

**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

<p>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.</p>	<p>For Department Use Only</p>
<p>1. Name and address of petitioner:</p> <p>Paxton-Hershey Water Company 22431 West Platte Valley Road Hershey NE 69143-5333</p> <p>E-mail address: _____ Telephone No. (308) 368-5248</p>	<p>Modification No.: VAR-3562 Date Filed: February 25, 2013 Time Filed: 8:03 AM SW Appropriation No.: _____ (if applicable) Right ID No.: _____ (if applicable) Water Division: 1-A Receipt No.: A-3892 Amount: 10.00</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>In the non-irrigation season, divert excess streamflows for the purpose of recharging the aquifer, via the existing Paxton-Hershey Canal NP head gate located in the SW 1/4 NW 1/4 Section 18, T14N, R33W, of the 6th P.M. in the Lincoln County from the North Platte River</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 (<10 AF)</p>	
<p>5. Other reason why a variance should be granted:</p> <p>Granting the variance will allow the applicant to provide broad benefits to local, regional and state interests. Specifically, the augmented flows will provide habitat for species as intended by the multi-state Platte River Cooperative Agreement. Augmented flow will further assist the applicant, Platte River Basin NRDs, and the State of Nebraska meet their water obligation under the PRIP and LB 962.</p> <p>See attachment</p>	
<p>11-9-12 Date</p>	<p><i>Rex Boyce</i> 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-02252013-3562-Pet1

COPY

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.

Paxton-Hershey Water Company
22431 West Platte Valley Road
Hershey NE 69143-5333

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 _____

E-mail address: _____ Telephone No. (308) 368-5248

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** Ground Water Recharge

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

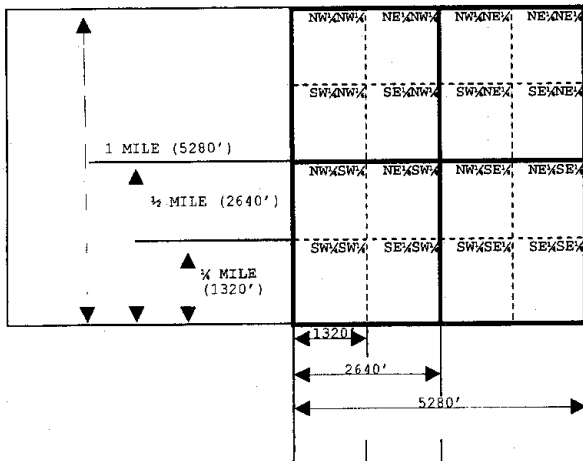
North Platte River

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

Paxton-Hershey Irrigation Ditch

5. Identify the location of the Headgate Pump

Section 18, Township 14 North, Range 33 E W County Lincoln



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.

* 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. 60

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

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

All facilities completed

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

early spring 2013 (see attachment)

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.

11-9-12
 Date

Lee Boyce president
 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.ne.gov/SurfaceWater/Title_457_0608.pdf). 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			

Narrative on the Benefits
of
The Irrigation Canal(s) Recharge Project
in the Twin Platte NRD

The water appropriations being sought is for a temporary right to provide broad benefits to many local, regional, and state interests. The objective of this project is to allow an opportunity in the non-irrigation season, when "excess" flows are available in the North and South Platte Rivers, to divert those excess flows into the existing irrigation canals for intentional ground water recharge.

A temporary permit is being requested at this time over a permanent permit since the Twin Platte (TPNRD) and the Irrigation Districts are just beginning the process of building a working relationship with one another. A long-term goal of this project would be to build future plans on a more permanent basis. In the meantime, being approved for a temporary permit will allow the TPNRD the time to develop a relationship that can benefit the entire region in the long term and continue to collect data that supports the beliefs that were created during the Upper Platte River Recharge & Flood Mitigation Project of 2011.

"Excess" flow can be identified as any flow that is not already being identified in the Platte River Recovery Implementation Agreement (PRIP) to which the State of Nebraska is a party, as well as any flow that is already appropriated for by the state.

This temporary water right being sought after will be used for ground water recharge through the Western Irrigation Canal from the South Platte River and the Keith-Lincoln Irrigation Canal; Suburban Irrigation District; Paxton-Hershey Water Company; and the Platte Valley Irrigation District (North Platte Canal) all of which divert from the North Platte River. When excess water is available, water would be diverted by any or all of the above mentioned irrigation canals to flow through the canals and their laterals. This diversion could take place in the fall, winter, and spring months as long as ice is not a problem and weather allows. The diversions could occur for however long an excess flow event occurs and benefits could be gained, which could be in the spring prior to the irrigation canals normal diversion period, or it may be in the late fall and early winter after their diversion ceases if ice does not cause a problem. All of the diversions would be subject to the availability of excess flows and would occur only when excess flow events occur. Times when diversions would be not eligible would be when the irrigation district normally diverts for irrigation purposes in April through October. Memorandums of agreements have been signed between the above irrigation districts, the TPNRD, and the Nebraska Department of Natural Resources District (DNR) for a five year period of time with the ability to re-new for another five year period. The intent of this project is to apply for a temporary water appropriation on an annual basis when excess flows are available during the five year period of the signed agreement. During the fifth year of the project, the TPNRD would work with their partners of this project to evaluate the overall benefit of the project. Since the exact same project has already been performed in 2011 as a demonstration

project, many of the unknowns have been worked through. Three of the canals have a spill where discharge measurements can be measured. For each spill measurement taken, the rate of water measured at the canal spill can be subtracted from the average daily diversion rate to determine the rate of canal loss. The loss is then divided by the average daily rate of diversion to calculate a daily loss as a proportion of the total volume of water diverted. For the other two canals, loss estimates can be calculated using the STELLA model by taking the total volume diverted and the modeled loss rate to determine the volume of water recharged.

Benefits of this project would include increased stream flows during the summer months as a result of the ground water recharge and the underground returns from this project. The enhanced stream flows would help the TPNRD fulfill its obligation of getting back to 1997 levels of depletions in the Platte River required by LB 962 and as agreed to by the State of Nebraska for the PRIP. Increased flows in the river benefit threatened and endangered species and their habitats. Both the Basin-wide Integrated Management Plan (IMP) and the TPNRD's IMP allows for the Platte Basin NRDs to identify management options to achieve the goal of incrementally achieving and sustaining a fully appropriated status from the current over appropriated status. This project would also protect existing water users, local economies, environmental health, and recreation uses, while maintaining the economic and social aspects of life within the TPNRD through a healthy balance between the surface and ground water users of this area, and lastly would be in the public's best interest.

In 2011, a demonstration project titled The Upper Platte River Recharge and Flood Mitigation Demonstration Project was developed in conjunction with the DNR, the Platte Basin NRDs (North Platte, South Platte, Twin Platte, Central Platte, and Tri-Basin), and willing irrigation districts along the North and South Platte Rivers.

Twenty-one irrigation districts participated in the spring 2011 Recharge and Flood Mitigation Project during the months of April and May. Twenty irrigation districts participated in the fall 2011 Recharge and Flood Mitigation Project during the months of September through December. In order to quantify the volume of water that was recharged by the canals, canal losses were developed for each canal. Canal losses were calculated using diversion and spill discharge measurements or were estimated from existing data sources. Based on the diversion records and calculated losses, recharge volumes were calculated by canal and summarized for each NRD. Recharge volumes for each canal were used in conjunction with response functions developed by the technical committee under the Platte Basin Habitat Enhancement Program (PBHEP) to calculate estimated accretions/depletions to the Platte River.

Results are summarized for each canal and the Western Canal Pond seepage project. These results are then aggregated by NRD. The estimated accretions to Platte River streamflow in each NRD is shown in the table below. These results estimate that the annual accretion during the first decade is approximately 1,000 to 1,500 AF per year and residual accretions greater than 500 AF per year will persist for 25 years. NRD specific estimates show a 50-year benefit to streamflow ranging from 2,000 up to 12,000 AF, with total 50-year benefits over 36,000 AF. Canal specific source data indicates that approximately 140,000 AF of water was diverted, of

which about 65,000 AF is estimated to have seeped into ground water storage. This indicates that much of the benefit from this single seepage demonstration may persist well beyond the 50-year planning horizon presented here. Water use and management practices in the interim will fundamentally effect the realization of these benefits, though this project has provided options that would not have been available if the DNR and its collaborating partners had not taken the opportunity to divert and store abundant excess flows in the Platte River throughout 2011.

The table below is taken from the Upper Platte River Recharge and Flood Mitigation Demonstration Project: Part of the Conjunctive Management Toolbox Technical Memorandum – January 2013. It shows the estimated accretions (in acre feet) to the Platte River stream flow for each NRD that participated in the demonstration recharge project during the spring and fall of 2011. These results of this demonstration project show the numerical values annually over a 50 year period from just one year of excess flows in the river.

Year	NPNRD	SPNRD	TPNRD	TBNRD	CPNRD	Annual Total
2011	3	3	422	0	634	1062
2012	83	44	853	21	671	1672
2013	229	89	868	69	590	1844
2014	328	105	805	104	511	1853
2015	381	107	724	121	445	1777
2016	405	102	644	126	392	1669
2017	414	95	574	125	348	1555
2018	413	88	513	121	311	1446
2019	406	81	461	115	281	1344
2020	396	75	416	109	255	1251
2021	384	69	378	103	233	1167
2022	371	64	345	97	214	1091
2023	357	59	316	91	198	1022
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
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
10yr Benefit	3056	787	6281	911	4439	15474
50yr Benefit	11341	1913	11991	2753	8171	36168

The TPNRD and their partners agree that the benefits gained from recharge projects were most beneficial in 2011 and would like the opportunity to re-create this re-charge project again when the opportunity arises.

COPY

MEMORANDUM OF AGREEMENT

THIS AGREEMENT entered into on this 9 day of November, 2012, by the STATE OF NEBRASKA, DEPARTMENT OF NATURAL RESOURCES hereinafter referred to as the "State," TWIN PLATTE NATURAL RESOURCES DISTRICT hereinafter referred to as the "NRD," and the Paxton-Hershey Water Company hereinafter referred to as the "Irrigator."

WITNESSETH:

WHEREAS, the Irrigator is the owner of the Paxton-Hershey Irrigation Canal as shown in Exhibit A; and

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

WHEREAS, the State and the NRD have jointly developed and agreed to implement an Integrated Management Plan which describes investigating projects to enhance and improve water supply, including the development of conjunctive management projects and intentional groundwater recharge projects; and

WHEREAS, the State and the NRD participate in the Platte Basin Habitat Enhancement Project (PBHEP) and the Platte Basin Water Project Coalition (COALITION) whose purposes include funding projects which enhance or improve the water supply of the Platte River; and

WHEREAS, the State and NRD desire to implement conjunctive management projects that will require alternative canal operations, such as the diversion of flood flows or other excess flows and intentional groundwater recharge, for purposes of enhancing or improving the water supply of the Platte River and;

WHEREAS, the State and NRD desire to work cooperatively to perform any monitoring that may be necessary to assess the performance of the alternative canal operations; and

WHEREAS, the State and NRD may request the Irrigator to engage in alternative canal operations which may for example result in reduced consumptive use, enhanced streamflows or groundwater recharge and;

WHEREAS, the Irrigator is willing to assist the State and NRD in exchange for compensation for a portion of its operation and maintenance costs and payment for reduced consumptive use, enhanced streamflows or groundwater recharge; and

WHEREAS, the State and NRD are willing to share in providing compensation to the Irrigator;

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. DURATION OF AGREEMENT

This Agreement is effective on the date signed by the last party and remains effective for 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.

II. THE IRRIGATOR AGREES TO PERFORM AS FOLLOWS:

- A. The Irrigator agrees to utilize the canal system shown in Exhibit A for the purpose of enhancing or improving streamflow. Specific projects, such as the diversion of flows that are in excess of USFWS target flows and state-protected flows, will be described in individual Task Orders which are agreed to at the time a project is planned.
- B. The Irrigator further agrees not to apply to consumptive use for irrigation any of the water 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. The irrigator may not divert water for purposes of this contract without first acquiring the necessary permits or other authorizations.
- D. The Irrigator retains the right to suspend or terminate its performance under this Agreement in the event of threatened damage to any of its facilities which in its sole judgment, the continued performance of which would jeopardize the integrity of its irrigation system or adversely affect its ability to provide irrigation service during its irrigation season. In the event that the Irrigator must suspend or terminate its performance pursuant to this paragraph, then it shall notify the State and the NRD in writing.
- E. Irrigator will not be required to perform additional actions without first agreeing to those actions by signing a Task Order as described in paragraph III.B below.

III. THE STATE AGREES TO PERFORM AS FOLLOWS:

- A. The State will contact the NRD and Irrigator to discuss the potential implementation of a new project.
- B. When a new project is agreed to by all Parties, the State will draft a Task Order identifying specific items such as the 1) rate of diversion, 2) total maximum diversion in acre-feet, 3) time frame in which any compensated diversions are to occur, and 4) amount or rate of compensation and payment date.
- C. Payment will be made pursuant to signed Task Orders agreed to by all Parties, describing the diversion of streamflow pursuant to this agreement.
- D. The State will work cooperatively with the NRD and Irrigator as necessary to perform measurements of the flow of water in, through and out of the project area.
- E. The State will work with all potentially affected NRDs and surface water appropriators to provide information obtained from the project regarding any impact upon stream flows.
- F. By execution of this Agreement, the State represents and affirms that it has requested and will make every effort to secure the funds for this project.

G. The State will pay a portion of the total costs according to the provisions of the PBHEP or the COALITION.

IV. THE NRD AGREES TO PERFORM AS FOLLOWS:

- A. The amount and the payment dates will be specified in individual Task Orders described in paragraph III.B.
- B. The NRD will pay a portion of the total costs according to the provisions of the PBHEP or the COALITION.
- C. The NRD will cooperate with the State to perform measurements of the flow of water in, through and out of the project area as determined necessary by the State.

V. THE PARTIES MUTUALLY AGREE AS FOLLOWS:

- A. The parties agree that 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, Central Nebraska Public Power and Irrigation District, or any other entity and the Irrigator that are outside of the provisions of this Agreement.
- B. Authorization to proceed with any work pursuant to this agreement shall be only approved by signed Task Orders that are agreed to by all parties. Additionally it is agreed that circumstances may arise in which diversion may begin prior to the date by which all of the parties have signed a particular Task Order. In such instances credit for such diversions will be given but only if approved by all of the parties.
- C. In executing this Agreement the parties shall be in compliance with all other applicable state and federal laws.

Paxton - Hershey (Irrigator)

Lex Boyce president
Name and Title

11-9-12
Date

TWIN PLATTE NATURAL RESOURCES DISTRICT (NRD)

Kent O. Miller, P.E., General Manager

11.18.12
Date

NEBRASKA DEPARTMENT OF NATURAL RESOURCES (State)

Brian P. Dunnigan, P.E., Director

11/18/13
Date

APPROVED

Paxton - Hershey Canal



Map of Paxton-Hershey Irrigation Canal
and Acres Associated with it

