



CPNRD IMP

Meeting 2

TODAY'S AGENDA

- Welcome
- 2nd Increment Topics
 - Conjunctive Management
 - Municipal Statute – 2026 Offsets
 - Drought Planning
- Public comment

WELCOME

- Open meeting notice
- Safety & logistics
- Introductions



2ND INCREMENT TOPICS

Conjunctive Management

Municipal Statute – 2026 Offsets

Drought Planning

2ND INCREMENT TOPICS

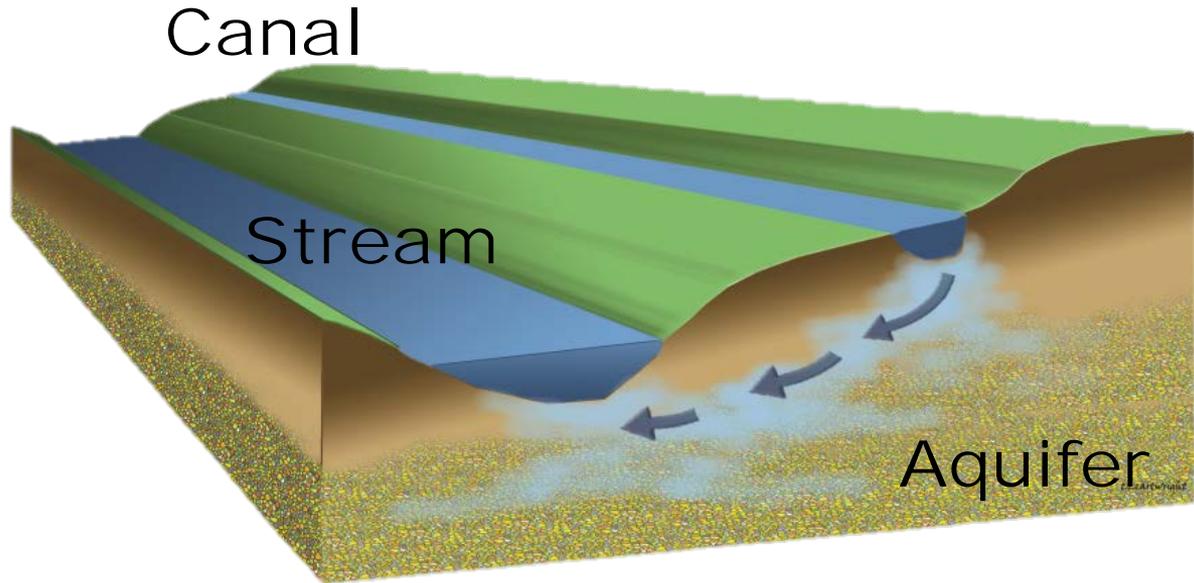
CONJUNCTIVE MANAGEMENT

IN THE UPPER PLATTE RIVER BASIN

UNDERLYING CONCEPTS OF CONJUNCTIVE WATER MANAGEMENT

(CWM)

- Surface and groundwater resources are interconnected
- Decisions to improve the management of one cannot be made properly without considering the other



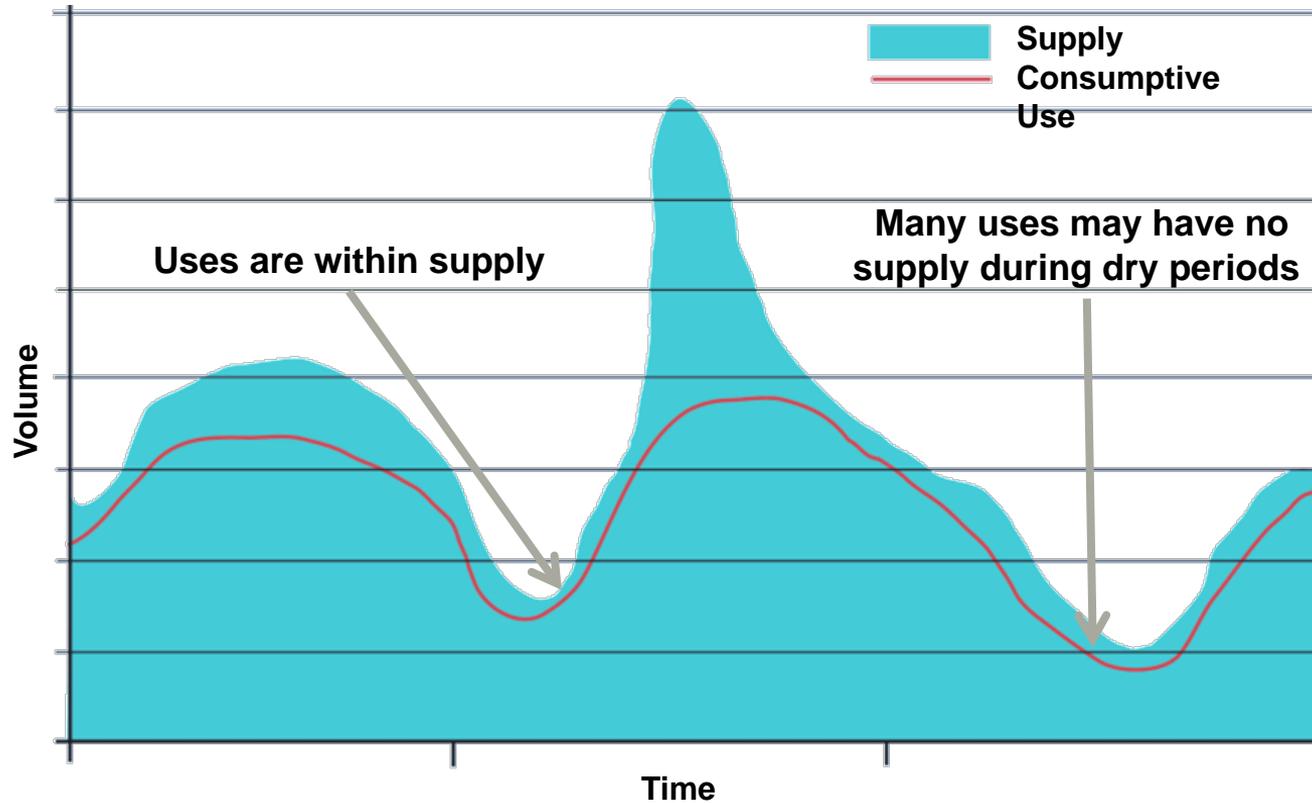
Conjunctive Water Management is an *adaptive process* that utilizes the *connection* between surface water and groundwater to *maximize water use*, while *minimizing impacts* to streamflow and groundwater levels in an effort to increase the overall water supply of a region and improve the reliability of that supply.

HOW IS CWM ACCOMPLISHED?

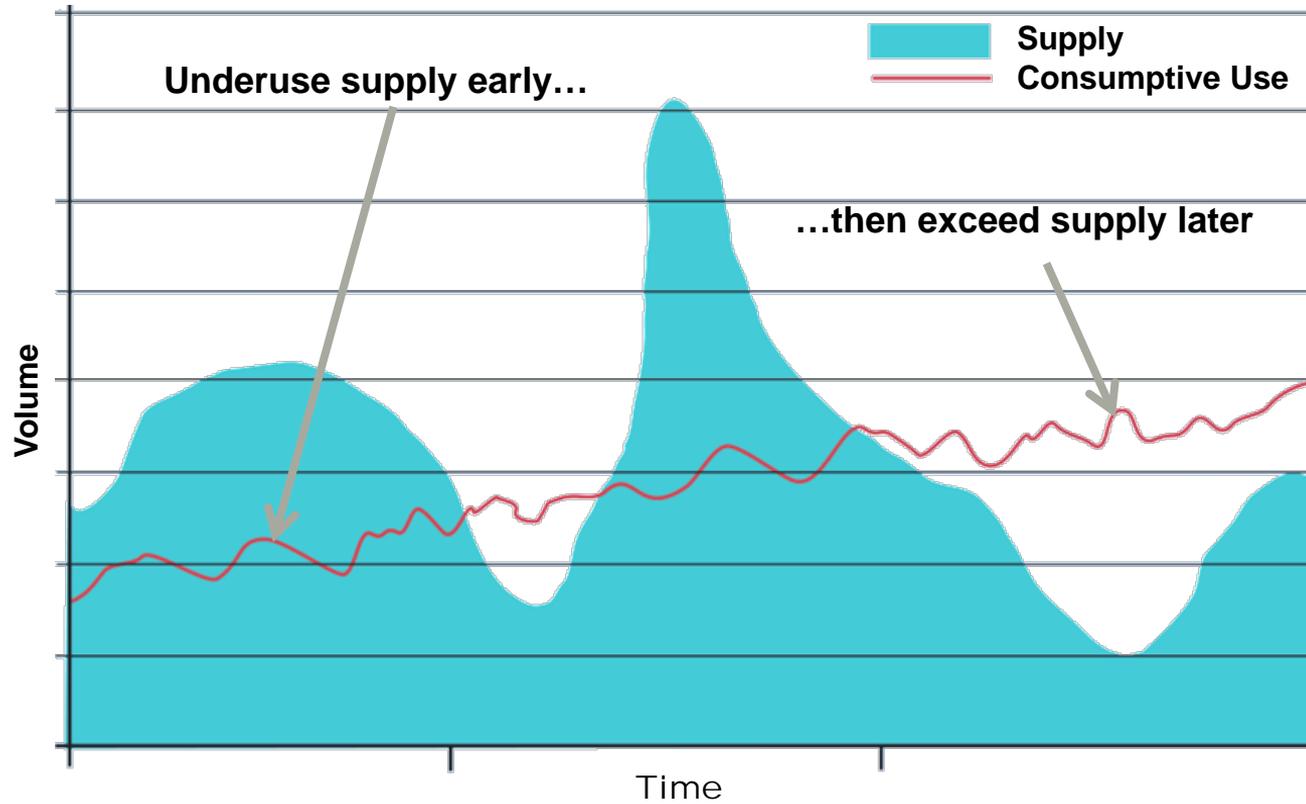
- Typically, by:
 - Using or storing additional surface water when it is plentiful
 - Relying more heavily on groundwater during dry periods
- Can change the timing and location of water for more efficient use

SCENARIO 1:

USING SURFACE WATER ONLY

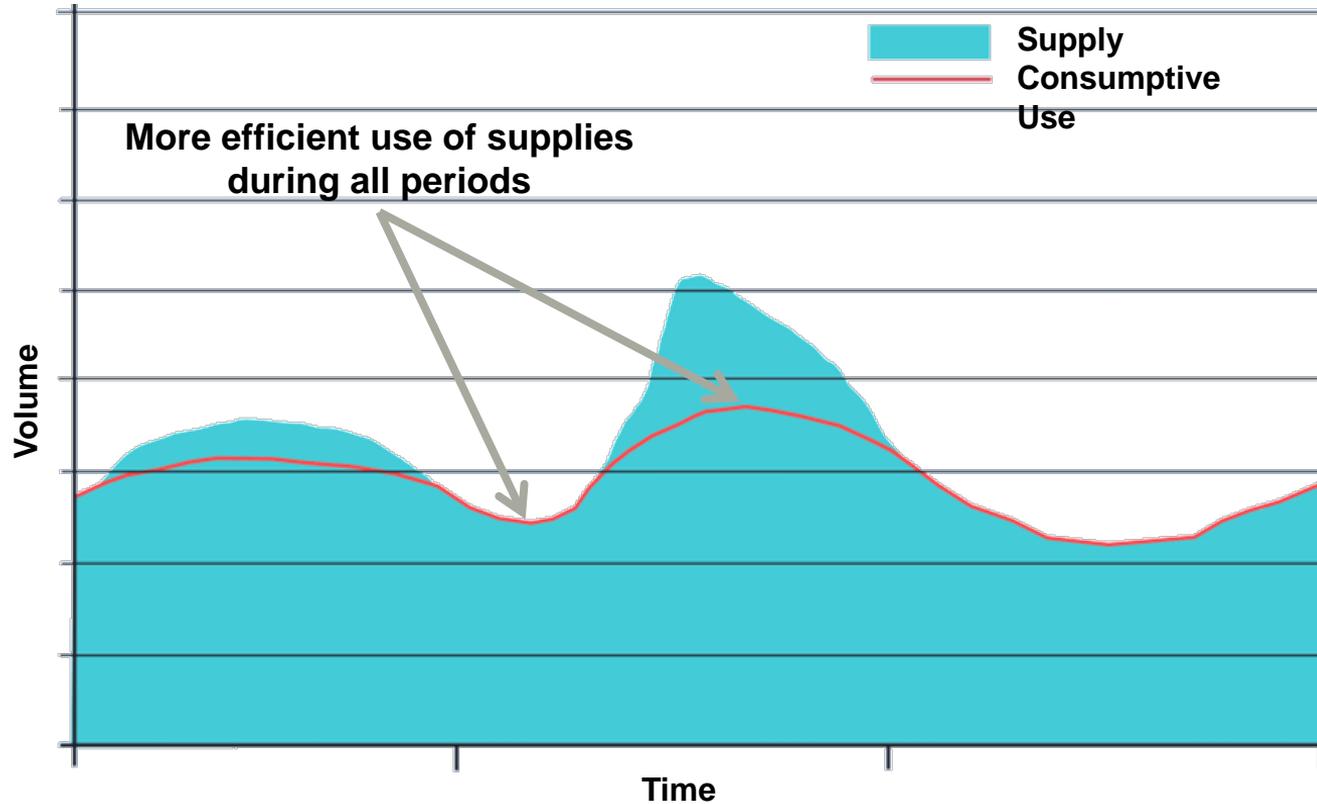


SCENARIO 2: USING GROUNDWATER ONLY



SCENARIO 3:

MANAGING SUPPLIES THROUGH CWM



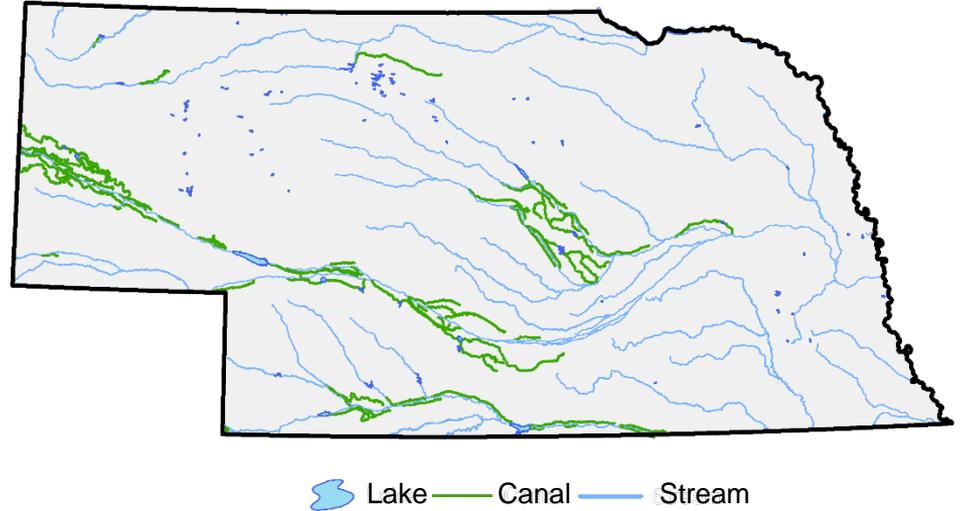
COMPONENTS OF CWM

- Surface water diversion and groundwater pumping
- Aquifer recharge
- Management of the timing of return flows
- Program for monitoring and evaluation



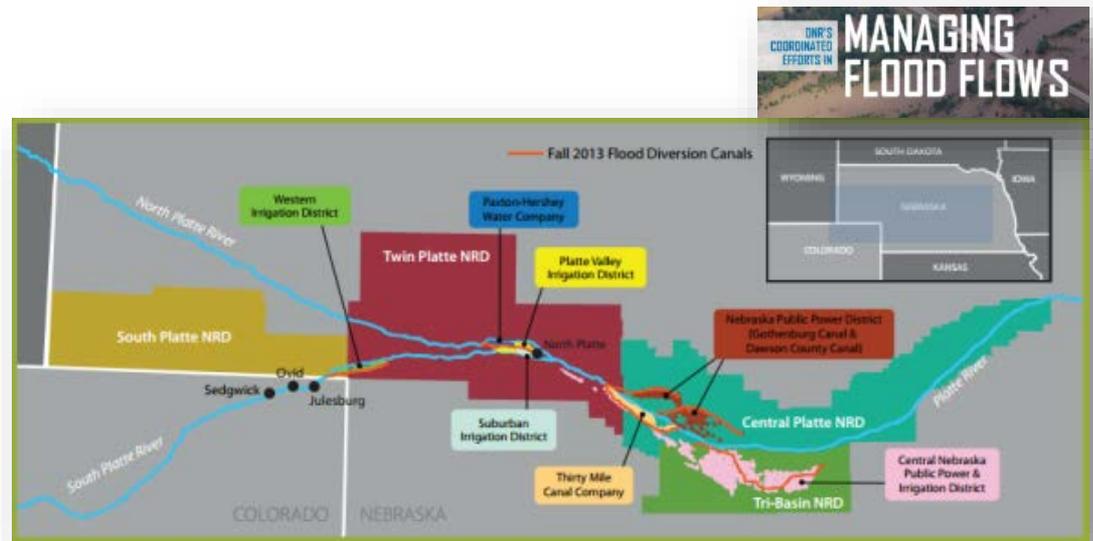
BENEFITS OF CWM

- Maximize available water supplies
- Leverage existing infrastructure
- Use existing planning framework
- Minimize the need for regulatory actions
- Customize to local opportunities or needs
- Maintain viability of existing uses



EXAMPLES OF CWM PROJECTS

- Augmentation projects such as N-CORPE
- Western canal conjunctive management study
- Water leasing arrangements
- CPNRD transfers and canal refurbishment
- Capturing excess flows using existing canal infrastructure (in partnership with irrigation districts)



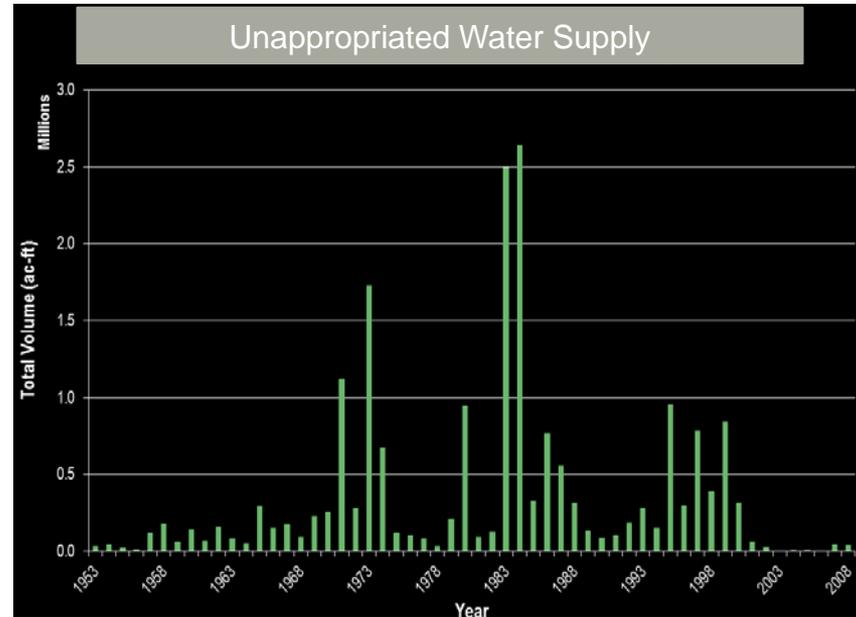
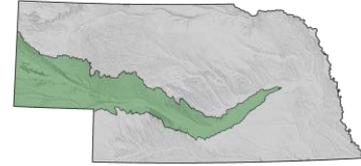
APPLYING CONJUNCTIVE MANAGEMENT

IN THE UPPER PLATTE RIVER BASIN

First Increment CWM Activities

UPPER PLATTE RIVER WATER SUPPLIES

- Receives average of 1 million ac-ft from snowmelt in Wyoming each year (North Platte Decree)
- More variable inflows in South Platte from Colorado
- Water is generally fully allocated, particularly above Elm Creek (over appropriated)
- Streamflow required to be shared under Endangered Species Act (Federal)
- Unappropriated water does occur during some very wet years, during shorter intervals, and outside of the irrigation season



2011 PILOT PROJECT

- High flows in spring prior to irrigation season
- NeDNR coordinated with NRDs, Irrigation Districts/Canal Companies to divert excesses
- Acquisition of permits
- Contracts
- Monitor



2013 FLOOD FLOWS

Friday, September 20, 2013



South Platte River Highway 83 Bridge, North Platte, NE

Saturday, September 21, 2013



South Platte River Buffalo Bill Road Bridge, North Platte, NE

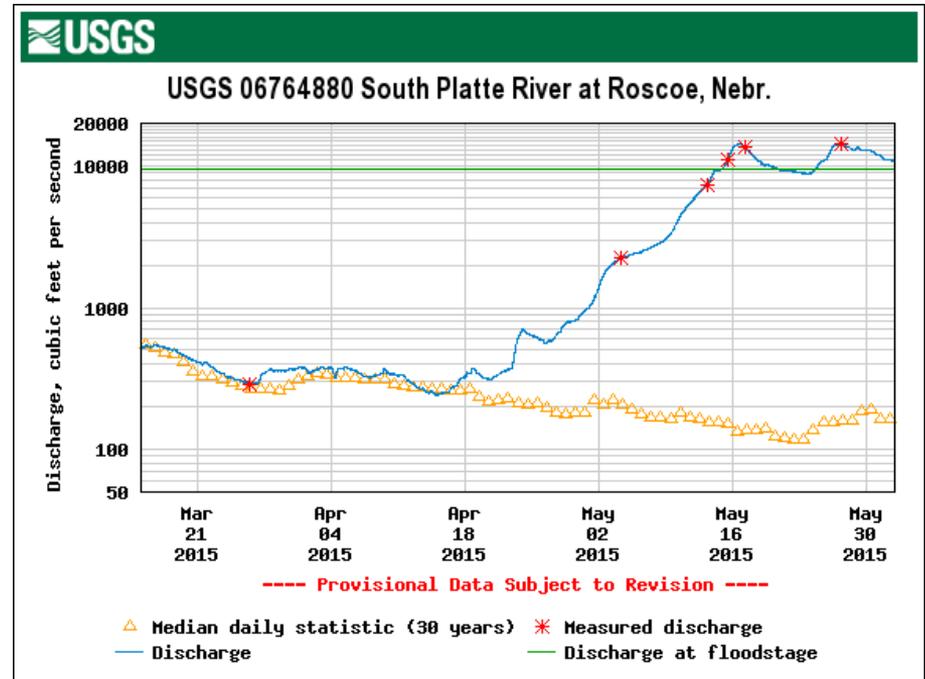


2015 FLOOD FLOWS

- Wet conditions during above average spring snowmelt
- Canals filled early
- Stored excess in lakes, reservoirs



30-Mile Canal Headworks,
June 2015



Flood & Excess Flow Benefits

Cozad Canal
Thirty-Mile Canal
Orchard-Alfalfa Canal



Year	Diversion	Recharge
2011	19,000	12,500
2013	3,600	2,100
2015	12,600	9,100
2016	16,661	9,547

Surface Water Temporary Transfers



Year	Transferred Water (AF)
2015	15,718
2016	15,777
2017	13,759

CWM FUTURE ACTIVITIES

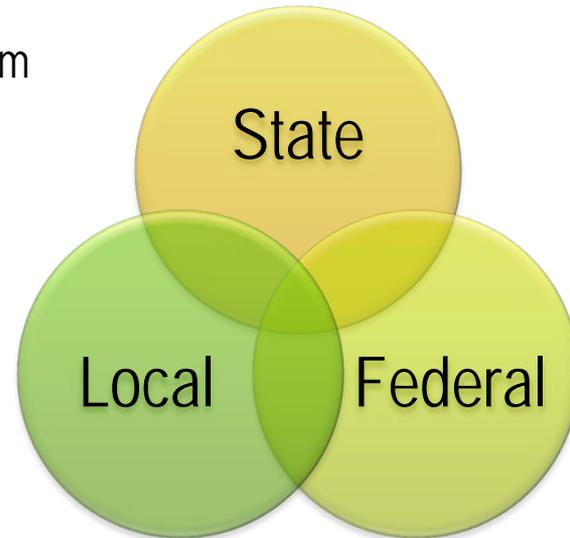
- Expand implementation of CWM projects
- Enhance adaptation strategies based on management goals
- Support continued investment in maintaining and enhancing infrastructure
- Ensure that sound science and monitoring are available to support management decisions



Cozad Canal, Gothenburg, NE

Collaboration

- Essential for Success
- State Agency
- Individual Canals
- Platte River Recovery Implementation Program
- States of Wyoming & Colorado



2ND INCREMENT TOPICS

MUNICIPAL STATUTE – 2026

OFFSETS

PROPOSED MUNICIPAL/INDUSTRIAL CHANGES FOR 2ND INCREMENT IMP

➤ Summary of current statute language

- Neb. Stat. § 46-740 states that an IMP, rule, or order cannot limit the use of groundwater by a municipality or non-municipal commercial/industrial use within a designated fully or over appropriated area until January 1, 2026.
- Prior to 2026 the NRD was responsible for offsetting any new or expanded consumptive use up to 25 million gallons/year

➤ Tracking Based on Municipal Size

- Population greater or less than 2,500

Population <2,500

- Difficulty in Reporting
 - Return Flows Often Not Measured
 - Lack of Meters
 - Would still require some level of reporting
- Simplified Tracking
 - Population/Census –based approach
 - Population change minimal or negative for many municipalities
 - Relatively small water use

Population >2,500

- Reliable Metering
 - Track changes in use
 - Returns Measured
 - Better communication with water managers
- Potential Population Growth
 - Sub-divisions, expansion into new areas
 - Industrial growth
- Changes in Per Capita Use
 - Recognize that operational changes reduce per capita use in some areas
 - Have metered data—more accurate than estimated

Simplify Baseline Calculations & Offsets

- Change Plan wording to include actions that we can control or manage
 - Cannot enforce reporting
 - Changing offsets annually is not practical
- Municipal Baseline
 - Highest water use year
 - Alternative: per capita and population change

Maximum Municipal Water Use to Date



	Gallons Pumped	Gallons Discharged	Net Gallons
Kearney	2.6×10^9	1.3×10^9	1.3×10^9
Grand Island	7.4×10^9	3.6×10^9	3.8×10^9
Gothenburg	5.1×10^8	1.7×10^8	3.3×10^8

Plus Per Capita Allowance

SUMMARY OF MAJOR CHANGES

- Changes in water use tracking based on municipality size
- Calculation of Baseline
- Focus on Achievable & Implementable Action Items

2ND INCREMENT TOPICS

DROUGHT PLANNING

BWP Drought Planning Goals

- **Action Item 1.3.4** : Develop a basin drought contingency plan for management of supplies during times of shortage.
 - **Action Item 1.3.4.1**: Develop a basin drought monitoring protocol for defining and determining drought conditions.
 - **Action Item 1.3.4.2**: Identify potential basin-wide mitigation and response actions to drought conditions and opportunities for cooperation across the basin (that is, management of storage water).
 - **Action Item 1.3.4.3**: Conduct a drought simulation workshop with NeDNR, NRDs, and water users to assist in developing and testing of protocols during a drought.
 - **Action Item 1.3.4.4**: Identify roles for administering and implementing basin drought contingency plan.

Stakeholder Feedback

- What problems do you face in drought?
- What is a drought plan to you?
- Would you be interested in participating in a drought workshop?

Central Platte NRD Drought Management Plan

- What Are We Doing?
 - Awarded a grant from the Water Sustainability Fund
 - Project has been put on hold to coincide with the IMP

- What Will The Plan Accomplish?
 - Identify district vulnerabilities
 - Create method of monitoring drought conditions
 - Identify and prioritize mitigation and response actions to reduce future drought impacts
 - Become a tool to assist the NRD in water resources management
 - Lead to a more sustainable and stable water supply for all users across the district

Central Platte NRD Drought Management Plan

- How Will This Be Accomplished?
 - Data collection/analysis of historic records
 - Drought Tournament with stakeholders
 - Development of a Drought Management Plan
 - Develop “Local” drought thresholds
 - Identify Mitigation Alternatives
 - Develop protocol for monitoring and forecasting



NEXT STEPS

MEETING DATES

- November 13, 2018
- January 15, 2019



PUBLIC COMMENT

Thank you

SUMMARY OF FLOOD FLOW DIVERSIONS

First Increment

- Over 200 Kaf of flood flows diverted since 2011
- Resulting recharge in excess of 100 Kaf
- Accretions will benefit Platte River flows for many years into the future
- Process in place for future successes
- Reduces the need for additional regulations
- Creates greater resiliency in future periods

