

## STATE OF NEBRASKA DEPARTMENT OF NATURAL RESOURCES

**PETITION TO THE NEBRASKA DEPARTMENT OF NATURAL RESOURCES  
FOR LEAVE TO FILE OR CONSIDER AN APPLICATION FOR A NEW  
SURFACE WATER APPROPRIATION WITHIN A MORATORIUM OR STAY AREA  
UNDER TITLE 457 N.A.C. CHAPTER 23**

Complete items 1 through 5 by printing in ink or typing the appropriate information and by placing an X in the appropriate box. Attach supporting documentation and a \$10 non-refundable filing fee.	For Department Use Only
<p>1. Name and address of petitioner:</p> <p>Farmers Irrigation District 1505 Second Avenue Scottsbluff, NE 69361-3113</p> <p>E-mail address: <u>kevin.adams@embarqmail.com</u> Telephone No. (308) 632-4921</p>	<p>Modification No.: VAR-6149 Date Filed: <u>March 14, 2017</u> Time Filed: <u>8:17 AM</u> SW Appropriation No.: _____ (if applicable) Right ID No.: _____ (if applicable) Water Division: <u>1-A</u> Receipt No.: <u>A-4898</u> Amount: <u>\$10.00</u></p>
<p>2. Check the situation that applies:</p> <p><input type="checkbox"/> Application Already Filed                      Application Number: _____</p> <p><input checked="" type="checkbox"/> Application Not Filed (Enclose copy of proposed application)</p>	
<p>3. Description of proposed project:</p> <p><u>Temporary appropriation to divert excess flows outside of irrigation season for groundwater recharge and stream baseflow enhancement.</u></p> <p><u>Farmers will divert up to 600 cfs at its headgate on the North Platte River, located in the NW1/4NE1/4 of Sec. 10, Twn 23 N, Rg 58 W,</u> <u>Scotts Bluff County)</u></p>	
<p>4. The Proposed Project — (Check all that apply):</p> <p><input type="checkbox"/> 001.01 — Is a non-consumptive use</p> <p><input type="checkbox"/> 001.02 — Will replace (offset) any consumptive use (Attach Offset Plan)</p> <p><input checked="" type="checkbox"/> 001.03 — Is for possible unappropriated water (Attach Analysis)</p> <p><input type="checkbox"/> 001.04 — Existed before the stay or moratorium (Attach Proof)</p> <p><input type="checkbox"/> 001.05 — Addresses a public safety issue (Attach Explanation)</p> <p><input type="checkbox"/> 001.06 — Is a temporary use for public construction (&lt;10 AF)</p>	
<p>5. Other reason why a variance should be granted:</p> <p><u>See attached supplemental information on anticipated excess flows and the benefits of recharge for reaching integrated management</u> <u>plan and PRRIP goals.</u></p> <p>_____</p> <p>_____</p>	
<p>March 3, 2017 _____ Date                                      Signature of Applicant (or authorized agent)</p>	

Send to the following address (along with \$10 non-refundable filing fee):

State of Nebraska  
Department of Natural Resources  
301 Centennial Mall South / PO Box 94676  
Lincoln, Nebraska 68509-4676  
(402) 471-2363

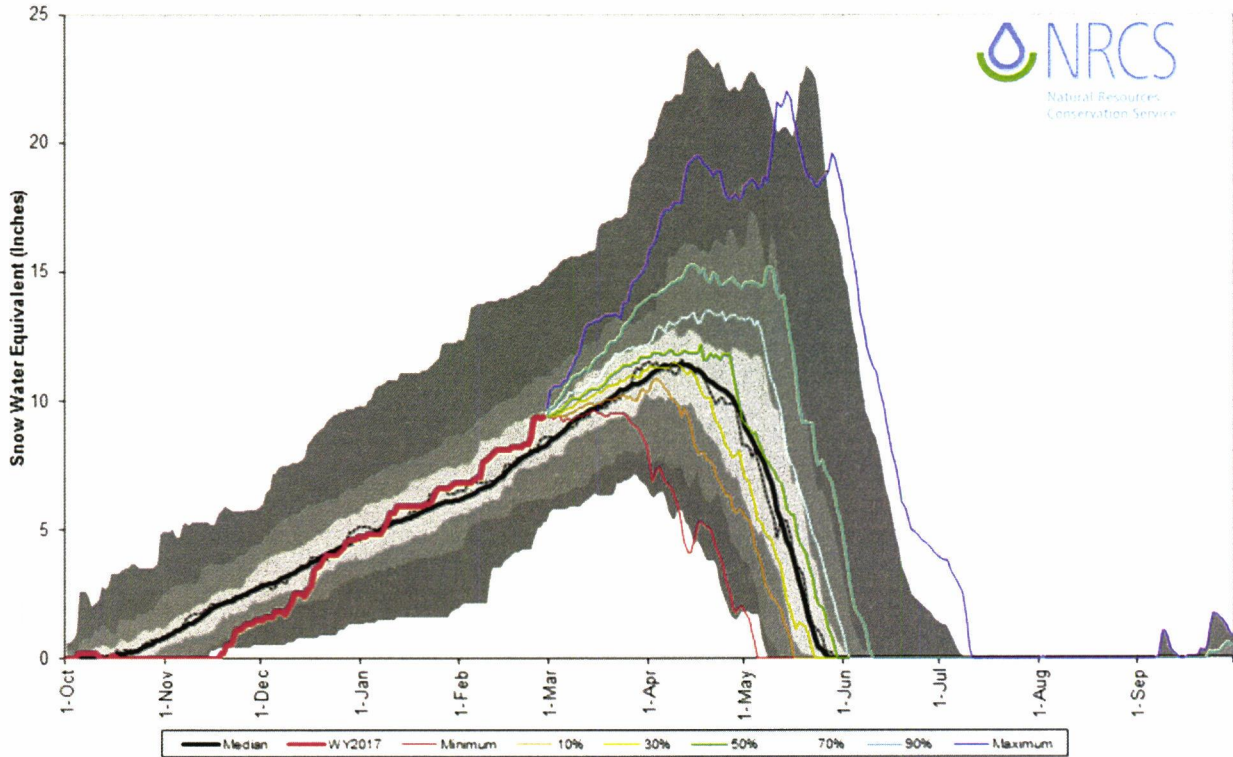
Mod- 0314 2017 - 6149 - pct : (26)

## Variance Petition Supplemental Information

Farmers Irrigation District (Petitioner) submits this variance petition, pursuant to Department Rules Title 457 N.A.C. 23, to request leave to file a temporary natural-flow appropriation for the purpose of diverting excess flows during the nonirrigation season. Petitioner desires to partner with the North Platte Natural Resources District (NRD) to divert excess flows into its main canal and allow such diverted water to seep through the canal perimeter and recharge the aquifer beneath the canal, less any spills back to the river or its tributaries that may occur during operation of the canal. Petitioner provides the following information in support of this variance petition, along with a copy of the draft application for a temporary appropriation; a copy of the five-year agreement which the Petitioner and the North Platte Natural Resources District have executed to take advantage of excess flows when available; and a copy of the executed Task Order for anticipated Spring 2017 excess-flow diversion opportunities.

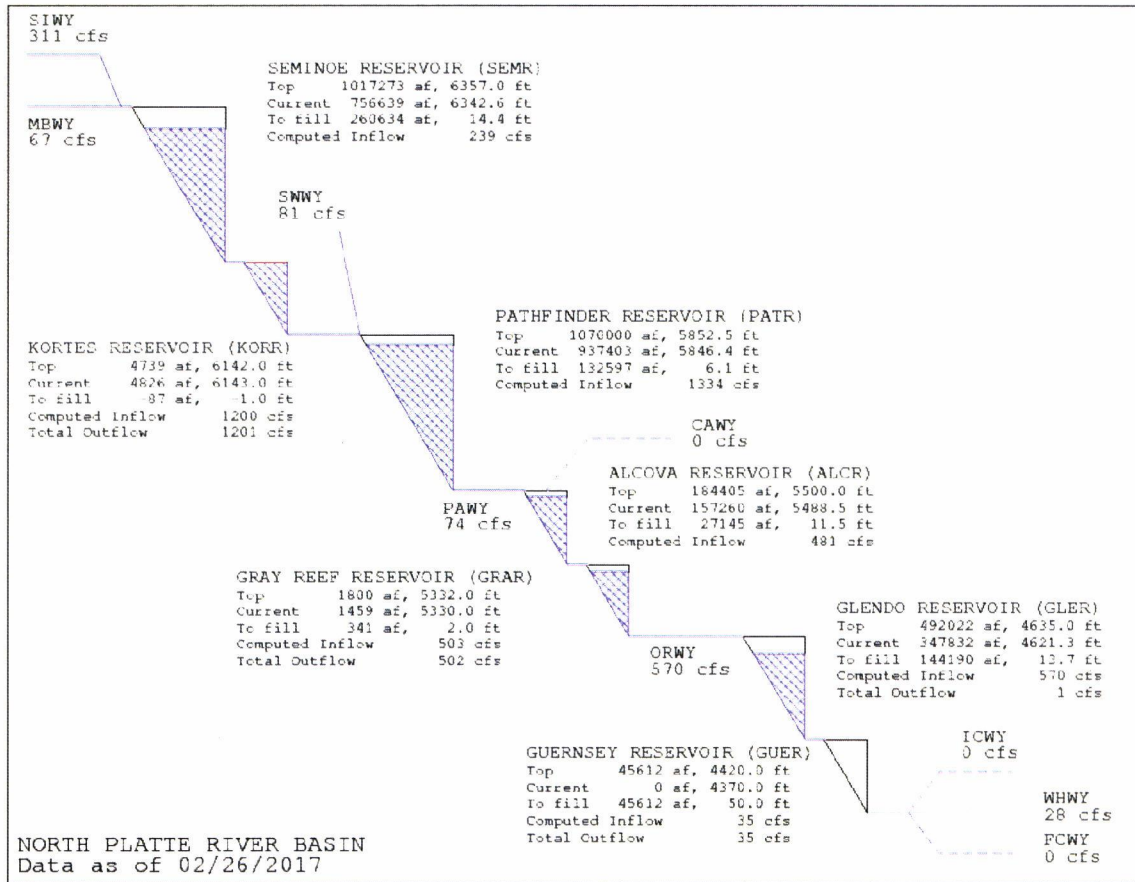
Title 457 N.A.C. 23.001.03, Unappropriated water: The Petitioner has reason to believe that unappropriated water in excess of “state-protected flows,” including those flows necessary to meet appropriations held by Central Nebraska Public Power and Irrigation District when in priority, and target flows required for compliance with the Platte River Recovery Implementation Program (PRRIP) may be available, prior to the beginning of the 2017 irrigation season. As of February 22, 2017, the snowpack in the upper North Platte Basin was at 124% of average (Figure 1), and more snow is expected in the mountains which feed the North Platte drainage before snowmelt season begins. This forecast does not include any spring precipitation event that may add to the total water supply in the North Platte Basin prior to the beginning of irrigation season.

**Lower North Platte with Non-Exceedence Projections**  
*Based on Provisional SNOTEL Data as of Feb 27, 2017*



**Figure 1:** Current and projected snow-water equivalent of snowpack in the lower North Platte Basin below Seminoe Reservoir. ([http://www.weather.gov/riw/cms\\_snotel\\_quicklinks\\_graphs](http://www.weather.gov/riw/cms_snotel_quicklinks_graphs), accessed February 27, 2017)

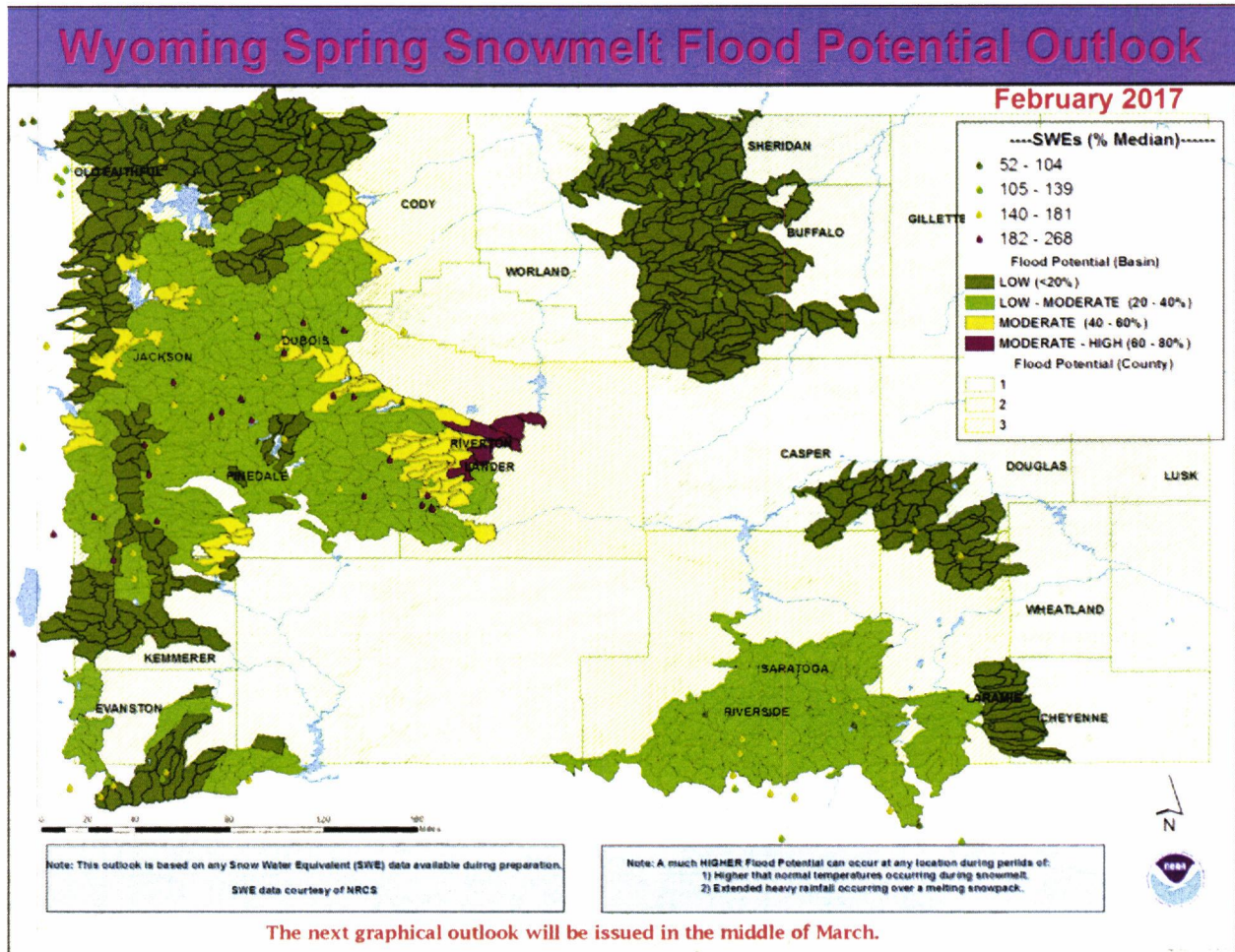
To compound the current state of above-average snowpack, all the US Bureau of Reclamation reservoirs in Wyoming are already full, except for Guernsey, which has been drained for spillway reconstruction (Figure 2).



**Figure 2:** TEACUP model of current Wyoming reservoir levels in the North Platte River system. ([https://www.usbr.gov/gp-bin/hydromet\\_teacup.pl](https://www.usbr.gov/gp-bin/hydromet_teacup.pl), accessed February 27, 2017)

The Bureau has stated that it will need to release water from storage to make room for snowmelt runoff later in the season, though no flooding conditions are currently forecast for the North Platte system as a result of these releases or snowmelt runoff (Figure 3). These releases, along with any additional releases that may be required to maintain the desired level of storage in the reservoir system through spring and early summer, may generate additional excess flows through the North Platte River system beyond what existing appropriations could either store or beneficially use.





**Figure 3:** Spring flood potential forecast for the upper North Platte basin, based on anticipated rate of snowmelt and reservoir storage. Note that this outlook does not incorporate abnormally high temperatures, which would accelerate snowmelt, or heavy precipitation events occurring during the snowmelt season. ([http://www.weather.gov/riw/cms\\_snotel\\_quicklinks\\_graphs](http://www.weather.gov/riw/cms_snotel_quicklinks_graphs), accessed February 27, 2017)

Because of the factors discussed above, high spring flows along the North Platte River are anticipated to occur before irrigation season begins. Petitioner and its partner, the North Platte NRD, believe that these flows will be in excess of both PRRIP target flows and state-protected flows that are required to be available prior to June 1.

Title 457 N.A.C. 23.002, Good cause: The North Platte NRD is currently implementing a joint integrated management plan (IMP) and a basinwide integrated management plan (BWP) with the Department of Natural Resources (DNR). As part of this plan, the NRD is required to offset depletions to streamflow caused by groundwater uses begun after July 1, 1997; subsequent increments of the IMP and BWP will include additional offset requirements to achieve or

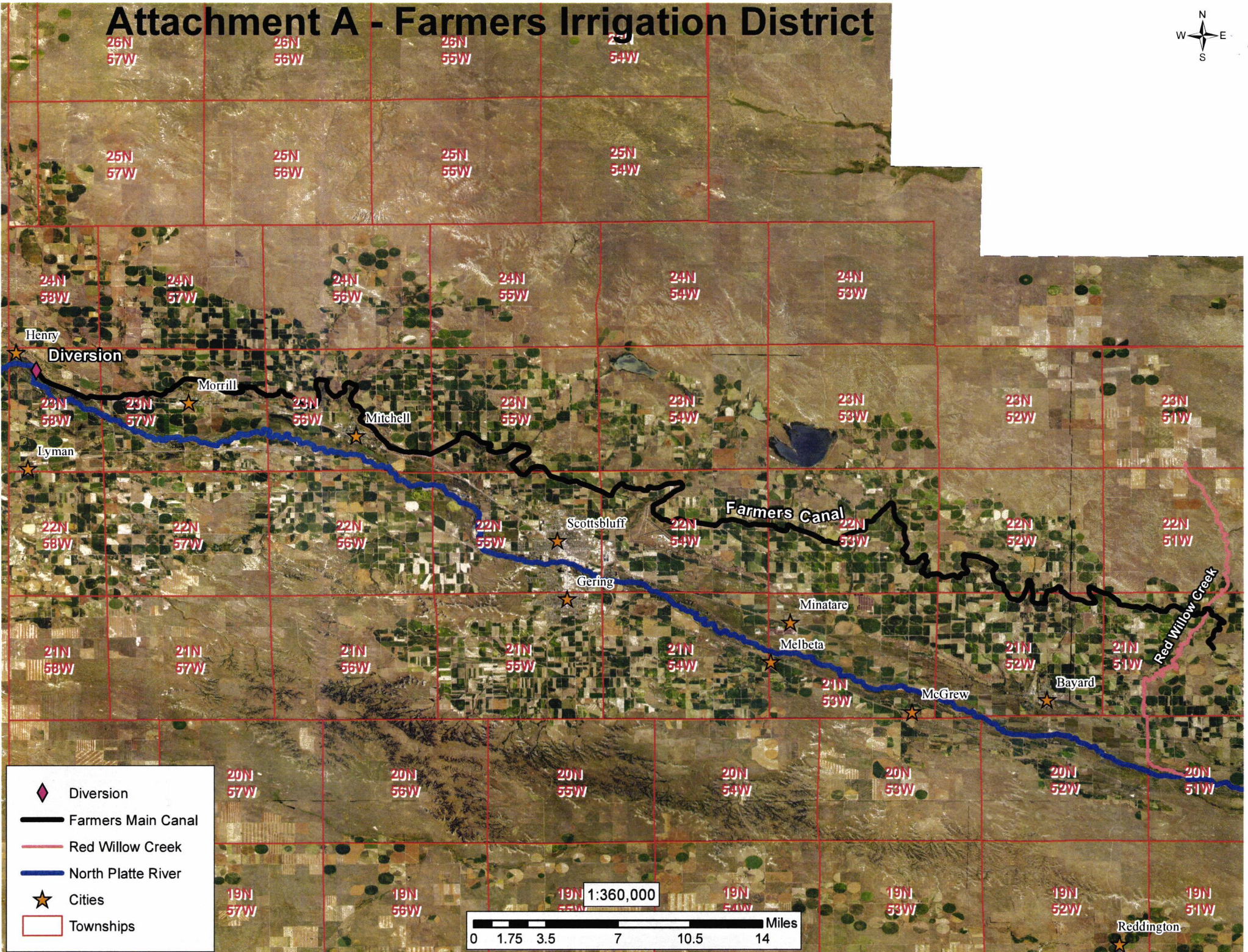
maintain a fully appropriated condition. In addition, Nebraska's compliance with PRRIP requires that shortages to target flows be reduced by 130,000 to 150,000 acre-feet per year. To accomplish both of these purposes, Petitioner and the North Platte NRD will partner once again to divert excess flows this spring, if available, to recharge the aquifer. Recharge gained will return as baseflow to the North Platte River, thereby retiming excess spring flows back to the river at other times of the year when flows are needed and reducing potential shortages during key seasons (e.g., irrigation).

The North Platte NRD has previously partnered with irrigation districts and canal companies to divert excess flows to alleviate flood conditions on the North Platte River and recharge the aquifer through canal seepage. In 2011, spring and fall diversions resulted in approximately 11,341 acre-feet of accretion to the North Platte River over fifty years (see Table 2, *Upper Platte River Recharge and Flood Mitigation Demonstration Project*, DNR Technical Memorandum January 2013). Diversions in the spring of 2016 added approximately 18,000 acre-feet of recharge to the aquifer, based on preliminary estimates. Petitioner and the North Platte NRD see an additional opportunity during Spring 2017 to divert anticipated excess flows for additional recharge and retiming benefits to the aquifer and the river. These benefits will ensure that the NRD and the state of Nebraska continue to meet depletion-offset targets for integrated management planning and PRRIP.

Conclusion: Petitioner presents this information in support of its variance petition for leave to file an application for a temporary, one-year, appropriation to divert excess flows in the nonirrigation season. Diversions and, as applicable, spills will be monitored to provide a record of the amount available for recharge, and these data will be reported to DNR as part of the integrated-management annual reporting requirements. Diversions will provide recharge to the alluvial aquifer, which will become baseflow accretions to the North Platte River over time. Previous such recharge diversions have provided ample benefit to streamflow and have assisted the North Platte NRD in meeting the goals of its IMP and of the BWP, as well as providing another mechanism for Nebraska to comply with PRRIP streamflow goals.



# Attachment A - Farmers Irrigation District





**STATE OF NEBRASKA  
DEPARTMENT OF NATURAL RESOURCES  
APPLICATION FOR A PERMIT TO APPROPRIATE WATER**

Complete items 1 through 10 by printing in ink or typing the appropriate information and by placing an X in the appropriate box **For Department Use Only**

1. Name and address of owner of land under proposed project. Names must be exactly as described on the deed or document transferring ownership of property. Landowner must sign the application

Farmers Irrigation District  
1505 Second Avenue  
Scottsbluff, NE 69361-3113

E-mail address: kevin.adams@embarqmail.com Telephone No. (308) 632-4921

Filed in the office of the Department of  
Natural Resources at \_\_\_\_\_ a m /p.m  
on \_\_\_\_\_

Application No. \_\_\_\_\_

Map No. \_\_\_\_\_

Water Division \_\_\_\_\_

Receipt No. \_\_\_\_\_ Amount \_\_\_\_\_

Right ID \_\_\_\_\_

2. Name, address, and telephone number of applicant if different than landowner

E-mail address: \_\_\_\_\_ Telephone No. ( ) \_\_\_\_\_

3a A permit is sought to:

Use natural flow       Use impounded water\*

3b A permit is sought for the purpose of

Irrigation       Manufacturing       Domestic

Other \_\_\_\_\_

Temporary\*\* Baseflow enhancement through GW recharge

4a Identify the source of water (name of stream or reservoir).

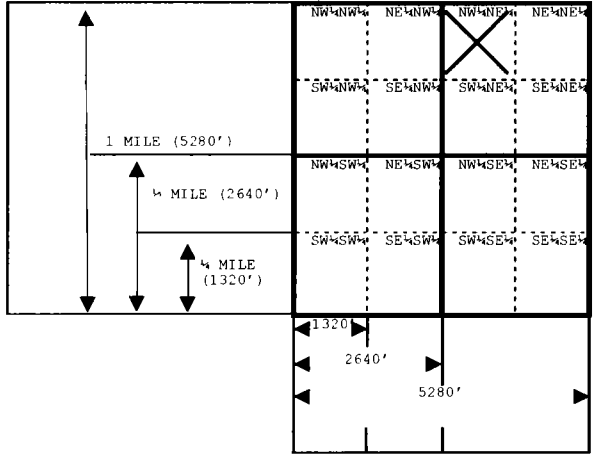
North Platte River

4b If applicable, identify the facility name for transporting water from the source (portable pump, name of canal or pipeline).

Farmers (Tri-State) Canal

5. Identify the location of the  Headgate       Pump

Section 10, Township 23 N North, Range 58 E  W  County Scotts Bluff



The box at left represents one square mile (section). Place an X within each appropriate 40-acre tract to indicate the location(s) of each headgate or pump

If applicable, indicate the height, in feet, of any diversion or check dams on the line below.

10'-6"

\* A separate permit to impound water must be obtained  
\*\* A temporary permit may be granted for a maximum of one year



6. If applicable, identify the location of lands by 40-acre subdivisions that will be irrigated.

LEGAL SUBDIVISIONS	Sec.	Twp.	Rge.	No. of Acres	LEGAL SUBDIVISIONS	Sec.	Twp.	Rge.	No. of Acres
TOTAL NUMBER OF ACRES TO BE IRRIGATED:									0.0

Enclosed is an aerial photograph that I have marked to show the approximate location of land to be irrigated as described above.

7. State the approximate quantity of water desired for

appropriation 600

- Gallons per minute
- Cubic feet per second
- Acre-feet (impounded water)

8a. State the estimated time required for completion of all water diversion facilities.

completed

8b. State the earliest date when water will have been used for beneficial purposes.

April 1, 2017, or as soon as water is available

9. Will this project be constructed under a federal program, receive federal funding, or have federal planning assistance?

No  Yes If yes, explain: \_\_\_\_\_

10. I certify that am familiar with the information contained in this application, and that to the best of my knowledge and belief such information is true, complete and accurate.

\_\_\_\_\_ Date

\_\_\_\_\_ Signature of owner or owner's authorized agent (with proper documentation)

A final project map may accompany this application or must be filed within six months following departmental approval of this application, drawn in accordance with NAC Title 457 – Rules for Surface Water, Chapter 10, (<http://dnr.nebraska.gov/swr/surface-water-rules>). At the request of the applicant, the Department will assist with preparation of the project map.

This form must be completed in full. An incomplete or defective application will be returned with 90 days being allowed for resubmission. Failure to resubmit a corrected application within this period shall cause dismissal of the application and consequent loss of priority and fees.

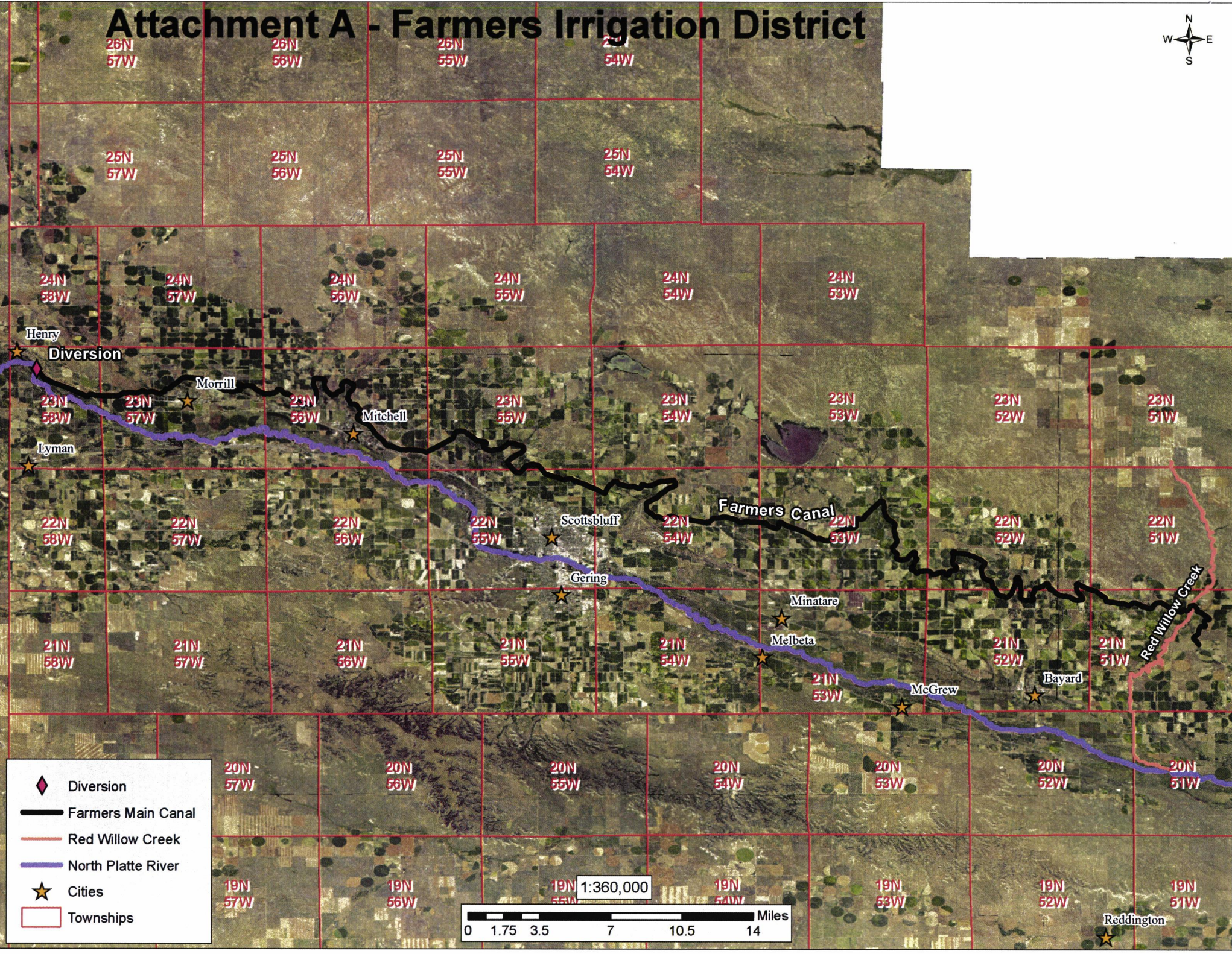
A non-refundable filing fee, payable to the Department of Natural Resources, computed from the table below must accompany this application. Forward this application and applicable fees to:

State of Nebraska  
 Department of Natural Resources  
 301 Centennial Mall South / P.O. Box 94676  
 Lincoln, Nebraska 68509-4676  
 (402) 471-2363

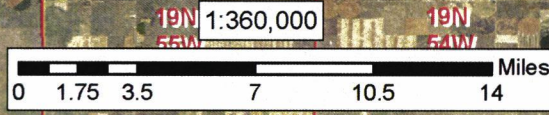
Nature of Use	Cost	Nature of Use	Cost
Domestic.....	\$10	Manufacturing	
Agricultural		General.....	\$10
Irrigation from Stream		Power Generation for each theoretical 50 horsepower.....	\$5
0-1,000 acres.....	\$200	Other.....	\$10
Each additional 1,000 acre unit.....	\$100		
or portion thereof in excess of the first 1,000 acre unit			
Irrigation from Storage Reservoir			
0-1,000 acres.....	\$50		
or portion thereof in excess of the first 1,000 acre unit			
Each additional 1,000 acre unit.....	\$25		
or portion thereof in excess of the first 1,000 acre unit			



# Attachment A - Farmers Irrigation District



- ◆ Diversion
- Farmers Main Canal
- Red Willow Creek
- North Platte River
- ★ Cities
- Townships



Reddington



## **Attachment B**

### **1.0 Introduction**

Farmers Irrigation District (Applicant) submits this application for a temporary appropriation to divert anticipated excess flows for groundwater recharge and stream baseflow enhancement in the North Platte River. This application includes the following supplemental components, in addition to the application form DNR Form APA-001:

Map of canal (Attachment A)

Application narrative discussing excess flows and beneficial use (Attachment B)

DNR Order granting Variance Petition VAR-\_\_\_\_, allowing Farmers Irrigation District to file the attached application (Attachment C)

Agreement and 2017 Task Order executed by Farmers Irrigation District and North Platte NRD for excess flow diversion (Attachment D)

*Upper Platte River Recharge and Flood Mitigation Demonstration Project: Part of the Conjunctive Management Toolbox*, DNR January 2013 Technical Memorandum (Attachment E)

Farmers Irrigation District desires to obtain a temporary, one-year, appropriation to divert excess natural flow during the nonirrigation season, for the purpose of groundwater recharge and stream baseflow enhancement. Applicant has partnered with the North Platte Natural Resources District (NRD) again this year to take advantage of anticipated excess flows, and the recharge benefits to be realized from the proposed diversions will assist the NRD in meeting its integrated management plan (IMP) obligations. In addition, the stream baseflow enhancement that will be realized will provide water toward meeting Nebraska's obligations under the Platte River Recovery Implementation Program (PRRIP).

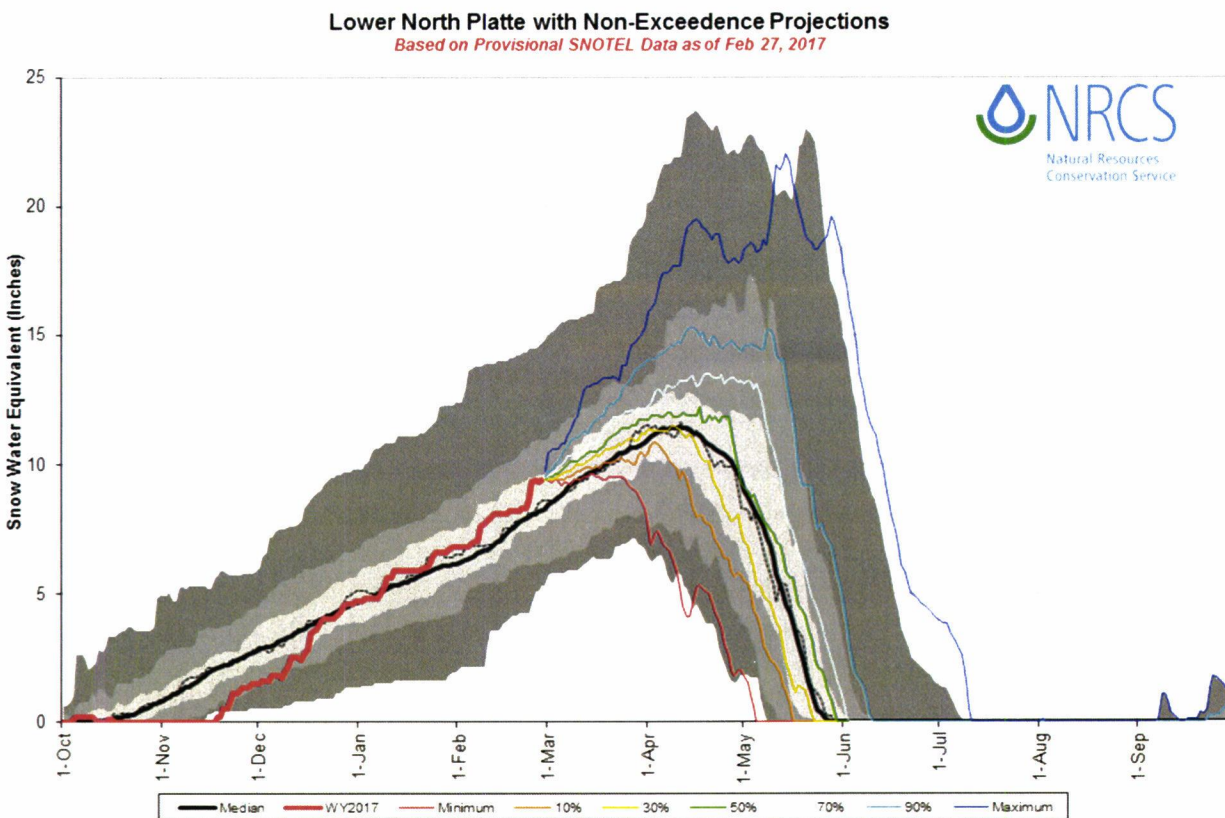
Applicant proposes to divert up to 600 cfs at its headgate located in the NW $\frac{1}{4}$ NE $\frac{1}{4}$  of Section 10, Township 23 North, Range 58 West of the 6<sup>th</sup> P.M., Scotts Bluff County, Nebraska, on the North Platte River. Of the total amount diverted, an anticipated 100 cfs will be spilled back to the North Platte River at a canal spill point on Red Willow Creek, located in the SE $\frac{1}{4}$  of Section 3, Township 21 North, Range 55 West of the 6<sup>th</sup> P.M., Morrill County, Nebraska. The locations of the Applicant's main canal, river diversion, and spill are shown on the map labeled Attachment A. Water will be diverted at the headgate and run through the main canal but not through the system laterals. That water which does not spill back to the North Platte River will be allowed to soak through the canal perimeter, providing recharge to the underlying aquifer, as has occurred on these projects in previous years.

### **2.0 Excess flows**

The Applicant believes that excess flows will be available along the North Platte River prior to the beginning of the 2017 irrigation season; the potential for excess flows following the 2017 irrigation season cannot be assessed at this time. As of February 22, 2017, the snowpack in the

## Attachment B

upper North Platte Basin was at 124% of average, and more snow is expected in the mountains which feed the North Platte drainage before snowmelt season begins (Figure 1). This level of snowpack is in line with previous years in which spring excess flows have occurred. This forecast does not include any spring precipitation event that may add to the total water supply in the North Platte Basin prior to the beginning of irrigation season.

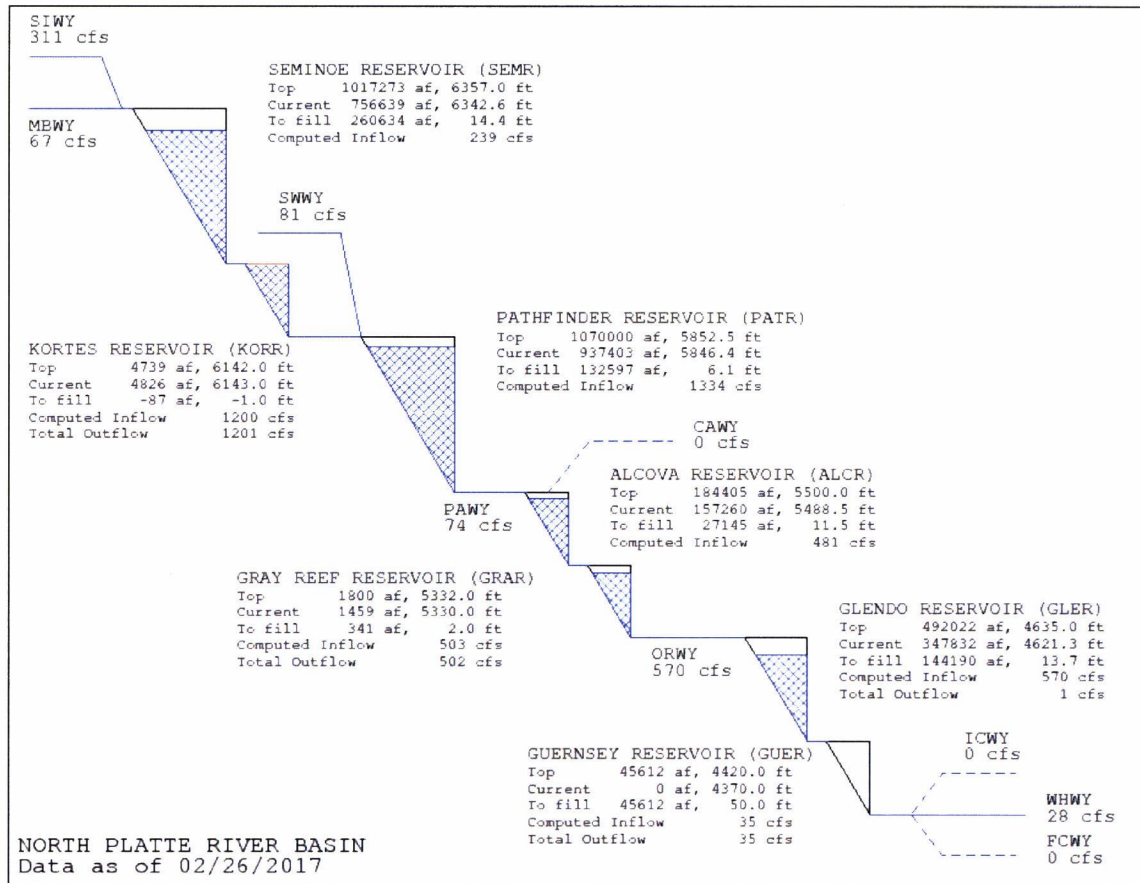


**Figure 1:** Current and projected snow-water equivalent of snowpack in the lower North Platte Basin below Seminoe Reservoir. ([http://www.weather.gov/riw/cms\\_snotel\\_quicklinks\\_graphs](http://www.weather.gov/riw/cms_snotel_quicklinks_graphs), accessed February 27, 2017)

To compound the current state of above-average snowpack, all the US Bureau of Reclamation reservoirs in Wyoming are already full, except for Guernsey, which has been drained for spillway reconstruction (Figure 2).



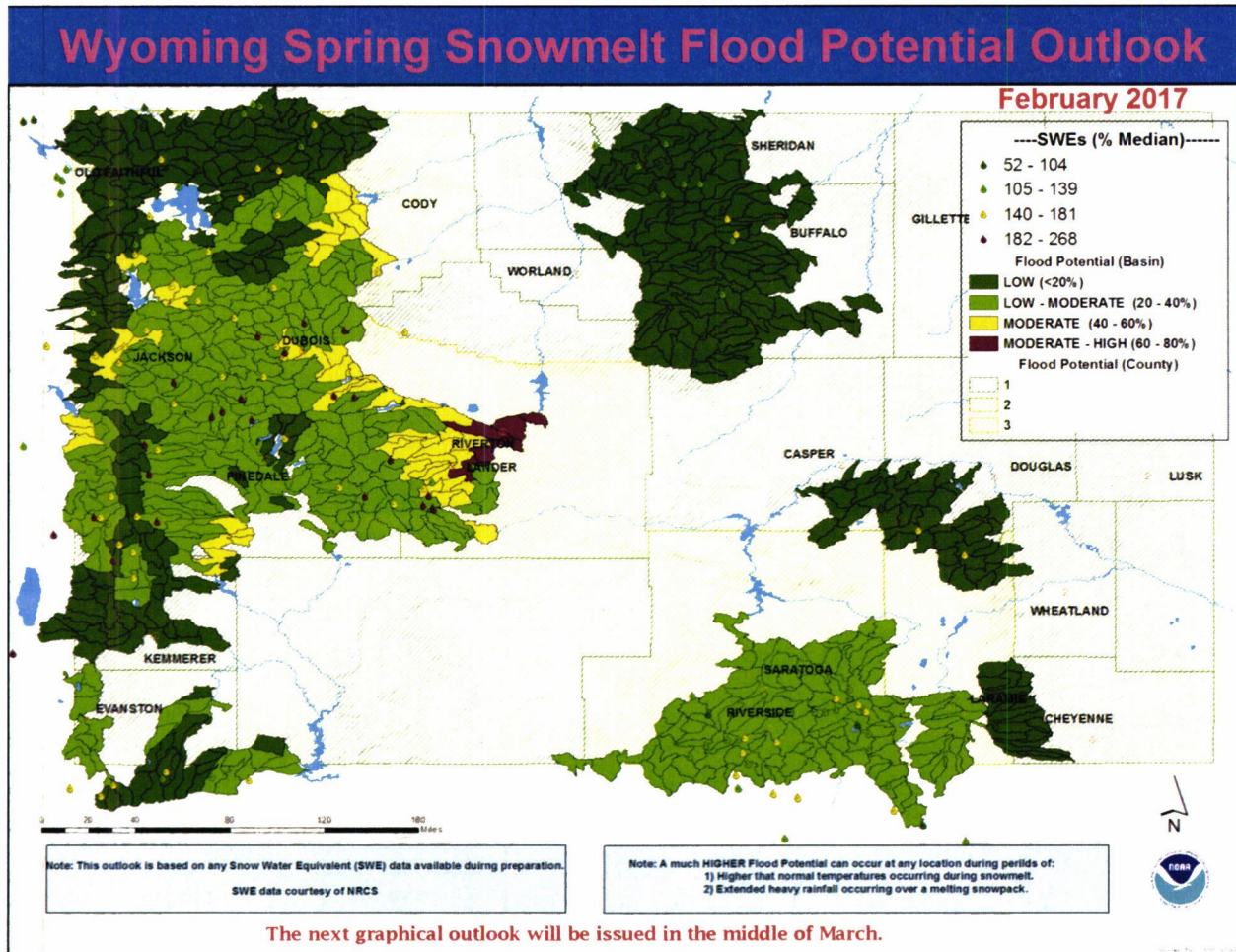
# Attachment B



**Figure 2:** TEACUP model of current Wyoming reservoir levels in the North Platte River system. ([https://www.usbr.gov/gp-bin/hydromet\\_teacup.pl](https://www.usbr.gov/gp-bin/hydromet_teacup.pl), accessed February 27, 2017)

The Bureau has stated that it will need to release water from storage to make room for snowmelt runoff later in the season, though no flooding conditions are currently forecast for the North Platte system as a result of these releases or snowmelt runoff (Figure 3). These releases, along with any additional releases that may be required to maintain the desired level of storage in the reservoir system through spring and early summer, may generate additional excess flows through the North Platte River system beyond what existing appropriations could either store or beneficially use.

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**Figure 3:** Spring flood potential forecast for the upper North Platte basin, based on anticipated rate of snowmelt and reservoir storage. Note that this outlook does not incorporate abnormally high temperatures, which would accelerate snowmelt, or heavy precipitation events occurring during the snowmelt season. ([http://www.weather.gov/riw/cms\\_snotel\\_quicklinks\\_graphs](http://www.weather.gov/riw/cms_snotel_quicklinks_graphs), accessed February 27, 2017)

Because of the factors discussed above, high spring flows along the North Platte River are anticipated to occur before the 2017 irrigation season begins. The Applicant and its partner, the North Platte NRD, believe that these flows will be in excess of both PRRIP target flows and state-protected flows that are required to be available prior to June 1.

### **3.0 Beneficial Use of Canal Recharge**

#### **3.1 Canal Recharge and Stream Baseflow Accretions**

Applicant and the North Platte NRD have previously partnered to divert excess flows for groundwater recharge, which subsequently enhances the stream baseflow in the North Platte



## Attachment B

River. Previous diversion projects in the North Platte NRD occurred in the spring and fall of 2011, as well as the spring of 2016. Below is a set of tables detailing the canals that were used for groundwater recharge during these previous events, along with the estimated amount of recharge that occurred for each canal.

**Table 1:** Diversion and recharge data from Spring 2011 excess flow diversion project. Estimated recharge values may be refined based on Robust Review of integrated management activities, currently being undertaken by the Platte Basin Coalition and its consultants.

<b>Spring 2011 Excess Flow Diversion Data</b>					
<b>Irrigation District/ Canal Company</b>	<b>Diversion Dates</b>	<b>Total Days Diverted</b>	<b>Total Diversion (AF)</b>	<b>Estimated Canal Loss %</b>	<b>Estimated Recharge (AF)</b>
Pathfinder	4/1/11 - 4/15/11	15	12,718	55%	6,995
Farmers	4/5/11 - 5/7/11	33	20,288	49%	9,941
Enterprise	4/1/11 - 5/1/11	31	2,443	42%	1,026
Central	4/6/11 - 5/15/11	40	627	42%	263
Castle Rock	4/3/11 - 5/3/11	31	1,497	41%	614
Minatare	4/1/11 - 4/30/11	30	2,437	24%	585
Nine Mile	4/15/11 - 5/14/11	30	1,579	68%	1,074
Chimney Rock	4/1/11 - 5/1/11	31	1,004	45%	452
Belmont	4/1/11 - 5/1/11	31	2,084	53%	1,105
Lisco	4/13/11 - 5/13/11	31	2,229	32%	713
<b>Total</b>			<b>46,906</b>		<b>22,767</b>

## Attachment B

**Table 2:** Diversion and recharge data from Fall 2011 excess flow diversion project. Estimated recharge values may be refined based on Robust Review of integrated management activities, currently being undertaken by the Platte Basin Coalition and its consultants.

<b>Fall 2011 Excess Flow Diversion Data</b>					
<b>Irrigation District/ Canal Company</b>	<b>Diversion Dates</b>	<b>Total Days Diverted</b>	<b>Total Diversion (AF)</b>	<b>Estimated Canal Loss %</b>	<b>Estimated Recharge (AF)</b>
Central	9/24/11 - 10/29/11	36	1,028	34%	350
Castle Rock	10/5/11 - 11/12/11	39	1,077	43%	463
Minatare	10/1/11 - 11/2/11	33	2,380	29%	690
Nine Mile	9/14/11 - 10/24/11	41	1,106	68%	752
Chimney Rock	9/24/11 - 11/9/11	47	2,963	30%	874
Belmont	9/24/11 - 11/9/11	47	2,009	51%	1,015
Lisco	9/23/11 - 10/23/11	31	1,516	47%	713
Winters Creek	9/23/11 - 11/7/11	46	882	31%	269
<b>Total</b>			<b>12,961</b>		<b>5,125</b>

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**Table 3:** Diversion and recharge data from Spring 2016 excess flow diversion project. Estimated recharge values may be refined in the future based on additional model analyses.

<b>Spring 2016 Excess Flow Diversion Data</b>					
<b>Irrigation District/Canal Company</b>	<b>Diversion Dates</b>	<b>Total Days Diverted</b>	<b>Total Diversion (AF)</b>	<b>Estimated Canal Loss %</b>	<b>Estimated Recharge (AF)</b>
Minatare	5/17/16 - 5/19/16	3	50	24%	12
Lisco	4/14/16 - 4/18/16	5	155	32%	50
Mitchell	5/27/16 - 6/8/16	13	3,590	28%	1,005
Castle Rock	5/16/16 - 6/20/16	36	2,701	41%	1,108
Northport	5/17/16 - 6/6/16	21	3,905	81%	3,174
Belmont	4/1/16 - 6/09/16	70	7,150	53%	3,790
Farmers	6/1/16 - 6/15/16	15	19,765	94%	18,580
<b>Total</b>			<b>37,316</b>		<b>27,718</b>

Note that the recharge values in Tables 1 through 3 indicate the amount of water infiltrated into the aquifer and do not represent anticipated changes in stream baseflow that will result from these recharge projects. Anticipated stream baseflow benefits from previous excess-flow diversions will be calculated as part of the integrated management plan Robust Review, which is currently ongoing. DNR published a Technical Memorandum in January 2013 entitled, *Upper Platte River Recharge and Flood Mitigation Demonstration Project: Part of the Conjunctive Management Toolbox*, that provides some preliminary methods for calculating the streamflow benefits anticipated from the 2011 excess-flow diversions (Attachment E). Tables 2 and 3 of this Technical Memorandum summarize these initial calculations and are abstracted as Tables 4 and 5 below for reference.



## Attachment B

**Table 4:** Reproduction of Table 2 from DNR January 2013 Technical Memorandum, showing estimated annual baseflow accretions to Platte River system, in acre-feet, from 2011 excess-flows diversions. (*Upper Platte River Recharge and Flood Mitigation Demonstration Project: Part of the Conjunctive Management Toolbox*, DNR January 2013 Technical Memorandum, p. 9)

Year	NPNRD	SPNRD	TPNRD	TBNRD	CPNRD	Annual
2011	3	3	422	0	634	1,062
2012	83	44	853	21	671	1,672
2013	229	89	868	69	590	1,844
2014	328	105	805	104	511	1,853
2015	381	107	724	121	445	1,777
2016	405	102	644	126	392	1,669
2017	414	95	574	125	348	1,555
2018	413	88	513	121	311	1,446
2019	406	81	461	115	281	1,344
2020	396	75	416	109	255	1,251
2021	384	69	378	103	233	1,167
2022	371	64	345	97	214	1,091
2023	357	59	316	91	198	1,022
2024	343	55	291	86	183	959
2025	330	51	269	81	171	903
2026	317	48	250	77	159	851
2027	305	45	233	72	149	804
2028	293	42	218	68	140	761
2029	281	40	204	65	132	722
2030	271	38	191	62	124	685
2031	260	36	180	59	118	652
2032	251	34	170	56	111	621
2033	241	32	161	53	106	593
2034	233	30	152	51	100	567
2035	224	29	145	48	96	542
2036	216	28	138	46	91	519
2037	209	26	131	44	87	498
2038	202	25	125	43	83	478
2039	195	24	119	41	80	460
2040	189	23	114	39	77	442
2041	183	22	109	38	74	426
2042	177	21	105	36	71	410
2043	171	21	101	35	68	396
2044	166	20	97	34	66	382
2045	161	19	93	33	63	369
2046	157	18	90	32	61	357
2047	152	18	86	30	59	346
2048	148	17	83	30	57	335
2049	144	17	80	29	55	324
2050	140	16	78	28	53	315
2051	136	16	75	27	52	305
2052	132	15	73	26	50	296
2053	129	15	70	25	48	288
2054	126	14	68	25	47	280
2055	122	14	66	24	46	272

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Year	NPNRD	SPNRD	TPNRD	TBNRD	CPNRD	Annual
2056	119	13	64	23	44	265
2057	117	13	62	23	43	258
2058	114	13	61	22	42	251
2059	111	12	59	21	41	244
2060	108	12	57	21	40	238
<b>10yr</b>	<b>3,056</b>	<b>787</b>	<b>6,281</b>	<b>911</b>	<b>4,439</b>	<b>15,474</b>
<b>50yr</b>	<b>11,341</b>	<b>1,913</b>	<b>11,991</b>	<b>2,753</b>	<b>8,171</b>	<b>36,168</b>

**Table 5:** Portion of Table 3 from DNR January 2013 Technical Memorandum, showing estimated baseflow accretions to Platte River system, in acre-feet, from 2011 excess-flows diversions, by individual canals located in the North Platte NRD. Canals downstream of Lake McConaughy have been removed. Data for certain canals shown in this table may differ from that shown in Tables 1 and 2 above; this likely reflect additional sources of information used to generate the values in Tables 1 and 2, which was not used in the DNR Technical Memorandum. (*Upper Platte River Recharge and Flood Mitigation Demonstration Project: Part of the Conjunctive Management Toolbox*, DNR January 2013 Technical Memorandum, p. 10)

Project	Spring Diversion	Fall Diversion	Total Diversion	Total Recharge	10-year Benefit	50-year Benefit
Pathfinder Canal	12,718	0	12,718	5,087	178	1,690
Farmers Canal	18,425	0	18,425	8,660	1,470	4,471
Enterprise Canal	2,559	0	2,559	1,689	287	872
Winters Creek Canal	0	882	882	42	7	22
Central Canal	524	1,022	1,545	331	56	171
Castle Rock Canal	1,595	1,069	2,664	1,198	42	398
Minatare Canal	2,709	2,338	5,048	1,207	205	623
Nine Mile Canal	1,521	1,114	2,635	1,850	314	955
Chimney Rock Canal	948	2,965	3,913	1,049	178	542
Belmont Canal	2,241	2,965	5,206	2,789	98	926
Lisco Canal	2,229	1,516	3,746	1,301	221	672
<b>Totals:</b>	<b>45,469</b>	<b>13,871</b>	<b>59,341</b>	<b>25,203</b>	<b>3,056</b>	<b>11,342</b>

The information presented in Tables 4 and 5 will also be reviewed during the Robust Review process and may not represent final accepted values. The magnitude and timing of streamflow benefits from excess-flow diversion events are clear from these tables, however, and indicate the streamflow benefits that may be expected from additional excess-flow diversions, such as that proposed in this application.

### 3.2 Integrated Management Plan and PRRIP Benefits

The recharge and baseflow accretion benefits described in Section 3.1 above provide offsets for groundwater depletions to streamflow from post-1997 uses, as required by the joint IMP adopted



## **Attachment B**

by the North Platte NRD and DNR, as well as the basinwide integrated management plan, to which the North Platte NRD and DNR are parties. In addition, the streamflow accretions realized from canal recharge provide water toward PRRIP goals of reducing shortages to target flows by 130,000 to 150,000 acre-feet per year. Because streamflow benefits accrue to the river over a long period of time, the total benefits from excess-flow diversions for recharge continue to materialize decades after the diversion events themselves. These long-term accretions will ensure that the North Platte NRD and the State of Nebraska continue to meet their respective depletion-offset obligations into the future.

The proposed temporary appropriation for excess-flow diversion will provide additional depletion-offset water toward meeting IMP and PRRIP goals. As with previous excess-flow diversions, the benefits from diverting excess flows under the proposed appropriation will continue to accrue to the North Platte River for many years, which will assist the NRD and Nebraska in meeting the goals of the next increment of IMPs. Groundwater recharge, streamflow accretion, and depletion offsets are all recognized beneficial uses of surface water, particularly in a fully or overappropriated area. The temporary appropriation requested here, if granted, will be put to beneficial use through the partnership between Applicant and the North Platte NRD, as outlined in the contract and 2017 task order included as Attachment D to this application.

### **4.0 Effects on other appropriators**

The excess flows discussed in Section 2.0 above are expected to be more than sufficient to provide for PRRIP target flows, as well as for "state-protected flows," a term of art intended to encompass flows needed to satisfy appropriators whose appropriations may be in priority at a given point in time. During the nonirrigation season, this term includes water that Central Nebraska Public Power and Irrigation District could expect to flow into Lake McConaughy, when its appropriations are in priority. These flows also include water for instream-flow and other excess-flow appropriations held by entities downstream of Lake McConaughy, including the Central Platte NRD.

The temporary appropriation sought under this application will receive a 2017 priority date, if granted, and will be permitted to divert when the appropriation is in priority. Just as with any other surface-water appropriation along the North Platte River, the Applicant will not be able to divert excess flows unless and until senior downstream appropriators are satisfied, and the appropriation will be subject to water administration. In an excess-flow event, however, streamflow is consistently present in quantities that will satisfy all in-priority appropriations, as well as PRRIP target flows. Consequently, the granting of this proposed temporary appropriation will have no adverse effect on downstream senior appropriators.

## **Attachment B**

### **5.0 Conclusion**

Farmers Irrigation District requests this temporary appropriation for the purpose of diverting excess flows during the nonirrigation season. Diverted water will be run through the Applicant's main canal, and that water which is not spilled back to the river will be allowed to soak away through the canal perimeter to recharge the aquifer. The Applicant has partnered with the North Platte NRD to accomplish this project, which will provide streamflow accretions that assist the NRD and the State of Nebraska in meeting IMP and PRRIP streamflow goals. The Applicant has presented information showing the likelihood of excess flows being available during the nonirrigation season, as well as an outline of the benefits to be expected from the beneficial use of water under the proposed appropriation.

**THIS AGREEMENT** entered into on this 12 day of May, 2016, by the **NORTH PLATTE NATURAL RESOURCES DISTRICT**, hereinafter referred to as the "**DISTRICT**," and **FARMERS IRRIGATION DISTRICT**, hereinafter referred to as the "**IRRIGATOR**."

**WITNESSETH:**

**WHEREAS**, the Irrigator has surface water appropriation(s) for natural flow from the North Platte River and/or its tributaries and the necessary conveyance structure(s) to transmit such natural flow; and

**WHEREAS**, the District and the Nebraska Department of Natural Resources have jointly developed and agreed to implement an integrated management plan (IMP) which describes investigating projects to enhance and improve water supply, including the development of new infrastructure and other groundwater projects for the purpose of providing net accretions to the river; and

**WHEREAS**, the District or the Nebraska Department of Natural Resources may request the Irrigator to 1) divert natural flow into the Irrigator's delivery system during periods when streamflow is in excess of US Fish and Wildlife Service target flows and state-protected flows, without subsequent consumptive use for irrigation, in order to assist the District in its efforts to 1) achieve flood prevention and study groundwater recharge and/or groundwater discharge to streamflow, or 2) other projects with the purpose of meeting the goals and objectives of the IMP; and

**WHEREAS**, the Irrigator is willing to assist the District to meet the objectives of the IMP in exchange for compensation; and

**NOW THEREFORE**, in consideration of the mutual covenants made, the compensation agreed to, and other good and valuable consideration the receipt of which is hereby acknowledged, the parties agree as follows:

## **I. SCOPE OF SERVICES**

The Irrigator will make available the diversion structures of the Farmers Irrigation canal and the services of a ditch rider or staff member, for the term of this Agreement, to assist District efforts to meet the objectives of the IMP, which may include, but not be limited to, the diversion of streamflows in excess of target flows and state-protected flows for the purpose of retiming streamflow, and any monitoring activities necessary to further understanding of the effects of such activities on streamflow. These efforts will be carried out in accordance with Task Authorizations developed under this Agreement and approved by the Irrigator and District. The purpose of this Agreement is to set forth the terms and conditions applicable to such efforts. During the term of this Agreement, the details of timing and payment shall be described and set forth in separate, numbered Task Authorizations, issued pursuant to the terms of this Agreement. Should a particular Task Authorization ever require revision, such revision shall be accomplished through an amendment to that individual Task Authorization.



## II. DURATION OF AGREEMENT

This Agreement is effective on the date signed by the last party and remains effective for five (5) years from the effective date. There will be no extension or renewal of this Agreement unless further agreed to in writing by the parties.

## III. THE IRRIGATOR AGREES TO PERFORM AS FOLLOWS:

- A. The Irrigator agrees to divert, only upon request from the District and in accordance with a particular Task Authorization then in operation, up to 500 cfs of natural flow surface water and convey such water through its delivery system.
- B. The Irrigator further agrees not to apply to consumptive use for irrigation any of the water diverted subject to this Agreement.
- C. The Irrigator represents and affirms that, in accordance with all relevant regulations, statutes, and/or procedures, the Irrigator has complied or will comply with all requirements necessary to allow it to enter into this Agreement and perform all actions herein required. If the Irrigator has not complied, or in the future fails to comply, with all relevant regulations, statutes, and/or procedures, this contract is null and void.
- D. The Irrigator retains the right to suspend or terminate its performance under this Agreement 1) in the event of threatened damage to any of its facilities; 2) threatened injury or damage to the person or property of third parties; 3) if any provisions of the Agreement subjects any part of the Irrigator's appropriation to cancellation, reduction, or loss under the laws of the State of Nebraska then in effect; or 4) adversely affects its ability to provide irrigation service during its irrigation season. The Irrigator's sole judgement in these matters will control. In the event that the Irrigator must suspend or terminate its performance pursuant to this paragraph, then it shall promptly notify the District by telephone and in writing.

## IV. THE DISTRICT AGREES TO PERFORM AS FOLLOWS:


- A. The District's total annual payment under the five (5) year term of this contract cannot exceed \$150 per cfs of excess flows diverted for flood relief and canal recharge.
- B. Payment will be made according to the terms of each Task Authorization, but not later than 6 months after the last date the Irrigator has diverted under the terms of any individual Task Authorization.

- C. The District will assist the Irrigator in obtaining all necessary permits from the Department for the purpose of diverting excess flows under this agreement.

**V. THE PARTIES MUTUALLY AGREE AS FOLLOWS:**

- A. The parties agree that Irrigator has retained and reserved the rights to any additional water that it would be entitled to receive under agreements and contracts between the Bureau of Reclamation or any other entity and the Irrigator that are outside of the provisions of this Agreement.
- B. In executing this Agreement, the parties shall comply with all other applicable state and federal laws.

**FARMERS IRRIGATION DISTRICT (IRRIGATOR)**

 MANAGER 5-12-2016  
Name and Title Date

**NORTH PLATTE NATURAL RESOURCES DISTRICT (DISTRICT)**

 John Berge, General Manager 5/16/16  
Date

MARCH 1, 2017, TASK ORDER #17-1 TO NORTH PLATTE NATURAL RESOURCES DISTRICT AGREEMENT #10 FOR EXCESS FLOW DIVERSIONS

**I. THE IRRIGATOR AGREES TO PERFORM AS FOLLOWS:**

- A. The Irrigator agrees to divert natural flow surface water and convey such water through its delivery system, beginning when directed by the Nebraska Department of Natural Resources (NDNR) Bridgeport Field Office Supervisor after April 1, 2017, as needed to alleviate flooding conditions on the North Platte River, or to take advantage of excess flows available in the North Platte River. The period of diversion for this purpose will be the duration of the excess flow event, from the beginning date of this task order and until the excess flows of such event are no longer available. To receive any compensation under North Platte Natural Resources District (District) Agreement 10, the Irrigator must in good faith divert flows into its system and convey such water for the period of time designated above and as directed by NDNR's Bridgeport field office and the District but which cannot be quantified precisely at this time. A flat rate fee payable to the Irrigator will be agreed upon by all parties prior to diversion of any excess flows.
  
- B. Prior to the date of the end of the excess flow event, as determined by NDNR, the Irrigator retains the right to suspend or terminate its performance under this Agreement 1) in the event of threatened damage to any of its facilities; 2) threatened injury or damage to the person or property of third parties; 3) if any provisions of the Agreement subjects any part of the Irrigator's appropriation to cancellation, reduction or loss under the laws of the State of Nebraska, then in effect; 4) adversely affects its ability to provide irrigation service during its irrigation season; or 5) the Irrigator commences irrigation deliveries. The Irrigator's sole judgement in these matters will control. In the event that the Irrigator must suspend or terminate its performance pursuant to this paragraph, then it shall promptly notify the District by telephone and in writing. In such events, the District will accordingly determine, based upon the benefit received, any reduction in the payment made to Irrigator.

**II. THE DISTRICT AGREES TO PERFORM AS FOLLOWS:**

- A. Payment will be for no more than \$150 per cfs diverted for flooding mitigation and canal recharge, and will be provided not later than ninety (90) days following the conclusion of diversion for these purposes.
  
- B. The District will work with NDNR to determine the measurements or methods needed to estimate project benefits (e.g. diversions and return flows). The District will make the agreed-upon measurements in conjunction with NDNR.



