

ORIGINAL

MEMORANDUM OF AGREEMENT
BETWEEN THE
BOSTWICK IRRIGATION DISTRICT IN NEBRASKA
AND
KANSAS-BOSTWICK IRRIGATION DISTRICT NO. 2

This AGREEMENT made this 4th day of October, 2000, by and between Kansas-Bostwick Irrigation District No. 2, party of the first part, and the Bostwick Irrigation District in Nebraska, party of the second part.

BACKGROUND:

1. The Kansas-Bostwick Irrigation District No. 2 is a duly organized irrigation district organized under the laws of the State of Kansas and operating under contract with the Bureau of Reclamation, Department of the Interior, and
2. The Bostwick Irrigation District in Nebraska is an irrigation district operating in Harlan, Franklin, Webster and Nuckolls Counties of the State of Nebraska and operating under a contract with the Bureau of Reclamation, Department of the Interior, and
3. There is situated on the Republican River in Webster County of the State of Nebraska, a diversion dam that is known as the Superior-Courtland Diversion Dam, and
4. The portion of the Courtland Canal and associated surface drains located in Webster and Nuckolls Counties in the State of Nebraska, herein designated as Courtland Canal in Nebraska, is used by both parties for transportation of irrigation waters for later use on their respective lands, and
5. Certain subsurface drains have been built in Nebraska and for the purposes of this agreement are considered a part of the water supply works that serves both parties, and
6. Both of the aforementioned parties have agreed to contract terms with the United States acting through the Bureau of Reclamation (Reclamation) that will become effective January 1, 2001, and
7. Both parties have agreed to assume certain operation, maintenance and replacement activities associated with their respective irrigation districts, and
8. The contract terms becoming effective January 1, 2001 provide for operation, maintenance and replacement of the aforementioned Superior-Courtland Diversion Dam, any drains or portions of drains constructed in Nebraska as part of the Courtland Canal water supply works, and the Courtland Canal in Nebraska by one of the parties, and

9. There are certain operation, maintenance and replacement costs associated with the Superior-Courtland Diversion Dam, the drains or portions of drains constructed in Nebraska as part of the Courtland Canal water supply works, and the Courtland Canal in Nebraska, and the parties hereto desire to enter into an agreement for the operation, maintenance and replacement of these facilities and an apportionment of the costs associated with these activities, and

10. There are designated irrigation costs incurred by the Corps of Engineers in the operation, maintenance and replacement of Harlan County Dam and Harlan County Lake and the parties desire to describe the apportionment and payment of those costs, and

11. The District Operating Plans associated with the contracts becoming effective January 1, 2001 provide for certain operating criteria for Harlan County Dam and Harlan County Lake and Lovewell Dam and Reservoir, and

12. The parties desire to annually apportion the available water supply of the Bostwick Division so that a certain amount of water in Harlan County Lake is designated for each party's use, and

AGREEMENT

NOW, THEREFORE, it is agreed by and between the parties hereto as follows:

1. To the procedures for operation, maintenance and replacement of Superior-Courtland Diversion Dam, all the drains or portions of drains constructed in Nebraska as part of the Courtland Canal water supply works, and the Courtland Canal in Nebraska as follows:
 - A. Kansas-Bostwick Irrigation District No. 2 will operate, maintain and replace these facilities and Bostwick Irrigation District in Nebraska in consideration thereof will bear a percentage of the costs associated with such activities, and
 - B. For purposes of this agreement, the "all the drains or portions of drains constructed in Nebraska as part of the Courtland Canal water supply works" shall include, but is not limited to:

Subsurface Drain 34-1-7
 Subsurface Drain 34-1-7C
 Subsurface Drain 33-1-7
 Subsurface Drain 33-1-7C
 Subsurface Drain 9-1-9
 Subsurface Drain 13-1-9, and

- C. The Bostwick Irrigation District in Nebraska shall reimburse the Kansas Bostwick Irrigation District No. 2 ten(10) percent of the operation, maintenance and replacement costs incurred by the Kansas-Bostwick Irrigation District No. 2 in performing the operation, maintenance and replacement of the Superior-Courtland Diversion Dam, Courtland Canal in Nebraska and the drains referenced in Article 1.B above. These costs include the following: all costs of electricity, personnel and equipment costs associated with operation and maintenance of the diversion dam, canal headgates and river sluice gates, maintenance of the house, operation and maintenance of Willow Creek Drain, etc., and
- D. Bostwick Irrigation District in Nebraska will furnish the changes in demand for Courtland Canal in Nebraska, Superior Canal and Franklin Pump Canal at least 2 days in advance of usage to the Kansas-Bostwick Irrigation District No. 2 and Kansas Bostwick Irrigation District No. 2 will furnish these values and the values of Kansas Bostwick Irrigation District No. 2 usage above Lovewell Reservoir to Reclamation, and
- E. The Bostwick Irrigation District in Nebraska will assist, if necessary, in maintenance and replacement with its personnel and equipment where practical at rates mutually agreed upon, and
- F. Special expenses such as judgements, damage claims, and individual causes of action should be borne by each party on the same basis as the operation, maintenance and replacement expenses, and
- G. The accounts associated with these activities shall be settled at the end of each year, and
2. To the allocation and payment of irrigation's share of the Corps of Engineers' operation, maintenance and replacement costs associated with Harlan County Dam and Harlan County Lake based on the most recent three-year moving average of each District's total diversions as established by Reclamation. (See the spreadsheet attached hereto and made a part hereof as Attachment A for prior year computations and procedure for computing individual District percentages.) and,
3. To the apportionment of the Bostwick Division water supply on an annual basis as follows and further described in Attachment B and by this reference made a part hereof:
- A. The annual apportionment will provide for a designated storage space in Harlan County Lake for each party and will be accomplished by Reclamation following a procedure that is outlined in Attachment B, and

- B. A day to day accounting of the storage accounts in Harlan County Lake will be accomplished by Reclamation, and
- C. Day to day calculation of releases, losses, pickup and usage will be made as necessary by Reclamation to determine proper accounting of waters at the Superior-Courtland Diversion Dam and the Courtland Canal inflow station to Lovewell Reservoir, and
- D. The Bostwick Irrigation District in Nebraska will annually make written request to the State of Nebraska for the administration of natural streamflows for the benefit of the Bostwick Division water supply, and
- E. At the end of each month adjustments will be made to the storage accounts in Harlan County Lake as outlined in Attachment B, and
- F. Deliveries to the irrigators can be made as long as water is available in a party's account and the water can be put to beneficial use, and
- G. If one of the parties uses all of their available storage water from Harlan County Lake and irrigation demands continue and water remains available for irrigation release, it is solely the decision of the party with water remaining as to whether a release is made for the benefit of the party that has used its allocated supply, and
- H. An adjustment will be made if waters taken for seasoning of canals or for early irrigation (prior to June 1) keep Harlan County Lake or Lovewell Reservoir from reaching the target elevation for the year, and
- I. At the request of either party, the parties shall review "Attachment B" and by mutual agreement of the parties and with the approval of Reclamation may revise and modify the calculation procedures; in the absence of such mutual agreement, Reclamation will review each District's efforts to improve their operations and delivery systems and then determine what appropriate revision or modification of the calculation procedure, if any, is to be made; and
- J. It is understood that requirements of the Republican River Compact Administration or the pending court case may require modification of this apportionment, and

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COST DISTRIBUTION PERCENTAGES

ATTACHMENT A

Corps of Engineers
HARLAN COUNTY DAM

YEAR	BOSTWICK IN NEBRASKA			KANSAS-BOSTWICK No.2			TOTAL ANNUAL DIVERSIONS	3-YEAR TOTAL DIVERSIONS	Percentage Distribution		USE FOR YEAR
	(1) ANNUAL DIVERSIONS	3-YEAR TOTAL DIVERSIONS	(2) ANNUAL DIVERSIONS	3-YEAR TOTAL DIVERSIONS	KANSAS						
					NEBRASKA	KANSAS					
1972	48,713	-	50,701	-	99,414	-	-	-	-	-	-
1973	53,569	-	50,635	-	104,204	-	-	-	-	-	-
1974	56,204	158,486	89,726	181,462	336,330	359,948	46.6%	53.4%	46.6%	53.4%	-
1975	52,810	162,583	79,574	210,335	322,384	372,918	43.6%	56.4%	43.6%	56.4%	-
1976	66,885	175,899	110,406	270,106	448,005	448,005	39.4%	60.6%	39.4%	60.6%	-
1977	40,226	159,921	59,353	249,333	99,579	409,254	39.1%	60.9%	39.1%	60.9%	-
1978	50,356	157,467	71,009	240,768	121,865	398,235	39.5%	60.5%	39.5%	60.5%	-
1979	33,418	124,000	56,927	187,289	90,345	311,289	39.8%	60.2%	39.8%	60.2%	-
1980	56,360	139,134	83,490	211,426	138,850	390,660	39.7%	60.3%	39.7%	60.3%	-
1981	39,776	116,694	52,661	193,078	80,577	309,772	37.7%	62.3%	37.7%	62.3%	-
1982	52,238	123,052	66,436	202,587	106,212	325,639	37.8%	62.2%	37.8%	62.2%	1984
1983	58,875	119,930	83,964	203,061	136,202	322,991	37.1%	62.9%	37.1%	62.9%	1985
1984	51,553	150,889	84,092	234,492	142,967	385,381	39.2%	60.8%	39.2%	60.8%	1986
1985	58,665	162,666	60,331	228,387	111,884	391,053	41.6%	58.4%	41.6%	58.4%	1987
1986	47,181	169,093	69,133	213,556	127,798	382,649	44.2%	55.8%	44.2%	55.8%	1989
1987	62,285	157,399	67,334	196,798	114,515	354,197	44.4%	55.6%	44.4%	55.6%	1989
1988	41,837	168,134	66,267	226,674	152,495	394,898	42.8%	57.2%	42.8%	57.2%	1990
1989	48,740	158,209	68,414	225,955	117,154	384,164	41.2%	58.8%	41.2%	58.8%	1991
1990	39,993	162,865	80,989	239,530	122,748	392,895	39.0%	61.0%	39.0%	61.0%	1992
1991	25,471	130,570	64,110	213,433	104,103	344,003	38.0%	62.0%	38.0%	62.0%	1993
1992	17,718	197,301	29,323	165,342	45,794	272,643	39.4%	60.6%	39.4%	60.6%	1994
1993	55,207	83,182	30,542	114,975	48,260	198,157	42.0%	58.0%	42.0%	58.0%	1995
1994	62,291	98,396	71,277	122,742	126,484	220,538	44.6%	55.4%	44.6%	55.4%	1996
1995	45,764	135,216	80,129	181,948	142,420	317,164	42.6%	57.4%	42.6%	57.4%	1997
1996	53,121	164,262	71,942	233,348	136,706	387,610	42.4%	57.6%	42.4%	57.6%	1998
1997	53,121	162,176	74,549	226,620	127,670	388,796	41.7%	58.3%	41.7%	58.3%	1999
1998	53,122	153,097	75,376	223,661	128,492	374,868	40.8%	59.2%	40.8%	59.2%	2000
1999	55,797	162,040	80,163	230,082	135,960	392,122	41.3%	58.7%	41.3%	58.7%	2001
2000											2002

Data to fill in columns (1) and (3) can be found in Table 6 of AOP

ATTACHMENT B
Apportionment Calculations for Harlan County Lake

1. In cooperation with the Corps of Engineers and the appropriate state agencies, establish the target elevations for Harlan County Lake and Lovewell Reservoir.
2. Determine whether seasoning of canals or early irrigation deliveries influenced the attainment of the target elevation at Lovewell Reservoir and/or Harlan County Lake. If so, an adjustment will be necessary. It is understood that Superior-Courtland Diversion Dam and the Courtland Canal system may be used for diversion and carriage of waters during the non-irrigation season.
3. At the beginning of June calculate the shutoff content for Harlan County Lake and compute the water available for irrigation release. Compute the water available for irrigation release from Lovewell Reservoir. It is assumed that inflow will offset evaporation losses during the summer months at both reservoirs.
4. The following table is established to determine the storage or flows necessary to delivery 1 inch of water from the different sources to all of the lands under that canal:

Canal	Acres	Storage Req'd Harlan County (AF)	Storage Req'd Lovewell (AF)	Pickup Required at Div. Dam (AF)
Franklin	11262	2079		
Naponee	1628	237		
Franklin Pump	2106	299		
Superior	5972	1080		972
Courtland (NE)	1967	223		201
Total in Nebraska	22935	3918		
Upper Courtland (KS)	13378	2705		2440
Lower Courtland	29122	5975	4092	
Total in Kansas	42500	8680		

5. Determine the storage water available for irrigation release from Lovewell Reservoir and then determine the estimated inches of farm delivery for the Lower Courtland Canal using the values from the above table.
6. Estimate the length of irrigation season so that the delivery from pickup can be computed.

Deliveries of an inch of water each 6 to 7 days is anticipated. Using values from the above table and assuming 80 cfs available pickup compute the water supply from pickup for the lands served by Superior, Courtland (NE) and Upper Courtland(KS) canals.

7. Using the values from the above table determine the storage required by canal in Harlan County Lake so that the deliveries can be equal to the inches of delivery in Step 5.
8. Determine the remaining storage available for irrigation release and convert to inches of available irrigation water for all lands.
9. Calculate the total storage water in Harlan County Lake that is assigned to each District and adjust for use prior to June 1.
10. Day to day calculations of releases, losses, pickup and usage will be made as necessary by Reclamation to determine proper accounting of waters at Superior-Courtland Diversion Dam and the Courtland Canal inflow station to Lovewell Reservoir (34.8). Assumed losses and travel times from Harlan County Dam to Franklin Pump Diversion site 5% (1 day), and to Superior-Courtland Diversion Dam 10% (2 days). Assumed losses from and travel times from Superior-Courtland Diversion Dam to Courtland Canal State Line 12.3% (1 day) and from state line to Courtland Canal inflow station to Lovewell reservoir 13.2% (1 day).
11. At the end of each month several adjustments will be considered:
 - A. Adjust the computations to the official inflow, outflow and evaporation records.
 - B. Adjust for overuse or underuse of flows at the Superior-Courtland Diversion Dam. Also consider whether the overuse is available for use or used by the other party.
 - C. Adjust for pickup variation from 80 cfs at the diversion dam.
 - D. Adjust for inflows in excess of evaporation loss at Harlan County Lake and Lovewell Reservoir. For Lovewell Reservoir take into account whether canal inflows are bypassed to the Lower Courtland Canal.
12. If no storage releases are being made and Harlan County Lake and Lovewell Reservoir are at the target elevations, the water at the Superior-Courtland Diversion Dam will be apportioned according to the ratio of the values in the last column of the table in item 4. These values would be 32.5% for Bostwick Irrigation District in Nebraska and 67.5% for Kansas-Bostwick Irrigation District No. 2.
13. After the adjustments are made the new values will be input into the calculation process and the previous month storage accounting will be rerun as necessary.

DUPLICATE ORIGINAL (2 of 2)

AMENDMENT TO
MEMORANDUM OF AGREEMENT
BETWEEN THE
BOSTWICK IRRIGATION DISTRICT IN NEBRASKA
AND
KANSAS-BOSTWICK IRRIGATION DISTRICT NO. 2

This AMENDMENT to the MEMORANDUM OF AGREEMENT made this 5th day of March, 2002, by and between Kansas- Bostwick Irrigation District No. 2, party of the first part, and the Bostwick Irrigation District in Nebraska, party of the second part.

WITNESSETH:

WHEREAS, the following statements are made by way of explanation:

a. Kansas-Bostwick Irrigation District No. 2, party of the first part, and the Bostwick Irrigation District in Nebraska, party of the second part, during Board of Directors meetings for each of the respective Districts executed the "Memorandum of Agreement between the Bostwick Irrigation District in Nebraska and Kansas-Bostwick Irrigation District No. 2," copy of which is attached hereto.

b. The above referenced Memorandum of Agreement did not provide an appropriate description or reference to the water supply facilities covered by the Agreement for the operation, maintenance and replacement.

c. To provide a more accurate and comprehensive description of the water supply facilities covered by the Agreement, the "Memorandum of Agreement between the Bostwick Irrigation District in Nebraska and Kansas-Bostwick Irrigation District No. 2" is hereby amended as follows:

NOW, THEREFORE, in consideration of the premises and of the mutual covenants herein set out, it is agreed as follows:

1. Article 4 under the heading "BACKGROUND" is deleted in its entirety and replaced with the following:

4. The portion of the Courtland Canal located in Webster and Nuckolls Counties in the State of Nebraska, herein designated as Courtland Canal in Nebraska, is used by both parties for transportation of irrigation waters for later use on their respective lands, and

2. Article 5 under the heading "BACKGROUND" is deleted in its entirety and replaced with the following:

5. Certain subsurface and surface drains have been built in Nebraska as part of the Courtland Canal water supply works and for the purposes of this agreement are considered a part of the water supply works that serves both parties, and

3. Article 1, first paragraph, and Article 1.A and Article 1.B under the heading "AGREEMENT" are deleted in their entirety and replaced with the following:

1. The facilities covered by this agreement for operation, maintenance and replacement are mutually agreed by both parties to include Superior-Courtland Diversion Dam, the drains or portions of drains constructed in Nebraska as part of the Courtland Canal water supply works, and the Courtland Canal in Nebraska. It is mutually agreed between the parties that as of January 1, 2001, the facilities covered by this agreement are as shown in Exhibit 1, attached hereto and by this reference made a part hereof. If at any time the parties to this agreement cannot reach mutual agreement as to the inclusion of additional facilities and/or the exclusion of facilities as shown on said Exhibit 1, Reclamation will make the final determination as to the facilities that will be included in this agreement.

The parties hereto agree to the procedures for operation, maintenance and replacement of the included facilities as follows:

- A. Kansas-Bostwick Irrigation District No. 2 will operate, maintain and replace these facilities and Bostwick Irrigation District in Nebraska in consideration thereof will bear a percentage of the costs associated with such activities, and
- B. For purposes of this agreement, the subsurface drains or portions of subsurface drains constructed in Nebraska as part of the Courtland Canal water supply works shall include but is not limited to Subsurface Drain 34-1-7C, Subsurface Drain 33-1-7C, Subsurface Drain 33-1-7, Subsurface Drain 33-1-7-3C, Subsurface Drain 9-1-9, and Subsurface Drain 13-1-9, as shown on said Exhibit 1, and

4. Article 1.C under the heading "AGREEMENT," the reference to "Article 1.B" in the 5th and 6th lines is deleted and replaced with "Article 1."

