

**TECHNICAL PROPOSAL
CONVERTING OPEN DITCH OSBORNE LATERAL 14.9 TO
BURIED PIPE PROJECT**

FOA No. BOR-DO-18-009

Small-Scale Water Efficiency Grants for Fiscal Year 2018

APPLICANT:

Webster Irrigation District No. 4
304 1st Street
Gaylord, KS 67638

PROJECT MANAGER:

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I. EXECUTIVE SUMMARY

Date: July 20, 2018	Applicant: Webster Irrigation District No. 4
City: Gaylord, Kansas	County: Smith
State: Kansas	Congressional District: Kansas District 1

Through the activities outlined in this application, Webster Irrigation District No. 4 (District) plans to convert Osborne open ditch lateral 14.9 into a buried pipe system. The District has placed a number of open ditch laterals into pipe. This project will convert the entire lateral 14.9 into buried pipe (approximately 1.5 miles). The project will provide water conservation benefits with water savings from the elimination of evaporation and seepage losses and the elimination of operational losses. Estimated water savings are 252 acre-feet per year and on-farm savings of 88 acre-feet per year. The project will provide improved water management with the installation of flowmeters (which will improve water measurement and accounting). The project will also improve on-farm efficiency with the relocation turnouts, increased delivery water service, and will provide opportunities to install center pivots. With increase delivery water service each landowner will save energy by reducing pumping requirements. Each conservation project completed by the District will result in less water being diverted from Webster Reservoir (under full supplies). Higher reservoir levels present opportunities for increased fish, wildlife, and recreation benefits, which may provide benefits for endangered species, specifically whooping cranes which are known to use the reservoir area. The Kansas Division of Wildlife and Parks is interested in increasing storage levels in Webster Reservoir. The District committed to minimum irrigation pool elevations during the District's contract renewal process in 2003. Conservation projects such as these buried pipe projects will result in less water being diverted from the reservoir.

If successful through this application, the funding awarded will be utilized to purchase materials needed to complete the project and for installation costs for the pipe and turnouts. This project accomplishes one of the specific goals outlined in the FOA through the piping of canals to conserve water.

Timeline - If successful through this application, the project will begin immediately following the completion of an agreement with Reclamation (likely fall of 2018) and will be completed by the end of May, 2019.

The proposed project takes place within and as part of the Webster Unit of the Solomon Division, Pick-Sloan Missouri Basin Program of the Bureau of Reclamation in North-central

Kansas. The project will be constructed entirely within existing easements of the open ditch system.

II. BACKGROUND

The Osborne Irrigation District No. 4 is part of Reclamation's Webster Unit, Solomon Division, Pick-Sloan Missouri Basin Program located along the valley of the South Fork of the Solomon River in Rooks and Osborne Counties in north-central Kansas (See Appendix A). The Webster Unit consists of Webster Dam and Reservoir, Woodston Diversion Dam, Osborne Canal, 4 pumping plants, and a system of laterals and drains. The Unit provides supplemental irrigation to 8,500 acres of project lands in Rooks and Osborne Counties (see project map in Appendix A). There are 85 project landowners served by the District, with the majority of crops being corn, soybeans, and milo. The District water supply is 12 inches per acre, when available.

Webster Dam and Reservoir are located on the South Fork of the Solomon River about eight miles west of the town of Stockton, Kansas. The primary purpose of the Webster Dam and Reservoir is to store water for irrigation of the Webster Unit and for flood control, along with the secondary benefits of recreation, and fish and wildlife. Webster Reservoir capacity includes 1,256 acre-feet of dead storage, 2,975 acre-feet of inactive storage, 71,926 acre-feet for irrigation, 76,157 acre-feet for exclusive flood control, and 140,912 acre-feet for surcharge flood control.

Irrigation water is released from Webster Reservoir into the South Fork of the Solomon River and is diverted into Osborne Canal at Woodston Diversion Dam, approximately 20 miles downstream of Webster Dam. The Woodston Diversion Dam diverts irrigation water to the Osborne Canal and consists of an uncontrolled concrete overflow spillway section, a gated sluiceway, a canal headworks structure, and earth dikes. Osborne Canal and lateral system extends eastward on the north side of the South Fork of the Solomon River and provides irrigation water for 8,500 acres. Osborne Canal is 33.1 miles long extending to just east of Osborne, Kansas, and has an initial capacity of 161 cfs. The lateral system includes 4 pumping plants, 6.3 miles of pump laterals and 24.2 miles of gravity laterals, ranging in capacity from 4 to 15 cfs.

The District has an irrigation water right with the Kansas Department of Agriculture, Division of Water Resources. Kansas Water Right #5745, with a priority date of June 28, 1956, permits the District to make use of surface water in the South Fork of the Solomon River at a maximum diversion rate not in excess of 158 cubic feet per second and in a quantity not to exceed 23,607

acre-feet for direct use and 71,700 acre-feet for storage in Webster Reservoir per calendar year for irrigation use of lands service by the District in Rooks and Osborne Counties in Kansas.

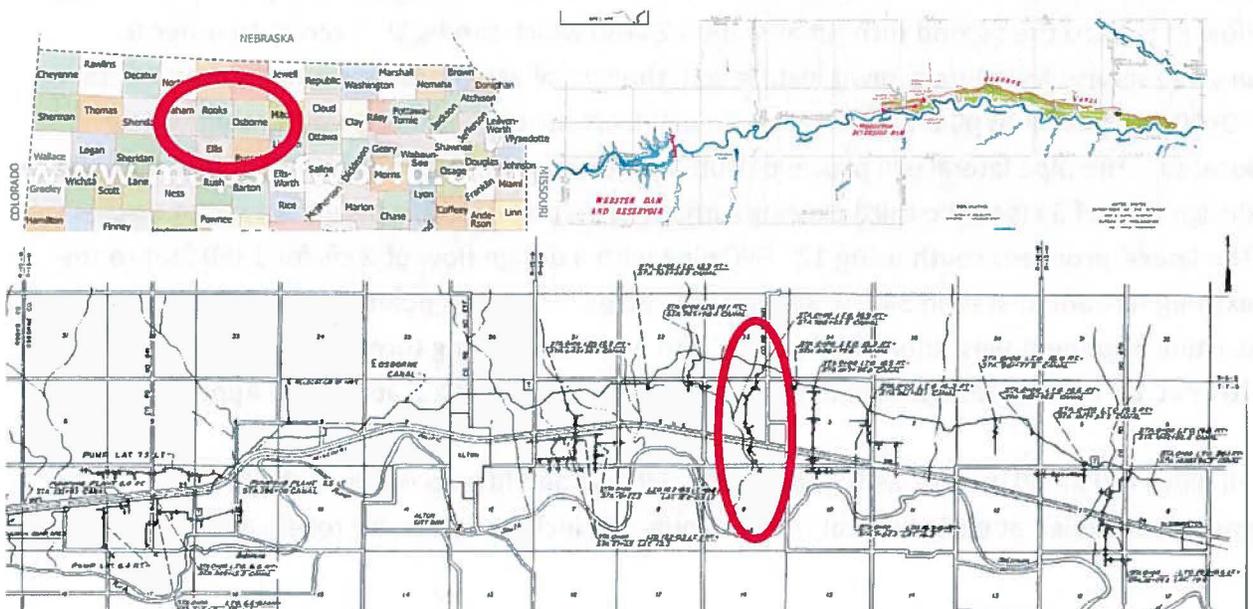
The Webster State Park surrounds Webster Reservoir and consists of 880 acres. The Park is managed by the Kansas Department of Wildlife and Parks and is open to fishing and hunting.

The District continues to seek opportunities to improve the project water delivery system. One of the most cost-effective measures is to replace portions of open ditch lateral with buried pipe. These buried pipe projects eliminate seepage losses, evaporation losses, eliminate the need for operational wasteways, improve water measurement, and provide project irrigators with on-farm improvement opportunities through increased delivery water surface, relocation of service points, and improved field access.

The District has worked with Reclamation on a number of past water conservation projects through the Water Conservation Field Services Program and the WaterSMART Program. Through a number of similar pipe projects, the District has eliminated approximately 10 miles of open ditch laterals.

III. PROJECT LOCATION

Osborne Lateral 14.9 is located approximately 4 miles east of the city of Alton, in Osborne County, in North-central Kansas (See Appendix A). The lateral turnout is located in the Southeast Quarter of the Southeast Quarter of Section 33, Township 6 South, Range 14 West of the 6th Principal Meridian. The lateral serves lands located in sections 4 and 9 of T 7 S, R 14 W.



IV. TECHNICAL PROJECT DESCRIPTION

Osborne Lateral 14.9 is a 1.5 mile open ditch lateral that serves 320 acres of three landowners through five turnouts. By placing this lateral in pipe, the new pipe lateral will be designed so that all lands served by this lateral will be able to take water at the same time. This lateral can be replaced with 3000 feet of 18 inch PVC pipe, 1240 feet of 15 inch PVC pipe, 1,360 feet of 12" PVC pipe, 2040 feet of 10 inch PVC pipe, PVC pipe fittings and accessories, and five metered turnouts and will continue to serve 320 acres. Upon completion of piping this lateral, each turnout will benefit with an increased delivery water surface. By increasing the delivery water surface, this project will also provide opportunities for these landowners to improve on-farm irrigation system efficiencies by utilizing gated pipe or installing center pivots. With metered turnouts, water measurement and accounting will be improved.

Andy Wilson, Manager of the District will serve as project manager, overseeing all project activities. The District has received a bid from a local contractor (who has completed a number of past pipe projects with the District) for the removal of existing open ditch lateral structures and will install the buried pipe lateral. Final grading will be completed by District maintenance staff.

The pipe will be placed within the existing easements for the open ditch lateral. The new pipe lateral will begin at the existing lateral turnout at Osborne Canal station 788+03. The first portion of the pipe lateral will begin using 18" PVC pipe with a design flow of 5 cfs. The pipe lateral will follow the alignment of the existing open ditch lateral for approximately 1440 feet to the first turnout at station 14+80 where it will have a turnout to serve 67.2 acres. From this point the lateral will continue approximately 1000 feet south using 18" PVC pipe with a design flow of 5 cfs to the second turnout at station 24+60 which serves 15.1 acres. In order to provide service for a future pivot installation, the lateral will continue south 560 feet to station 30+00 using 18" PVC pipe with a design flow of 5 cfs, where a future pivot turnout will be located. The pipe lateral will proceed south approximately 1240 feet using 15" PVC pipe with a design flow of 3 cfs to the third existing turnout at station 41+50, where it serves 24.6 acres. The lateral proceeds south using 12" PVC pipe with a design flow of 2 cfs for 1360 feet to the existing turnout at station 54+71, serving 60.7 acres. From this point, the lateral follows the existing alignment west then south to the fifth and final existing turnout at station 74+55, using 10" PVC pipe with a design flow of 1 cfs, where it will serving 52.5 acres (See Appendix A).

All pipes will be 80 psi PVC with gasket bells. Elbows and fittings will be either solvent weld or gasket as needed at each application. Turnouts will include valves, air relief valves, meter

tubes, meters, and meter guards. All meter installations shall meet State of Kansas specifications for meter installations.

See Appendix A for existing later drawings, pipe diagrams, and aerial photo.

V. EVALUATION CRITERIA

EVALUATION CRITERION A – Project Benefits (35 Points)

Historic operations of lateral 14.9 reveal an estimate seepage/evaporation loss of 1.5 cfs. By placing this lateral in pipe, the water savings would be 1.5 cfs, or 3 acre-feet per day. Assuming that the District has a full water supply of 12 inches per acre, delivered over 12 weeks, this pipe project will result in an estimated water savings of **252 acre-feet of water per year** (3 AF/day X 7 days/week X 12 weeks).

Current on farm irrigation practices of pulling a furrow result in an on-farm irrigation efficiency of 40%. By increasing the delivery water surface at each turnout, landowners will be able to utilize gated pipe, which will increase the on-farm irrigation efficiency to 50%. This would result in an additional 32 acre-feet of water available to the crop (320 acres X 12 inches/acre X 10% improvement = 32 acre-feet). With the installation of a center pivot (efficiency 85%), this on-farm savings will increase to **67 acre-feet per year** (100 acres X 12 inches/acre X 45% = 45 acre-feet plus 220 acres X 12 inches/acre X 10% = 22 acre-feet). The first landowner has submitted a letter of commitment to install a center pivot (See Appendix C).

The District has experienced periods of water supply shortages over the last 30 years. The District continues to seek opportunities to improve the project water delivery system. One of the most cost effective measures is to replace portions of open ditch lateral with buried pipe. These buried pipe projects eliminate seepages losses, evaporation losses, eliminate the need for operational wasteways, improve water measurement, and provide project irrigators with on-farm improvement opportunities through increased delivery water surface, relocation of service points, and improved field access. Piping these laterals eliminates the need to apply chemicals for weed control and require less staff time by eliminating the need to monitor open ditch turnouts. The efficiency improvements from this later will result in higher end of irrigation season reservoir levels in Webster Reservoir, which provides fish, wildlife, and recreation benefits.

EVALUATION CRITERION B – Planning Efforts Supporting the Project (35 points)

The conversion of open ditch lateral 14.9 to buried pipe fits well into the District’s Water Conservation Plan and the District Operating Plan. This project will improve the overall delivery efficiency of the canal system and will allow landowners to improve on-farm efficiency by allowing opportunities to improve irrigation systems with the use of gated pipe and center pivots.

From the Webster Irrigation District No. 1’s Water Conservation Plan, Section C. Adopted Plan Elements, A. Selected Measures

The District will continue to replace open ditch laterals with buried pipe. Although these projects are expensive, they provide immediate water savings. These types of projects will be funded through agreements with other agencies, cost share funds provided through project irrigators, and through a water conservation fund that will be initiated through the contract renewal process.

The District will continue to investigate and install improved water measurement devices on the canal systems including farm turnouts, wasteways, and strategic points throughout the system. Improved water measurement accuracy will allow the District to better manage the system.

The District signed a new repayment contract with the United States effective January 1, 2003. The contract included a District Operating Plan between the United States and the Webster Irrigation District No. 4. The District Operating Plan was developed for the purpose of providing a means to implement the contractual commitment made by the District to the United States concerning the operation of the District and the performance of certain water conservation and environmental activities which are part of the consideration to secure a 40-year repayment term. Through this District Operating Plan, the District agreed to initiate water conservation measures to improve the efficiency of the project delivery system and encourage on-farm efficiency improvements. The Plan listed a goal to increase the delivery efficiency of the District by a total of 6 percent and on-farm efficiencies by a total of 5 percent.

From the District’s Operating Plan;

Continue aggressive conservation efforts and explore new technologies which will convert as much of the District’s delivery system as possible to improved delivery

methods including, but not limited to, buried pipelines, metered turnouts, lined canals, etc.

Continue to seek grants and agreements with outside agencies to provide funding assistance for the above mentioned improvements.

Continue to work with Reclamation on cost share opportunities for water conservation measures such as installation of improved water measurement structures, replacement of open ditch with buried pipe, and potential canal lining projects.

Continue to encourage irrigators to convert to gated pipe, surge, and pivot irrigation.

EVALUATION CRITERION C – Project Implementation (10 points)

The District is prepared to begin construction on this pipe project immediately following the 2018 irrigation season. The likely starting date will be late fall of 2018, following selection of application and development of a cooperative agreement. With applications due by July 30, 2018, it is anticipated that selection will take two months, and drafting and completion of a cooperative agreement may take one month, which means the project could begin in November, 2018.

The District Manager had discussed this project with all landowners served by Lateral 14.9 and all three landowners are supportive on the project and will provide some of the funds needed to complete project. The pipe will be placed within the existing easement of the open ditch lateral, so there will be no additional easements needed for this project. The District has also received a bid from a local contractor for the removal of the open ditch lateral structures and installation of the buried pipe. The contractor's bid included a commitment to complete this project by the end of May, 2019. The District's maintenance staff is available to work on the project as needed.

Cultural clearance for this lateral has been completed as listed in Environmental and Cultural Resource Compliance section of this proposal. The District will work with Reclamation's NKAO to complete any NEPA compliance issues. The District has worked with NKAO on a number of pipe lateral projects and does not expect any delays in project construction. NKAO staff has briefly reviewed this Lateral 14.9 pipe project and anticipates it will be cleared with a Categorical Exclusion Checklist (CEC) similar to past pipe projects.

EVALUATION CRITERION D – Nexus to Reclamation (10 points)

The Webster Irrigation District No. 4 (District) is part of Reclamation’s Webster Unit, Solomon Division, Pick-Sloan Missouri Basin program located along the valley of the South Fork of the Solomon River in Rooks and Osborne Counties in northcentral Kansas (See Appendix A). The District signed a new repayment contract with the United States effective January 1, 2003. The contract includes Appendix B, District Operating Plan between the United States and the District, which lists goals to increase delivery efficiency and on-farm efficiencies.

EVALUATION CRITERION E – Department of the Interior Priorities (10 points)

This project meets the Department of the Interior Priorities such as creating a conservation stewardship by implementing best practices to manage land and water resources with the elimination of open ditch seepage losses, evaporation losses, and operational losses. The increased water delivery service provided through this project will present opportunities for the landowners to implement on-farm irrigation efficiency improvements through other state and federal agencies and programs.

DOI water storage, transportation, and distribution systems to resolve conflicts and expand capacity – water saved by piping this open ditch lateral will result in higher end of irrigation season reservoir levels in Webster Reservoir each year, which will provide improved recreation and fish and wildlife benefits at Webster State Park.

This project will also improve trust with local communities. By continuing to make delivery system improvements like this Osborne Lateral 14.9 pipe project, the District will continue to build trust with the people of Kansas, the Kansas Department of Wildlife and Parks, other Kansas State agencies, and the local communities and rural population by showing the District’s commitment to manage this limited water resource. By extending the District’s water supply, others will benefit in the form of increased carryover storage in Webster Reservoir.

This project supports the White House Public/Private Partnership Initiative to modernize U.S. infrastructure by utilizing landowner, District, and Federal funds to pay for this project. The project also meets the DOI priority of construction of infrastructure by replacing the open ditch lateral with buried pipe.

VI. PROJECT BUDGET

FUNDING PLAN AND LETTERS OF COMMITMENT

The District will fund its portion of this project through in-kind services, cash from the District's water conservation fund, and cash contributions from project landowners served by Lateral 14.9. The District works with each landowner receiving a benefit from these projects and asks these landowners to contribute for the construction charge. The District Manager has discussed the project with the landowners served by Lateral 14.9 and the landowners have committed to fund a portion of the pipe installation costs (See letter of commitment in Appendix C). These landowner contributions will be combined with District funding commitment of a minimum of 50% non-federal cost share. The first landowner served has submitted a letter of commitment to install a center pivot if the lateral is converted to pipe (See Appendix C). The District has funded and completed similar projects in the past through cooperative agreements with Reclamation's Water Conservation Field Services Program and WaterSMART Program. The District is committed to provide a minimum of 50 percent of the cost share for this project.

The overall cost estimate for this project is \$126,000. Project funding will include \$63,000 of Reclamation WaterSMART funding, \$26,600 of landowner contributions, \$18,500 of District contributions, and \$17,900 of District in-kind contributions.

FUNDING SOURCES

NON-FEDERAL FUNDING SOURCES	\$63,000.00
Project Landowners	\$26,600.00
Webster Irrigation District No. 4	
Funds	\$18,500.00
In-kind Services	\$17,900.00
FEDERAL FUNDING	\$63,000.00
Bureau of Reclamation	\$63,000.00
	=====
TOTAL PROJECT COSTS	\$126,000.00

BUDGET PROPOSAL

Total Project Costs			\$126,000.00
PVC Pipe			\$62,990.40
18" PVC (80 psi)	2960 ft	\$12.42	\$36,763.20
18" PVC (100 psi)	60 ft	\$15.28	\$916.80

15" PVC (80 psi)	1200 ft	\$8.32	\$9,984.00
15" PVC (100 psi)	40 ft	\$10.11	\$404.40
12" PVC (80 psi)	1320 ft	\$5.26	\$6,943.20
12" PVC (100 psi)	40 ft	\$6.42	\$256.80
10" PVC (80 psi)	2200 ft	\$3.51	\$7,722.00
Fittings			\$4,262.88
Pipe vent T – 18x15x4	\$295.37	Pipe T 18x18x10(2)	\$408.12
Reducer 15x12 (3)	\$169.92	Reducer 18 x 15	\$167.81
12" 45 elbow (4)	\$233.48	Pipe T 12x10x4	\$111.13
15" 22.5 elbow	\$74.02	12" 45 elbow (6)	\$235.56
15" 45 elbow	\$90.71	PVC Cement (8gal)	\$481.60
12" 30 elbow	\$58.38	PVC Primer (8 gal)	\$420.00
12" 22.5 elbow	\$44.14	PVC Cement (8 Qt)	\$145.60
15" 30 elbow	\$90.71	PVC Primer (8 Qt)	\$145.60
Turnouts – 5 at \$1,750 each			\$8,750
Meter	\$1,183.50	2" alum nipple	\$11.20
4" Air relief valve	\$79.20	Meter Vanes	\$33.60
2" Air relief valve	\$19.20	Labor weld 10"	\$20.00
4" female adapter	\$10.50	Labor weld 2"	\$6.00
2" male adapter	\$2.60	Rolled end labor	%5.00
Line Valve	\$140.00	Cut meter hole	\$8.00
Alum Tube	\$14.55	Meter Guard	\$150.00
Misc Parts	\$66.65		
Pipe Installation			\$26,600
Contractor Bid			
Demolition, Removal of structures	\$3,600		
Trench and Place PVC pipe	\$19,500		
Encase pipe through Siphons	\$3,500		
District Costs			\$11,445
Project coordination – Andy Wilson, District Manager	\$5,780		
(6 hr/day x 35 days X \$27.52/hr)			
Removal of turnouts – District Equipment & Staff	\$2,323		
Backhoe – 4 hours x 5 turnouts x \$50.00/hr			
Backhoe Operator – 4 hours x 5 turnouts x \$22.05/hr			

Laborers – 2 staff x 4 hours x 5 turnouts x \$22.05/hr	
Final Grading – District Equipment & Staff	\$2,306
Maintainer/Grader – 32 hours x \$50/hr	
Operator – 32 hours x \$22.05/hr	
Install Turnout Guards – District Staff	\$441
2 laborers x 2 hr/turnout x 5 turnouts x \$22.05/hr	
Administrative Costs – District Staff	\$595
Office Manager – 1 hr/day x 35 days x \$16.99/hr	
NEPA Compliance	\$276
Environmental Clearance by NKAO Staff	\$276
Cultural Clearance Complete	
Contingencies (10%)	\$11,675.70

BUDGET NARRATIVE

The District purchases pipe from Kroy Industries for similar pipe lateral projects. The District Manager contacted Kroy Industries and received a price quote for the pipe delivered to the construction site. All PVC pipe will be 80 psi except road crossings or field access roads where the District will install 100 psi pipe. Pipe lengths and costs are listed in the budget.

The District does not have the equipment needed to bury the pipe lateral. The District manager has obtained price quotes for the installation of this pipe lateral from a local contractor that has completed similar pipe projects for the District. The contractor’s bids for the Lateral 14.9 project are shown below. The District has completed a number of similar pipe projects with this contractor, who has always honored bids submitted at early stages of projects and has completed the projects within the bid submitted. The District does not anticipate any changes in the project scope so the bid submitted by the contractor should not change. The local contractor has reviewed the pipe project and has submitted the listed in the budget for completing the installation.

District operations and maintenance staff will remove existing turnout structures from the open ditch lateral, complete final grading once pipe lateral has been installed, construct and install the meter guards, and account all work and project expenses. District will utilize existing District equipment and staff to complete these tasks. District labor rates included in the budget represent actual labor rates of District personnel. District equipment rates listed were

estimated and are below the rates listed on the Corps of Engineers Construction Equipment Ownership and Operating Expense Schedule.

Environmental and Cultural Resource Compliance Costs

The District will work with Reclamation's Nebraska-Kansas Area office to obtain the necessary Environmental Clearances. Jeanette Timm, Natural Resource Specialist of the NKAO estimated that this project will be completed with a Categorical Exclusion Checklist, and with the cultural clearances already complete, the clearance will take approximately 4 hours at \$69 per hour for a total cost of \$276.00. Work on the CEC will begin immediately following the selection process.

Project Construction Schedule

As listed in FOA No. BOR-DO-18-009, successful award recipients will be notified in the fall of 2018 or slightly later, and financial assistance agreements will be awarded within 1-3 months following selection. If selected, Initial work on this project would begin as soon as the financial assistance agreement is finalized, likely in October or November. Removal of existing structures will begin once a cooperative agreement is in place. Pending the late fall weather, pipe installation may begin in the fall of 2018. Any remaining work items will be completed in the spring of 2019. The project should be completed in April of 2019.

VII. ENVIRONMENTAL AND CULTURAL RESOURCES COMPLIANCE

The District has completed a number of similar conservation projects of replacing open ditch laterals with buried pipe. As with past projects, the District will work with Reclamation's Nebraska-Kansas Area Office (NKAO) for the completion of all required environmental compliance activities associated with this project. The District will work with NKAO to ensure this project complies with the National Environmental Policy Act (NEPA), Endangered Species Act (ESA), National Historic Preservation Act (NHPA), and Native American Graves Protection and Repatriation Act (NAGPRA).

From similar past projects, the District does not expect to have any problems with environmental compliance issues. NEPA compliance activities for these types of buried pipe projects generally are completed with a Categorical Exclusion Checklist (CEC) prepared by NKAO staff. Jeanette Timm, Natural Resource Specialist with the NKAO reviewed this project and anticipates this project will receive environmental clearance with a CEC.

Cultural Resources Compliance has been completed for the Osborne Lateral 14.9 pipe lateral project. The District worked with Reclamation's Nebraska Kansas Area Office (NKAO) to complete cultural reviews of all remaining open ditch laterals (including Osborne Lateral 14.9) in 2011 through a contract with Cultural Resources Inc. (See Appendix B). This work concluded with a report titled "An Archeological Pedestrian Survey of Open Ditch Laterals Within the Kirwin and Webster Units, Solomon Division, Pick-Sloan Missouri River Basin Project, Bureau of Reclamation, in Phillips, Smith, Osborne, and Rooks Counties, Kansas, January 2011". This survey included 234.8 acres of privately owned lands that were identified as future projects for the replacement of open ditch laterals with buried pipe. The report resulted in a finding of *no historic properties affected* which was proposed by NKAO Archeologist Bill Chada in his March 2, 2011 letter to the Kansas State Historic Preservation Office. Mr. Chada recommended that no further cultural resource survey or testing be required and that the proposed project proceed as planned. The Kansas State Historic Preservation Office concurred with the conclusion that the proposed project will have no effect on historic properties as defined in 36 CFR 800 and had no objection to the canal/buried pipeline conversion (see the Kansas SHPO March 14, 2011 letter in Appendix B).

VIII. REQUIRED PERMITS AND APPROVALS

NEPA compliance activities will be completed as referenced in the previous section. All utilities will be contacted through Kansas Dig Safe or by direct contact. The pipe project is within existing easements of the open ditch lateral, so there are no land acquisition activities required for this project.

IX. LETTERS OF PROJECT SUPPORT

The District has received a letter of support for this project from the Kansas Groundwater Management District No. 4. The District is anticipating letters of support from the Kansas Water Office, the Kansas Division of Water Resources, and the Kansas Department of Wildlife and Parks. Copies of letters of support are included in Appendix D.

X. OFFICIAL RESOLUTION

The Webster Irrigation District No. 4 signed a Resolution stating their support for this project on July 5, 2018. A copy of this resolution is included in Appendix E.

WEBSTER UNIT

The **WEBSTER UNIT, SOLOMON DIVISION, MISSOURI RIVER BASIN PROJECT**, is in the valley of the South Fork of the Solomon River in Rooks and Osborne Counties in north central Kansas. The 6,500 acres of irrigable lands are north of the river between the towns of Woodston and Osborne. *Webster Reservoir* provides for storage of irrigation water, flood protection, recreation, and development of fish and wildlife resources. Other features of the unit are *Woodston Diversion Dam, Osborne Canal, project pumps, and a lateral system*.



WEBSTER DAM

History

Settlement in Rooks and Osborne Counties began in 1869 and by 1880 their population was more than 20,000. Favorable precipitation in the 1880's resulted in good crop yields but the following years were interspersed with years of extreme drought. Prolonged droughts in the 1930's emphasized the need for a program to stabilize agriculture by storing destructive flood waters for irrigation.

The **BUREAU OF RECLAMATION** initiated investigations in the area in 1939 and the **WEBSTER UNIT** was authorized as a part of the **MISSOURI RIVER BASIN PROJECT** by the Flood Control Acts of 1944 and 1946. *Webster Dam* construction began in November 1952. The plan for irrigation was presented in a 'definitive plan report' which was approved in February 1957. Construction started on *Woodston Diversion Dam* and the *Osborne Canal* in July 1957.

Organization of **WEBSTER IRRIGATION DISTRICT NO. 4** was completed in February 1957. A repayment contract with the United States was signed by the District in April 1957.

Water Supply and Requirements

The average annual runoff from the 1,125 square-mile drainage area above *Webster Dam* was 50,900 acre-feet during the period 1920-1953. Flows into the river between *Webster Dam* and *Woodston Diversion Dam* averaged 6,900 acre-feet annually.

Farm delivery requirements are expected to average 1.47 acre-feet per acre annually while average annual diversion requirements are expected to be 2.11 acre-feet per acre.

Soils

Unit lands are located between the north bank of the river and the high valley walls and are primarily on high terraces. Minor portions are on low terraces or high bottoms. Most of the soils are well adapted to irrigation development. They are deep, friable, and well drained and vary in texture from a fine sandy loam to a friable silty clay loam. The subsoils range from friable, very permeable, silty clays to fine sandy loams. They have high water-holding capacities, good tillability, and are free from harmful alkali or saline conditions.

Climate

The elevation of the unit lands above sea level varies from 1710 feet at the western edge to 1500 feet at the eastern edge. The climate is typical of the central great plains, with moderately long and cold winters and hot and intermittently long summers. Temperatures have varied from -32° to 120° Fahrenheit and annual precipitation from 13.7 to 42.7 inches. Average annual precipitation has been 22.4 inches with approximately 65 percent occurring during the average growing season of 170 days. The irrigation season is about May 1 to September 30.

Markets and Transportation

Most livestock and agricultural products are marketed through dealers in neighboring towns. They in turn ship to markets in Omaha, Salina, and Kansas City. These large markets are only a few hours by truck or rail from the project area.

Branch lines of the Missouri Pacific and the Atchison, Topeka, and Santa Fe Railroads are conveniently located. Trucking operations utilize U. S. Highways 24, 183, and 281.



BUREAU OF RECLAMATION
NATIONAL OFFICE, WASHINGTON
REGIONAL OFFICE, DENVER
1600 SOUTH FEDERAL CENTER
DENVER, COLORADO

BENEFITS FROM DEVELOPMENT

Irrigation

The 6,500 acres of irrigable land in the unit are fertile and highly productive. Before irrigation, wheat was the main source of cash farm income. Under irrigation, principal crops are corn, alfalfa hay, and forage sorghums. The introduction of these crops permits the adoption of good soil and crop management practices. With a dependable feed supply available, raising and fattening cattle and hogs are becoming important sources of farm income.

The increased and more assured agricultural production tends to benefit community dwellers in the area as well as farmers. New wealth created by irrigation has pronounced effects on local trades and services and on mercantile enterprises. More prosperous conditions contribute to community welfare and result in a higher standard of living for all.



IRRIGATED ALFALFA FAY

Flood Control

A flood in July 1951, the largest on record at Webster, and numerous other floods over the years have destroyed crops, livestock and property. **WEBSTER RESERVOIR** can now control completely the largest floods of record and most of the flood water can be saved for irrigation. Flood damages estimated at \$667,000 are prevented annually.

BOATING



Recreation, Fish and Wildlife

WEBSTER RESERVOIR provides excellent opportunities for outdoor recreation. Favorite attractions are hunting, fishing, boating, swimming, water skiing, and picnicking. An estimated 126,000 people took advantage of these opportunities in 1958. Administration of all recreation areas and wildlife lands has been transferred to the **KANSAS FORESTRY, FISH AND GAME COMMISSION**. Additional recreation and wildlife improvements will be made by the Commission as needed.



U. S. DEPARTMENT OF THE INTERIOR, BUREAU OF RECLAMATION, REGION 7, DENVER, COLORADO



THE UNIT PLAN

Unit features include *Webster Dam* and *Reservoir*, *Woodston Diversion Dam*, *Osborne Canal*, four small *project pumps*, and a *lateral system*.

WEBSTER DAM is on the South Fork of the Solomon River about eight miles west of Stockton, Kansas. The rolled earthfill dam rises 107 feet above the streambed and 134 feet above the lowest foundation point. About 8,145,000 cubic yards of earth embankment and rock facing and over 45,000 cubic yards of concrete were used in construction of the dam, spillway, and outlet works.

The concrete spillway on the left abutment is controlled by three large radial gates and has a maximum capacity of 138,000 cubic feet of water per second. Gated outlet works through the base of the dam are used to release water to the stream for downstream requirements and for diversion into the *Osborne Canal* at *Woodston Diversion Dam*.

Initial capacity of **WEBSTER RESERVOIR** is 260,700 acre-feet—64,000 for irrigation, 193,600 for flood control, and 2,700 for dead storage.

WOODSTON DIVERSION DAM is on the South Fork of the Solomon River about 20 miles downstream from *Webster Dam*. The dam diverts irrigation water to the *Osborne Canal* and consists of an uncontrolled concrete overflow spillway section, a gated sluiceway, a canal headworks structure, and earth dikes.

The **OSBORNE CANAL** originates at the headworks of the *Woodston Diversion Dam* and extends eastward on the north side of the river. The canal and its lateral system serves 7,307 acres by gravity and 1,183 acres by pumping.

Four *laterals*, supplied by three *pumping plants* along the first seven miles of the *Osborne Canal*, serve project lands which cannot be irrigated by gravity systems. These laterals total 6.3 miles in length. An additional 24.2 miles of *laterals* provide gravity delivery of irrigation water to individual farm units. *Subsurface* and *farm outlet drains* will be constructed as the need develops.

Other Developments

The **SOLOMON DIVISION** of the **MISSOURI RIVER BASIN PROJECT** encompasses the entire drainage area of the Solomon River. The other existing development of the Division is the **KIRWIN UNIT** on the North Fork of the Solomon River. Principal features of that unit are *Kirwin Dam* and *Reservoir*, *Kirwin Main*, *North*, and *South Canals*, and a *lateral system*. The **GLEN ELDER UNIT** is authorized for future construction on the main stem of the Solomon River and will include *Glen Elder Reservoir* and a *distribution system* to serve unit lands.



WOODSTON DIVERSION DAM

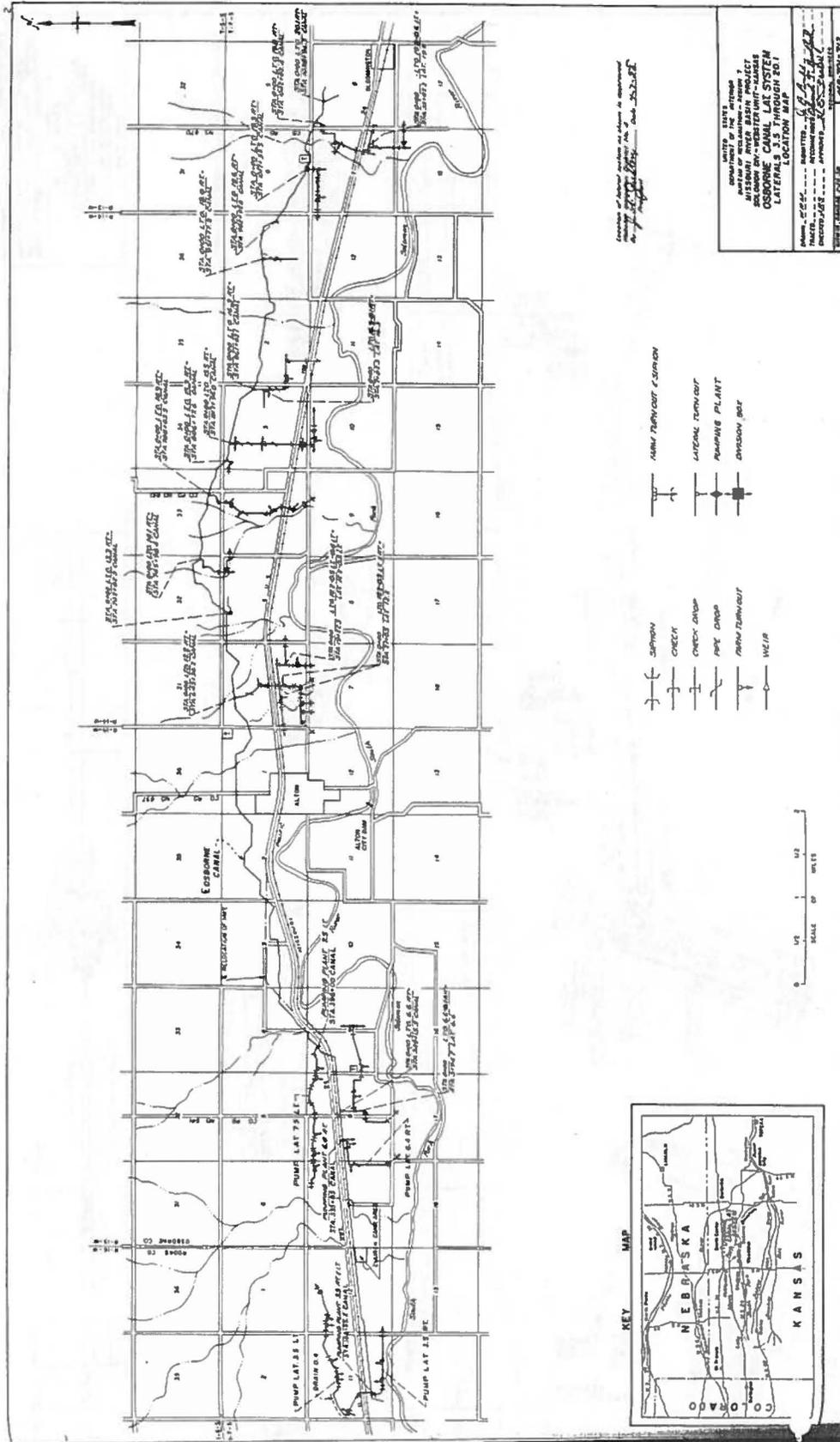
Plan of Operation

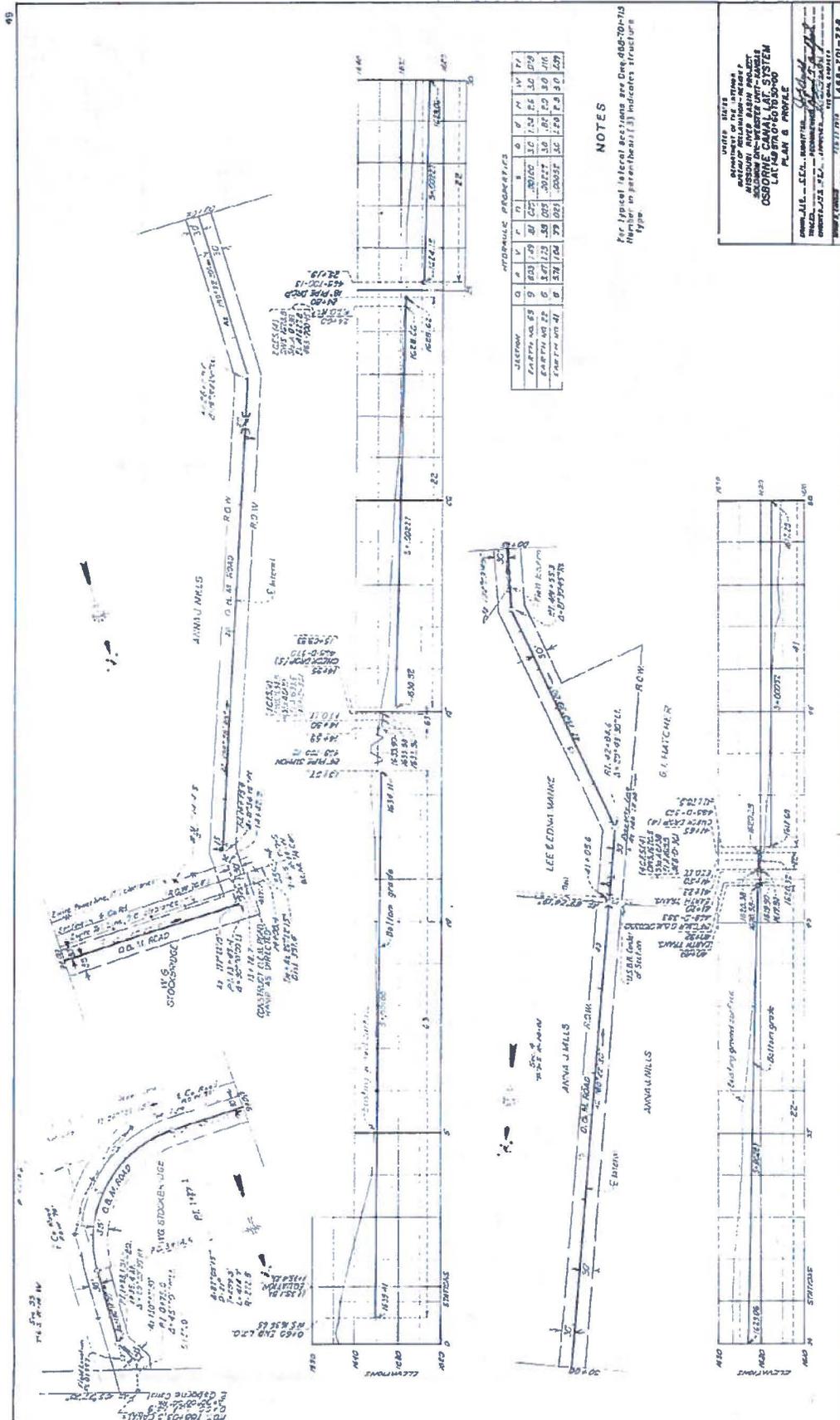
Webster Dam and *Reservoir* are operated and maintained by the Bureau of Reclamation. Operation of the reservoir is coordinated with that of others in the Kansas River Basin. The Corps of Engineers furnishes data and operational procedures for regulation of water in the flood control pool.

It is intended that operation and maintenance of the irrigation system will become the responsibility of the irrigation district at the beginning of the development period. The *Webster* and *Kirwin* Irrigation Districts have agreed to operate and maintain their irrigation works under a joint management and cost sharing plan. This will reduce costs to the water users.

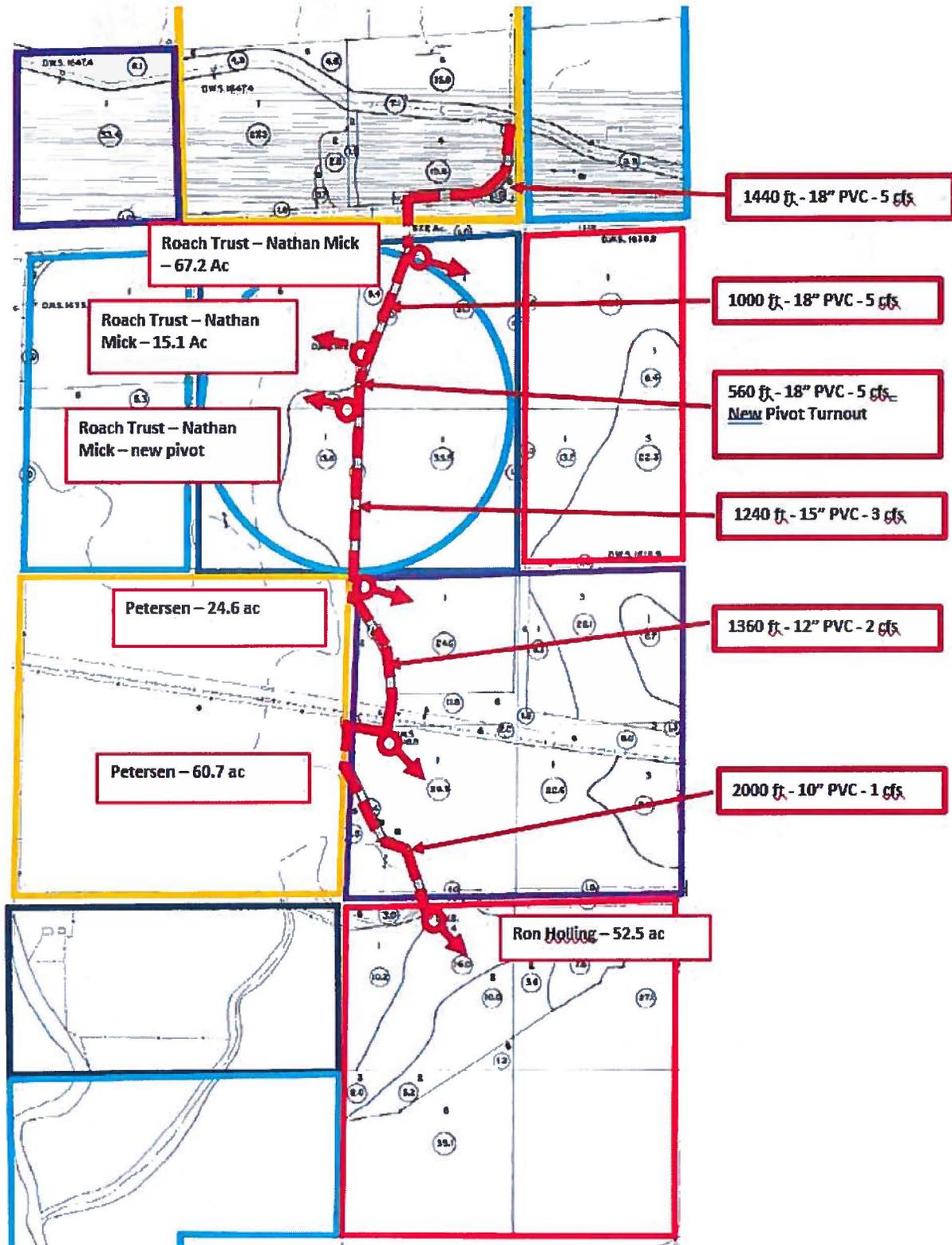
PROJECT DATA

WEBSTER DAM AND RESERVOIR			WOODSTON DIVERSION DAM				
Type	Dam	Earthfill	Hydraulic Height (ft.)		14		
crest elevation (ft.)	1,744		Length at Head (ft.)		151		
Height of Embankment (ft.)	107		Length of Dam (ft.)		2,140		
Hydraulic Height (ft.)	66.7		Deaths (44)		191		
Length of Crest (ft.)	10,720		PUMPING PLANTS				
Width of Crest (ft.)	30		Pumpage Plant	No. of Units	Capacity (cfs)	Total Head (ft.)	Total Horsepower
Basin Width (ft.)	940		1.5 East	2	4.8 3	16	60
Reservoir			4.4 Right	2	4.8 3	11	15
Normal Water Surface Elev. (ft.)	1899.4		7.5 Left	2	4.8 3	42	85
Normal Storage, Initial (Ac. Ft.)	67,800		DISTRIBUTION AND DRAINAGE SYSTEMS				
Normal Surface Area (Square Miles)	1,645		Canal	Length (Miles)	Initial Capacity (Ac.)	Acres Served	
Normal Shore Line (Miles)	27		Osborne Canal	33.1	181	1,999	
Flood Storage (Ac. Ft.)	192,600		Lateral (Pump)	6.3	4 to 12	1,192	
(At base normal storage)	260,700		Lateral (Gravity)	24.2	4 to 11	5,708	
Total Controlled Storage (Ac. Ft.)			Drains			To be constructed as required	
Spillway and Outlet Works			Subsurface	22.9			
Spillway Type	Gated		Farm Outlet	4.6			
Spillway Capacity (cfs)	138,000						
Spillway Crest Elevation (ft.)	1899.4						
Outlet Works Type	Gated Concrete						





Osborne Lateral 14.9 Pipe Project





**AN ARCHAEOLOGICAL PEDESTRIAN SURVEY OF OPEN DITCH
LATERALS WITHIN THE KIRWIN AND WEBSTER IRRIGATION
DISTRICTS, KIRWIN AND WEBSTER UNITS, SOLOMON DIVISION,
PICK-SLOAN MISSOURI RIVER BASIN PROJECT, BUREAU OF
RECLAMATION, IN PHILLIPS, SMITH, OSBORNE, AND ROOKS
COUNTIES, KANSAS**

Reclamation Contract No. R10PX60203

Prepared For:

**Bureau of Reclamation
Nebraska-Kansas Area Office
P.O. Box 1607 (NK-310)
Grand Island, Nebraska 68802-1607
(308) 389-5320**

Prepared By:

**Cultural Resources, Inc.
3213 West Main Street #249
Rapid City, South Dakota 57702-2314**

January 2011



**AN ARCHAEOLOGICAL PEDESTRIAN SURVEY OF OPEN DITCH
LATERALS WITHIN THE KIRWIN AND WEBSTER IRRIGATION
DISTRICTS, KIRWIN AND WEBSTER UNITS, SOLOMON DIVISION,
PICK-SLOAN MISSOURI RIVER BASIN PROJECT, BUREAU OF
RECLAMATION, IN PHILLIPS, SMITH, OSBORNE, AND ROOKS
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Grand Island, Nebraska 68802-1607
(308) 389-5320**

Prepared By:

**Cultural Resources, Inc.
3213 West Main Street #249
Rapid City, South Dakota 57702-2314**

January 2011

CRI Project No. 1484

January 4, 2011

**AN ARCHAEOLOGICAL PEDESTRIAN SURVEY OF OPEN DITCH
LATERALS WITHIN THE KIRWIN AND WEBSTER IRRIGATION
DISTRICTS, KIRWIN AND WEBSTER UNITS, SOLOMON
DIVISION, PICK-SLOAN MISSOURI RIVER BASIN PROJECT,
BUREAU OF RECLAMATION, IN PHILLIPS, SMITH, OSBORNE,
AND ROOKS COUNTIES, KANSAS**

BOR Contract No. R10PX60203

Prepared For:

**Bureau of Reclamation
Nebraska-Kansas Area Office
P.O. Box 1607 (NK-310)
Grand Island, Nebraska 68802-1607
(308) 389-5320**

Prepared By:

**Aimee J. Leithoff
*Principal Investigator***

**Cultural Resources, Inc.
3213 West Main Street #249
Rapid City, South Dakota 57702-2314
757-813-0344**

ABSTRACT

From October 4 through October 8, 2010, Cultural Resources, Inc. (CRI) conducted a cultural resources survey of the Bureau of Reclamation (Reclamation) Kirwin and Webster Irrigation District open ditch laterals, under Reclamation Contract No. R10PX60203. This project entails the replacement of open ditch lateral with buried pipe off the Kirwin Main, Kirwin South, Kirwin North and Osborne Canals in Philips, Smith Osborne and Rooks counties, Kansas. Laterals ranged in length from approximately 300 feet to over 12,000 feet in length. The width of the project Area of Potential Effect (APE) was limited to 15 to 23 meters (50 to 75 foot) BOR lease easement for the laterals and the archaeological survey was limited to the 15-23 meter APE. CRI designed the survey methods to provide BOR with definitive information on the presence and type of cultural resources located within the project APE and to assess the potential for further investigation of any identified sites.

The archaeological field work included pedestrian reconnaissance of the proposed APE, in an effort to identify surface and subsurface cultural resources and to document the level of integrity and prior disturbances. Two transects were walked one on each side of the open ditch lateral at 15 meter spacing. Surface visibility ranged from 60% to 100% and the project area consisted of two track dirt road, gravel section roads, plowed, disked and planted agricultural fields, and old Railroad beds. In a few instances either old railroad bed or pasture land occupied one side of the lateral and surface visibility was less than 50%, in these instances the centerline of the lateral was walked allowing for 85% to 100% visibility. When archaeological sites were identified 10 meter transects were walked across the site to establish site boundaries.

Results of the Archaeological Survey

There are no previously identified archaeological sites within the APE. Archaeologists surveyed a total of 234.8 acres within the proposed APE. Two archaeological sites (14OB107 and 14OB108) and a standing structure (141-129) were identified during the survey. Site 14OB107 is an Alibates Archaic or Early Ceramic period projectile point located within the open ditch lateral. No additional cultural material was documented within the lateral or the adjacent agricultural fields and it is likely the point was washed down the lateral, and due to a low research potential associated with a single point, and a lack of cultural features or layers CRI recommends the site not eligible for listing under Criterion D of the NRHP and no further work is recommended. Criterion A, B and C were considered not applicable. The site will be buried by the proposed buried pipeline. Site 14OB108 is a 20th century trash scatter located in a road cut between two agricultural fields and the edge of the lateral. A diffuse scatter of ceramic, glass, and metal artifacts were located in the road cut with no additional artifacts in either agricultural field. Due to a lack of research potential associated with a 20th century trash scatter and a lack of features or cultural layers CRI recommends the site not eligible for listing on the NRHP under Criterion D and no further work is recommended. Criterion A, B and C were considered not applicable. The site will not be impacted by the proposed buried pipeline. The standing structure 141-129 is a limestone historical marker that was erected in 1938. The marker is on the edge of the Reclamation easement however will not be impacted by the proposed buried pipeline and therefore no further work is recommended.

IX. PROPOSALS TO AVOID, MIMIMIZE, TEST OR MITIGATE

Two archaeological sites and one standing structure were recorded as part of the archaeological survey of approximately 234.8 acres of open ditch lateral within the Kirwin and Webster Irrigation Districts. Site 14OB108 and standing structure 141-129 will not be impacted by the proposed replacement of open ditch laterals with buried pipe. Site 14OB107 is an isolated projectile point on the floor of the open ditch lateral and as such this location will be buried by the proposed replacement of open ditch laterals with buried pipe. The artifact was collected and the location documented with GPS. As no further evidence of cultural material was identified within the lateral or the adjacent agricultural fields it is likely that the projectile point was washed down the lateral and no further information is to be gained from this site. *Therefore CRI recommends no further work for sites 14OB107, 14OB108, and 141-129.*

Conclusions of the Archaeological Survey

From October 4 through October 8, 2010, CRI conducted a cultural resources survey of the Reclamation Kirwin and Webster Irrigation District open ditch laterals, under Reclamation Contract No. R10PX60203. This project entails the replacement of open ditch lateral with buried pipe off the Kirwin Main, Kirwin South, Kirwin North and Osborne Canals in Philips, Smith Osborne and Rooks Counties, Kansas. Laterals ranged in length from approximately 300 feet to over 12,000 feet in length. The width of the project Area of Potential Effect (APE) was limited to 15 to 23 meters (50 to 75 foot) BOR lease easement for the laterals and the archaeological survey was limited to the 15-23 meter APE. CRI designed the survey methods to provide BOR with definitive information on the presence and type of cultural resources located within the project APE and to assess the potential for further investigation of any identified sites.

The archaeological field work included pedestrian reconnaissance of the proposed APE, in an effort to identify surface and subsurface cultural resources and to document the level of integrity and prior disturbances. Two transects were walked one on each side of the open ditch lateral at 15 meter spacing. Surface visibility ranged from 60% to 100% and the project area consisted of two track dirt road, gravel section roads, plowed, disked and planted agricultural fields, and old Railroad beds. In a few instances either old railroad bed or pasture land occupied one side of the lateral and surface visibility was less than 50%, in these instances the centerline of the lateral was walked allowing for 85% to 100% visibility. When archaeological sites were identified 10 meter transects were walked across the site to establish site boundaries.

There are no previously identified archaeological sites within the APE. Archaeologists surveyed a total of 234.8 acres within the proposed APE. Two archaeological sites (14OB107 and 14OB108) and a standing structure (141-129) were identified during the survey. Site 14OB107 is an Alibates Archaic or Early Ceramic period projectile point located within the open ditch lateral. No additional cultural material was documented within the lateral or the adjacent agricultural fields. It is likely the point was washed down the lateral and does not represent an intact archaeological find. CRI recommends

the site not eligible for listing on the NRHP under Criterion D. Criterion A, B and C were considered not applicable. The site will be buried by the proposed buried pipeline, however due to the limited nature of the find no further work is recommended. Site 14OB108 is a 20th century trash scatter located in a road cut between two agricultural fields and the edge of the lateral. A diffuse scatter of ceramic, glass, and metal artifacts were located in the road cut. No additional artifacts were identified in either agricultural field. Due to a lack of research potential associated with a 20th century trash scatter and a lack of features or cultural layers CRI recommends the site not eligible for listing on the NRHP under Criterion D and no further work is recommended. Criterion A, B and C were considered not applicable. The site will not be impacted by the proposed buried pipeline. The standing structure 141-129 is a limestone historical marker that was erected in 1938. The marker is on the edge of the Reclamation easement however will not be impacted by the proposed buried pipeline. No further work is recommended.

The table below summarizes the recommendations.

Table 4. Summary of Cultural Resources Identified During the Survey with Recommendations				
County	Resource #	Resource Date	Resource Type	Recommendation
Osborne	14OB107	Archaic/Early Ceramic	Alibates Point	Not Eligible, No Further Work
Osborne	14OB108	20 th Century	Trash Scatter	Not Eligible, No Further Work
Osborne	141-129	1938	Historical Marker	No Further Work

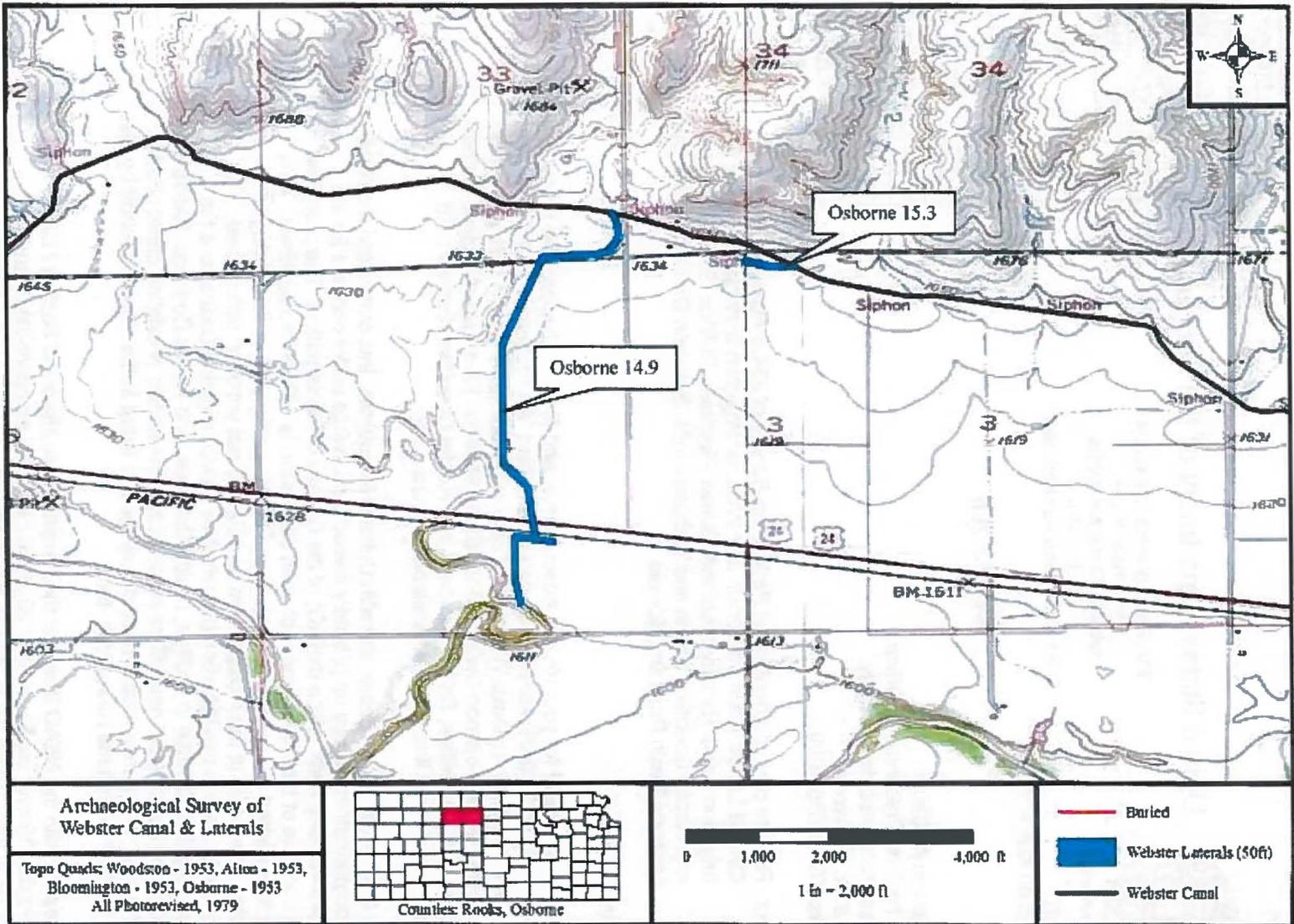


Figure 35. Detail of *Alton, KS* 1953 (Photorevised 1979) and *Bloomington, KS* 1953 (Photorevised 1979) USGS 7.5 minute series Quadrangles Depicting the Osborne lateral 14.9 and Osborne lateral 15.3 Project Area; T6S & 7S; R14W.

Subject: Results of an Archeological Pedestrian Survey

2

The areas involved, 234.8 acres in total, received a 100% cultural resource survey using parallel transects placed at no more than 15 meter intervals, with visibility ranging from 60-100%. All survey areas were located along existing ditches or canals and/or agricultural fields that have experienced heavy disturbance from previous modern agricultural activities.

Two archeological sites (14OB107 and 14OB108) and a standing structure (141-129) were identified during the survey. Site 14OB107 consists of an isolated find, an Alibates Archaic or Early Ceramic period projectile point located in secondary deposition on the floor of an open ditch lateral. No additional cultural material was documented within the lateral or the adjacent agricultural fields. It is likely that the point was washed down the lateral. Due to the low research potential associated with a single point, and the lack of cultural features, it is recommended that site 14OB107 is not eligible for listing on the National Register of Historic Places (NRHP) and no further work is recommended. Site 14OB108 consists of a 20th century trash scatter located in a road cut between two agricultural fields and the edge of an open ditch lateral. The site contains ceramic, glass, and metal artifacts and is located in the road cut with no additional artifacts in either agricultural field. Due to the lack of research potential associated with a 20th century trash scatter and the lack of features or cultural layers, it is recommended that site 14OB108 is not eligible for listing on the NRHP and no further work is recommended. The standing structure (141-129) consists of a limestone historical marker that was erected in 1938. The marker is on the edge of a Reclamation easement; however, it will not be impacted by the proposed buried pipeline project and, therefore, no further work is recommended.

Because neither site (14OB107 or 14OB108) appears to be potentially eligible for the NRHP, and because the standing structure (141-129) will be avoided during construction, a finding of no historic properties affected is proposed for this project. It is recommended that no further cultural resource survey or testing be required and that the proposed project proceed as planned.

If you have any questions or comments, please contact me at the above address or by phone at 308-389-5320. Thank you.

Sincerely,

BILL R. CHADA

Bill R. Chada
Area Archeologist

Enclosure - w/ AKAD Archeology Division

WBR:BChada:acarison:03/01/2011:308-389-5320
Leithoff 2010a 030111

KSR&C No. 11-03-231

6425 SW 6th Avenue
 Topeka, KS 66615

RECEIVED
 BUREAU OF RECLAMATION



phone: 785-272-8681
 fax: 785-272-8682
 email@kshs.org

2011 MAR 17 10:10 AM
 Kansas Historical Society
 NEBRASKA-KANSAS AREA OFFICE
 GRAND ISLAND, NEBRASKA

March 14, 2011

Bill R. Chada
 Area Archeologist
 Bureau of Reclamation
 Nebraska-Kansas Area Office
 P.O. Box 1607
 Grand Island, Nebraska 68802-1607

Dear Mr. Chada:

In accordance with 36 CFR 800, the Kansas State Historic Preservation Office has reviewed a final report entitled *Results of an Archeological Pedestrian Survey of 234.8 Acres of Privately Owned Lands within the Kirwin and Webster Irrigation Districts Proposed for Irrigation Canal Replacement with Buried Pipelines, Phillips, Smith, Osborne, and Rooks Counties, Kirwin and Webster Units, Solomon Division, Pick-Sloan Missouri Basin Program, Kansas*, by Aimee J. Leithoff of Cultural Resources, Inc. We find the report to be acceptable and concur with its recommendations that archeological sites 14OB107 and 14OB108 are not eligible for listing in the National Register of Historic Places. We further concur that since the historic marker (standing structure 141-129) is outside of the project area and will not be affected by construction, no further investigation will be necessary. Finally, our office concurs with the conclusion that the proposed project will have no effect on historic properties as defined in 36 CFR 800. We have no objection to the canal/buried pipeline conversion.

This information is provided at your request to assist you in identifying historic properties, as specified in 36 CFR 800 for Section 106 consultation procedures. If you have questions or need additional information regarding these comments, please contact Tim Weston at 785-272-8681 (ext. 214).

Sincerely,

Jennie Chinn, Executive Director and
 State Historic Preservation Officer

Patrick Zollner
 Deputy SHPO

San Brownback, Governor Jennie Chinn, Executive Director			
Route To	Initial	Date	Action
Esplin	BE	3/17	
Chada	erouted		
Remarks			
Classification: ENV-3.00			
Project: 3437 GF			
Control No: 11021368			
Folder ID: 1018995			

LANDOWNER FUNDING COMMITMENT

Webster Irrigation District No. 4
P.O. Box 660
304 First Street
Gaylord, Kansas 67638
785-697-2273
widkid@ruraltel.net

July 11, 2018

Agreement on the Cost of Construction on Webster Lateral 14.9

Total Cost: \$26,600 Bid good through May 31, 2019

Monies payable to Webster Irrigation District No. 4
Webster Irrigation District will reimburse Schamp Construction \$26,600
after completion of project.

Nathan Mick 67 Acres \$120.36 per acre \$8,064.12
Sign Nathan Mick

Nathan Mick 15 Acres \$120.36 per acre \$1,805.40
Sign Nathan Mick

Petersen Trust %Farmers National Company
25 Acres \$120.36 per acre \$3,009.00
Sign John Petersen 7/15/18

Petersen Trust % Farmers National Company
61 Acres \$120.36 per acre \$7,341.96
Sign John Petersen 8/15/18

Ronald Holling 53 Acres \$120.36 per acre \$6,379.08
Sign Ronald Holling

Schamp Construction
Contractor Sign Paul Schamp

Andy Wilson
District Manager Sign Andy Wilson

Osborne Lateral 14.9

Landowner Commitment Letter

On-Farm Improvement

Webster Irrigation District No. 4
304 First Street
Gaylord, Kansas 67638

I currently own land served by Osborne Lateral 14.9. My land is located in the E 1/2 of the NW 1/4 and the W 1/2 of the NE 1/4 of Section 4, Township 7 South, Range 14 West. Osborne Lateral 14.9 splits this property in two pieces and these two tracts are served by two turnouts, one on the west side of the lateral and one on the right side of the lateral. If this lateral was placed in pipe, it will allow me to install a center pivot that would cover both of these tracts of land with one turnout. This would raise on-farm irrigation efficiency by an estimated 45% (open ditch at 40% to center pivot at 85%).

If Osborne Lateral 14.9 is converted to buried pipe, I plan on installing center pivot to serve the lands in the E 1/2 of the NW 1/4 and the W 1/2 of the NE 1/4 of Section 4, Township 7 South, Range 14 West.

Nathan E. Wick



**NORTHWEST KANSAS
GROUNDWATER MANAGEMENT
DISTRICT NO. 4**

1290 West 4th Street
P.O. Box 905
Colby, Kansas 67701-0905

June 20, 2018

Webster Irrigation District No. 4
304 First Street
P.O. Box 660
Gaylord, Kansas 67638

RE: FOA BOR-DO-009, WaterSMART Grants: Small-Scale Efficiency Projects for FY 2018

WID Board of Directors:

This letter is in support of your application for a Federal Grant to replace an open ditch lateral with underground pipe. I know from experience that this will greatly decrease water loss, and will increase efficiency of the system.

While this project does not directly impact groundwater in NW Kansas, we realize that efficiency improvements in irrigation districts serviced by reservoirs that have their headwaters with the boundaries of GMD #4 can, and should, reduce water demands on those reservoirs. The reduced demand can help in the over-all water balance of the region.

We feel that this is a worthwhile project, and do support your grant request.

Sincerely,

Ray P. Luhman
Manager
GMD #4

RESOLUTION
WaterSMART
Small-Scale Water Efficiency Projects for Fiscal Year 2018

WHEREAS, the Webster Irrigation District No. 4 (District) is applying with the United States Department of the Interior, Bureau of Reclamation for grant financial assistance through the WaterSMART (Sustain and Manage America's Resources for Tomorrow) program, Small Scale Water Efficiency Projects for Fiscal Year 2018, Funding Opportunity No. BOR-DO-18-009; and,

WHEREAS, Andrew Wilson, General Manager of the District, has reviewed the application and is hereby authorized to submit an application and enter into agreement on behalf of the District for the WaterSMART: Small-Scale Water Efficiency Projects for Fiscal Year 2018; and,

WHEREAS, the District Board of Directors support the application submitted; and,

WHEREAS, The District has sufficient funds in its Public Fund to satisfy its portion of the cost share as specified in the funding plan; and,

WHEREAS, the District is committed to cooperate with the United States Department of the Interior, Bureau of Reclamation to meet established deadlines for entering into cooperative agreements.

NOW, THEREFORE, BE IT RESOLVED that the Webster Irrigation District No. 4 prays it is awarded the WaterSMART: Small-Scale Water Efficiency Projects for Fiscal Year 2018 Grant and is fully committed to replace open ditch Osborne Lateral 14.9 with buried pipe as expeditiously as possible to conserve energy, conserve water, increase water measurement accuracy, and to help increase future water supplies for agricultural, recreational, and environmental purposes.

Passed and adopted this 5th day of July, 2018.

WEBSTER IRRIGATION DISTRICT NO. 4



Lance Kendig, Board President



Ronald Holling, Board Secretary