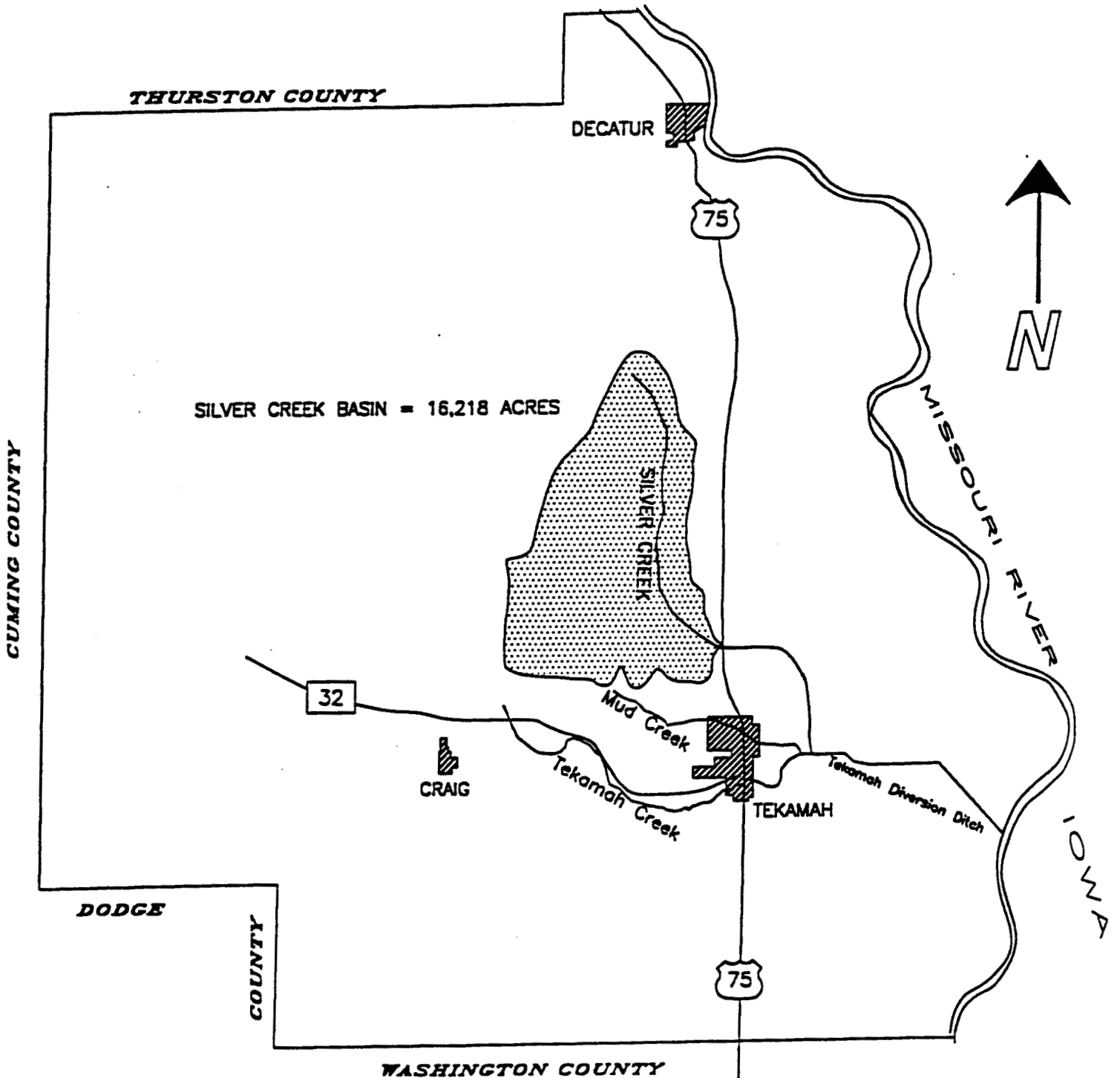


SILVER CREEK WATERSHED BURT COUNTY NEBRASKA



SILVER CREEK WATERSHED
SPECIAL EROSION AND SEDIMENT CONTROL PROJECT
BURT COUNTY NEBRASKA

Silver Creek Watershed is a 25 square mile watershed located along the Missouri River bluffs northwest of Tekamah in eastern Burt County. The majority of this 16,218 acre watershed is in crop production, and, because of its strongly sloping terrain, soil erosion and sedimentation are major problems. Over 4,000 acres of the steeper land with the greatest potential for erosion is currently enrolled in the Conservation Reserve Program (CRP). While soil erosion, grade stabilization and sedimentation are the major problems associated within the uplands of Silver Creek, sedimentation and flooding caused by Silver Creek greatly impact the Burt-Washington Drainage District through which Silver Creek passes before it reaches the Missouri River.

SILVER CREEK WATERSHED
LAND USE

Cropland Acres	9,666 acres
Conservation Reserve Program (CRP)	4,000 acres
Pastureland Acres	1,614 acres
Woodland Acres	838 acres
Farmsteads and Roads	100 acres
TOTAL WATERSHED	16,218 acres

Erosion damage in this watershed is caused primarily by water. In general, the watershed soils are deep, fertile and properly used; but, sheet and rill erosion, particularly on steeper slopes, results in rills and ditches that reduce production and increase operational costs. With present cropping conditions, soil loss from cropland averages as high as 24 tons per acre per year if not adequately treated with conservation measures. Gully erosion is also a major problem because of the steepness of the land and contributes greatly to the sediment load from the watershed.

Sediment losses from the watershed are high. It is estimated that approximately 80,000 tons of sediment per year is delivered to the lower reaches of this watershed. This rate will increase after CRP contracts expire and the lands return to crop land use. Consideration is being given to programs that would keep CRP land in permanent vegetation in order to prevent increased erosion and sediment damages.

Silver Creek is contained within dikes from where it crosses Highway 75 to where it merges with Tekamah/Mud Creek east of the city of Tekamah. A combined channel then runs southeasterly across the Missouri River flood plain and outlets into the Missouri River. These dikes were constructed during the 1920's by the Burt-Washington Drainage District and are maintained by the same entity. The Drainage District is a special purpose entity of government made up of the landowners served by the Drainage District. The major function of the District is to transport upland and local waters across the bottomlands to the Missouri River. The removal of sediment from these drainage ditches is a major expense for the District, whose annual budget is about \$179,000 per year, while the cost of dredging sediment from one mile of ditch is about \$41,000. Portions of the Silver Creek drainage ditch were cleaned of sediment in 1986, and are already in need of sediment removal again.

Silver Creek also contributes significantly to the flood problems experienced by the Burt-Washington Drainage District. Other flood water problems in the watershed consist of damages to crops, pastures, other agricultural properties, roads and bridges. Agricultural properties damaged by flood water include fences, farm buildings, livestock, grain and hay.

PLAN OF ACTION

The Soil Conservation Service in Burt County has developed a plan to address the erosion, sediment and flooding problems within the Silver Creek Watershed as well to address the effects the watershed has on the Burt-Washington Drainage District. This plan includes terraces and terrace outlets, sediment basins and erosion control/grade stabilization dams, as summarized in the following table.

Structural Conservation Needs

	Unit Needs *	Estimated Total Costs
Terraces/Tile Outlets	978,000 feet	\$1,420,000.00
Waterways	100 acres	80,000.00
Sediment Basins	50 each	91,000.00
Erosion Control/Grade Stabilization Dams	30 each	<u>1,480,000.00</u>
TOTAL COSTS		\$3,071,000.00

* Based upon a projection of 3,000 acres of CRP returning to cropland, and a need for 75% land treatment in the watershed

Funding Sources

Papio-Missouri River NRD	\$2,023,250.00
Silver Creek Landowners	397,750.00
Federal (ASCS)	150,000.00
State (NSWCP)	<u>500,000.00</u>
TOTAL COSTS	\$3,071,000.00

Schedule

1. Install soil conservation measures to control sheet and rill erosion; completion in FY 2005.
2. Construct Erosion Control/Grade Stabilization Dams; completion in 2005.

Application of land treatment measures and dams will benefit the entire watershed. Long range benefits will include lower sedimentation rates, flood control, and improved water quality. Soil and water conservation practices will help control agricultural runoff and its attendant sediment, fertilizer and pesticides. Dams will control gully and streambank erosion, stabilize grades and trap sediment.

Wildlife benefits and recreational potential will be enhanced from the creation of 30 dams with permanent pools ranging in size from 4-20 acres. Outside the watershed benefits will also be realized through the reduction of sediment and flood damages in the Burt-Washington Drainage District.

Silver Creek Watershed
Proposed Structure Sites

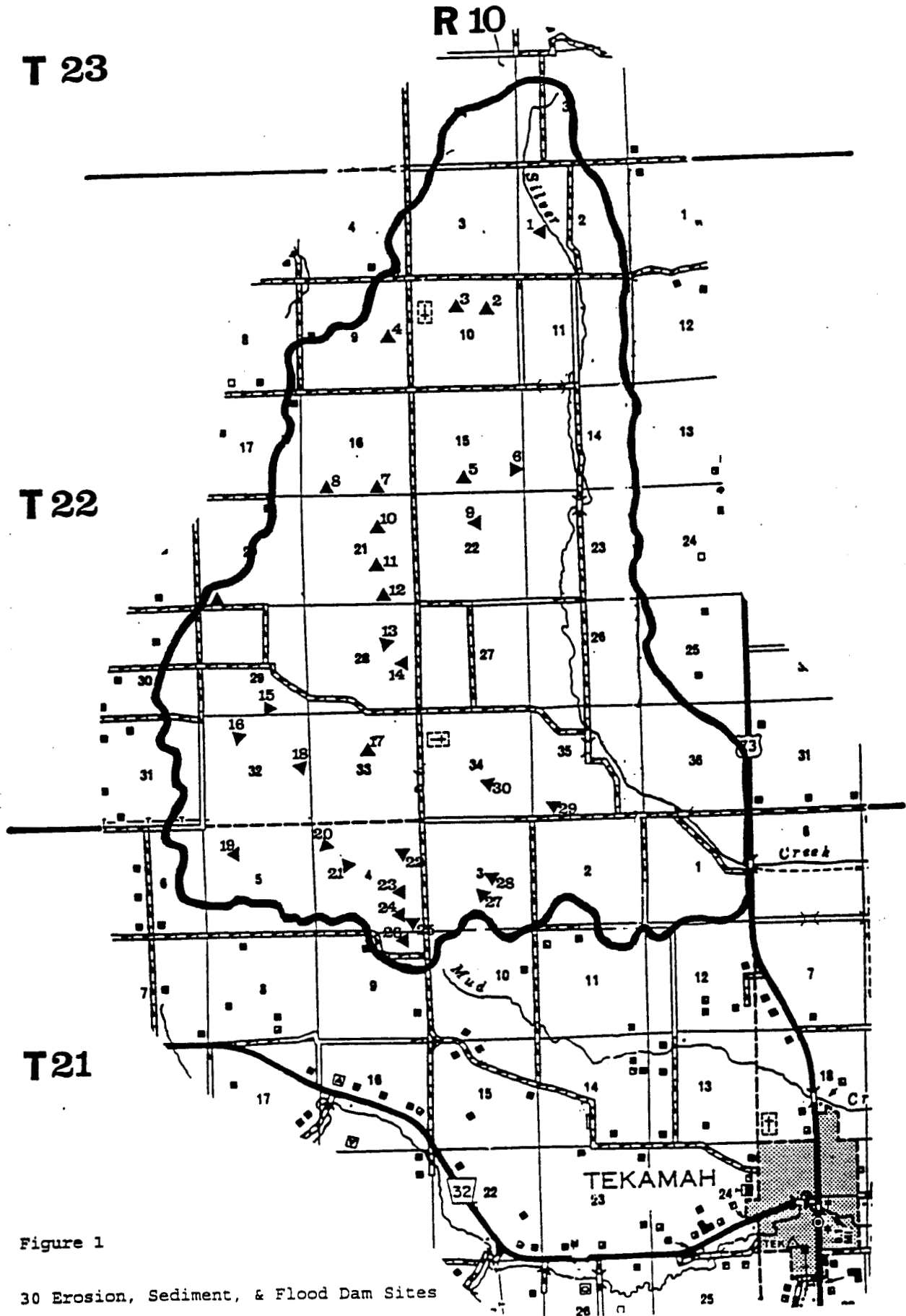


Figure 1

30 Erosion, Sediment, & Flood Dam Sites

CONSERVATION RESERVE PROGRAM (CRP) CONTRACTS
IN WATERSHED

<u>LANDOWNER</u>	<u>ACRES</u>	<u>LEGAL DESCRIPTION</u>	<u>CONTRACT EXPIRATION DATE</u>
Helen Thomas	24.1	2, 3-22-10	1986 - 1995
Clinton Miller Est	65.0	33-22-10	1986 - 1995
Alby Helms	38.1	9-22-10	1987 - 1996
Sam Houston	143.9	14, 23-22-10	1987 - 1996
Gary Bucy	234.2	10-22-10	1987 - 1996
Morris Swedberg	145.8	29-22-10	1987 - 1996
Ione Lipps	83.3	26-22-10	1987 - 1996
Johnson Farms A Ptnp	149.7	21-22-10	1987 - 1996
Eleanor Claussen	245.9	3-22-10	1987 - 1996
Anderson, Oerhlerking	140.9	11-22-10	1987 - 1996
Dale McAllister	89.0	29-22-10	1987 - 1996
Heidi Hundahl	143.8	23-22-10	1987 - 1996
Heidi Hundahl	141.6	14, 23-22-10	1987 - 1996
Irene Hudson	78.2	11-22-10	1987 - 1996
Charlie Washam	77.6	14-22-10	1987 - 1996
Backacres	56.3	32-22-10	1987 - 1996
Bernard Neary	4.4	2-22-10	1987 - 1996
Barney G. Inc	89.2	21, 28-22-10	1987 - 1996
Levena Thomas	22.0	3-22-10	1987 - 1996
Duane Snow	81.1	27, 34-22-10	1987 - 1996
Clinton Miller Est	41.8	33-22-10	1987 - 1996
Jessie Jensen	153.0	15-22-10	1987 - 1996
Bernard Uhing	257.0	26, 27-22-10	1987 - 1996
Clifford Connor	43.6	16-22-10	1987 - 1996
Mary Donlevy	325.6	9-22-10	1987 - 1996
Robert Coffman	70.4	2-22-10	1988 - 1997

WATERSHED DESCRIPTION

The watershed is oblong in shape with an average width of approximately four miles and seven miles long, having a total area of 16,218 acres (25.3 square miles). Upland topography varies from moderately sloping to steep. The soils in the watershed have developed in loess on rolling and steep slopes and in alluvium along upland drainageways.

The major soils identified in the watershed area are Ida-Burchard-Steinauer soil association which are silty and loamy soils formed in loess and glacial till.

Surface elevations range from 1390 feet above sea level along north end of the watershed divide to 1089 feet in the lower reaches of Silver Creek where it reaches U.S. Highway 75. Relief of the watershed is 301 feet.

LAND CLASSES

Class 2 = 33%	5,332 acres
Class 3 = 15%	2,411 acres
Class 4 = 52%	8,478 acres

<u>LANDOWNER</u>	<u>ACRES</u>	<u>LEGAL DESCRIPTION</u>	<u>CONTRACT EXPIRATION DATE</u>
Valder Hill Farm Ptnp	16.0	36-22-10	1988 - 1997
John Hundahl	84.0	14, 15-22-10	1988 - 1997
Eleanor Dietemann	182.1	34-23-10	1988 - 1997
Dr L R. Schultz	359.1	14, 15-22-10	1988 - 1997
Duane Fausset	6.0	30-22-10	1990 - 1999
Violet Eriksen	34.9	30-22-10	1989 - 1998
Morris Swedberg	184.5	19, 20, 21-22-10	1992 - 2001
Morris Swedberg	7.9	20-22-10	1992 - 2001
Charlie Washam	62.5	11-22-10	1993 - 2002
Richard Perchal	<u>123.6</u>	22-22-10	1993 - 2002
TOTAL	4,006.1		