DNR Form SW-001
January 2009

# 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**

Modification No.: VAR-4604
Date Filed: March 18, 2013
Time Filed: 8:05 AM
SW Appropriation No.: (if applicable)
Right ID No.: (if applicable)
Water Division: 2-A
Receipt No.: A-3926
Amount: 10.00

1. Name and address of petitioner:

Western Irrigation District
Attn: Dennis Schilz
1106 East A St
Ogallala NE 69153

E-mail address: _____ Telephone No. (308) 2890313

2. Check the situation that applies:

- ☐ Application Already Filed — Application Number: _____
- ☑ Application Not Filed (Enclose copy of proposed application)

3. Description of proposed project:

In the non-irrigation season, divert excess stream flows for the purpose of re-charging the aquifer, via the existing Western Irrigation District canal. The head gate is located in Section 14,T12N, R43W, of the 6th p.m. in Deuel County, diverting from the South Platte River.

4. The Proposed Project — (Check all that apply):

- ☐ 001.01 — Is a non-consumptive use
- ☐ 001.02 — Will replace (offset) any consumptive use (Attach Offset Plan)
- ☑ 001.03 — Is for possible unappropriated water (Attach Analysis)
- ☐ 001.04 — Existed before the stay or moratorium (Attach Proof)
- ☐ 001.05 — Addresses a public safety issue (Attach Explanation)
- ☐ 001.06 — Is a temporary use for public construction (<10 AF)

5. Other reason why a variance should be granted:

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 NRDs, and the State of Nebraska meet their water obligation under the PRIP and LB 962.

See attachment

3-11-13
Date

Dennis Schilz Pres
Signature of Applicant (or authorized agent)

**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-03182013-41604-Pet1

DNR Form APA-001
August 2008

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.

Western Irrigation District
Attn: Dennis Schilz
1106 East A St
Ogallala NE 69153

E-mail address: _____ Telephone No. (308) 289-0313

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** Ground Water Recharge

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

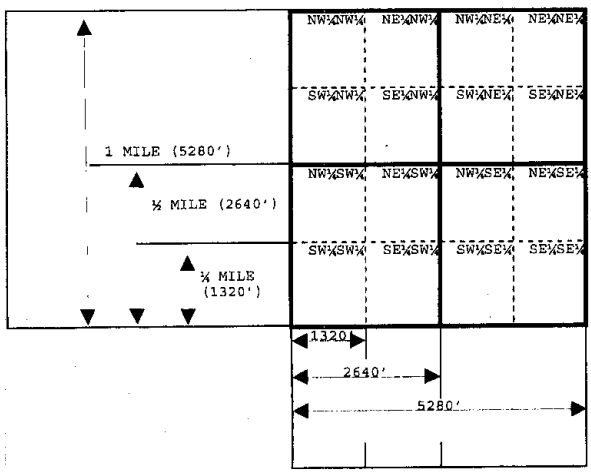
South Platte River

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

Western Irrigation District

5. Identify the location of the ☐ Headgate ☐ Pump

Section 14, Township 12 North, Range 43 E ☐ W ☑ County Deuel




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 maybe 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. 150

☐ 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 are 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.

3-11-13
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.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 |
|---|---|
| Domestic | $10 |
| Agricultural | |
| Irrigation from Stream | |
| 0-1,000 acres | $200 |
| Each additional 1,000 acre unit or portion thereof in excess of the first 1,000 acre unit | $100 |
| Irrigation from Storage Reservoir | |
| 0-1,000 acres or portion thereof in excess of the first 1,000 acre unit | $50 |
| Each additional 1,000 acre unit or portion thereof in excess of the first 1,000 acre unit | $25 |

| Nature of Use | Cost |
|---|---|
| Manufacturing | |
| General | $10 |
| Power Generation for each theoretical 50 horsepower | $5 |
| Other | $10 |

# MEMORANDUM OF AGREEMENT

**THIS AGREEMENT** entered into on this 14 day of November, 2013 by the **STATE OF NEBRASKA, DEPARTMENT OF NATURAL RESOURCES** hereinafter referred to as the **"State,"** the **TWIN PLATTE NATURAL RESOURCES DISTRICT** hereinafter referred to as the **"TPNRD"** and the **SOUTH PLATTE NATURAL RESOURCES DISTRICT** hereinafter referred to as the **"SPNRD" and collectively known as the "NRDs,"** and the **WESTERN IRRIGATION DISTRICT** hereinafter referred to as the **"Irrigator."**

**WITNESSETH:**

**WHEREAS**, the Irrigator is the owner of the Western Irrigation Canal as shown in Exhibit A; and

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

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

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

**WHEREAS,** the State and NRDs 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 NRDs 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 NRDs 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 NRDs 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 NRDs 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 NRDs will pay a portion of the total costs according to the provisions of the PBHEP or the COALITION.

C. The NRDs 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 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, Nebraska Public Power 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.

**WESTERN IRRIGATION DISTRICT (Irrigator)**

Chief President — 11-14-12

Name and Title — Date

**TWIN PLATTE NATURAL RESOURCES DISTRICT (TPNRD)**

11.16.12

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

**SOUTH PLATTE NATURAL RESOURCES DISTRICT (SPNRD)**

11-29-2012

Rod L. Horn, General Manager — Date

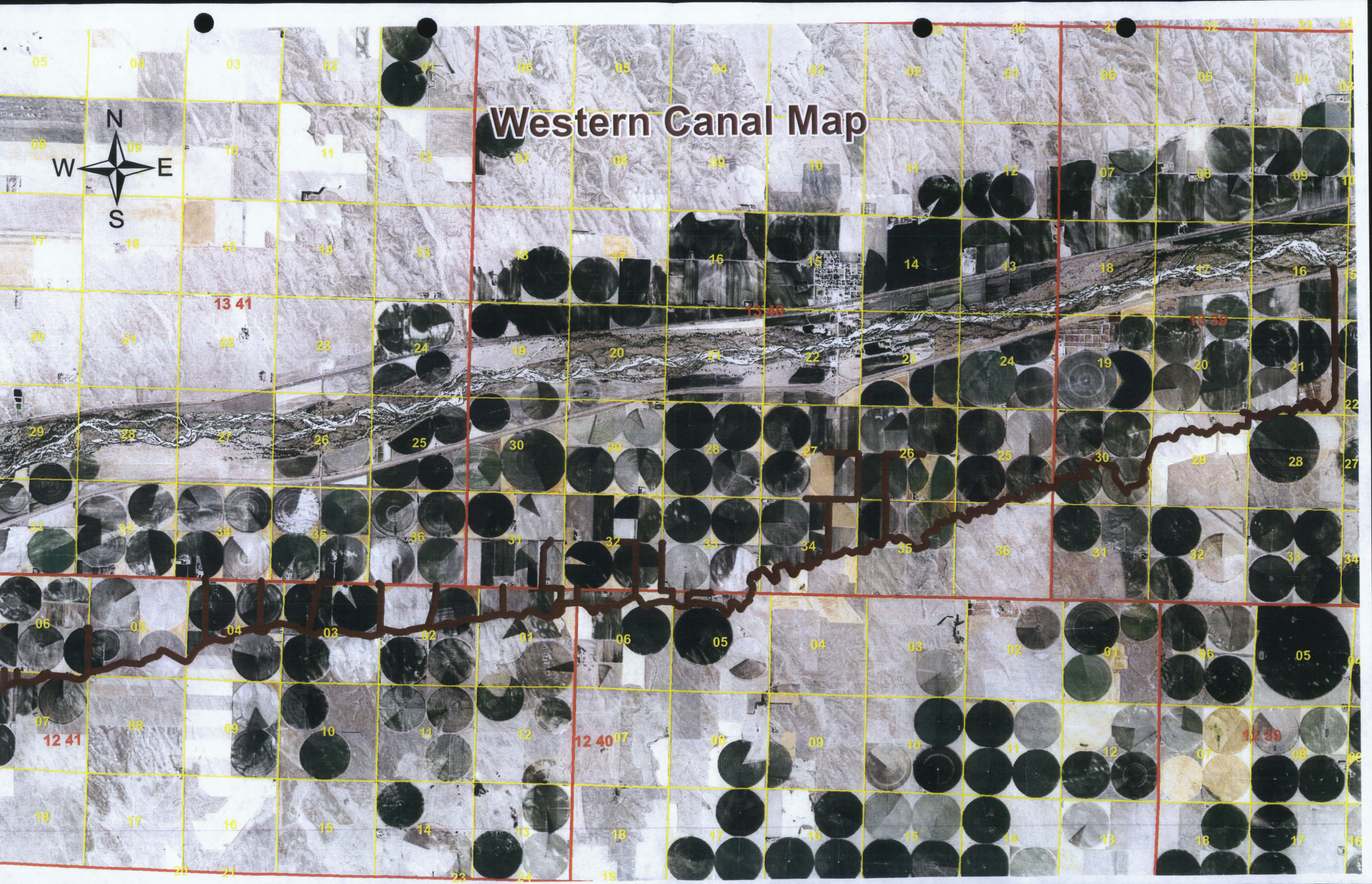
**NEBRASKA DEPARTMENT OF NATURAL RESOURCES (State)**

1/18/13

Brian P. Dunnigan, P.E., Director — Date

APPROVED
AS TO FORM & CONTENT
BY NDNR LEGAL COUNSEL
LWS DATE 1/9/2013

# Western Canal Map



# Narrative on the Benefits
# of
# The Western Irrigation District Canal 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 South Platte River, to divert those excess flows into the existing Western Irrigation District Canal 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 Western Irrigation District 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. When excess water is available, water would be diverted by Western Irrigation District canal to flow through the canal 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 Western Irrigation District normally diverts for irrigation purposes in April through October. A memorandum of agreement has been signed between the Western Irrigation District, 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. During this project some of the TPNRD irrigation canals had a spill where discharge measurements could 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 was 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 Western Irrigation District Canal and another irrigation district, loss estimates were 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.