



**APPLICATION FOR A TEMPORARY PERMIT TO  
APPROPRIATE WATER FOR TESTING WINTER CANAL  
OPERATIONS AND PILOT RECHARGE PROJECTS ON  
THE PHELPS CANAL IN GOSPER AND PHELPS  
COUNTIES**

**SUBMITTED BY  
THE CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT  
TO  
STATE OF NEBRASKA  
DEPARTMENT OF NATURAL RESOURCES**

**APRIL 2011**

**APPLICATION FOR A TEMPORARY PERMIT TO APPROPRIATE WATER  
FOR TESTING WINTER CANAL OPERATIONS AND PILOT RECHARGE PROJECTS  
ON THE PHELPS CANAL IN GOSPER AND PHELPS COUNTIES**

415 Lincoln St.  
P.O. Box 740  
Holdrege, NE 68949-0740



**CENTRAL**  
Nebraska Public Power  
and Irrigation District

Phone: (308) 995-8601  
Fax: (308) 995-5705  
Web: www.cnppid.com

March 29, 2011

Mr. Mike Thompson, Division Head  
Permits and Registrations  
Nebraska Department of Natural Resources  
PO Box 94604  
Lincoln, NE 68509

Dear Mike:

Enclosed is the supplemental information discussed with you and your staff on March 14-15, 2011. We are supplying information regarding just cause (item #4) as discussed with you, however, we do not find this requirement in the statutes.

If you should have any questions about this information, please contact Cory Steinke.

Sincerely,

A handwritten signature in black ink that reads "Don Kraus". The signature is written in a cursive style.

Don Kraus, P.E.  
General Manager

jh

Enclosure

RECEIVED

APR 19 2011

DEPARTMENT OF  
NATURAL RESOURCES

## Supporting Information for Petition VAR-2007

### Platte River Diversion Operations and Data

Central Nebraska Public Power and Irrigation District (CNPPID) diverts water from the Platte River east of the city of North Platte, Nebraska. CNPPID holds permits to divert natural flow and storage water from the Platte River into the Supply Canal for the purposes of irrigation, power production and instream flows for fish and wildlife. CNPPID normally diverts all water that is available at the diversion dam into the Supply Canal up to a 2,250 cfs capacity and all remaining water is passed downstream of the diversion dam into the Platte River. Tables 1 and 2 show historic winter diversions into the Supply Canal and flows passing the Tri-County Diversion Dam.

Table 1 Winter Tri-County Supply Canal Diversions

| Supply Canal Diversion, af |          |         |          |
|----------------------------|----------|---------|----------|
| Water Year                 | December | January | February |
| 1991                       | 41190    | 53640   | 72320    |
| 1992                       | 58890    | 67370   | 85830    |
| 1993                       | 69510    | 79380   | 81760    |
| 1994                       | 102450   | 96970   | 91010    |
| 1995                       | 60980    | 63060   | 56970    |
| 1996                       | 92480    | 91140   | 99300    |
| 1997                       | 100620   | 94460   | 109520   |
| 1998                       | 131060   | 122370  | 122260   |
| 1999                       | 108240   | 107130  | 115580   |
| 2000                       | 131260   | 133811  | 125845   |
| 2001                       | 56212    | 75908   | 76594    |
| 2002                       | 64780    | 61810   | 53970    |
| 2003                       | 38330    | 39320   | 35550    |
| 2004                       | 21166    | 24234   | 28398    |
| 2005                       | 27648    | 29094   | 26175    |
| 2006                       | 30626    | 32806   | 27000    |
| 2007                       | 28934    | 28779   | 35585    |
| 2008                       | 28853    | 34557   | 33283    |
| 2009                       | 27532    | 36086   | 32490    |
| 2010                       | 57991    | 79266   | 55678    |

Table 2 Winter Flow Passing Tri-County Diversion

| Flows Passing the Tri-County Diversion Dam, af |          |         |          |
|--|----------|---------|----------|
| Water Year                                     | December | January | February |
| 1991   | 7570     | 3460    | 3830     |
| 1992   | 3490     | 3250    | 3690     |
| 1993   | 3380     | 14160   | 6890     |
| 1994   | 3050     | 9230    | 6430     |
| 1995   | 2960     | 3760    | 3100     |
| 1996   | 4530     | 9440    | 16560    |
| 1997   | 13290    | 13490   | 5070     |
| 1998   | 63080    | 70930   | 48770    |
| 1999   | 16410    | 45220   | 0        |
| 2000   | 42050    | 51972   | 43603    |
| 2001   | 0        | 0       | 0        |
| 2002   | 0        | 123     | 0        |
| 2003   | 3        | 0       | 0        |
| 2004   | 0        | 0       | 0        |
| 2005   | 0        | 0       | 0        |
| 2006   | 0        | 0       | 0        |
| 2007   | 0        | 0       | 0        |
| 2008   | 0        | 0       | 0        |
| 2009   | 0        | 0       | 0        |
| 2010   | 1259     | 2153    | 1002     |

Winter diversions into the Supply Canal are typically for power production uses. If the EA Manager wishes to release Environmental Account water in the winter season, CNPPID would also divert that water if possible into the Supply Canal. Water only passes the Tri-County diversion dam if the Supply Canal is diverting at capacity, icing or maintenance issues exists along the Supply Canal, or if we are in an agreement with another agency to intentionally bypass water past our Supply Canal. The temporary permit associated with VAR-2007 will not change any historic or future diversion operations for CNPPID. CNPPID will continue to divert as much as

possible and pass any remaining water down the Platte River. This temporary permit only affects the amount of water that will be returned at the J2 Return.

### Reduction of J2 Return Flows

CNPPID is requesting to divert excess flows into the Phelps Canal in the permit associated with VAR-2007. Excess flows are flows in the Platte River that are in excess of target flow requirements established by the Fish and Wildlife Service (FWS) for the Platte River Recovery and Implementation Program (PRRIP) and in excess of that needed by existing surface water appropriations. CNPPID included an analysis with VAR-2007 which illustrates that excess flows at the J2 Return are present. DNR also has published a report, "Evaluation of Historic Platte River Streamflow in Excess of State Protected Flows and Target Flows", which also shows the presence of excess flows at the J2 return. Since the permit accompanying VAR-2007 is only requesting to divert into the Phelps Canal at times when excess flows are present and diversions are not to exceed the amount of excess flows present at any given time, any depletion to J2 Return during times of diversion under this temporary permit would not cause harm to any existing surface water appropriations or target flows.

### Expected Benefits

The permit associated with VAR-2007 is for the diversion of natural flow into the Phelps Canal for the purpose of testing the winter canal operations and for diversion of water into a pilot recharge project in coordination with the PRRIP. Expected benefits of these diversions will assist the PRRIP by providing invaluable data for this pilot recharge project and data to evaluate the feasibility of using the Phelps Canal for a project to help reduce the shortages to FWS target flows. These studies are currently seeking to identify potential sites for acquiring permanent applications and this pilot recharge project would assist in quantifying the high quality locations for further study. Additionally, the diversion and recharge of these flows associated with these testing operations might also assist local natural resource districts and the state in offsetting the impacts of some of the uses which have occurred subsequent to 1997 as required by the PRRIP and LB962.

The PRRIP was developed on January 1, 2007 by the governors of Nebraska, Colorado and Wyoming and the Secretary of the Interior to provide defined benefits for four threatened or endangered species using the Platte River Basin. LB 962 was adopted by the Nebraska Legislature in 2004 calling for the management, conservation, and beneficial use of hydrologically connected ground water and surface water. LB 962 requires the development of integrated management plans and offsets for streamflow depletions caused by post July 1, 1997 uses with additional offsets that may be needed to return overappropriated basins to a fully appropriated conditions.



Dave Heineman  
Governor

# STATE OF NEBRASKA

DEPARTMENT OF NATURAL RESOURCES  
Brian P. Dunnigan, P.E.  
Director

March 8, 2011

IN REPLY TO:

VAR-2007

Michael Drain, P.E.  
Central Nebraska Public Power and Irrigation District  
P.O. Box 740  
Holdrege, NE 68949

RE: Petition VAR-2007, for leave to file application for temporary surface water appropriation

Dear Mike:

Petition VAR-2007, a Petition for Leave to File or Consider an Application for a new Surface Water Appropriation was received at the Department of Natural Resources (Department) on November 29, 2010. After initial review this petition and accompanying proposed application to appropriate and attachments submitted require some additional items.

Please provide the following:

1. The historical diversion data for the amount diverted and time diverted at Tri-County Diversion Dam for each existing permitted use for the proposed "winter months," and how the proposed temporary permit diversion would contrast.
2. For the same "winter months" time period please provide historical data to show the amount of water passing the Tri-County Diversion dam, if any.
3. Discuss how the decrease of outflow at the J-2 return will not cause harm.
4. What are the expected benefits of this potential temporary appropriation that would show good cause to warrant an exception to the moratorium.

Please return this information to the Department within 90 days of receipt of this letter. If you have any questions you can contact me at (402) 471-2363 or [mike.thompson@nebraska.gov](mailto:mike.thompson@nebraska.gov).

Sincerely,

Michael Thompson, Head  
Permits and Registrations



CNPPID  
p&r/thompson  
mod - 03082011 - 2007 - CORi ( )  
301 Centennial Mall South, 4th Floor • P.O. Box 94676 • Lincoln, Nebraska 68509-4676 • Phone (402) 471-2363 • Telefax (402) 471-2900

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STATE OF NEBRASKA  
DEPARTMENT OF NATURAL RESOURCES

ORDER GRANTING LEAVE TO FILE AN APPLICATION FOR  
A NEW SURFACE WATER APPROPRIATION WITHIN AN AREA SUBJECT TO A  
MORATORIUM, BY PETITION VAR-2007  
WATER DIVISION 1-B

BACKGROUND

1. On July 14, 2004, the Department of Natural Resources (Department) issued a formal moratorium on all new surface water appropriations in the Platte River Basin upstream of the confluence with the Loup River near Columbus, Nebraska. The moratorium included all tributary streams above the Loup River confluence including the North and South Platte Rivers and tributaries.
2. On January 1, 2007, work officially commenced on the Platte River Recovery and Implementation Program (PRRIP or Program). PRRIP's goals include reducing shortages to U.S. Fish and Wildlife Service target flows and providing additional land habitat for endangered species in the Lexington to Chapman reach of the Platte River. In order to meet these goals, each signatory to PRRIP has adopted depletions plans to address the mitigation of the adverse impacts of certain new water-related activities on streamflows in the Platte River. In addition to focus on new depletion, Nebraska's New Depletion Plan provides that the State of Nebraska will mitigate existing surface water and groundwater uses in order to return to a July 1, 1997, level of water-use development. Portions of the shortages to target flows are intended to be offset through water conservation and water supply projects identified by the PRRIP Governance Committee in the Water Action Plan, which provides guidance in implementing the water component of the Program. A goal of the first thirteen-year increment of the Program is to attempt to retime and improve flows in the central Platte River so as to reduce shortages to target flows by an average of 130,000 to 150,000 acre-feet (AF) per year, as measured at Grand Island.
3. On August 13, 2009, integrated management plans (IMPs) were adopted by order of the Department, pursuant to Neb. Rev. Stat. § 46-718(2) for the following Natural Resources Districts (NRDs): the North Platte NRD, the South Platte NRD, the Twin Platte NRD, the Central Platte NRD, and the Tri-Basin NRD. As part of the surface water controls adopted by the Department pursuant to Neb. Rev. Stat. § 46-716(1)(b), the moratorium on issuing new surface water appropriations was continued.
4. On September 11, 2009, a Basin-Wide Integrated Management Plan (BWIMP) for the overappropriated area of the Platte River Basin was adopted by order of the Department. The BWIMP was also adopted by the following NRDs: the North Platte NRD, the South Platte NRD, the Twin Platte NRD, the Central Platte NRD, and the Tri-Basin NRD. These NRDs are collectively referred to in the BWIMP as the "Platte River Basin NRDs."

5. On November 29, 2010 the Central Nebraska Public Power and Irrigation District (Petitioner), filed petition VAR-2007 for Leave to File or Consider an Application for a Permit to Appropriate Water within a Moratorium Area or Stay Area. The petition requests leave to file an application for a temporary permit to appropriate water for the purpose of testing winter operations of the Phelps Canal and pilot recharge projects to assist the PRRIP.
6. For the purpose of this order, "excess flows" will be those streamflows that are in excess of the U.S. Fish and Wildlife Service target flows and other state protected appropriations that are in priority.

#### ANALYSIS

1. The formal moratorium issued by the Department in 2004 has been continued in the surface water controls included in the individual NRD IMPs adopted by the Platte River Basin NRDs and the Department. The Department's July 14, 2004, order and the provisions of Neb. Rev. Stat. § 46-714(3)(n) allow for new surface water appropriations if the Department grants a variance and subsequently approves a permit for such new use. When filing a variance request, a project proponent must offer a clearly stated basis for such request and must offer sufficient good cause shown. *Department of Natural Resources Rules of Surface Water, Title 457, Neb. Admin. Code Chapter 23* lists six circumstances that may be put forward as justification for granting a variance to apply for a new water use, in conjunction with an examination of good cause shown.

In addition to *Department of Natural Resources Rules for Surface Water, Title 457 Neb. Admin. Code Chapter 23* regarding variances, the following useful definition is found in Neb. Rev. Stat. § 46-706(29), which states:

*Variance means (a) an approval to deviate from a restriction imposed under subsection (1), (2), (8), or (9) of § 46-714 or (b) the approval to act in a manner contrary to existing rules or regulations from a governing body whose rule or regulation is otherwise applicable[.]*

In determining the intent and scope of good cause, the Department will apply the definition supplied by Neb. Rev. Stat. § 46-706(23), which states:

*Good cause shown means a reasonable justification for granting a variance for a consumptive use of water that would otherwise be prohibited by rule or regulation and which the granting agency, district, or organization reasonably and in good faith believes will provide an economic, environmental, social, or public health and safety benefit that is equal to or greater than the benefit resulting from the rule or regulation from which a variance is sought[.]*

Furthermore, consumptive use is defined in Neb. Rev. Stat. § 46-706(20) as follows:

*Consumptive use means the amount of water that is consumed under appropriate and reasonably efficient practices to accomplish without waste the purposes for which the appropriation or other legally permitted use is lawfully made[.]*

Because the Platte River Basin is currently undergoing integrated management for the purposes of reducing depletions to streamflow, any new consumptive use must be examined for its potential effects on extant surface and groundwater users and upon all matters of significant public interest and concern. This includes assessing both positive and negative impacts on the State's ability to comply with interstate agreements, programs, decrees and compacts, including PRRIP. Thus, any proposed project must be scrutinized to prevent conflict with (a) the goals and actions necessary to implement the IMPs adopted by the Platte River Basin NRDs and the Department and (b) the water needs of Water Action Plan projects that will be implemented under PRRIP. Applications for potential beneficial uses that are not clearly non-consumptive will be presumed to be at least partially consumptive. Therefore, an analysis of the effects of a proposed new diversion on these existing uses and responsibilities is required in order to determine whether sufficient good cause exists to grant a variance to apply for a new use.

2. Petitioner provided a document and digital spreadsheet titled "Platte River Hydraulic Analysis GI North Bend Louisville," which was intended to demonstrate the presence of unappropriated water in the Platte River by comparing gaged stream records at three locations against U.S. Fish and Wildlife Service target flows and state-protected instream flow appropriations held by the Central Platte NRD and the Nebraska Game and Parks Commission. The analysis does suggest there may be unappropriated water during certain years.
3. Petitioner is collaborating with PRRIP partners by proposing to take advantage of excess flows on the Platte River for the purposes of studying winter operations of canals, studying groundwater recharge in Phelps Canal and in pilot recharge project ponds. The monitoring of this project is expected to provide information that will be used to plan for future projects that are intended to achieve PRRIP goals. It is expected that data acquired will be used to identify good quality recharge sites for permanent use or further study. Petitioner also indicated the recharge that results from this pilot project may have an additional benefit of assisting local natural resources districts in offsetting some post-1997 new uses, as required by the BWIMP and individual IMPs.
4. The expected benefits from projects such as this are (a) to mitigate post-1997 new depletions by replacement of groundwater that was withdrawn for irrigation and (b) to enhance base flow returns to the Platte River by way of aquifer recharge and, therefore, to retime excess flows so that they will augment streamflow when it is more necessary to help satisfy target flows and state-protected flows. Quantified estimates of recharge potential have not been offered for this temporary project; however, the recharge component will be monitored in order to better plan for this type of project in the future. The information gathered from this project will assist in verifying these concepts.

5. Petitioner proposes to divert excess flows during the non-irrigation season. In particular, Petitioner intends to divert during the winter season, if river conditions are such that excess flows are available.

#### CONCLUSIONS

1. Petitioner has demonstrated there may be unappropriated water in the Platte River during the non-irrigation season.
2. The temporary diversion project proposed on the attached draft application is in cooperation with PRRIP partners and is in conformity with the intent of PRRIP Water Action Plan projects. Information and data obtained by the proposed temporary project would be used to demonstrate the feasibility of long term integrated management and Water Action Plan projects that propose to divert excess flows and retime the return flows to increase the frequency at which target flows and state protected flows are satisfied. Such data may be incorporated in the design of future projects.
3. Petitioner addressed the potential effects on other appropriators and pointed out that the time at which diversions would occur under the proposed project would be during the non-irrigation season. Therefore, no adverse impacts on existing water users are expected by Petitioner, and the prior appropriation system will protect other appropriators. Petitioner acknowledges that protection of target flows must be maintained throughout the year, and Petitioner expects such to be a condition of any permit approval, if a permit is allowed to be filed and is ultimately granted.
4. The potential benefits of testing operational procedures, obtaining design and groundwater recharge data, and ancillary recharge of the groundwater aquifer that Petitioner expects to result from the proposed project outweigh the effects of any stream depletions from temporarily diverting the water during times of unappropriated streamflow availability for the proposed temporary permit.
5. For these reasons, Petitioner should be granted leave to file a temporary application to test winter operations of the Phelps Canal and construct and monitor canal recharge and pilot recharge projects to assist the PRRIP.

#### ORDER

#### IT IS HEREBY ORDERED:

1. Petition VAR-2007 meets the requirements of *Department of Natural Resources Rules of Surface Water, Title 457, Nebraska Admin. Code Chapter 23, §§ 001.03*, has shown sufficient good cause, and is GRANTED.

2. This decision shall not bind the Director to approve any application to which it relates, or in any way be used as evidence of prejudice for the Director's future decisions concerning the specific approval requirements of such an application.

DEPARTMENT OF NATURAL RESOURCES

April 6, 2011

  
Brian P. Dunnigan, P.E., Director

A copy of this Order was posted on the Department's website. A copy of this Order was provided to the Department's field office in Cambridge, Nebraska. A copy of this Order was mailed on April 6, 2011, to the following:

Don Kraus, General Manager  
Central Nebraska Public Power and Irrigation District  
415 Lincoln Street, P.O. Box 740  
Holdrege, Nebraska 68949-0740

THE CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT — HOLDREGE, NEBRASKA  
CENTRAL NBR PUBLIC POWER

38259

Vendor ID: V0001314

Nebraska Department of Natural

InvDate

InvNbr

PONbr

Description

Discount

Amount Pd

4/18/11

Water Right Application

0.00

10.00

Check Date: 04/18/2011

Check Number: 38259

Check Amount:

\$10.00

APPLICATION

## CNPPID's Intentions

### Temporary Permit to Appropriate Water for Testing Winter Canal Operations and Pilot Recharge Projects on the Phelps Canal in Gosper and Phelps Counties

The applicant, The Central Nebraska Public Power and Irrigation District (CNPPID) intends to divert Platte River flows in excess of the U. S. Fish and Wildlife Service's Target Flows (target flows) and state protected flows (as defined in the Nebraska New Depletions Plan) for purposes of testing winter canal operations and pilot recharge projects for the Platte River Recovery Implementation Program (PRRIP) on the Phelps Canal.

Only at those times when flow in the Platte River exceeds the quantity necessary to satisfy target flows and state protected flows would diversion occur. Included with CNPPID's Petition For Leave is the Platte River Hydraulic Analysis showing that CNPPID expects unappropriated flows in the Platte River.

The hydraulic analysis and description of excess flows or unappropriated water in the Platte River is based on an assumption that, because of the Platte River Recovery Implementation Program, any new appropriations to Platte River water may be limited to only being able to divert water in excess of U. S. Fish and Wildlife Service's "Target Flows." CNPPID is unaware of any formalization of a requirement to protect Target Flows in the seeking or granting of new appropriations. Therefore, CNPPID wants to clarify that this petition requests the next available water in the Platte River based on priority and submission date and that any limitations regarding Target Flows would be those requirements that may be shared by all future appropriations, or as otherwise may be required as a matter of law.

Diversion for testing the canal and the pilot recharge projects into CNPPID's Phelps Canal would not exceed 350 cfs and would not exceed 10,000 acre-feet annually. The proposed area of testing and pilot recharge projects will be within the first 9.7 miles of the Phelps Canal.

# REPORT

**REPORT TO ACCOMPANY**

**THE**

**APPLICATION FOR A TEMPORARY PERMIT**  
**TO APPROPRIATE WATER FOR TESTING WINTER CANAL**  
**OPERATIONS AND PILOT RECHARGE PROJECTS**  
**ON THE PHELPS CANAL**  
**IN GOSPER AND PHELPS COUNTIES**

**November 2010**

**SUBMITTED BY**

**THE CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT**

**TO**

**STATE OF NEBRASKA**  
**DEPARTMENT OF NATURAL RESOURCES**

THE CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT

REPORT TO ACCOMPANY  
THE  
APPLICATION FOR A TEMPORARY PERMIT  
TO APPROPRIATE WATER FOR TESTING WINTER CANAL OPERATIONS  
AND PILOT RECHARGE PROJECTS  
ON THE PHELPS CANAL  
IN GOSPER AND PHELPS COUNTIES

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**EXHIBITS**

Exhibit 1 The CD contains the following documents and data:

- (1) Cover Letter
- (2) Petition for Leave Form
- (3) Permit to Appropriate Water Form
- (4) CNPPID's Intentions
- (5) Spreadsheet of Platte River Hydraulic Analysis of Flows in the Platte River
- (6) Platte River Hydraulic Analysis Summary Document
- (7) Report to Accompany the Application for a Temporary Permit to Appropriate Water for Testing Winter Canal Operations and Pilot Recharge Projects on the Phelps Canal in Gosper and Phelps Counties
- (8) The data for creating Map 1 and Map 2

Exhibit 2 A summary of the Platte River Hydraulic Analysis of Flows in the Platte River. The data analysis is on the CD in Exhibit 1.

## TABLE OF CONTENTS (continued)

### MAPS

(Note: The data used to create the maps is on the CD in Exhibit 1.)

- Map 1 CNPPID - SUPPLY CANAL AND LAKES  
LINCOLN, DAWSON AND GOSPER COUNTIES  
Drawing No. SC-LAKES1  
Date: 11/19/98
- Map 2 Phelps Testing/Pilot Recharge Project Located in Gosper and  
Phelps Counties, Nebraska

THE CENTRAL NEBRASKA PUBLIC POWER AND IRRIGATION DISTRICT

REPORT TO ACCOMPANY  
THE APPLICATION FOR A TEMPORARY PERMIT TO APPROPRIATE WATER  
FOR TESTING WINTER CANAL OPERATIONS AND  
PILOT RECHARGE PROJECTS ON THE PHELPS CANAL  
IN GOSPER AND PHELPS COUNTIES

**Project Description**

Parties in the Platte River Basin are in need of projects that can retime excess flows in the Platte River or develop offsets for streamflow depletions. Studies have shown that recharge projects may be able to retime flows in the Platte River for beneficial uses. CNPPID has existing facilities (canals) that can accomplish these needs. However, excess river flows and canal capacities are typically only available in the non-irrigation season. This would require canals to operate during the winter months and extreme weather conditions. This application requests a temporary water appropriation for diverting water into CNPPID's Phelps Canal in the non-irrigation season to test winter operations of the Phelps Canal and divert canal flows into pilot recharge projects for the Platte River Recovery Implementation Program (PRRIP). The project will use Platte River flows in excess of the U. S. Fish and Wildlife Service's Target Flows<sup>1</sup> and state protected flows (as defined in the Nebraska New Depletions Plan). A Platte River Hydraulic Analysis summary, which shows the availability of excess flows, is included in Exhibit 2 with the data analysis included on the CD in Exhibit 1.

CNPPID will divert surface water from the Platte River at CNPPID's Diversion Dam, near North Platte, Nebraska, through the Supply Canal into the Phelps Canal and laterals for purposes of testing the ability of winter operations and to deliver water to pilot recharge projects. Because CNPPID already utilizes these same facilities for diversion under other more senior appropriations for hydropower production, no additional water would be diverted from the Platte River at the point of diversion under this appropriation. However, under this appropriation the water so diverted would then be further diverted into the Phelps Canal, rather than being returned to the Platte River at the Johnson No. 2 River Return (J2 Return) so long as excess water is available.

**Temporary Application**

CNPPID would like to take advantage of the current water supply and available excess flows in the Platte River and seek a temporary water right permit for the purpose of testing winter operations of the Phelps Canal and diverting water into pilot recharge projects for the PRRIP. This temporary permit request is for one year or one full winter season from the date that the

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<sup>1</sup> Taken from the Nebraska Depletions Plan, Platte River Recovery Implementation Program, Attachment 5, Section 8, December 7, 2005, pg 4.

request may be granted by the Nebraska Department of Natural Resources (Department). The current water supply most likely will produce flows in excess of instream flow rights and the U. S. Fish and Wildlife Service's (FWS) target flows for the near future. This temporary right would enable CNPPID to divert those excess flows to verify that the Phelps Canal is able to be operated in the winter months and provide water to recharge projects along and in the Phelps Canal.

### **Project Facilities**

CNPPID's Diversion Dam is located just below the confluence of the North Platte River and the South Platte River, approximately 50 miles downstream from Kingsley Dam. The Diversion Dam near North Platte is a combination concrete ogee spillway and radial gate structure extending 874 feet across the Platte River. The Diversion Dam diverts the natural streamflow of the North Platte River and the South Platte River and storage water releases from Lake McConaughy into the headgates of CNPPID's 75.5-mile-long Supply Canal.

The Supply Canal has a capacity of 2,250 cfs and extends from the Diversion Dam to the J2 Return, located south and east of Lexington. The Supply Canal diverts water on a year-round basis and furnishes water for CNPPID's three hydroelectric generating power plants and the cooling water for Nebraska Public Power District's Canaday Steam Plant. Jeffrey Reservoir and Johnson Reservoir are located along the Supply Canal and serve as regulating reservoirs. The Diversion Dam and Supply Canal are shown on Map 1.

The Phelps Canal is CNPPID's largest irrigation canal on the Supply Canal system. It begins at the J2 Return and consists of 56.9 miles of main canal and 235.6 miles of distribution laterals and buried pipelines. It provides water to land (56,782 irrigated acres in 2010) in Gosper, Phelps, and Kearney Counties. The Phelps Canal is shown on Map 2 and Map 3.

### **Proposed Canal Testing and Pilot Recharge Project Operations**

CNPPID intends to divert water into the Phelps Canal during the winter months to test the canal's ability to operate under icing conditions. Gate movement, ice, monitoring equipment and canal bank erosion are concerns of winter operations that will be tested or monitored. The canal will be filled to normal operating levels and then a lower constant flow of around 30 cfs will be run through the canal and released back to the Platte River through an existing unnamed drain approximately 9.7 miles from the Phelps Canal head gate. The water will return to the Platte River just east of the Overton, Nebraska, bridge crossing. The canal and unnamed drain can be seen on Map 2. Additional water will need to be diverted to cover seepage losses in the canal and to keep the canal sections at normal levels. The Phelps Canal capacity is 1,000 cfs, but for the purpose testing and filling of the canal, diversions shall not exceed a peak flow of 350 cfs.

The pilot recharge project will consist of up to two sites along the Phelps Canal. Each site may be around one acre in area and require a constant diversion of around 1-2 cfs. Each site will be filled to normal operating levels and then a constant source of water will be diverted into the sites to test infiltration rates, groundwater effects of the seepage and nearby drain/stream fluctuations. Possible pilot recharge project sites can be seen on Map 2.

CNPPID diverts water through its Supply Canal during the non-irrigation season for hydropower production. Diverting surface water for testing of the canal and pilot projects only slightly modifies the operations of CNPPID's system, primarily reducing the amount of water returned to the Platte River at the J2 Return.

### **Quantity and Rate of Diversions**

A maximum flow of 350 cfs and a maximum annual diversion of 10,000 acre-feet shall be expected for the testing involved in this temporary permit. Flows of up to 350 cfs will be diverted to fill the canal sections. Flows will then drop to around 70 cfs to pass water through the system and cover seepage losses along the canal. The winter operations could last up to 3 months if no problems are encountered with canal operations and the pilot projects need the supply for their testing process.





PETITION FOR LEAVE TO FILE APPLIC FOR A  
TEMP PERMIT TO APPROPRIATE FOR  
TESTING WINTER CANAL OPERATIONS  
NOV 2010



## Platte River Hydraulic Analysis

The Central Nebraska Public Power and Irrigation District (CNPPID) analyzed Platte River flows at Grand Island, North Bend and Louisville over the past fourteen years (1996-2009) to illustrate the availability of unappropriated water in the Platte River. CNPPID identified the U.S. Fish and Wildlife Service's Target Flows or excess flows and state protected flows (as defined in the Nebraska New Depletions Plan) as flow requirements that must be exceeded prior to distinguishing unappropriated water. These flow requirements vary throughout the year with the target flows differing for type of year (wet, average, and dry) also.

For the purpose of this hydraulic analysis, CNPPID analyzed the flows in the Platte River that exceed the higher of the "wet" condition daily target flows and instreamflow appropriations (such as, Central Platte Natural Resource District's appropriations (A-17004 through A-17009), and Nebraska Game and Parks Commission's appropriations (A-17329 through A-17332)). This analysis conservatively quantifies the amount of excess water available at Grand Island because of the use of the "wet" target flow criteria. Actual conditions for most of, if not all of, the drought cycle were classified as "dry" conditions, therefore the target flows would have been lower and more unappropriated water was in the Platte River than shown in this analysis. CNPPID acknowledges that the state protected flows include Water Action Plans that may utilize some of the unappropriated water in the Platte River, but due to the uncertainty of the projects and required flows, they were not included in this analysis.

The analysis consists of fourteen years of data, 1996 to 2009, to cover a time frame that includes both wet/average years (1996 to 2001, 2009) and dry years (2002 to 2008). The attached Platte River Hydraulic Analysis Summary shows the number of days that the Grand Island, North Bend and Louisville river flow exceeds the requirements, the annual amount of unappropriated water at each location, and the annual amount of unappropriated water available at CNPPID's J2 Return for the past fourteen-year period.

The analysis shows unappropriated water in the Platte River for all but two years at Grand Island and every year at North Bend and Louisville. It is evident that the limiting factor for available unappropriated water at the J2 Return is the flow requirements and flow conditions at Grand Island. There seems to be around one-third of the amount of unappropriated water at Grand Island as there is at North Bend and Louisville over the analyzed period.

Days of Excess at Grand Island (Using FWS "Wet" Target Flows, NGPC and CPNRD rights)

Sum of Days of E

| Year               | Jan        | Feb       | Mar       | Apr       | May        | Jun        | Jul        | Aug        | Sep        | Oct       | Nov        | Dec        | Grand Total |
|--------------------|------------|-----------|-----------|-----------|------------|------------|------------|------------|------------|-----------|------------|------------|-------------|
| 1996               | 24         | 7         | 8         | 2         | 14         | 17         | 27         | 30         | 29         | 20        | 18         | 31         | 227         |
| 1997               | 31         | 10        | 7         | 16        | 10         | 17         | 10         | 22         | 29         | 28        | 30         | 31         | 241         |
| 1998               | 31         | 18        | 12        | 30        | 20         | 15         | 11         | 18         | 30         | 0         | 30         | 31         | 246         |
| 1999               | 31         | 14        | 5         | 13        | 21         | 30         | 15         | 27         | 30         | 31        | 30         | 31         | 278         |
| 2000               | 31         | 15        | 15        | 17        | 9          | 7          | 8          | 1          | 0          | 0         | 12         | 10         | 125         |
| 2001               | 28         | 4         | 7         | 3         | 13         | 0          | 4          | 6          | 13         | 0         | 4          | 29         | 111         |
| 2002               | 26         | 0         | 4         | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 0          | 30          |
| 2003               | 1          | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 1          | 2           |
| 2004               | 0          | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 0          | 0           |
| 2005               | 0          | 0         | 0         | 0         | 6          | 5          | 0          | 0          | 0          | 0         | 0          | 0          | 11          |
| 2006               | 0          | 0         | 0         | 0         | 0          | 0          | 0          | 0          | 0          | 0         | 0          | 3          | 3           |
| 2007               | 2          | 0         | 0         | 5         | 1          | 5          | 10         | 13         | 0          | 0         | 0          | 4          | 40          |
| 2008               | 4          | 0         | 0         | 0         | 14         | 14         | 8          | 0          | 0          | 4         | 13         | 1          | 58          |
| 2009               | 9          | 0         | 0         | 4         | 0          | 10         | 8          | 0          | 1          | 3         | 21         | 18         | 74          |
| <b>Grand Total</b> | <b>218</b> | <b>68</b> | <b>58</b> | <b>90</b> | <b>108</b> | <b>120</b> | <b>101</b> | <b>117</b> | <b>132</b> | <b>86</b> | <b>158</b> | <b>190</b> | <b>1446</b> |

Days of Excess at North Bend (Using NGPC instream flow rights)

Sum of Days of E

| Year               | Jan        | Feb        | Mar        | Apr        | May        | Jun        | Jul        | Aug        | Sep        | Oct        | Nov        | Dec        | Grand Total |
|--------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| 1996               | 26         | 29         | 31         | 30         | 31         | 30         | 31         | 31         | 30         | 31         | 30         | 24         | 354         |
| 1997               | 31         | 28         | 31         | 30         | 31         | 30         | 20         | 22         | 30         | 31         | 30         | 31         | 345         |
| 1998               | 24         | 28         | 30         | 30         | 31         | 30         | 31         | 31         | 30         | 31         | 30         | 31         | 357         |
| 1999               | 31         | 28         | 31         | 30         | 31         | 30         | 31         | 30         | 30         | 31         | 30         | 31         | 364         |
| 2000               | 31         | 29         | 31         | 30         | 31         | 30         | 28         | 16         | 25         | 31         | 30         | 25         | 337         |
| 2001               | 31         | 28         | 31         | 30         | 31         | 28         | 20         | 18         | 29         | 31         | 30         | 26         | 333         |
| 2002               | 30         | 21         | 25         | 30         | 31         | 24         | 0          | 3          | 11         | 30         | 29         | 28         | 262         |
| 2003               | 14         | 25         | 31         | 30         | 31         | 30         | 7          | 0          | 11         | 26         | 30         | 16         | 251         |
| 2004               | 0          | 13         | 31         | 30         | 26         | 30         | 22         | 5          | 13         | 30         | 30         | 26         | 256         |
| 2005               | 15         | 28         | 31         | 30         | 31         | 30         | 10         | 12         | 13         | 28         | 27         | 24         | 279         |
| 2006               | 31         | 24         | 31         | 30         | 12         | 6          | 0          | 8          | 25         | 31         | 29         | 25         | 252         |
| 2007               | 20         | 28         | 31         | 30         | 31         | 30         | 27         | 31         | 30         | 31         | 30         | 31         | 350         |
| 2008               | 31         | 29         | 31         | 30         | 31         | 30         | 31         | 17         | 17         | 29         | 30         | 22         | 328         |
| 2009               | 31         | 28         | 31         | 30         | 31         | 30         | 31         | 31         | 30         | 31         | 30         | 7          | 341         |
| <b>Grand Total</b> | <b>346</b> | <b>366</b> | <b>427</b> | <b>420</b> | <b>410</b> | <b>388</b> | <b>289</b> | <b>255</b> | <b>324</b> | <b>422</b> | <b>415</b> | <b>347</b> | <b>4409</b> |

Days of Excess at Louisville (Using NGPC instream flow rights)

Sum of Days of E

| Year               | Jan        | Feb        | Mar        | Apr        | May        | Jun        | Jul        | Aug        | Sep        | Oct        | Nov        | Dec        | Grand Total |
|--------------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|------------|-------------|
| 1996               | 22         | 26         | 31         | 30         | 31         | 30         | 31         | 31         | 30         | 31         | 30         | 25         | 348         |
| 1997               | 31         | 28         | 31         | 30         | 31         | 30         | 23         | 20         | 30         | 31         | 30         | 31         | 346         |
| 1998               | 31         | 28         | 31         | 30         | 31         | 30         | 31         | 31         | 30         | 31         | 30         | 30         | 364         |
| 1999               | 31         | 28         | 31         | 30         | 31         | 30         | 31         | 31         | 30         | 31         | 30         | 31         | 365         |
| 2000               | 31         | 29         | 31         | 30         | 31         | 30         | 30         | 5          | 1          | 17         | 30         | 28         | 293         |
| 2001               | 31         | 28         | 31         | 30         | 31         | 29         | 24         | 10         | 24         | 31         | 30         | 24         | 323         |
| 2002               | 31         | 19         | 25         | 30         | 31         | 13         | 0          | 5          | 2          | 12         | 25         | 18         | 211         |
| 2003               | 13         | 15         | 29         | 30         | 31         | 30         | 11         | 0          | 5          | 0          | 4          | 11         | 179         |
| 2004               | 3          | 14         | 31         | 28         | 17         | 30         | 22         | 0          | 9          | 4          | 30         | 18         | 206         |
| 2005               | 18         | 28         | 31         | 30         | 31         | 30         | 10         | 2          | 0          | 0          | 11         | 23         | 214         |
| 2006               | 31         | 22         | 31         | 30         | 13         | 3          | 0          | 3          | 21         | 19         | 19         | 20         | 212         |
| 2007               | 22         | 28         | 31         | 30         | 31         | 30         | 20         | 31         | 30         | 31         | 30         | 31         | 345         |
| 2008               | 31         | 29         | 31         | 30         | 31         | 30         | 31         | 28         | 28         | 31         | 30         | 25         | 355         |
| 2009               | 31         | 28         | 31         | 30         | 31         | 30         | 31         | 31         | 30         | 31         | 30         | 7          | 341         |
| <b>Grand Total</b> | <b>357</b> | <b>350</b> | <b>426</b> | <b>418</b> | <b>402</b> | <b>375</b> | <b>295</b> | <b>228</b> | <b>270</b> | <b>300</b> | <b>359</b> | <b>322</b> | <b>4102</b> |

Amount of Excess at Grand Island, af  
Sum of Excesses at

| Year               | Jan           | Feb           | Mar          | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Grand Total    |
|--------------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| 1996               | 20033         | 6942          | 5891         | 60            | 28582         | 41296         | 27511         | 61211         | 115281        | 36873         | 51075         | 51730         | 446486         |
| 1997               | 47068         | 4364          | 7359         | 5236          | 8093          | 166138        | 44054         | 75552         | 68431         | 52226         | 101972        | 139619        | 720110         |
| 1998               | 162131        | 62044         | 41634        | 124147        | 50599         | 18784         | 14975         | 41158         | 25131         | 0             | 62282         | 6408          | 666892         |
| 1999               | 93026         | 18090         | 1924         | 6665          | 150726        | 193570        | 93661         | 135830        | 122164        | 49111         | 73647         | 115717        | 1054131        |
| 2000               | 125992        | 35425         | 22671        | 4126          | 11286         | 8727          | 9759          | 40            | 0             | 0             | 4146          | 6784          | 228955         |
| 2001               | 31438         | 1507          | 4146         | 1944          | 15769         | 0             | 2321          | 3372          | 14202         | 0             | 1408          | 17792         | 93899          |
| 2002               | 21640         | 0             | 793          | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 22433          |
| 2003               | 198           | 0             | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 99            | 298            |
| 2004               | 0             | 0             | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0              |
| 2005               | 0             | 0             | 0            | 0             | 24453         | 4046          | 0             | 0             | 0             | 0             | 0             | 0             | 28499          |
| 2006               | 0             | 0             | 0            | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 0             | 1575          | 1575           |
| 2007               | 791           | 0             | 0            | 16665         | 573           | 4544          | 5038          | 9858          | 0             | 0             | 0             | 2894          | 40364          |
| 2008               | 545           | 0             | 0            | 0             | 63567         | 47550         | 14341         | 0             | 0             | 7976          | 11750         | 206           | 145936         |
| 2009               | 2182          | 0             | 0            | 5199          | 0             | 25415         | 5536          | 0             | 127           | 1035          | 26680         | 12942         | 79116          |
| <b>Grand Total</b> | <b>505047</b> | <b>128372</b> | <b>84418</b> | <b>164041</b> | <b>353648</b> | <b>510071</b> | <b>217195</b> | <b>327020</b> | <b>345335</b> | <b>147221</b> | <b>332960</b> | <b>413365</b> | <b>3528694</b> |

Amount of Excess at North Bend, af  
Sum of Excesses at

| Row Labels         | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Grand Total     |
|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| 1996               | 57918          | 173358         | 196862         | 184009         | 289492         | 384125         | 101456         | 273267         | 286814         | 250397         | 224671         | 219296         | 2641665         |
| 1997               | 147176         | 400469         | 286933         | 292348         | 203210         | 330292         | 106633         | 135136         | 167983         | 262001         | 316368         | 282946         | 2931494         |
| 1998               | 254880         | 334240         | 304705         | 520074         | 234152         | 412965         | 132200         | 145589         | 113298         | 205828         | 302603         | 194879         | 3155411         |
| 1999               | 206681         | 262794         | 276004         | 394955         | 503551         | 834399         | 316289         | 222787         | 204102         | 231950         | 253293         | 222231         | 3929036         |
| 2000               | 230205         | 200294         | 247481         | 207891         | 150548         | 99651          | 77773          | 15709          | 18506          | 95069          | 146362         | 58136          | 1547626         |
| 2001               | 91836          | 90249          | 290702         | 370756         | 312163         | 76722          | 20847          | 23782          | 74262          | 110778         | 88028          | 98263          | 1648388         |
| 2002               | 42447          | 54546          | 133946         | 124941         | 72299          | 42368          | 0              | 4066           | 6922           | 46057          | 64523          | 62123          | 654238          |
| 2003               | 19141          | 54050          | 128570         | 116788         | 206224         | 66943          | 7160           | 0              | 13944          | 20807          | 67518          | 26143          | 727290          |
| 2004               | 0              | 102468         | 165146         | 51869          | 79459          | 89555          | 83148          | 754            | 32886          | 34632          | 81363          | 54824          | 776104          |
| 2005               | 18209          | 137992         | 115777         | 138746         | 180875         | 256308         | 9600           | 11603          | 6109           | 21819          | 30744          | 149020         | 1076802         |
| 2006               | 96834          | 63492          | 108914         | 115995         | 14400          | 3134           | 0              | 9957           | 67856          | 49409          | 38658          | 56153          | 624803          |
| 2007               | 38182          | 266900         | 213206         | 279297         | 307145         | 301333         | 41336          | 176928         | 68609          | 176730         | 84914          | 112881         | 2067462         |
| 2008               | 109271         | 197775         | 187520         | 169926         | 422327         | 601972         | 130772         | 24417          | 16562          | 202496         | 134005         | 70831          | 2267874         |
| 2009               | 150369         | 199064         | 141047         | 159216         | 102130         | 219117         | 76365          | 95109          | 80649          | 163559         | 219673         | 41237          | 1647535         |
| <b>Grand Total</b> | <b>1463149</b> | <b>2537690</b> | <b>2796814</b> | <b>3126809</b> | <b>3077975</b> | <b>3718884</b> | <b>1103580</b> | <b>1139104</b> | <b>1158503</b> | <b>1871531</b> | <b>2052724</b> | <b>1648963</b> | <b>25695727</b> |

Amount of Excess at Louisville, af  
Sum of Excesses at

| Row Labels         | Jan            | Feb            | Mar            | Apr            | May            | Jun            | Jul            | Aug            | Sep            | Oct            | Nov            | Dec            | Grand Total     |
|--------------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|----------------|-----------------|
| 1996               | 143348         | 379999         | 305221         | 276381         | 711600         | 887676         | 170859         | 638389         | 325572         | 305201         | 271581         | 209517         | 4625343         |
| 1997               | 215011         | 567876         | 463841         | 417685         | 342729         | 482229         | 202456         | 120954         | 243217         | 329479         | 342709         | 342074         | 4070261         |
| 1998               | 473918         | 424866         | 543122         | 924509         | 485144         | 930480         | 373592         | 296950         | 75135          | 221517         | 404356         | 192042         | 5345632         |
| 1999               | 205689         | 367721         | 371867         | 785605         | 967750         | 1188117        | 533462         | 343007         | 223322         | 212195         | 227031         | 254880         | 5680645         |
| 2000               | 284950         | 310398         | 282411         | 210767         | 152908         | 183295         | 158541         | 7934           | 397            | 34691          | 132081         | 55320          | 1813693         |
| 2001               | 169193         | 119407         | 591718         | 580570         | 641920         | 202218         | 52880          | 12774          | 84636          | 57978          | 64642          | 97271          | 2675206         |
| 2002               | 91439          | 50976          | 236056         | 154455         | 145867         | 76087          | 0              | 26797          | 1408           | 15689          | 20252          | 31657          | 850683          |
| 2003               | 15471          | 28166          | 136465         | 134323         | 381249         | 141503         | 22513          | 0              | 18823          | 0              | 4027           | 5415           | 887953          |
| 2004               | 2579           | 229094         | 282609         | 50222          | 211322         | 155665         | 125496         | 0              | 18863          | 1051           | 54844          | 29336          | 1161081         |
| 2005               | 32073          | 166931         | 108676         | 251349         | 309228         | 430558         | 21680          | 555            | 0              | 0              | 3888           | 124822         | 1449760         |
| 2006               | 117602         | 50778          | 110620         | 249663         | 29316          | 3213           | 0              | 4760           | 118712         | 15273          | 16205          | 61786          | 777929          |
| 2007               | 116729         | 563929         | 453726         | 498394         | 620419         | 550620         | 26242          | 378392         | 148743         | 485105         | 243812         | 194641         | 4280750         |
| 2008               | 214714         | 338564         | 434347         | 382240         | 804032         | 1478303        | 358994         | 48239          | 67518          | 423299         | 383054         | 192459         | 5125761         |
| 2009               | 422763         | 519538         | 329975         | 311727         | 183573         | 497224         | 175540         | 164690         | 179646         | 266206         | 356455         | 62460          | 3469796         |
| <b>Grand Total</b> | <b>2505478</b> | <b>4118242</b> | <b>4650653</b> | <b>5227891</b> | <b>5987056</b> | <b>7207186</b> | <b>2222254</b> | <b>2043441</b> | <b>1505992</b> | <b>2367684</b> | <b>2524936</b> | <b>1853680</b> | <b>42214493</b> |

Excesses available at J2 on days of Excess at Grand Island, af

Sum of Available Ex

| Year               | Jan           | Feb           | Mar          | Apr           | May           | Jun           | Jul          | Aug           | Sep           | Oct           | Nov           | Dec           | Grand Total    |
|--------------------|---------------|---------------|--------------|---------------|---------------|---------------|--------------|---------------|---------------|---------------|---------------|---------------|----------------|
| 1996               | 20033         | 6942          | 5891         | 60            | 24734         | 31115         | 26515        | 53257         | 74857         | 35961         | 46037         | 51730         | 377133         |
| 1997               | 43530         | 4364          | 7359         | 5236          | 8093          | 23584         | 922          | 39868         | 62189         | 51087         | 83966         | 111506        | 441704         |
| 1998               | 92356         | 54407         | 33700        | 88702         | 41747         | 16019         | 13083        | 34008         | 25069         | 0             | 62282         | 64008         | 525380         |
| 1999               | 76771         | 18090         | 1924         | 6665          | 44981         | 79260         | 20583        | 63049         | 80158         | 47452         | 71503         | 108385        | 618819         |
| 2000               | 113182        | 33366         | 21303        | 4126          | 9750          | 7815          | 9193         | 40            | 0             | 0             | 3466          | 5990          | 208231         |
| 2001               | 31438         | 1507          | 4146         | 1944          | 15327         | 0             | 2321         | 3372          | 14202         | 0             | 1210          | 17792         | 93259          |
| 2002               | 21640         | 0             | 793          | 0             | 0             | 0             | 0            | 0             | 0             | 0             | 0             | 0             | 22433          |
| 2003               | 198           | 0             | 0            | 0             | 0             | 0             | 0            | 0             | 0             | 0             | 0             | 0             | 198            |
| 2004               | 0             | 0             | 0            | 0             | 0             | 0             | 0            | 0             | 0             | 0             | 0             | 0             | 0              |
| 2005               | 0             | 0             | 0            | 0             | 2633          | 4046          | 0            | 0             | 0             | 0             | 0             | 0             | 6680           |
| 2006               | 0             | 0             | 0            | 0             | 0             | 0             | 0            | 0             | 0             | 0             | 0             | 0             | 0              |
| 2007               | 0             | 0             | 0            | 7008          | 573           | 3661          | 5027         | 6784          | 0             | 0             | 0             | 1117          | 24169          |
| 2008               | 347           | 0             | 0            | 0             | 6033          | 3537          | 6015         | 0             | 0             | 381           | 8856          | 0             | 25169          |
| 2009               | 1587          | 0             | 0            | 2677          | 0             | 20056         | 5275         | 0             | 127           | 133           | 26352         | 12942         | 69148          |
| <b>Grand Total</b> | <b>401083</b> | <b>118677</b> | <b>75116</b> | <b>116416</b> | <b>153871</b> | <b>189093</b> | <b>88933</b> | <b>200378</b> | <b>256602</b> | <b>135013</b> | <b>303671</b> | <b>373470</b> | <b>2412323</b> |

Excesses available at J2 on days of Excess at North Bend, af

Sum of Available Ex

| Year               | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Grand Total    |
|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| 1996               | 44732         | 76127         | 79437         | 84184         | 55373         | 71646         | 42308         | 63224         | 95724         | 90160         | 102269        | 69260         | 874444         |
| 1997               | 74558         | 92147         | 102503        | 93403         | 78394         | 58779         | 1041          | 39831         | 89474         | 101121        | 107510        | 111506        | 950267         |
| 1998               | 78626         | 104193        | 94046         | 93998         | 81575         | 64168         | 29508         | 48027         | 89699         | 108060        | 112421        | 86196         | 990518         |
| 1999               | 90798         | 101874        | 93099         | 83750         | 86946         | 80930         | 27866         | 68547         | 89221         | 108349        | 110035        | 112468        | 1053884        |
| 2000               | 115012        | 103160        | 97088         | 86623         | 62658         | 43631         | 23586         | 6668          | 15619         | 41691         | 46755         | 37349         | 679840         |
| 2001               | 59954         | 61863         | 52466         | 55099         | 34920         | 18145         | 10614         | 16862         | 47800         | 39689         | 17320         | 41128         | 455859         |
| 2002               | 37548         | 28166         | 31841         | 22325         | 9549          | 7851          | 0             | 533           | 4760          | 10093         | 12618         | 21175         | 186459         |
| 2003               | 10528         | 18532         | 19515         | 16271         | 8326          | 2510          | 0             | 0             | 199           | 0             | 13796         | 7461          | 97138          |
| 2004               | 0             | 12186         | 14659         | 0             | 0             | 0             | 0             | 0             | 0             | 4211          | 14935         | 12945         | 58936          |
| 2005               | 10005         | 20265         | 16892         | 16299         | 5712          | 34889         | 0             | 0             | 2360          | 10522         | 12614         | 15262         | 144821         |
| 2006               | 19977         | 9119          | 28993         | 8662          | 5             | 1             | 0             | 0             | 1968          | 14622         | 11963         | 14447         | 109756         |
| 2007               | 8002          | 26711         | 37022         | 36009         | 23085         | 31173         | 21433         | 16875         | 1454          | 18010         | 16104         | 21934         | 257811         |
| 2008               | 23090         | 25031         | 22733         | 22096         | 25055         | 3872          | 20631         | 8358          | 1             | 32675         | 34201         | 4431          | 222175         |
| 2009               | 24596         | 24999         | 15028         | 51463         | 15108         | 40635         | 12407         | 0             | 24507         | 45573         | 67526         | 10824         | 332667         |
| <b>Grand Total</b> | <b>597425</b> | <b>704373</b> | <b>705322</b> | <b>670181</b> | <b>486706</b> | <b>458229</b> | <b>189395</b> | <b>268925</b> | <b>462786</b> | <b>624777</b> | <b>680067</b> | <b>566386</b> | <b>6414574</b> |

Excesses available at J2 on days of Excess at Louisville, af

Sum of Available Ex

| Year               | Jan           | Feb           | Mar           | Apr           | May           | Jun           | Jul           | Aug           | Sep           | Oct           | Nov           | Dec           | Grand Total    |
|--------------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|---------------|----------------|
| 1996               | 51067         | 74330         | 84753         | 84184         | 55373         | 71646         | 42473         | 63224         | 95724         | 90160         | 104887        | 72295         | 890115         |
| 1997               | 74669         | 92147         | 102503        | 93403         | 78394         | 58779         | 2596          | 37443         | 90025         | 101121        | 107510        | 111506        | 950097         |
| 1998               | 97810         | 104193        | 100889        | 93998         | 81575         | 64168         | 29604         | 51068         | 64361         | 107787        | 112421        | 88757         | 996632         |
| 1999               | 90798         | 101874        | 93099         | 83750         | 86946         | 80930         | 27876         | 70197         | 89221         | 108349        | 110035        | 109705        | 1052780        |
| 2000               | 114962        | 103160        | 97088         | 86623         | 62658         | 43402         | 26824         | 3564          | 397           | 18075         | 45539         | 41193         | 643484         |
| 2001               | 61527         | 61863         | 52639         | 55099         | 34920         | 18420         | 13655         | 9991          | 43416         | 30732         | 15862         | 44992         | 443115         |
| 2002               | 46731         | 26777         | 31444         | 22325         | 9549          | 3351          | 0             | 315           | 299           | 2112          | 7810          | 15861         | 166575         |
| 2003               | 9428          | 8839          | 17689         | 16798         | 8326          | 2510          | 0             | 0             | 0             | 0             | 0             | 3227          | 66817          |
| 2004               | 912           | 12384         | 14659         | 0             | 0             | 0             | 0             | 0             | 0             | 337           | 13764         | 10517         | 52574          |
| 2005               | 10912         | 20265         | 16892         | 16299         | 5712          | 34889         | 0             | 0             | 0             | 0             | 2214          | 15262         | 122445         |
| 2006               | 19977         | 8168          | 28993         | 8662          | 5             | 1             | 0             | 0             | 1810          | 4582          | 5312          | 10679         | 88188          |
| 2007               | 9983          | 26711         | 37022         | 36009         | 23085         | 31173         | 12175         | 15214         | 1454          | 18010         | 17361         | 21934         | 250131         |
| 2008               | 25372         | 25031         | 23046         | 22096         | 25055         | 3872          | 21384         | 10692         | 2399          | 34350         | 34201         | 5542          | 233040         |
| 2009               | 24596         | 24999         | 17353         | 52942         | 15108         | 40635         | 13138         | 0             | 24507         | 45573         | 67526         | 10824         | 337202         |
| <b>Grand Total</b> | <b>638745</b> | <b>690742</b> | <b>718069</b> | <b>672187</b> | <b>486706</b> | <b>453776</b> | <b>189725</b> | <b>261708</b> | <b>413613</b> | <b>561188</b> | <b>644442</b> | <b>562294</b> | <b>6293196</b> |

Available Excesses at J2 for Each Location

| Year               | Location       |                |                |
|--------------------|----------------|----------------|----------------|
|                    | Grand Island   | North Bend     | Louisville     |
| 1996               | 377133         | 874444         | 890115         |
| 1997               | 441704         | 950267         | 950097         |
| 1998               | 525380         | 990518         | 996632         |
| 1999               | 618819         | 1053884        | 1052780        |
| 2000               | 208231         | 679840         | 643484         |
| 2001               | 93259          | 455859         | 443115         |
| 2002               | 22433          | 186459         | 166575         |
| 2003               | 198            | 97138          | 66817          |
| 2004               | 0              | 58936          | 52574          |
| 2005               | 6680           | 144821         | 122445         |
| 2006               | 0              | 109756         | 88188          |
| 2007               | 24169          | 257811         | 250131         |
| 2008               | 25169          | 222175         | 233040         |
| 2009               | 69148          | 332667         | 337202         |
| <b>Grand Total</b> | <b>2412323</b> | <b>6414574</b> | <b>6293196</b> |

MAP 1

