



# SINGLE PLANNING GROUP MEETING #2

July 20, 2016  
North Platte, NE

# AGENDA

- I. Introductions
- II. Logistics/Process
- III. Review of First Increment Basinwide Plan Goals and Objectives
- IV. Implementation During the First Increment
- V. Summary of Implementation with respect to First Increment Basinwide Plan Goals and Objectives
- VI. New Information Available
- VII. Additional Information Requests
- VIII. Next Steps
- IX. Public Comment



# I. INTRODUCTIONS



## **II. LOGISTICS/PROCESS**



# **III. REVIEW OF FIRST INCREMENT BASINWIDE PLAN GOALS AND OBJECTIVES**

# GOAL 1: Incrementally achieve and sustain a fully appropriated condition.

## OBJECTIVES

1. Offset impacts of streamflow depletions to (A) surface water appropriations and (B) water wells constructed in aquifers dependent upon recharge from streamflow to the extent those depletions are due to water use initiated after July 1, 1997.

ACTION ITEMS

**A. Offset depletions to streamflows for new or expanded uses initiated after July 1, 1997, in the overappropriated basin.\***

1. Identify depletions and accretions
2. Develop methodologies and gather and evaluate data that could be used to estimate depletions and accretions to streamflow
3. Identify projects that may be used to enhance water supply
4. Reduce consumptive water use through retirement of irrigated lands, water use allocation, and/or management options.
5. Establish uniform methods for calculating depletions and offsets for conduction water banking of both ground water and surface water, stools developed as part of COHYST and other methods.
6. Establish uniform methods for identifying and regulating water use on acres irrigated with both surface water and ground water.
7. Ensure that offsets of depletions occur at the equivalent time, amount, and location of the depletion.

**B. Identify depletions.\***

Determine how the depletion estimates from the COHYST model, as well as any other methodologies, need to be revised when additional data or model improvements become available. Determine whether the depletion estimates should be revised as additional information is collected, as refinements are made to consumptive use estimates, as revisions are made in the COHYST models, or as deemed appropriate by the NRDs and DNR. Other data and methods may be used to determine consumptive use and depletions as long as DNR and the NRD(s) agree on the data or method used.

2. Actively pursue funding for offsets and develop and maintain data and analytical tools, such as the Cooperative Hydrology Study (COHYST) and other programs and projects needed to implement this Plan.

ACTION ITEMS

**A. Work together to maintain and improve COHYST.**

**B. Work to secure necessary funding for existing and proposed projects that will advance the goals of this Plan.**

# GOAL 1: Incrementally achieve and sustain a fully appropriated condition.

## OBJECTIVES (CONTINUED)

### 3. Continue to develop the methodology to calculate the difference between the current and fully appropriated levels of development in each NRD.

ACTION ITEMS	<p>A. Determine the overall difference between current and fully appropriated levels of development:</p> <ol style="list-style-type: none"> <li>1. take into account cyclical supply, including drought;</li> <li>2. identify the portion of the overall difference that is due to conservation measures;</li> <li>3. identify the portion of the overall difference due to water use initiated prior to July 1, 1997; and</li> <li>4. identify the portion of the overall difference due to water use initiated or expanded on or after July 1, 1997.</li> </ol>	<p>B. Identify the overall difference between the current and fully appropriated levels of development. Identify portions of the overall difference due to water use initiated prior to July 1, 1997, conservation measures and/or other possible causes including but not limited to drought, invasive vegetation, crop rotation, and canal operations, diversions and returns. Complete a peer review process of any analysis to determine the difference between the current and fully appropriated levels of development.*</p>	<p>C. The COHYST model, and other models or tools, will be used to refine estimates of the overall difference between the current and fully appropriated levels of development. The estimates will be adjusted as additional information is collected, as refinements are made to consumptive use estimates, as revisions are made to the COHYST model, or as deemed appropriate by the NRDs and DNR.</p>	<p>D. Use a water budget/ consumption approach to determine the overall difference. It can be a useful tool in that it allows for a comprehensive understanding of the water supplies and uses in the basin.</p>
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### 4. Conduct a technical analysis to determine whether the controls adopted in the respective plans or other management actions taken by the NRD are sufficient to offset depletions due to post- July 1, 1997, water uses and whether the provisions of this Plan and the IMPs are adequate to sustain progress toward a fully appropriated level of water use.

ACTION ITEMS	<p>A. In the second and any subsequent increments of this Plan, the IMP for each NRD shall specify the extent to which any remaining overall difference between fully and overappropriated status results from consumptive uses with in each individual NRD.</p>	<p>B. The IMP for each of the Platte River Basin NRDs that is adopted for any subsequent increment of the overappropriated basin planning process shall describe how progress toward the depletion reduction objective for that particular NRD is to be measured.</p>
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# GOAL 1: Incrementally achieve and sustain a fully appropriated condition.

## OBJECTIVES (CONTINUED)

### 5. Use available funds to offset depletions due to water uses initiated prior to July 1, 1997, that are identified as part of the overall difference between current and fully appropriated levels of development.

ACTION  
ITEMS

A. Cooperate with the federal government to utilize programs such as CREP and EQUIP that promote reductions in consumptive use.

B. Encourage Platte River Basin NRDs, agencies, and water users to participate in these programs.

### 6. Adopt and implement IMPs in each Platte River Basin NRD

ACTION  
ITEMS

A. The IMP for each Platte River Basin NRD shall:\*  
1. Be consistent with this Basin-Wide Plan.  
2. Identify management options that will help to achieve the goals and objectives of this Plan.  
3. Ensure that depletion used by new or expanded uses within each Platte River Basin NRD are offset.  
4. Describe how progress toward the depletion reduction objective for that Platte River Basin NRD is to be measured.  
5. Include actions that will offset depletive impacts of post-July 1, 1997  
6. Allow for the transfer of certified acres across NRD boundaries, while not increasing streamflow depletions to the Plate River

B. If DNR and a Platte River Basin NRD determine that management actions taken have not provided the offsets required to meet the goals of the Basin-Wide Plan they will revise the individual district IMP.



**GOAL 2: Prevent reductions in the flow of a river or stream that would cause noncompliance with an interstate compact or decree or other formal state contract or agreement.**

**OBJECTIVES**

**1. Prevent streamflow depletions that would cause noncompliance by Nebraska with the Nebraska New Depletions Plan (NDP) included within the Platte River Recovery Implementation Program (Program), for as long as the Program exists.**

**ACTION  
ITEMS**

A. Ensure that the ground water and surface water controls adopted in the individual district IMPs are sufficient to ensure that the state will remain in compliance with state and federal laws as well as decrees and other formal state agreements.

B. Collectively, as defined in the Nebraska NDP, offset the new depletions caused by new uses within the Platte River Basin NRDs.

# GOAL 3: Keep the Plan current.

## OBJECTIVES

### 1. Meet at least annually to review progress toward achieving the goals and objectives of this Plan and those portions of individual NRD IMPs that implement this Plan.

ACTION ITEMS	A. The first annual meeting will be held within one year of when this Plan is adopted at a time and place designated by DNR and the Platte Basin NRDs. Thereafter, the annual meeting will be held in June or July of each year, unless agreed to otherwise.	B. Discussion shall include, but not be limited to the following: 1. revisions to this Plan; 2. revisions to the IMPs (the individual IMPs may be amended more frequently); 3. new data and information, including items like consumptive use calculations for municipal, livestock and industrial uses 4. disputes related to implementation of IMPs; and/or 5. any other topic on which the DNR and the Platte Basin NRDs have mutually agreed.	C. A proposed agenda will be made available to the public, along with any available supporting documents, at least two weeks prior to the annual meeting.	D. As a result of actions taken at the annual meeting, the plan may be revised as necessary.	E. Stakeholder and/or public feedback concerning the Basin-Wide Plan or individual IMPs will be considered.*
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### 2. Gather and evaluate data and information to measure the effectiveness of controls, incentives and/or other programs in the individual NRD IMPs used to implement this Plan.

ACTION ITEMS	A. Jointly conduct a study to identify the impact of soil and water conservation measures on streamflows. Specifically, assess the impact on streamflow depletions from conservation measures, as required by Neb. Rev. Stat. § 46-715(4)(c).	B. Review current methodologies, as well as proposed new methodologies, and evaluate at the annual meeting discussed in goal 3, objective A.	C. Revise Plan, if such revisions will ensure its goals and objectives will be achieved in the timeliest and most efficient cost-effective manner possible.
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# Work cooperatively to identify and investigate disputes between ground water users and surface water appropriators and, if determined appropriate, implement management solutions to address such issues.

## GOAL 4:

### OBJECTIVES

#### 1. Identify disputes between ground water users and surface water appropriators.

ACTION ITEMS

A. Surface water appropriators or ground water users may present data and other supporting information identifying the nature and scope of potential disputes at the annual meeting.

B. The Platte River Basin NRDs and DNR may present data and other supporting information identifying the nature and scope of potential disputes at the annual meeting.

#### 2. Investigate and address issues between ground water users and surface water appropriators, based on investigation results.

ACTION ITEMS

A. The DNR and the Platte River Basin NRDs shall determine whether specific disputes identified via goal 4, objective 1, have a hydrologic impact.

B. The DNR and the Platte River Basin NRD(s) will investigate a given dispute in order to determine whether the issue should be addressed through modification of the Basin-Wide Plan or individual IMPs, or by other means.

C. If it is determined, as a result of the investigation, that the issue is not a basin-wide issue, the issue will be turned over to the appropriate affected NRD(s) and/or DNR.

D. The DNR and/or the affected Platte River Basin NRD(s), as determined in goal 4, objective 2, section B, working with the affected water user(s), shall develop management solutions, as appropriate, to address the issue(s).

E. The DNR and the affected Platte River Basin NRD(s) shall update the Basin-Wide Plan and/or individual IMP, as appropriate.



# **IV. IMPLEMENTATION DURING THE FIRST INCREMENT**



**01** North Platte NRD

**02** South Platte NRD

**03** Twin Platte NRD

**04** Tri-Basin NRD

**05** Central Platte NRD

**06** Nebraska DNR



**NORTH PLATTE**  
Natural Resources District

# WATER MANAGEMENT IN THE NORTH PLATTE NRD

Presented by:

Barb Cross, Assistant Manager

Tracy Zayac, Policy Advisor

July 20, 2016



# NPNRD INTEGRATED MANAGEMENT GOALS AND OBJECTIVES

- ▶ Work toward achieving and sustaining a fully appropriated condition in the overappropriated area:
  - ▶ Incentive programs to reduce consumptive uses
  - ▶ Permanently or temporarily retire groundwater irrigation from wells in high-depletion areas
  - ▶ Surface water leasing—direct stream augmentation and recharge
- ▶ These measures reduce depletions & provide offsets for post-1997 depletions to streamflows
  - ▶ BWP Goal 1, Objectives 1 & 2



# NPNRD INTEGRATED MANAGEMENT GOALS AND OBJECTIVES

- ▶ Actively pursue funding for offsets; to develop and maintain data and analytical tools; implement other programs and projects:
  - ▶ NPNRD/SPNRD obtained IWMPP grant to develop Western Water Use Management Model
  - ▶ NPNRD partnered with DNR in 2011 to divert excess river flows for recharge
  - ▶ NPNRD received DNR and NET funding for telemetry installation
  - ▶ NPNRD received WSF grant to retire groundwater irrigation
  - ▶ SPNRD, with NPNRD as partner, received WSF grant for WWUM updates, peer review
- ▶ These measures reduce depletions & improve the tools we use to develop, and assess the effectiveness of, management actions on reaching IMP goals and ensuring continued compliance with interstate agreements.
  - ▶ BWP Goal 1, Objectives 2, 4, 5

# NPNRD WATER MANAGEMENT ACTIVITIES TIMELINE

- ▶ 2001 – Placed a moratorium on the drilling of new wells in the Pumpkin Creek Basin Subarea (first in Platte River Basin).
- ▶ 2002 – Placed a moratorium on the drilling of new wells in the remainder of the NRD and certified all ground water uses in the Pumpkin Creek Basin Subarea.
  - ▶ (NPNRD IMP Goals 1.a. & 2.a., BWP Goals 1 & 2)



- ▶ 2003 – Implemented a ground water irrigation allocation of 15 acre-inches per acre in the Pumpkin Creek Basin Subarea.
- ▶ 2004 -- DNR placed a stay on the expansion of irrigated acres.
- ▶ 2005 – Pumpkin Creek Basin Subarea ground water irrigation allocation reduced to 14 acre-inches per acre per water year.
- ▶ 2006 – Permanently retired approximately 2,500 irrigated acres in the Pumpkin Creek Basin Subarea through conservation easements.
- ▶ 2006 – Certified all ground water uses in the District and required flow meter installation in the overappropriated portion of the District.

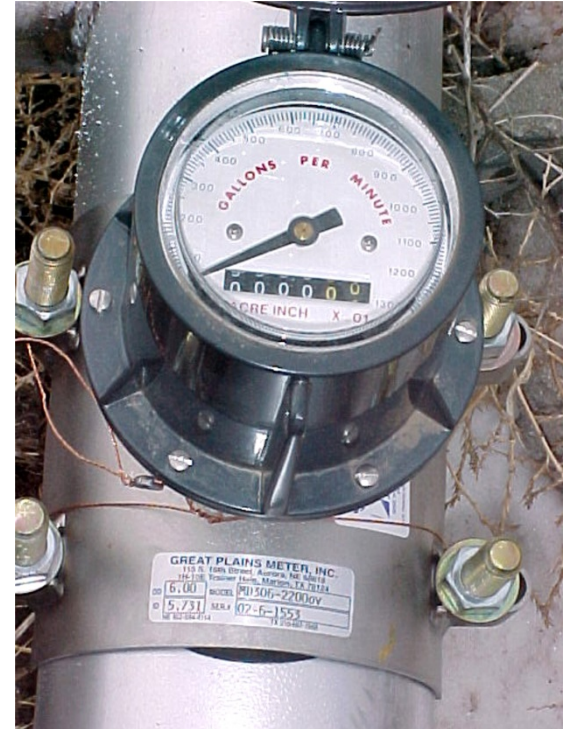
- ▶ 2007 – Joined with other Panhandle NRDs and counties to form the High Plains Weed Management Association to address the control of invasive plant species in the upper Platte River Basin.
- ▶ 2007 – Began a cooperative effort on no-till farming practices with the other Panhandle NRDs and NRCS to promote continuous no-till, hold producer workshops, and an annual conference.
- ▶ 2007 – Adopted ground water transfer rules

- ▶ 2008 – Certified all other ground water uses within the District. Completed flow meter installation on wells in the overappropriated area.
- ▶ 2008 – The ground water irrigation allocation for the Pumpkin Creek Basin Subarea reduced to 12 acre-inches per acre per water year.



- ▶ 2008 – Implemented ground water irrigation allocation of 18 acre-inches per acre per water year in the overappropriated area of the District.
- ▶ 2009 – Adopted the Basin-wide Plan for the overappropriated portion of the Platte River Basin on September 11.
- ▶ 2009 – Adopted the District Integrated Management Plan on September 14.
- ▶ 2010 – Set ground water irrigation allocation in the overappropriated area at 56 acre-inches for the Water Years 2010 through 2013.

- ▶ 2011 – District worked with surface water districts, canal companies, and DNR to divert high flows in the North Platte River for recharge in the aquifer. Estimates of credit to the District top 40,000 a/f.
- ▶ 2012 – Set the irrigation allocation in the Pumpkin Creek Basin Subarea at 36 acre-inches per acre over Water Years 2013 through 2015.



- ▶ 2013 – Extended the ground water irrigation allocation (14 inches per acre) in the overappropriated area of the District by one water year.
- ▶ 2014 – Set the new allocation at 70 inches per acre in the overappropriated area, and 60 inches per acre in the Pumpkin Creek Basin Subarea, over five water years.
- ▶ 2014 – Changed the NSWCP and internal cost share programs to score and rank based on positive impacts toward our obligations under the IMP and BWP.
- ▶ 2014 - By end of year, District had temporarily/permanently retired almost 8,400 irrigated acres within the District since retirement programs began.



- ▶ 2015 – Required metering of all regulated wells in the fully appropriated area of the District by the end of calendar 2016.
- ▶ 2015 – Established two new incentive programs to reduce consumptive use in the District through bonus payments for renewal of federal retirement contracts; short term leases on irrigated land; alternative cropping and allocation buy-down.
- ▶ 2015 – District temporarily or permanently retired 898.1 ground water irrigated acres.



- ▶ 2016 – Secured a Water Sustainability Fund Grant to aid us in the permanent retirement of an additional 1,000 acres of high-depletion ground water irrigated lands.
- ▶ 2016 – Installed 231 telemetry units to gather real time water use information for inclusion in the Western Water Use Management Model.
- ▶ 2016 - Worked with surface Water districts and canal companies to divert high flows in the North Platte River for recharge into the aquifer. Estimates of credit to the District top 17,000 a/f.
- ▶ 2016 – District has, thus far, temporarily or permanently retired 88 irrigated acres and is on track to retire the first 500 acres targeted with WSF money.



# LESSONS LEARNED

- ▶ Producers/landowners have been incredible in meeting the challenges of doing much more with less – they have become more efficient, better stewards, and good partners with this NRD.
- ▶ Producers/landowners respond well to a balance of incentives with regulations. Using our authority as a political subdivision, we have changed our funding structure so that nearly 50% of our budget is directed toward water management.
- ▶ Landowners have great ideas. Many of the ideas for new programs and projects were not staff or board generated, but were generated by landowners.

- ▶ Outreach is important.
  - ▶ We hold annual producer roundtable meetings in each of the counties that are represented in our District.
  - ▶ We have two weekly radio updates and intermittent news columns covering the happenings at the District where we can share good and bad news, programmatic details and requirements.
- ▶ We must work with surface water! Working with our partners in the surface water community is imperative to the success of our actions. This includes surface water districts both in our District and downstream.



- ▶ We must be vigilant in seeking funding to help us in our cause.
  - ▶ Over the past three years, we have changed our funding mix at NPNRD from 60% property tax/40% state and federal grants to 60% state and federal grants/40% property tax.
  - ▶ This part of a longer term strategy to hedge a potential downturn in valuations, but also as important, to keep property tax burdens low for our land and homeowners. The cost of projects and incentives are not going to go down, so we must seek new revenue streams.
- ▶ Providing information to our stakeholders related to our analyses of management activities is important to keep them informed of our progress.



# THANK YOU!

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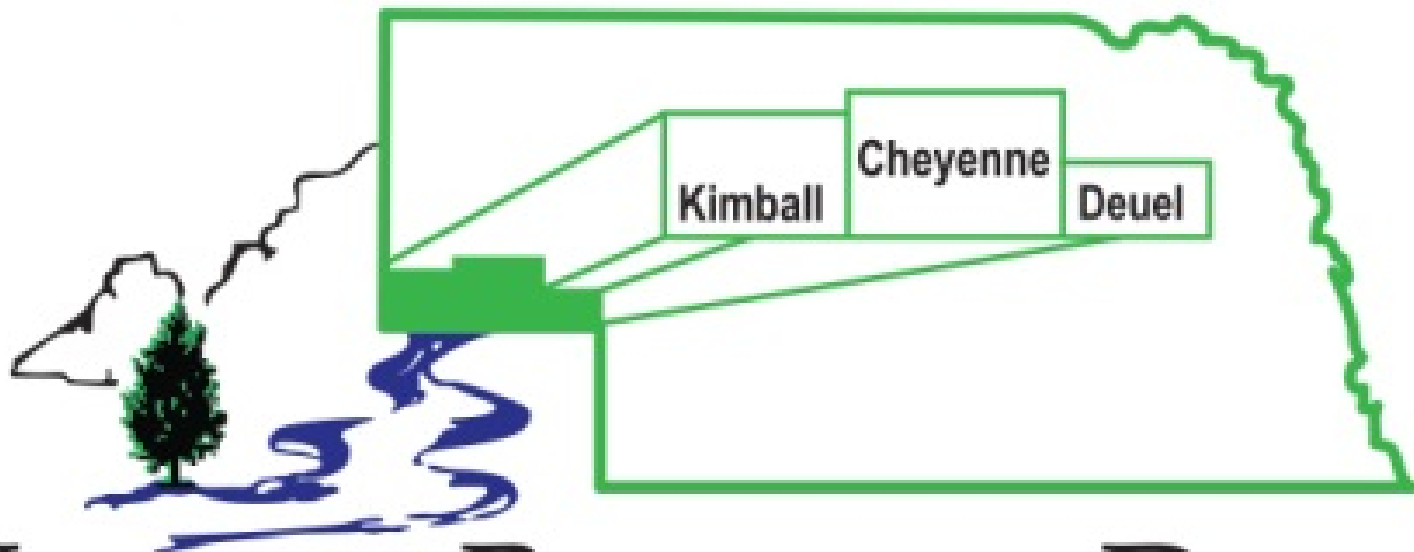
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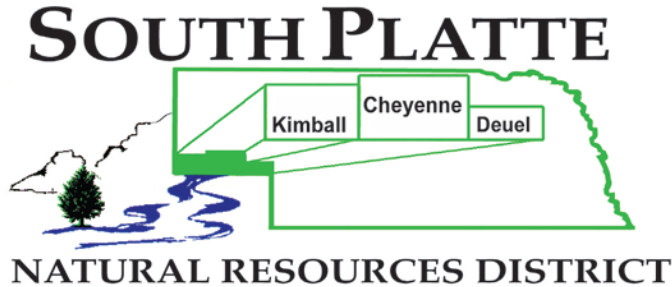
Policy Advisor



# SOUTH PLATTE



NATURAL RESOURCES DISTRICT

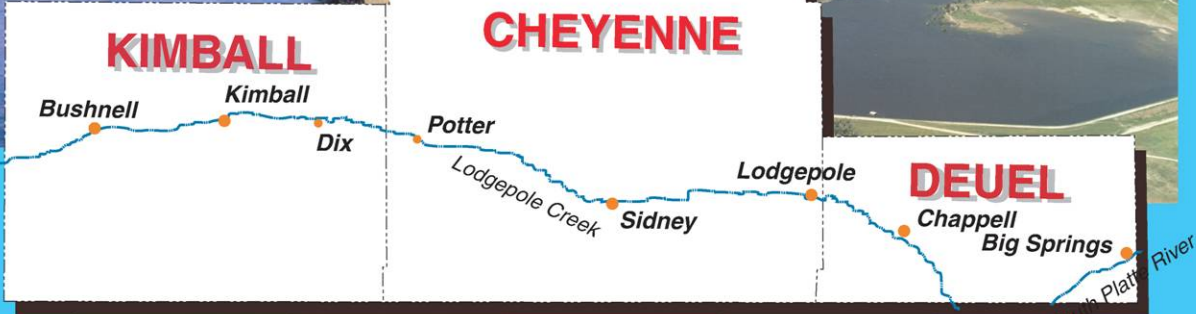


# Overview of the SPNRD Water Management

Upper Platte River Basin Water Management Plan (2<sup>nd</sup> Increment Process) –  
Stakeholder Planning Group Meeting

North Platte, Nebraska  
July 20, 2016





**Our Mission:**  
Formulate and instigate forward-looking plans and programs through a cooperative process that will provide for the long-term protection and enhancement of the district's natural resources while ensuring that major economic and social impacts are fully considered.

# South Platte Natural Resources District

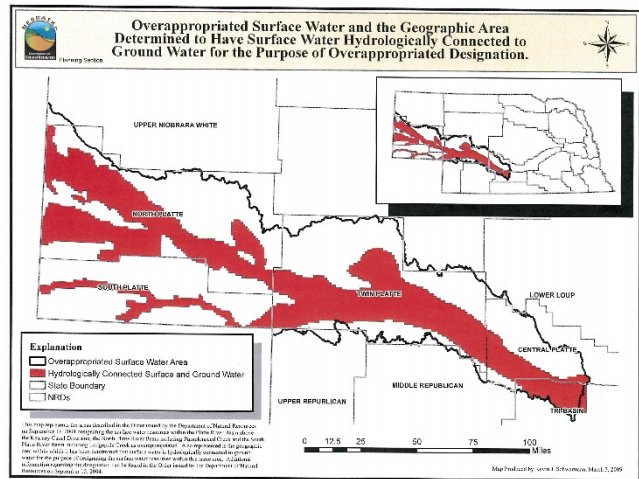
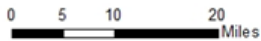
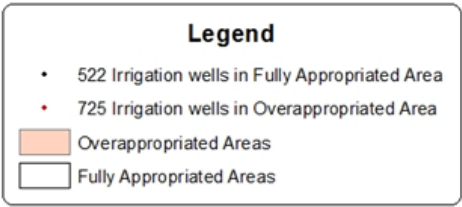
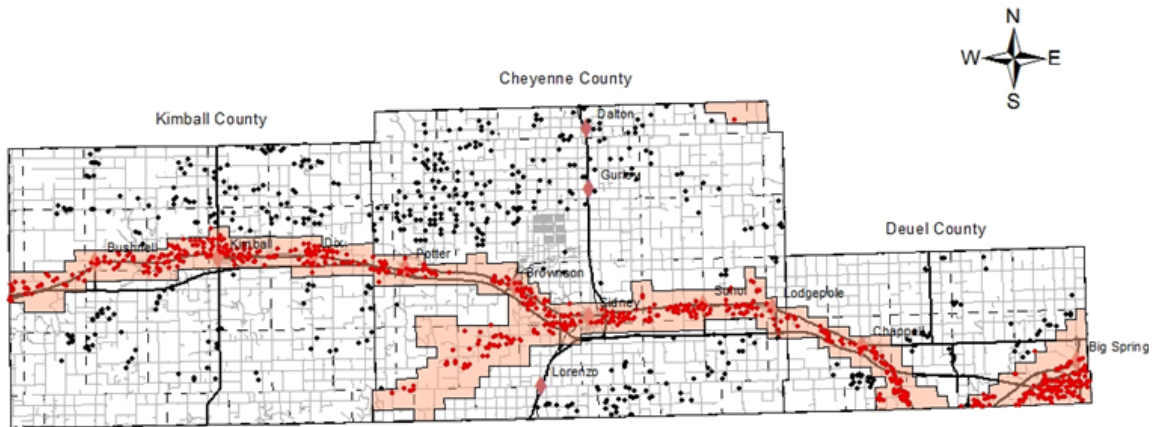
# Effect of LB 962 on Integrated Management Planning (IMP) in the South Platte NRD

(Basin-Wide Plan Goal 1, Objective 6, adopt and implement IMPs)

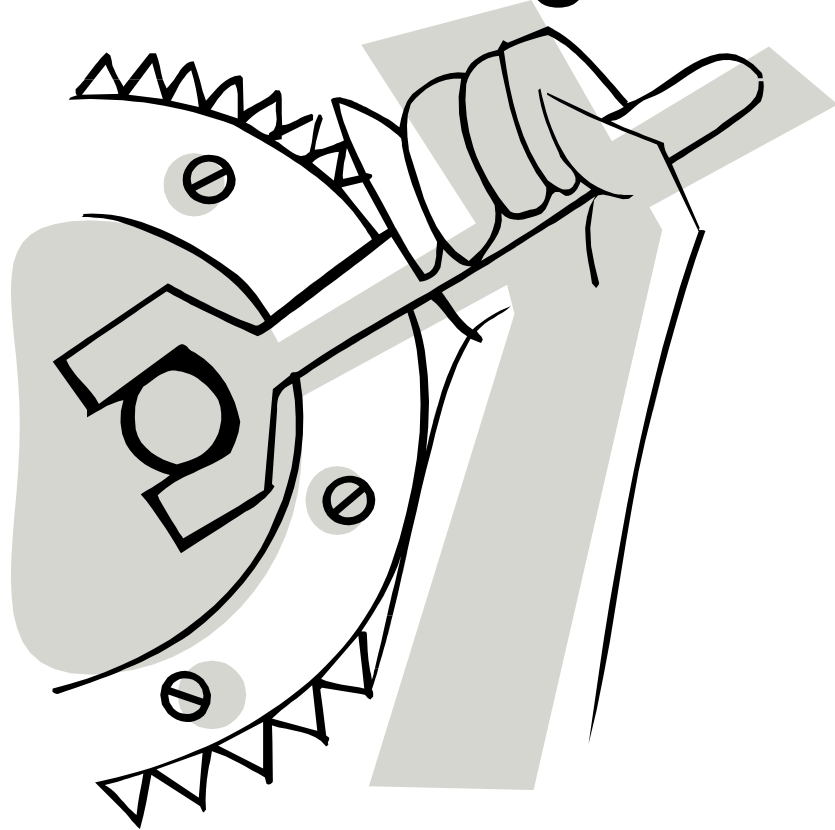
- September 14, 2004, the NDNR designated a portion of the SPNRD as overappropriated
- September 30, 2004, the NDNR issued an order of final determination that the hydrologically connected GW and SW within the District was fully appropriated
- This IMP was adopted by the SPNRD on August 11, 2009 and by the NDNR on August 13, 2009
- The IMP became effective on September 14, 2009



# South Platte NRD Irrigation Wells in Fully and Over Appropriated Areas



# What is being done?



# South Platte NRD Integrated Management Plan Goal

- Work together for the greater good of all citizens of the SPNRD to cooperatively develop and implement a local Integrated Surface Water/Ground Water Plan that has an acceptable degree of certainty of 1) maintaining a sufficient water supply for use by present and future generations, 2) maintaining, enhancing and protecting the region's agricultural economy and the viability of its cities and villages, and 3) promoting the growth of economic activities while seeking to avoid adverse impacts on the environment.

# South Platte NRD Integrated Management Plan - Overappropriated Goals and Objectives

- Incrementally achieve and sustain a fully appropriated condition
- Ensure that no act or omission of the SPNRD would cause noncompliance by Nebraska with any interstate compact or decree or other formal state contract or agreement (e.g. PRRIP)
- Maintain consistency with the Platte River Basin-Wide Plan
  - Supports Basin-Wide Plan: Goal 1, Objectives 1, 2, 3, 4 and 5; Goal 2, Objectives 1; Goal 3, Objectives 1 and 2; and Goal 4, Objectives 1 and 2

# Action Items to Achieve our Goals and Objectives

- Western Water Use Management Modeling (WWUMM) and Analyses
- Agriculture, Municipal and Commercial/Industrial Water Usage Accounting
- Permanently and Temporarily Retiring/Decertifying Irrigated Acres
- Water Banking and Water Marketing Development Activities
- Oliver Reservoir Streamflow Enhancement Project
- South Platte River Augmentation/Recharge Projects
- Studies and Research
- Advisory Committees
- Information and Education Components

# Funding Sources to Achieve our Goals and Objectives

- SPNRD Budgeted General Funds
- Nebraska Soil and Water Conservation Program Funds (NSWCP)
- Nebraska Environmental Trust Funds (NETF)
- Platte Basin Habitat Enhancement Program Funds (PBHEP, PBC)
- Interrelated Water Management Plan Program Funds (IWMPPF)
- Water Well Decommissioning Funds
- Water Resources Cash Fund
- DOI-Bureau of Reclamation Funds
- Agricultural Water Enhancement program (AWEP)
- Environmental Quality Improvement Program Funds (EQIP)
- Water Sustainability Funding Opportunities (LB 1098 - 2014)



# WATER QUANTITY / INTEGRATED MANAGEMENT PROGRAMS

Balance between the District's Ground Water Management Area Rules and Regulations and the Integrated Management Plan (IMP) process pursuant to the Nebraska Ground Water Management and Protection Act

# 2002 through 2009 Amendments to the Districtwide Ground Water Management Area Rules and Regulations



- Installation of Flow Meters on all Irrigation Wells/Systems
- Incorporated Allocations, Transfers and Pooling Procedures
- Moratorium on Permits for Large Capacity Wells (50 gpm or greater)
- Certification of Irrigated Acres

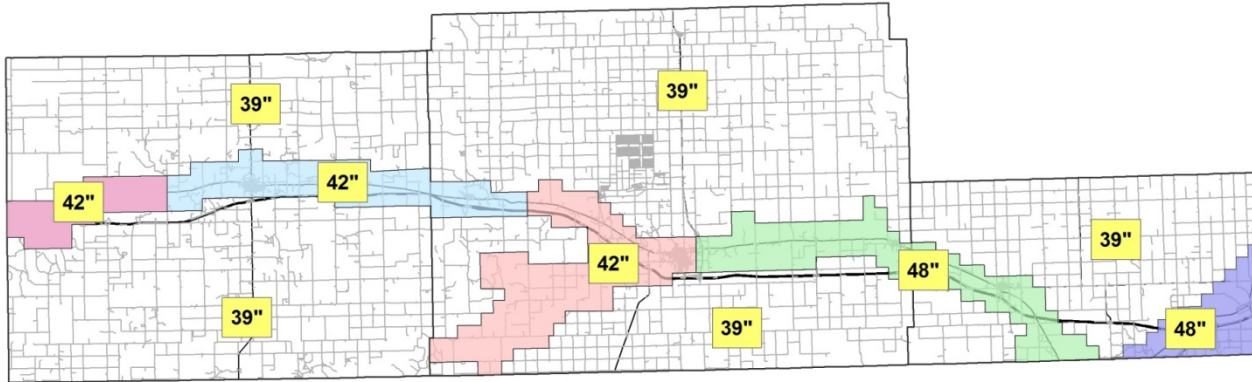
# South Platte NRD

- Agricultural/Irrigation Ground Water Usage
  - Districtwide
    - Approximately 133,000 Certified Irrigated Acres
      - Irrigated Acres Certified in 2002
      - About 1,100 Active Irrigation Wells
      - About 1.5% of the Irrigated Acres in Nebraska
    - Water Usage (Analysis Period: 2012 – 2015)

2012	2013	2014	2015
17.48"/acre	11.72"/acre	9.37"/acre	8.07"/acre

# South Platte Natural Resources District

Allocation Subareas & Allocations (Acre-inches) for the  
2016 through 2018 Allocation Period



## Legend

- |  |  |  |
|--|--|--|
|  A - Wyoming State Line to Oliver Reservoir (RD 27) |  D - Sidney to Colorado State Line |  Start 2016 |
|  B - Oliver Reservoir to Buffalo Bend (RD 87)       |  E - South Platte Valley           |  |
|  C - Buffalo Bend to Sidney (RD 115)                |  F - Tablelands                    |  |

# South Platte NRD Integrated Management Plan - Overappropriated Goals and Objectives

- The above measures achieve the following:
  - Reduce depletions and provide offsets for Post-1997 depletions to streamflow; and
  - Reduce depletions and improve the tools we use to develop, and assess the effectiveness of, management actions on reaching Integrated Management Plan goals and objectives and ensuring continued compliance interstate agreements

# South Platte NRD Milestones

- Since its inception in 1972, the SPNRD has been recording the depth of ground water in a network of observation and recorder wells to monitor ground water trends.
- 1985-1986 – SPNRD’s Ground Water Management Plan required by LB 1106 (1984) was completed and approved by the Nebraska Department of Natural Resources, which established “trigger mechanisms” for the Ogallala and alluvium aquifers. Due to the complex nature and extreme water table fluctuations, a Brule aquifer observation zone was established in 2002 to enable the District to better monitor this resource.
- 1998 – The Cooperative Hydrology Study (COHYST) was started to develop scientifically supportable hydrologic databases, analyses, models, and other information in the Platte Basin in Nebraska upstream of Columbus. The SPNRD was a co-sponsor.

# South Platte NRD Milestones cont.

- 2002 – The SPNRD Board of Directors adopted an order establishing the Lodgepole Creek Integrated Ground Water Management Subarea, which placed a moratorium on permits for new wells with a capacity of 50 gallons per minute or greater.
- 2002-2006 – Completed certification of 133,457 total irrigated acres with 1,312 registered irrigation wells.
- 2004 – SPNRD Board of Directors ordered a temporary suspension of water well construction for all areas of the District not already in a moratorium.
- 2004 – The Board of Directors approved requirement to have flow meters installed on irrigation wells District wide. Flow meters were installed incrementally through March 2009.

# South Platte NRD Milestones cont.

- 2004 – Because of LB 962 (2004), stays were placed on the drilling of new large capacity wells and expansion of irrigated acres throughout the District.
- 2004 – To meet requirements of LB 962, Board of Directors formed the Integrated Management Plan Committee to help form and make recommendations on an Integrated Management Plan (IMP).
- 2004 – Under LB 962, the entire SPNRD was designated as either fully appropriated or overappropriated.
- 2006 – The SPNRD board adopted amendments to the Districtwide Ground Water Management Area Rules and Regulations incorporating allocation, transfer and pooling procedures.
- 2007-2009 – Allocations went into effect and were phased in during this period.



# South Platte NRD Milestones cont.

- 2008 – The SPNRD and NDNR Integrated Management Plan (IMP) (Fully Appropriated Area component(s) only) was adopted and went into effect. The IMP was amended in 2009 to add the Overappropriated provisions).
- 2009 – The District commissioned a study from UNL to determine possible impacts and implications regulations might have on the agricultural community and District economy as a whole.
- 2009 – The Platte Basin Habitat Enhancement Program (PBHEP) set out to increase habitat diversity and the resilience of the Platte River Basin ecosystem. With funding from NET, NDNR, the Nebraska Game and Parks Commission and five Platte Basin NRDs, the District developed a number of conservation easements permanently retiring irrigated acres, and participated in water recharge projects.

# South Platte NRD Milestones cont.

- 2009 – The SPNRD, NDNR and Platte Basin NRDs approved and implemented the Basin-Wide Plan for Joint Integrated Water Resources Management of Overappropriated Portions of the Platte River Basin.
- 2009 – Beginning and formation of the Western Water Use Management Modeling efforts to complete the development of scientifically supportable hydrologic databases, models and other means of analysis relating to the hydrological connection between surface and ground water in the Nebraska Panhandle portion of the Platte River Basin, which was intended to supplement the Cooperative Hydrology Study (COHYST).
- 2010 – As part of the IMP process, the District began the process to account for industrial/ commercial water uses and establish baselines.
- 2011, 2013, 2014, 2015 and 2016 – The SPNRD cooperatively works with the Western Irrigation District (WID) , NDNR, TPNRD and Irrigators to mitigate excess South Platte River flows for the purpose of providing ground water recharge and net accretions to the river through the WID's surface water infrastructure and re-use pits.

# South Platte NRD Milestones cont.

- 2011 – The Board approved the final baselines for municipal water accounting, completing the process to account for most ground water uses within the District.
- 2012 – To help meet goals pertaining to reduction of ground water use under the District's IMP, the board approved funding to be used in conjunction with PBHEP and AWEF funds as incentives to permanently decertify irrigated acres within the District's overappropriated area.
- 2012 – Platte Basin NRDs and NDNR formed the Platte Basin Coalition. The Coalition applied for NET funds for projects to study, develop and implement management actions to reduce the consumptive uses of water or to enhance stream flows or ground water recharge in the Platte River Basin.
- 2015 – Amendments to the Districtwide Ground Water Management Area were approved by the Board lowering Subarea E (South Platte Valley) from 18" per year average to 16" per year average and Subarea F (Tablelands) from 14" per year average to 13" per year average for the irrigation allocation years of 2016 – 2018. The other four subareas remained the same.

# South Platte NRD Milestones cont.

- 2013 – In conjunction with the North Platte and Twin Platte NRDs and in cooperation with the Nebraska Oil and Gas Commission, began scanning geophysical logs from Commission archives which could yield additional data revealing the base of aquifer throughout the region. An NET grant has been received, which the districts will use to interpolate the data to determine additional points confirming the base of aquifer to add to ground water models.
- 2015 – Completion of Groundwater Modeling “Western Water Use Management Model” (WWUMM) and beginning of Analysis of WWUMM to see how water availability and sustainability are affected by management actions. Analysis will also monitor how the District is meeting its requirements for the IMP and Districtwide Water Management Rules and Regulations. The WWUMM is used along with the Irrigator/Industrial/Municipal Water Usage Reports and Water Level Reports and continued input from the public with Water Advisory Committee Meetings to help the District manage its water resources.

# South Platte NRD Milestones cont.

- Through 2015, the SPNRD retired or decertified 1,651 acres equating to an estimated 714 acre-feet of water benefitting the Lodgepole Creek. These acres located in the overappropriated Lodgepole Creek Valley.
- 2015 – The District received approval through the Platte Basin Coalition (PBC) for funding for the Oliver Reservoir Streamflow Enhancement Project. Management of Oliver Reservoir is specifically noted as a management option that could meet the goals and objectives of the IMP through reducing shortages to the reservoir and enhancing flows downstream (Lodgepole Creek) from the reservoir through increased seepage from the lake due to increased water levels.
- 2016 – The SPNRD with the NPNRD was successful in seeking funding through the new Water Sustainability Fund (WSF) program to further update and refine the Western Water Use Management Modeling (WWUMM) to ensure the most up to date modeling and information through fiscal year 2018.

# Lessons Learned

- The SPNRD appreciates the cooperation and adaptability of the farmers in the District, including their use of the latest technologies to make sure they are using water in the most efficient and effective way possible. Without them we would not see the gains we are experiencing in water resources management. Municipalities and industries have also taken steps to conserve water.
- The budgeting needs are great to develop and maintain data and analytical tools, such as the WWUM and other programs and projects needed to implement the District's IMP.

# Lessons Learned cont.

- Ground Water Advisory Subcommittees, which were previously composed of mainly irrigators, now include individuals who represent municipal, livestock, environmental and economic interests of the SPNRD. The added perspectives on these subcommittees have been invaluable.
- The SPNRD has taken aggressive measures to address water resources depletions to work toward fully appropriated conditions. The board carefully balances regulations with the administrative and economic burdens placed on the those subject to our regulatory authority. As a result, modeling becomes central for evaluating the effectiveness of management actions and achieving the goals and objectives of the District's IMP.

# Lessons Learned cont.

- The SPNRD continually evolves its projects and programs to ensure the greatest water resources benefits for the cost to the taxpayer. The SPNRD has used acre retirements, surface water recharge projects, and regulatory measures (allocations, etc.) to meet the goals of the IMP while trying to maintain a minimal impact to the taxpayer.



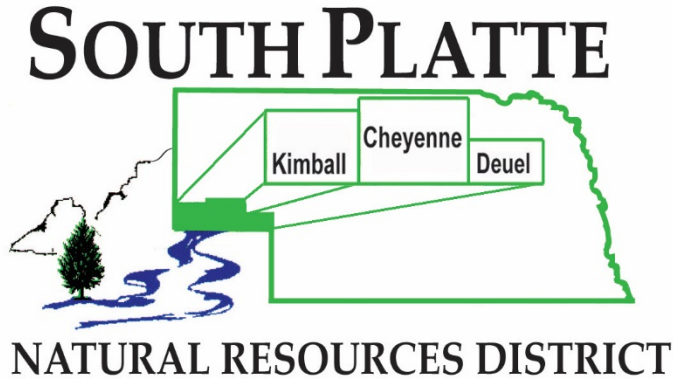
# Questions? Comments

Rod L. Horn, General Manager  
South Platte Natural  
Resources District

P.O. Box 294  
Sidney, NE 69162

Cell # 308-249-5671  
Office # 308-254-2377

**Protecting Lives, Protecting  
Property, Protecting the Future**





**TWIN PLATTE**

**NATURAL RESOURCES DISTRICT**

# Twin Platte NRD

Basin-Wide Meeting

July 20, 2016

Ann Dimmitt

# TWIN PLATTE NRD GOALS & OBJECTIVES

## Goals of the FA portion of the TPNRD

- 1) Protect to the extent possible existing users, local economy, environmental health and recreation users.
- 2) Manage total water supply in the TPNRD to achieve sustainability of supply and use while allowing for growth and changes in use.
- 3) Recognize there are multiple causes of streamflow depletion and to the extent possible distribute mitigation responsibilities appropriately.

# TWIN PLATTE NRD GOALS & OBJECTIVES

## Goals of the OA portion of the TPNRD

- 1) To incrementally achieve and sustain a fully appropriated condition.
  - Within first 10 year increment, address streamflow depletions due to post 1997 development.
  - Once a fully appropriated condition is achieved, maintain such conditions through the implementation of the IMP.
- 2) To ensure that no act or omission of the TPNRD would cause noncompliance by Nebraska with any interstate decree, compact, or other formal state contract or agreement.
  - PRIP
- 3) Maintain consistency with the Basin-Wide Plan.

# TWIN PLATTE NRD GOALS & OBJECTIVES

## Objectives

- a) Implement measures within the first ten (10) year increment to offset an average annual depletion rate of seven-thousand (7,700) acre-feet to the river for the period 2043-2048.
- b) Conduct a technical analysis as described in Neb. Rev. Stat. 46-715 (4)(d)(iii) for this IMP after it has been in effect for six (6) years, to determine whether the measures adopted in this IMP are sufficient to offset depletions due to post July 1997 water uses.
- c) Continues to refine the estimation methodology used to calculate the difference between the current and fully appropriated levels of development. Review the provisions of this IMP to ensure that they are adequate to sustain progress toward a fully appropriated condition.
- d) Review the provisions of this IMP to ensure that they are adequate to maintain a fully appropriated condition.

# TWIN PLATTE NRD GOALS & OBJECTIVES

## Objectives (continued)

- e) Maintain compliance with NDP, provide accretions to the river equal to or exceeding the annual depletion amount, taking into account appropriate timing and location, for the first ten (10) year increment as shown below table.
- f) Review the provisions of this IMP to ensure that they are adequate to sustain progress toward a fully appropriated condition.
- g) Review the provisions of this IMP to ensure that they are adequate to maintain a fully appropriated condition.
- h) Maintain compliance with NDP, provide accretions to the river equal to or exceeding the annual depletion amount, taking into account appropriate timing and location, for the first ten (10) year increment as shown below table.

# TWIN PLATTE NRD GOALS & OBJECTIVES

## Objectives (continued)

Year	2009	2010	2011	2012	2013	2014
Annual Stream Depletion (AF)	5,829	5,908	6,068	6,156	6,243	6,293

Year	2015	2016	2017	2018	2019
Annual Stream Depletion (AF)	6,363	6,426	6,550	6,704	6,760



# TWIN PLATTE NRD IMPLEMENTATION ACTIVITIES

## Activities over the first (10) ten year increment

- 1) Working with Irrigation Districts – Excess Flows – canals, re-use pits, and ponds
- 2) Working with Irrigation District – Instream Flow – Leasing
- 3) N-CORPE – Mitigation of Flows
- 4) CPNRD – Purchase up to 500 ac-ft
- 5) J-2 Project –
- 6) Non-Irrigated Certified Acres – Ground Water Only – short/long term lease
- 7) CREP/AWEP/CRP Programs to Retire Water Rights

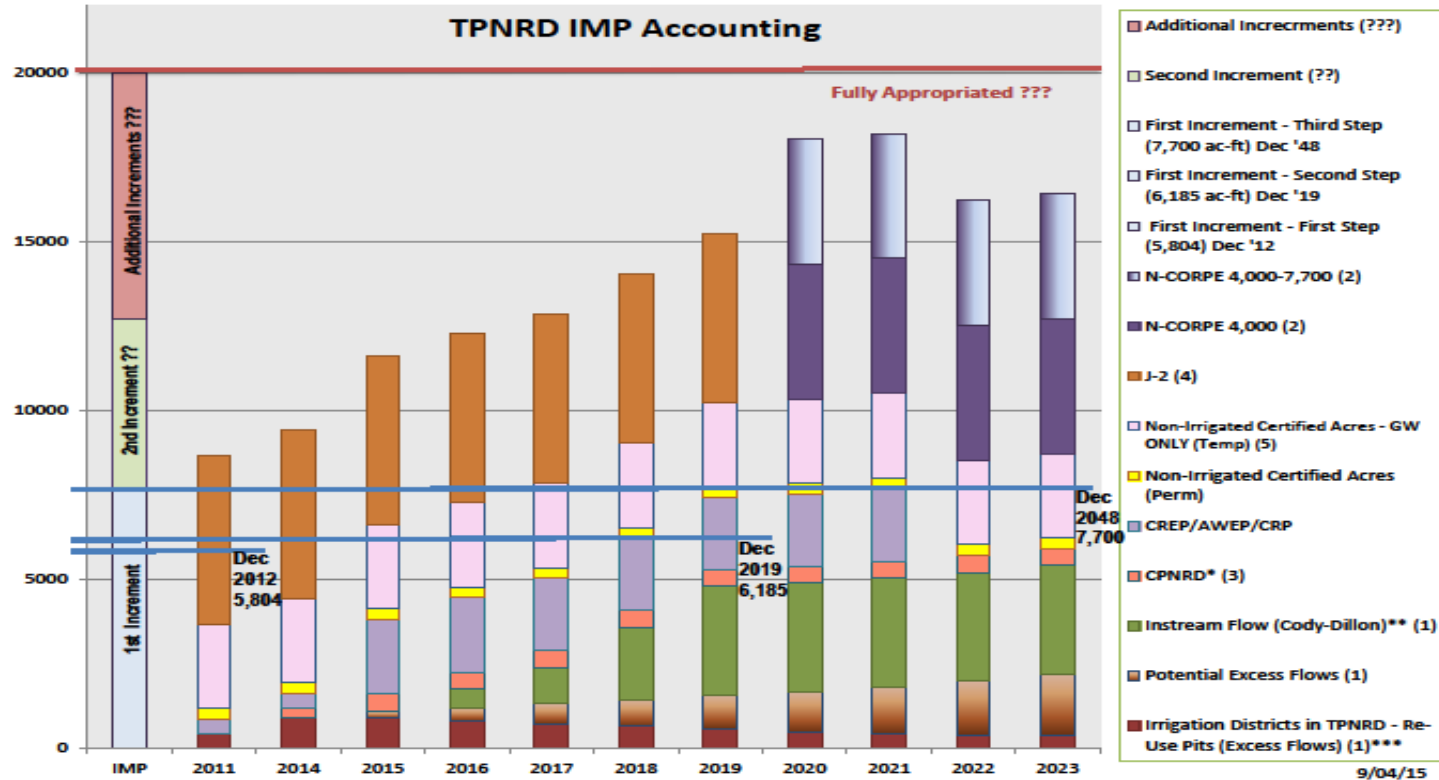
Rank	Subcommittee Priorities	IMP	2011	2014	2015	2016	2017	2018	2019	2020	2021	2022	2023	
1	Irrigation Districts in TPNRD - Re-Use Pits (Excess Flows) (1)***		422	903	901	807	718	641	574	469	427	390	390	
1	Potential Excess Flows (1)		0	0	200	400	600	800	1,000	1,200	1,400	1,600	1,800	
1	Instream Flow (Cody-Dillon)** (1)		0	0	0	535	1,071	2,142	3,214	3,214	3,214	3,214	3,214	
2	N-CORPE 4,000 (2)		0	0	0	0	0	0	0	4,000	4,000	4,000	4,000	
2	N-CORPE 4,000-7,700 (2)		0	0	0	0	0	0	0	3,700	3,700	3,700	3,700	
3	CPNRD* (3)		0	287	500	500	500	500	500	500	500	500	500	
4	J-2 (4)		5,000	5,000	5,000	5,000	5,000	5,000	5,000	0	0	0	0	
5	Non-Irrigated Certified Acres - GW ONLY (Temp) (5)		2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	2,500	
6	Conservation Tillage Measures (6)		0	0	0	0	0	0	0	0	0	0	0	
7	South Platte River Compact (7)		0	0	0	0	0	0	0	0	0	0	0	
	CREP/AWEP/CRP		431	431	2,207	2,207	2,132	2,132	2,132	2,132	2,132	0	0	
	Non-Irrigated Certified Acres (Perm)		325	325	325	325	325	325	325	325	325	325	325	
	Additional Increments (???)	7,300												
	Second Increment (??)	5,000												
	First Increment - First Step (5,804) Dec '12	5,804												
	First Increment - Second Step (6,185 ac-ft) Dec '19	381												
	First Increment - Third Step (7,700 ac-ft) Dec '48	1,515												
			20,000	8,678	9,446	11,634	12,274	12,847	14,040	15,246	18,040	18,198	16,229	16,429

\* up to 1,500 as water is available

\*\*potential ~ 1,500 acres

\*\*\*Does not include 2015 excess flow numbers

# TPNRD IMP Accounting



# TWIN PLATTE NRD ACHIEVEMENTS

## Achievements Due to Activities over the First Increment

- 1) Exceeded all the Annual Triggers Mentioned in Table 1 thru 2016.
- 2) Are on Track to Exceed the Annual Triggers thru 2019 and to Meet the 2048 goal of 7,700 ac-ft by 2024.
- 3) Are on Track to Start Putting Water Towards the Fully Appropriated Goal.

# **TWIN PLATTE NRD LESSONS LEARNED**

**Too many to list them all!**



*Natural Resources District*



Stream Depletion Offset and Streamflow Augmentation Projects in the  
Platte Basin

# TBNRD PLATTE BASIN IMP REQUIREMENTS

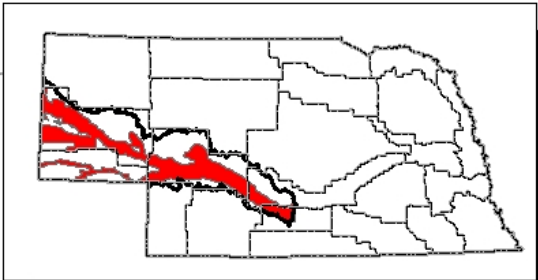
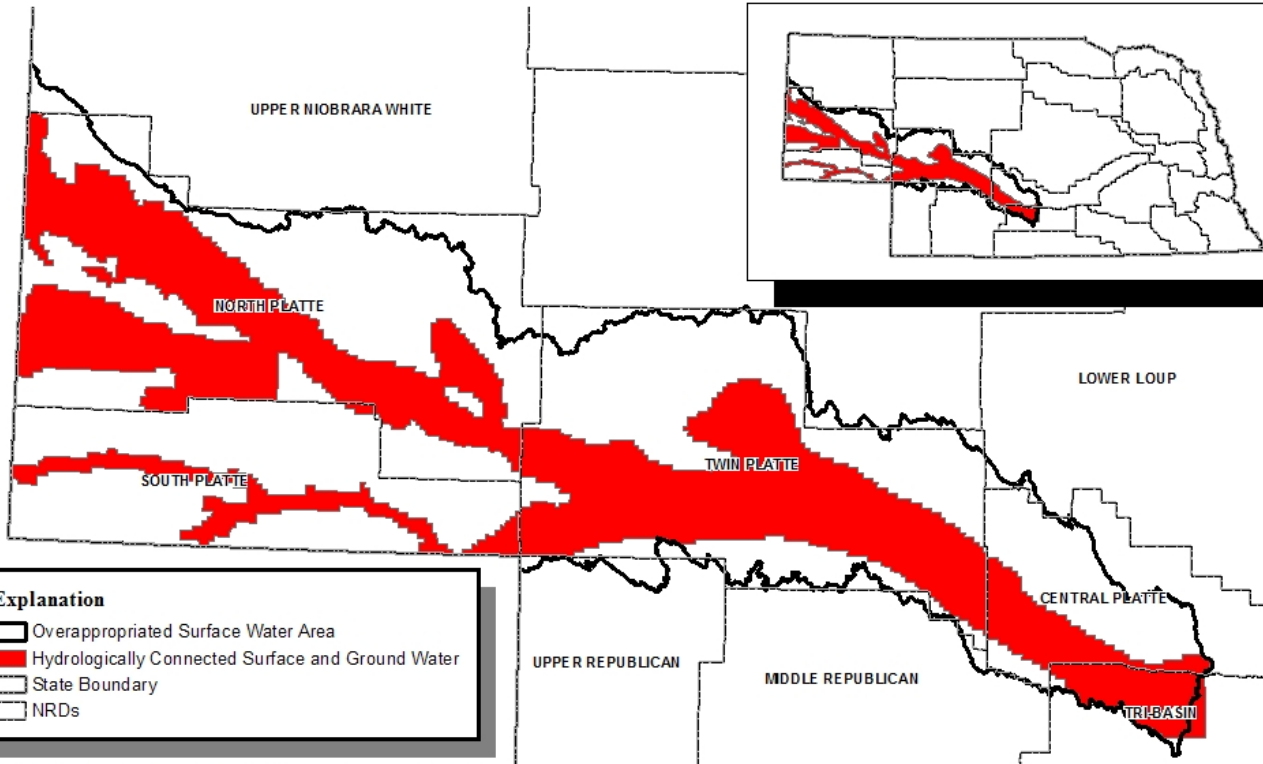
- TBNRD includes both overappropriated and fully appropriated portions of Platte basin.
- TBNRD IMP streamflow depletion reduction requirements to return to 1997 levels of depletions:
  - **OA Basin** (W of US Hwy. 183) 1775 a-f/Yr. by 2020
  - **FA Basin** (E of US Hwy. 183) 1760 a-f/Yr. by 2020
  - **Total** offset requirement= 3535 a-f/Yr. by 2020





Planning Section

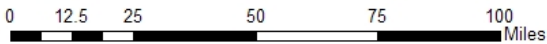
# Overappropriated Surface Water and the Geographic Area Determined to Have Surface Water Hydrologically Connected to Ground Water for the Purpose of Overappropriated Designation.



**Explanation**

- Overappropriated Surface Water Area
- Hydrologically Connected Surface and Ground Water
- State Boundary
- NRDs

This map represents the areas described in the Order issued by the Department of Natural Resources on September 15, 2004 designating the surface water resources within the Platte River Basin above the Kearney Canal Diversion, the North Platte River Basin including Pumpkinseed Creek and the South Platte River Basin including Lodgepole Creek as overappropriated. Also represented is the geographic area within which it has been determined that surface water is hydrologically connected to ground water for the purpose of designating the surface water resources within this same area. Additional information regarding the designation can be found in the Order issued by the Department of Natural Resources on September 15, 2004.



# TBNRD REGULATORY ACTIONS

- No increase in certified irrigated acres.
- Transfers of irrigated acres pro-rated if destination field has a higher depletion level than originating field.
- Supplemental wells for surface water-irrigated fields permitted only if landowner agrees to retain surface water contract for life of well.
- Flowmeters required on all new and conditional replacement wells.

# **Tri-Basin Depletion Offset Projects**

# PLATTE OFFSET MECHANISMS

- Retiring Irrigated cropland (USDA-EQIP, CREP)= < 10 a-f credit per year
- North Dry Creek Augmentation Wells= up to 2000 a-f/Yr.
- J-2 Reservoir= 2040 a-f/Yr. credit through 2019, after 2019=unknown (contingent on project actually being built)
- Platte high flow diversions











# PLATTE HIGH FLOW DIVERSIONS

- TBNRD works with CNPPID to divert high Platte flows into canals, Elwood reservoir.
- Over 96,000 acre-feet diverted since first diversions in 2008.
- Over 76,000 creditable a-f at NRD cost of \$16-\$48 per a-f (DNR pays half cost).
- Diversions into Elwood Reservoir and E-65 Canal benefit both Platte and Republican Basins.

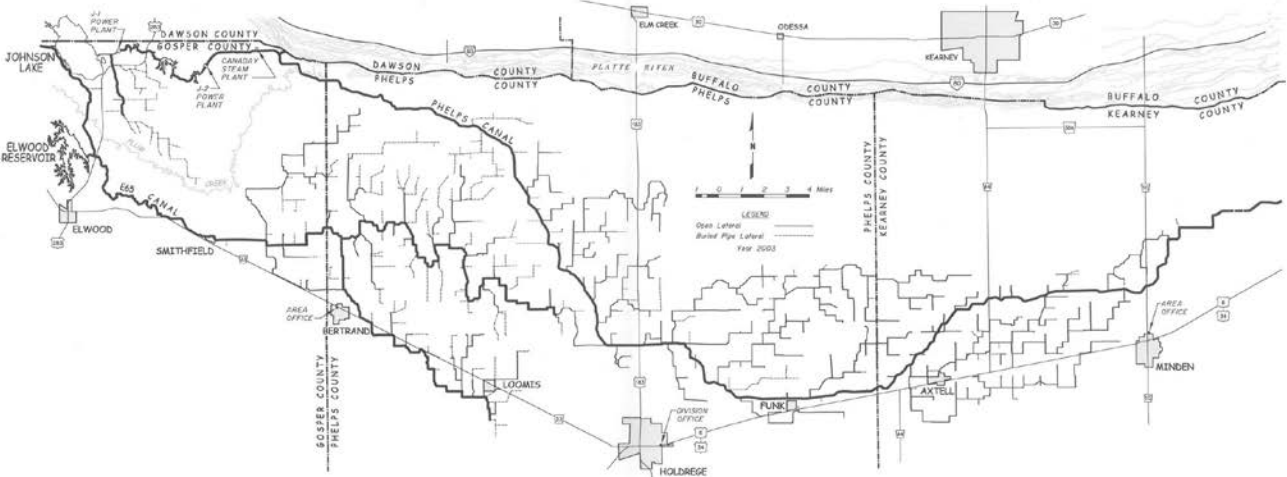
## **PLATTE HIGH FLOW DIVERSIONS**

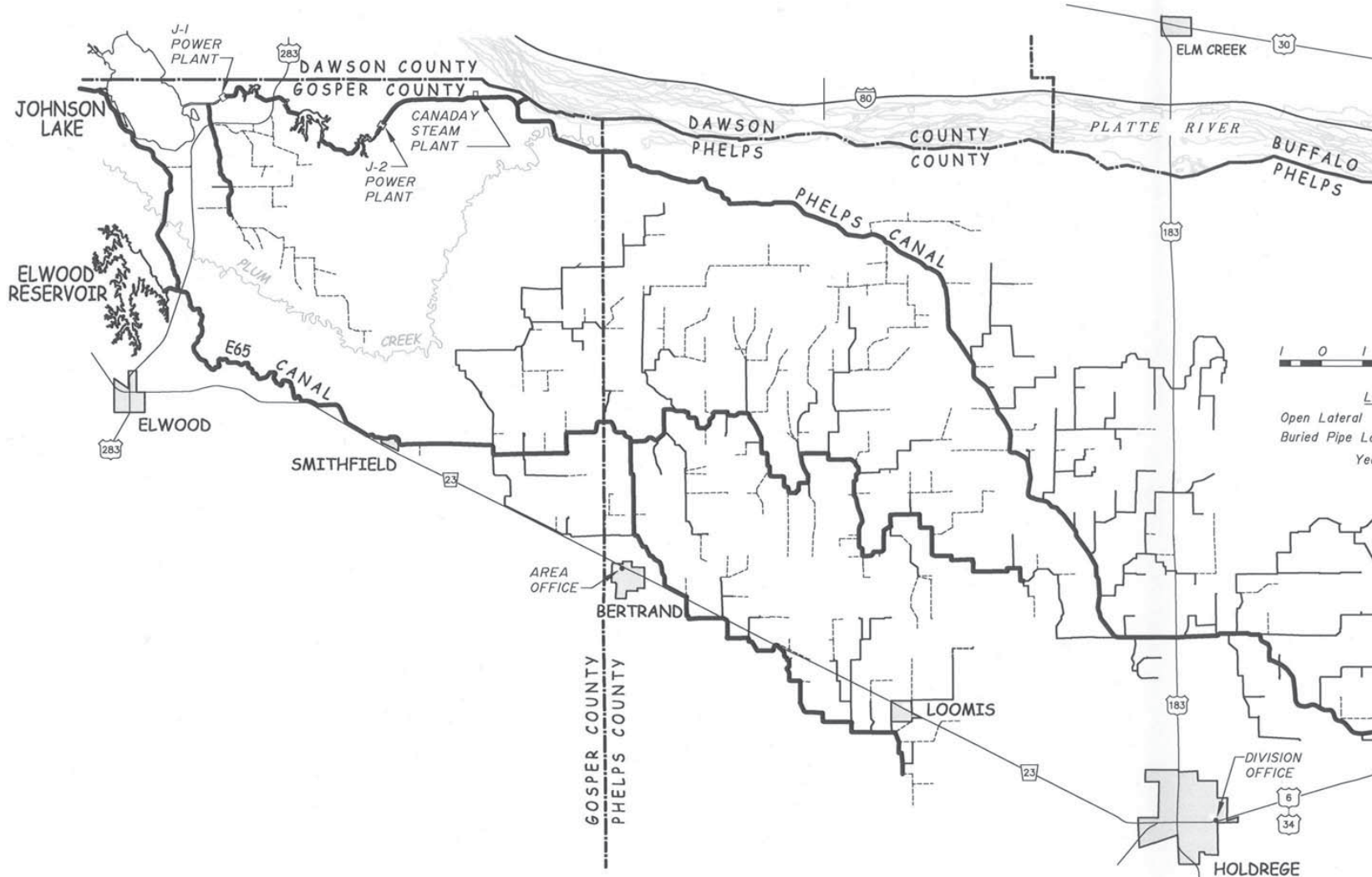
- Total diverted 2006-15= 96,969 a-f
- Average Ann. Diversion= 9700 a-f
- Elwood Reservoir= 87,495 a-f
- E-65 Canal= 4750 a-f
- Phelps County Canal= 4724 a-f

# ELWOOD RESERVOIR

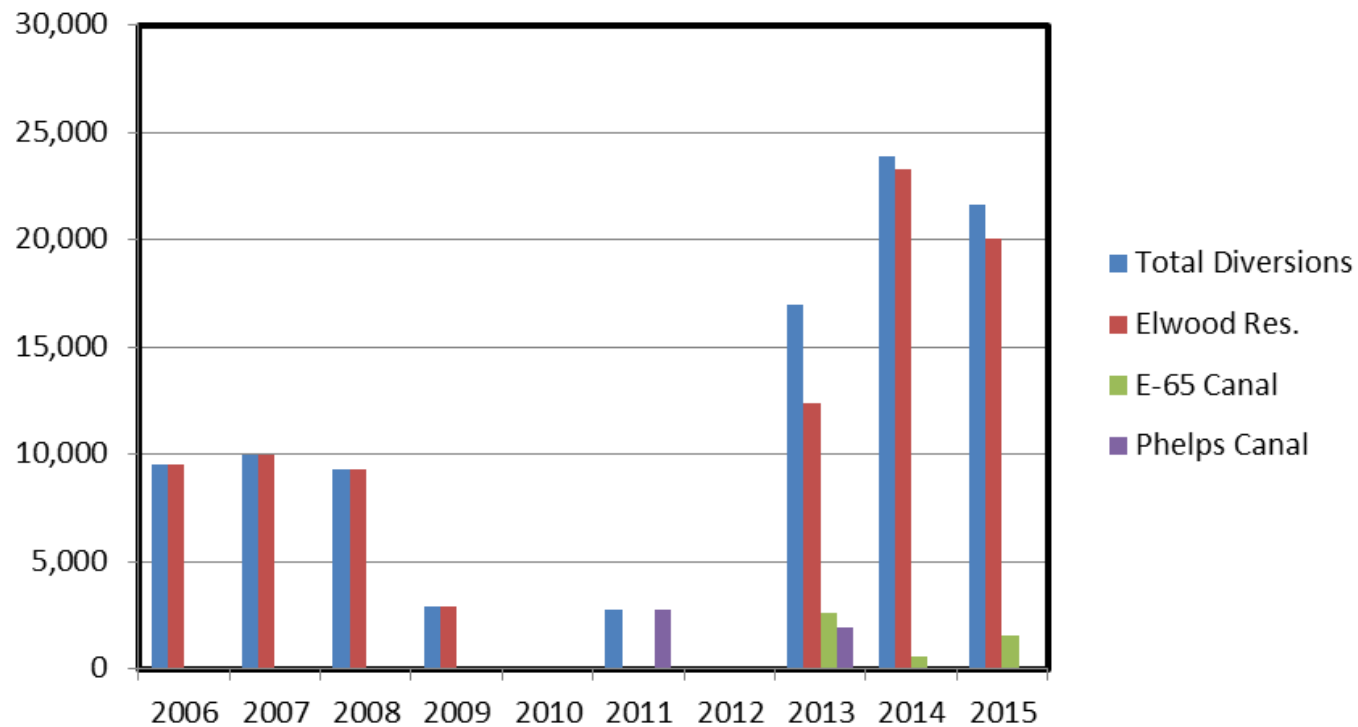


# CNPPID IRRIGATION CANAL SYSTEM

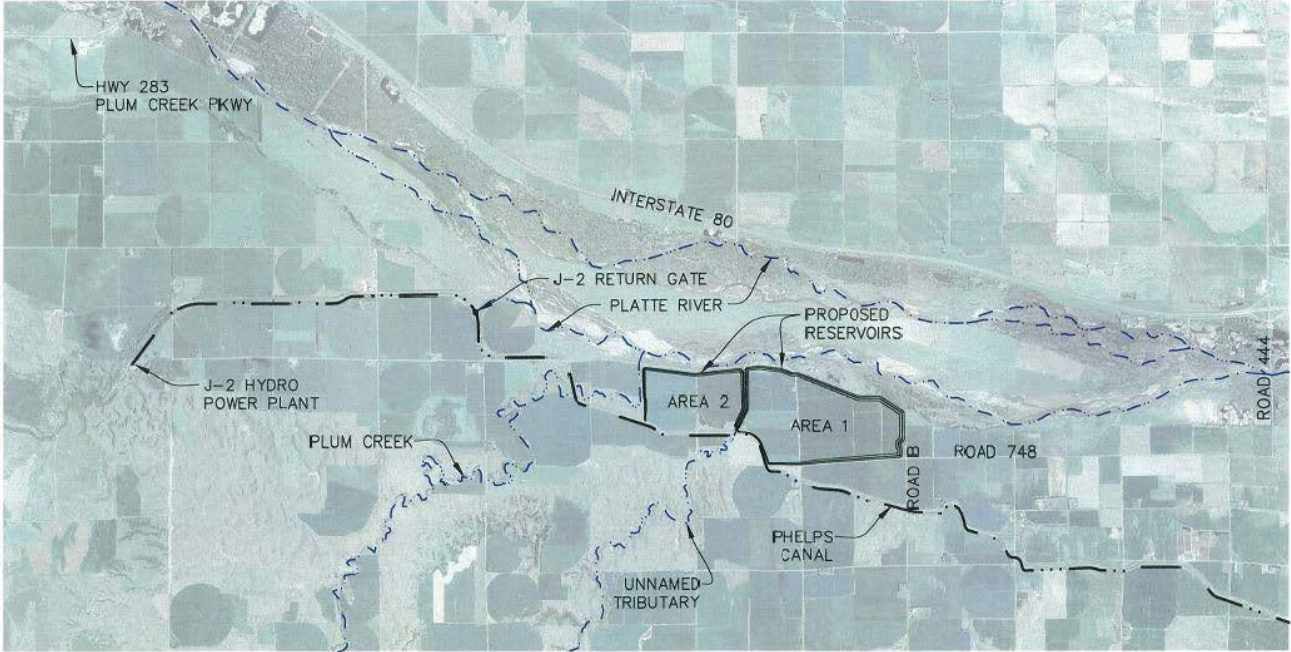




## GW Recharge Diversions by CNPPID for TBNRD and NDNR



# J-2 RESERVOIRS



## **J-2 RESERVOIRS**

- Partner in J-2 reservoirs project.
- NRD cost =\$1,571,661 over three years.
- 2040 creditable a-f per year.
- 50 year agreement.
- Cost=\$15 per creditable acre-foot.



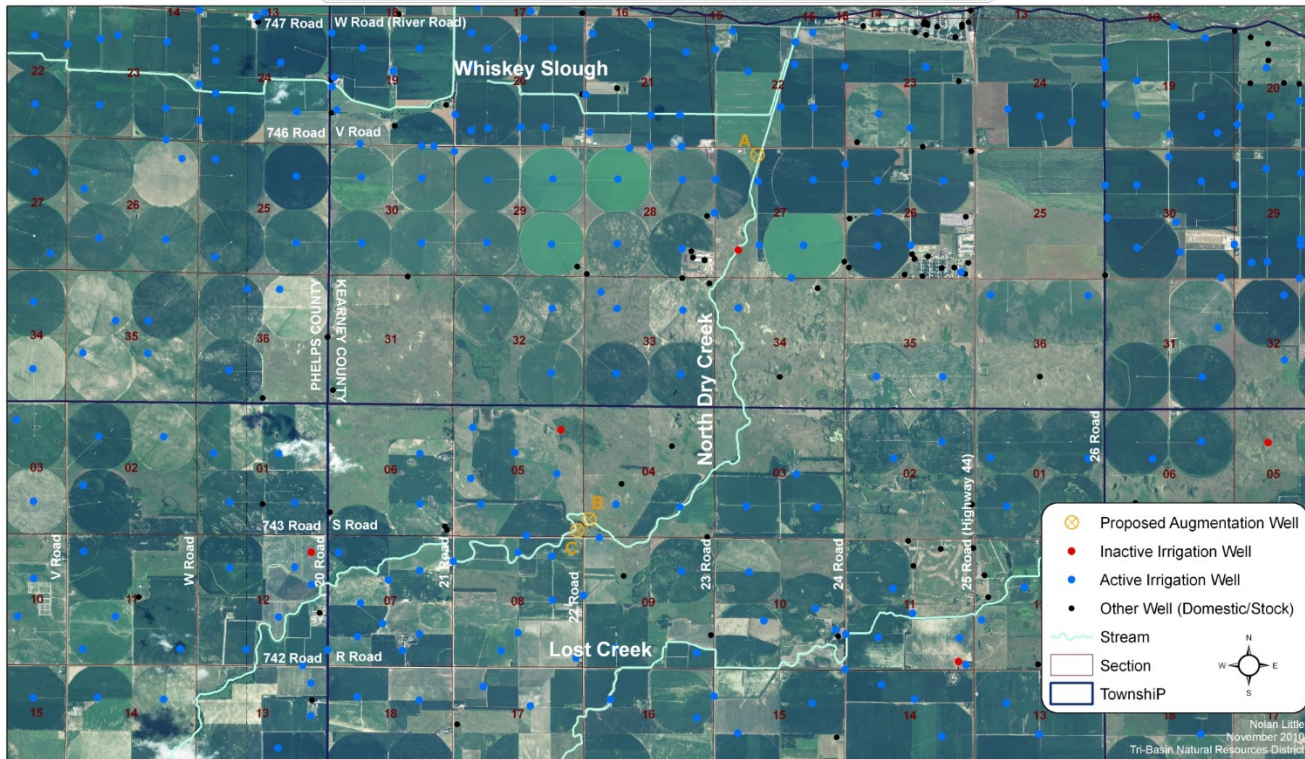
# NORTH DRY CREEK STREAMFLOW AUGMENTATION PROJECT





# Tri-Basin Natural Resources District

## North Dry Creek Streamflow Augmentation Project



# **NORTH DRY CREEK STREAMFLOW AUGMENTATION PROJECT**

- TBNRD developed first streamflow augmentation well project in Nebraska.
- Located on North Dry Creek (Platte Trib. Near Kearney).
- First well completed in 2011, second well in 2014.
- DNR paid 50% of cost.
- Anticipate \$11-12 per creditable a-f cost.

# EQIP SPECIAL INITIATIVE



## **USDA-EQIP SPECIAL INITIATIVE**

- Worked with USDA-NRCS on EQIP Special initiative to convert center pivot corners to grass, habitat (5-year contracts) starting in 2008.
- Total of 28 contracts (364 acres) enrolled.
- Created good upland game habitat.
- Not very effective as offset project (45 creditable a-f per year) because most corners enrolled were in low-depletion areas.

# 30 MILE CANAL DIVERSION



# CPNRD CANAL DIVERSIONS

- Signed 20 year agreement with CPNRD in 2014 to compensate them for diverting water into Dawson County Canals.
- 510 a-f creditable water so far.
- NRD cost=\$35 per a-f (no DNR cost-share available).
- CPNRD can raise rates annually.



# CPNRD



CENTRAL PLATTE  
NATURAL RESOURCES DISTRICT

# INTEGRATED MANAGEMENT PLAN



Lyndon Vogt, General Manager

# Effective Date

## *(Goal 1. objectives of the Basin-Wide Plan, adopt and implement IMPs)*

- This Integrated Management Plan (IMP) was adopted by the Central Platte Natural Resources District on July 23, 2009 and by the Nebraska Department of Natural Resources on August 13, 2009.
- The original IMP became effective on September 15, 2009.
- The revised IMP was adopted on March 22, 2012, and became effective on May 21, 2012.

# Background

- The District lies almost entirely within the Central Platte River Basin with the Platte River being not only the largest surface water feature, but also the major source of water for the seven surface water irrigation projects located in Dawson and western Buffalo counties.
- Annual flows in the Platte River average approximately 1.1 million-acre feet per year.

# Background

- Water rights for irrigation, instream flows, storage, and storage use are held by numerous individuals and organizations on both the Platte River and on the Platte River tributaries across the Natural Resources District.
- The District has an instream flow water right that represents the largest quantity of surface water within the District.
- In addition to providing irrigation water to approximately 81,000 acres of cropland in Dawson and Buffalo counties, Nebraska Public Power District (NPPD) also has a water right to produce electricity at their hydro plant on their Kearney Canal located near the UNK Campus in Kearney, Nebraska.
- The Gothenburg, Dawson County, and Kearney Canals are all owned and operated by NPPD while the four other Canals (Cozad, Six-Mile, Thirty-Mile, and Orchard Alfalfa) are privately owned and each are operated by their own boards of directors.

# Background

- The primary source of irrigation water is groundwater, with 17,462 registered irrigation wells irrigating 936,554 certified acres, 14,315 certified acres that are surface water only, and another 77,175 certified acres that are a co-mingled use.
- Total certified and inventoried acres are 1,028,044 and are supplied by surface water, groundwater, or both.

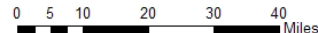
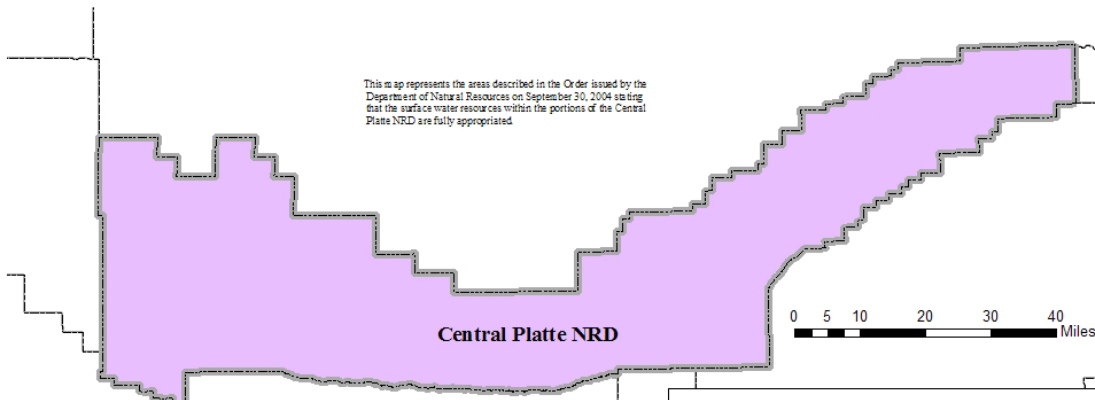


Planning Section

# Map 1: Geographic Areas of the Central Platte NRD Designated by the Department of Natural Resources as Fully Appropriated.

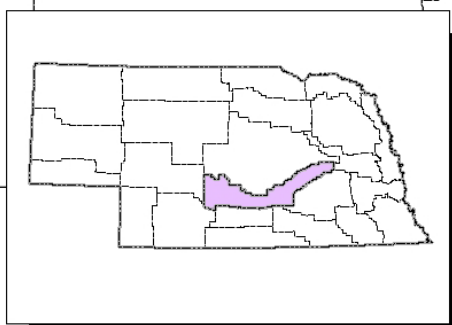


This map represents the areas described in the Order issued by the Department of Natural Resources on September 30, 2004 stating that the surface water resources within the portions of the Central Platte NRD are fully appropriated.



**Explanation**

- Fully Appropriated Integrated Management Area
- Central Platte NRD
- NRDs



Map Produced by Kevin J. Schwartzman, April 27, 2009



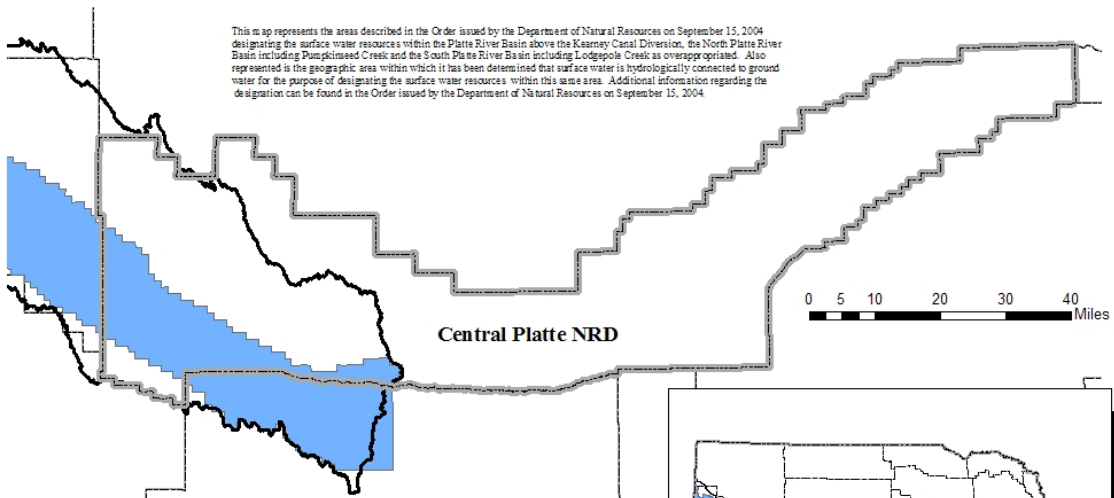


Planning Section

## Map 2: Geographic Areas of the Central Platte NRD Designated by the Department of Natural Resources as Overappropriated.

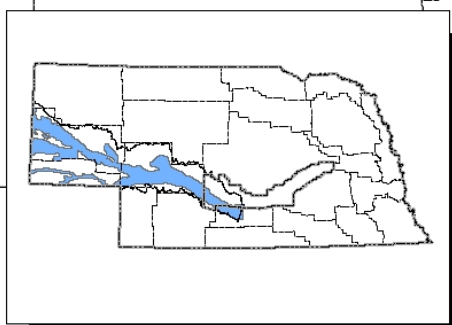


This map represents the areas described in the Order issued by the Department of Natural Resources on September 15, 2004 designating the surface water resources within the Platte River Basin above the Kearney Canal Diversion, the North Platte River Basin including Pumpkinseed Creek and the South Platte River Basin including Lodgepole Creek as overappropriated. Also represented is the geographic area within which it has been determined that surface water is hydrologically connected to ground water for the purpose of designating the surface water resources within this same area. Additional information regarding the designation can be found in the Order issued by the Department of Natural Resources on September 15, 2004.



**Explanation**

- Overappropriated Integrated Management Subarea (OAIMS)
- Overappropriated Surface Water Area
- Central Platte NRD
- NRDs



Map Produced by Kevin J. Schwartzman, April 27, 2009



# Overappropriated Area & Nebraska New Depletion Plan Goals and Objectives

- **Goals**

- 1. Incrementally achieve and sustain a fully appropriated condition. (*Goal 1. of the Basin-Wide Plan*)**

(a) Within the first ten (10) year increment, address impacts of streamflow depletions to surface water appropriations and water wells constructed in aquifers dependent upon recharge from streamflow to the extent those depletions are due to water use initiated after July 1, 1997. (***Goal 1. objectives of the Basin-Wide Plan***)

(b) Impacts of streamflow depletions to surface water appropriations and water wells constructed in aquifers dependent upon recharge from streamflow to the extent those depletions are due to water use initiated prior to July 1, 1997, may be addressed prior to a subsequent increment with the intent of achieving a fully appropriated condition.

(c) Once a fully appropriated condition is achieved, maintain such condition through the continued implementation of the IMP.

# Overappropriated Area & Nebraska New Depletion Plan Goals and Objectives

- **Goals**

**2. Ensure no act or omission of the District will cause the state to be in noncompliance with any interstate compact or decree or other formal state contract or agreement. *(Goal 2. of the Basin-Wide Plan)***

**(a)** Ensure no act or omission of the District will cause the state to be in noncompliance with the Nebraska New Depletions Plan (NNDP) included within PRRIP, for as long as PRRIP exists. *(Goal 2. objective of the Basin-Wide Plan)*

**3. Maintain consistency with the Basin-Wide Plan.**

# Overappropriated Area & Nebraska New Depletion Plan Goals and Objectives

- **Objective 1**

- **(a)** Implement measures within the first ten (10) year increment to offset an annual depletion rate of one thousand nine hundred (1,900) acre-feet to the river in the year 2043. This rate is the current best estimate and is subject to change based upon new data and information.
- **(b)** Conduct a technical analysis as described in Neb. Rev. Stat. § 46-715(4)(d)(iii) for this IMP after it has been in effect for six (6) years, to determine whether the measures adopted in this IMP are sufficient to offset depletions due to post-July 1, 1997, water uses. ***(Goal 1. objectives of the Basin-Wide Plan)***

# Overappropriated Area & Nebraska New Depletion Plan Goals and Objectives

- **Objective 2**

- **(a)** Continue to refine the estimation methodology used to calculate the difference between the current and fully appropriated levels of development. ***(Goal 1. objectives of the Basin-Wide Plan)***
- **(b)** Use available funds to offset depletions that are identified as part of the overall difference between current and fully appropriated levels of development. ***(Goal 1. objectives of the Basin-Wide Plan)***

# Overappropriated Area & Nebraska New Depletion Plan Goals and Objectives

- **Objective 3**

- **(a)** Develop and maintain data and analytical tools, such as the Cooperative Hydrology Study (COHYST) and other programs and projects needed to implement this integrated management plan (IMP). ***(Goal 1. objectives of the Basin-Wide Plan)***
- **(b)** Review the provisions of this IMP to insure that they are adequate to sustain progress toward a fully appropriated condition. ***(Goal 3. objectives of the Basin-Wide Plan)***
- **(c)** Review the provisions of this IMP to insure that they are adequate to maintain a fully appropriated condition.

# Overappropriated Area & Nebraska New Depletion Plan Goals and Objectives

- **Objective 4**

- **(a)** To the extent required in order to maintain compliance with the NNDP, provide accretions to the Platte River equal to or exceeding the annual depletion amount, taking into account appropriate timing and location, for the first ten (10) year increment. The data shown in the following table represents the current best estimate of stream depletions due to changes in groundwater irrigated acres between 1997 and 2005 and is subject to change based upon new data and information.
- **(b)** As required by the NNDP, submit reports to the Department as necessary to assist Nebraska in maintaining compliance with PRRIP.

Current best estimate of depletions to the Platte River due to changes in groundwater irrigated acres within the overappropriated area of the District between 1997 and 2005 based upon the June 10, 2008, COHYST Report on stream depletions

Year	2009	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019
Annual SD in AF	1,044	1,070	1,141	1,167	1,183	1,202	1,219	1,232	1,261	1,257	1,182

# Overappropriated Area & Nebraska New Depletion Plan Goals and Objectives

- **Objective 5**

- **(a)** Amend this IMP as needed to remain consistent with the Basin-Wide Plan. ***(Goal 3. of the Basin-Wide Plan)***
- **(b)** Participate in basin-wide planning activities. ***(Goal 3. objectives of the Basin-Wide Plan)***
- **(c)** If appropriate, follow the dispute process in the Basin-Wide Plan. ***(Goal 4. of the Basin-Wide Plan)***



# 1st Increment Implementation Activities (Non-regulatory)

- Information and Education Programs
  - Invasive species management, conversion of irrigated to dryland agriculture or wildlife habitat, soil residue and tillage management
- Incentive Programs
  - Conservation Reserve Enhancement Program (CREP), Environmental Quality Incentive Program (EQIP), Agricultural Water Resources Enhancement Program (AWREP), Platte Basin Habitat Enhancement Program (PBHEP), Platte Basin Coalition (PBC), Regional Conservation Partnership Program (RCPP), Ogallala Aquifer Initiative (OAI)
- Water Banking Program
  - Encourage and facilitate the transfer of water between users; saving to meet statutory requirements or interstate agreement obligations; saving to meet future incremental targets toward achieving a fully appropriated condition

# Achievements

- **Crop Irrigation and Demand Network**

- The crop irrigation and demand network has been in place for 3 years and is collecting real-time precipitation, water pumped, and soil moisture data for selected sites across the CPNRD. The CPNRD has partnered with DNR, UNL extension, Seim Ag Technology, and McCrometer to collect information the producers and the NRD can use.
- The goal of the project is being accomplished by measuring water pumped and precipitation at selected locations to provide data that could be use to develop irrigation efficiencies by irrigation equipment type, soil water holding capacities, and crop type.

# Achievements

- **Water Banking**

- Since the initial certification of acres within the District, 1,584 transfers have been completed allowing 15,612 acres to be newly irrigated while 10,242 acres were offset (this applies to the District as a whole and new uses cannot be transferred into the overappropriated area.
- 2,447 acres of surface water were retired accounting for 1,833 acre feet of return to the Platte River by 2043
- 2,401 acres of ground water were retired accounting for 733 acre feet of return to the Platte River by 2043
- Individual IMP objective – 1,900 acre feet of return to the Platte River by 2043

# Achievements

- **Rehabilitation of Surface Water Canals**

- Cozad, Thirty Mile, Southside (Orchard Alfalfa), and Six Mile.
  - The canals will and have been used for their original purpose, surface water irrigation delivery; as well as for retiming Platte River flows to enhance target flows for endangered species.
  - The retiming of Platte River flows has been accomplished by diverting flows excess to target flows to recharge the ground water system or by transferring surface water irrigation rights to in stream use, which will be diverted from the canal back to the river.
  - Water rights for diverting excess flow for recharge were granted to the Canal systems by DNR and Temporary Transfer permits for returning surface water to the river for in stream use have been filed with the DNR.
  - Above target flow Platte River water was diverted in 2011, 2013, 2014, and 2015. The total diverted by the 3 canals was 37,359 acre feet and the computed recharge was 23,883 acre feet. The return to the River is computed to be 80 to 90 acre feet per month.
  - Six Mile was the Districts first endeavor. It was purchased by the District, and its water rights were transferred to Thirty Mile Irrigation District. The Ditch was closed and the land that it once traveled through is now being farmed.



*Nebraska*

Department of Natural Resources

# NEEDNR PARTICIPATION IN BASIN-WIDE PLAN AND NRD IMPs

- Plan Development
  - Collaborated with 5 Upper Platte NRDs on the development of the Basin-Wide Plan
  - Worked with each Upper Platte NRD on the development of individual IMPs
- Plan Implementation
  - Partner in many IMP-related projects throughout the Upper Platte Basin
    - Financial partner in a number of IMP-related projects
    - Sole financier of additional IMP-related projects  
*(Goal 1, Objective 2, of the Basin-Wide Plan)*



# J-2 REGULATING RESERVOIR

- Benefit to Platte River:
  - Store water during times of excess streamflow and release stored water when shortages to target flow are expected to occur.
- Partners:
  - NeDNR
  - CNPPID
  - CPNRD
  - TBNRD
  - TPNRD
  - PRRIP



*Goal 1, Objective 6, of the Basin-Wide Plan  
Ch.6. II. A. 2. Other Programs (CPNRD IMP)  
Ch.6. II. A. 3. Other Programs (TBNRD IMP)  
Ch.6. II. A. 3. Other Programs (TPNRD IMP)*

# EXCESS FLOW DIVERSIONS & CANAL RECHARGE PROJECTS

- NeDNR, all 5 NRDs partnering with irrigation districts and canal companies
- Take advantage of high streamflow to recharge groundwater
  - Recharge will return to stream over time
  - Reduce flooding during extreme events
- Opportunities in 2011, 2013, 2015, and 2016
- Diverted over 180,000 acre-feet through 2015
  - Over 86,000 acre-feet recharged

*Goal 1, Objective 6, of the Basin-Wide Plan  
Ch.6. II. A. 2. Other Programs (CPNRD IMP)  
Ch.6. II. A. 3. Other Programs (TBNRD IMP)  
Ch.6. II. A. 3. Other Programs (TPNRD IMP)  
Ch.9.2.2.3 Other Programs (SPNRD IMP)  
Ch.6. II. A. 3. Other Programs (NPNRD IMP)*



30-Mile Canal Headworks, June 2015



# QUESTIONS?





# **V. SUMMARY OF IMPLEMENTATION**

## **WITH RESPECT TO FIRST INCREMENT BASINWIDE PLAN GOALS AND OBJECTIVES**

# SUMMARY

- NRDs, partners, and producers have been very active
- Diverse activities to achieve objectives
  - Planning, studies and reporting
  - Management and regulatory actions
  - Data Collection and tool development
  - Implementation



# **VI. NEW INFORMATION AVAILABLE**

# STUDIES

- Platte River Excess Flow Study
- Conservation Measure Study (in Progress)
- Excess flow recharge pilot studies
- Current to Fully Appropriated Study (in Progress)
- Western Canal conjunctive management study
- Robust review (in Progress)
- North Dry Creek Augmentation
- Canal efficiencies studies

# DATA

- Well metering data
- Evapotranspiration monitoring
- Certified irrigated acres
- Canal return gaging
- Land use and crop types

# TOOLS

- COHYST model
- Western Water Use Model (WWUM)
- Web-based depletion calculator - PBHEP
- Guidance document for annual assessment of new uses
- Surface water appropriation transfer template
- INSIGHT database



# **VII. ADDITIONAL INFORMATION REQUESTS**

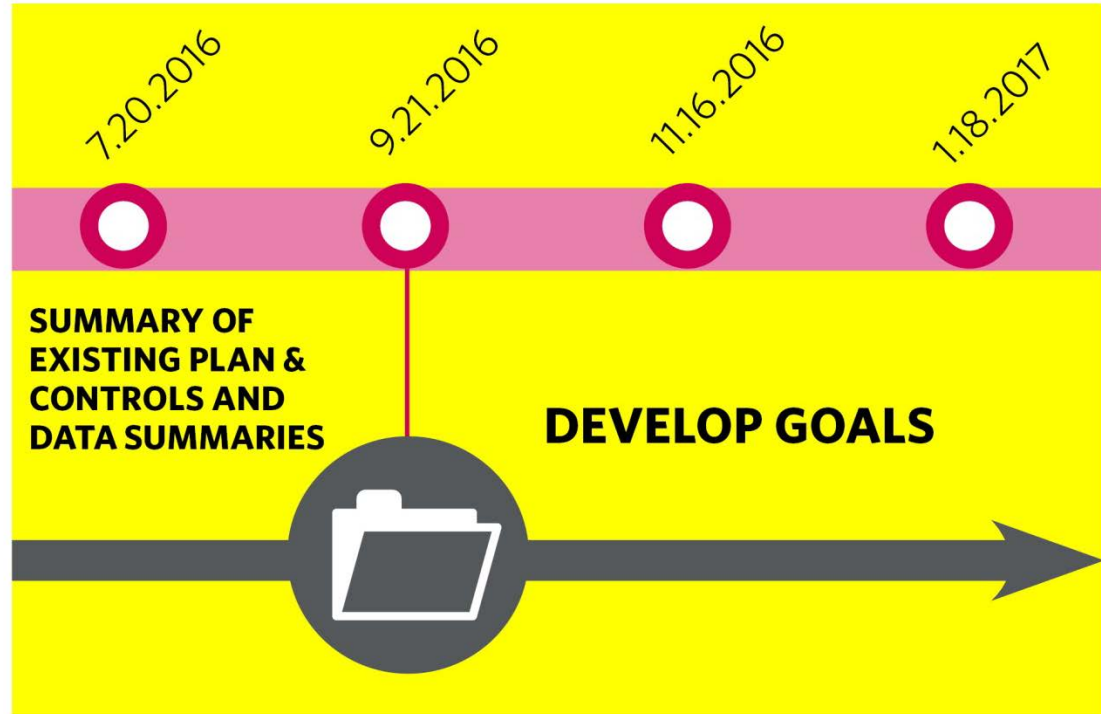




# **VIII. NEXT STEPS**

# NEXT STEPS

- September 21, 2016 and November 16, 2016 Meetings
  - Goal Development





# **IX. PUBLIC COMMENT**

**PUBLIC COMMENT?**