMDA observes that research involving SDI has been very limited on the high plains of New Mexico and studies are needed in order to test the feasibility of SDI systems for production of the predominant crops (e.g. sorghum, wheat, corn) grown in the region. These experiments should include various existing crops as well as those that are not grown to a large extent but may have good water use efficiency potential. Perhaps the most efficient system is one that utilizes both conservative irrigation and drought tolerant crops. More research is needed to examine the economic constraints and benefits associated with SDI. Productivity and profitability depend greatly on local conditions, and until SDI systems are tested extensively, questions will remain about their role in the water conservation efforts of agricultural producers in our region of the

state. Information gained will lead to a greater understanding of water use of selected crops that can lead to a more sustainable utilization of groundwater resources.

Further, that this type of water conservation research is immediately necessary in eastern New Mexico. NMDA suggests that we are nearing a time when significant changes in resources will affect greatly present agricultural practices and productivity of this region of the U.S. As human populations increase rapidly and water quantity and quality continue to diminish, the importance of sustainable cropping systems weighs heavier on producers than ever before. Likewise, research in this area is critical and necessary in order to understand better and manage this threatened natural resource.

NMDA additionally indicates that agriculture is the foundation for economic stability on the High Plains of eastern New Mexico. While comprising only 30 percent of the state's total land area, the counties of Chaves, Colfax, Curry, De Baca, Eddy, Guadalupe, Harding, Lea, Quay, Roosevelt, and Union account for over $1.2 billion annually (60 percent of all agricultural cash receipts; New Mexico Agricultural Statistics, 2002; 1997 Census of Agriculture). Curry County alone accounted for over $270 million in cash receipts of farm commodities in 2002. Eastern New Mexico is considered semi-arid and precipitation is limited and quite variable. Average annual precipitation ranges from 12 to 20 inches and rainfall during the growing season often is not enough for profitable crop production. Evaporation exceeds precipitation by greater than 5 times in many areas. Subsequently, agricultural production and the maintenance of rural economies in the region depend largely on irrigation from groundwater supplied from the Ogallala Aquifer. Water is extracted from the aquifer in large amounts each year to irrigate such crops as grain sorghum, grain and forage corn, cotton, wheat, peanuts, and alfalfa. About 70 percent of the water depletions in New Mexico are attributed to irrigated agriculture (New Mexico Office of the State Engineer, 2000). In Curry and Roosevelt Counties, almost 95 percent (> 340,000 acre-feet) of the water taken from the Ogallala Aquifer is used for irrigation purposes. There is a general concern that the water in the aquifer, which is extracted at much higher rates than the amounts returned through recharge, is in danger of being depleted and that we will lose this natural resource forever. Because water levels in the aquifer are not uniformly distributed, some areas have experienced drying of wells already and have been forced to convert from irrigated crop production to dryland endeavors. Increasing costs of fuel and pumping expenses have contributed to the difficulty of extracting water for irrigation.

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