

TBNRD Stakeholder Meeting #2 Minutes

Project: 2nd Increment Stakeholder Process for Tri-Basin NRD Integrated Management Plan (IMP)

Subject: Stakeholder Meeting #2

Date: Wednesday, December 12, 2018 from 1:00 p.m. – 3:30 p.m.

Location: Tri-Basin NRD Office, 1723 Burlington St, Holdrege, NE 68949

Topics:

1. Welcome

- John Thorburn, Tri-Basin NRD (TBNRD) manager, opened the meeting at 1:18 p.m. CT. He acknowledged the open meetings act on the wall, and the safety and logistics of the facility. John introduced Jesse Bradley and invited the stakeholders and attendees to introduce themselves. The attendance sheet is attached (Attachment B).

2. Review of Upper Platte Basin-wide Plan (UPBWP)

- NeDNR and NRDs will work cooperatively to investigate disputes, identify and work out disputes between groundwater and surface water users or implement management solutions to address those issues.
- **Goal 1:** Incrementally achieve and sustain a fully appropriated condition while maintaining economic viability, social and environmental health, safety, and welfare of the Basin.
 - Offset the post-1997 depletions to streamflow to the extent that they effect surface water appropriations and groundwater wells dependent on aquifer.
 - Make progress toward fully appropriated condition.
 - Balance between uses and supply.
 - Look at imbalances effecting water users, and short- and long-term water supply and demand.
 - Explore and implement measures to mitigate those impacts
 - Look at drought and become better prepared for the next drought and manage supplies more effectively.
 - Conduct technical analysis to evaluate the UPBWP and how it is working.
 - Look for new funding opportunities and use available funds to match those new dollars.
 - To update and continue to implement the TBNRD IMP.
- **Goal 2:** Prevent or mitigate human-induced reductions in the flow of a river or stream that would cause non-compliance with an interstate compact or decree or other formal state contract or agreement.

- PRRIP is authorized through 2019; states working with government to get extension for existing 10 or 13 years.
- **Goal 3:** Partner with municipalities and industries to maximize conservation and water use efficiency.
 - Already collecting water use data from M/I, want them to be informed about what they are doing in this planning process.
 - New feature for this increment to establish baselines for their water use by 2026.
 - Discussion about the municipalities and industries involvement
 - Both are required to report their water use annually (this includes feed lots)
- **Goal 4:** Work cooperatively to identify and investigate disputes between groundwater users and surface water appropriators and, if determined appropriate, implement management solutions to address such issues.
- **Goal 5:** Keep the Upper Platte River Basin-Wide Plan current and keep stakeholders informed.
 - Continue what we are doing, including annual meetings and progress reports from different NRDs and NeDNR about our implementing the individual plans.
 - Improve ways on how we share information with stakeholders.
 - Conduct planning for subsequent Plans, get ready for the next 10 year increment.

3. Upper Platte Basin-wide Plan – Status update

- The second increment includes the first increment elements, with the addition of the stakeholder group's direction including the need for a drought contingency plan.

4. Conjunctive Water Management

- Conjunctive Water Management is an adaptive process that utilizes the connection between surface water and groundwater to increase sustainability of both water sources by increasing the overall water supply of a region
- **Components of conjunctive management** include
 - Surface water diversion, ground water pumping, aquifer recharge, managing timing of return flows, and water discharge back to the stream,
- **Benefits:** Working to maximize water supply in NE; leveraging existing infrastructure (especially the major surface water infrastructure such as canals and reservoirs)
 - Facilities we can use and repurpose, continued conjunctive management can optimize water supply.
- **Efforts:** Continued emphasis on conjunctive management process to support planning goals. Requires funding and coordination from multiple users, which can be complicated, but can be overcome

5. Municipal Statute – 2026 offsets

- LB962- deals with growth of towns and industries
 - Up until January 2026, municipal growth offsets are for NRD to address

- After 2026, NRD has a choice to push for municipal/industrial to offset for growth
- **What is appropriate?** Municipal. Towns are pretty stable, continue to function, no real booms coming to municipalities.

6. Drought Planning

- Discussion about pipelines and drought took place
 - Stakeholders expressed their desire for the IMP to outline offsets and balances during times of drought and excess
- Stakeholders interested in participating in a drought workshop

7. Robust Review Results

- Jesse Bradly discussed the results of the Robust Review analysis for TBNRD, which assessed progress made on the first increment goals and objectives. This includes progress made toward offsetting stream depletions caused by post-1997 uses.
 - Discussion occurred on the data used in the analysis, how the results might change if producers decided to plant more corn again, benefits of excess flow and augmentation projects, and what results might have looked like if models included pre-agricultural development years.

8. Stakeholder discussion: What's missing from the plan?

- No additional comments.
- Stakeholders were interested in the usefulness of the models in contingency planning efforts (e.g., what happens if soybeans in the NRD are switched to corn?).
- Costs? Other projects? Anything we know won't work?

9. Next Steps

- Next IMP stakeholder meeting: ~~February 13, 2019~~ **March 14, 2019** at 1:00pm, TBNRD Office
- Hearings on Upper Platte Basin-Wide Plan and TBNRD IMP: July 16, 2019, TBNRD Office

10. Public Comment

- Meeting Adjourned at 3:33pm



Agenda

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Topics:

1. Welcome
2. Upper Platte Basin-wide Plan – status update
 - a. Status update
 - b. 2nd Increment Topics
 - i. Conjunctive management
 - ii. Municipal statute – 2026 offsets
 - iii. Drought planning
3. Robust Review Results
4. Stakeholder discussion
5. Next Steps
6. Public comment

Next Meeting: February 13, 2019 at 1:00 p.m. @ TBNRD Office

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TBNRD IMP

2nd Increment IMP
Stakeholder Meeting #2
December 12, 2018



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TODAY'S AGENDA

- Welcome
- Upper Platte Basin-Wide Plan
 - Status Update
 - 2nd Increment Topics
 - Conjunctive Management
 - Municipal Statute – 2026 Offsets
 - Drought Planning
- Robust Review Results
- Stakeholder Discussion
- Next Steps
- Public Comment



WELCOME

- Open meeting notice
- Safety & logistics
- Introductions



UPPER PLATTE BASIN-WIDE PLAN STATUS UPDATE

Goals & Objectives



Basin-wide Plan Goals and Objectives (Draft)

Goals

1. Incrementally achieve and sustain a fully appropriated condition, while maintaining economic viability, social and environment health, safety, and welfare of the basin
2. Prevent or mitigate human-induced reductions in the flow of a river or stream that would cause non-compliance with an interstate compact or decree or other formal state contract or agreement
3. Partner with municipalities and industries to maximize conservation and water use efficiency
4. Work cooperatively to identify and investigate disputes between groundwater users and surface water appropriators and, if determined appropriate, implement management solutions to address such issues
5. Keep the Upper Platte River Basin-Wide Plan current and keep stakeholders informed

Goal 1: Incrementally achieve and sustain a fully appropriated condition, while maintaining economic viability, social and environment health, safety, and welfare of the basin

- 1.1 Maintain previous increment mitigation progress
- 1.2 **Offset impacts of streamflow depletion** to (A) surface water appropriations and (B) water wells constructed in aquifers dependent on recharge from streamflow **to the extent those depletions are due to water use initiated after July 1, 1997**
- 1.3 **Make progress toward a fully appropriated condition**
- 1.4 **Conduct technical analyses** to support and evaluate effectiveness of plan and adequacy in sustaining progress toward a fully appropriated level of water use
- 1.5 **Use available funds and actively pursue new funding opportunities** to cost effectively offset depletions, as well as to develop, maintain and update data and analytical tools needed to implement this plan
- 1.6 **Update and continue implementing IMPs** in each Platte River Basin NRD

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Goal 1: Incrementally achieve and sustain a fully appropriated condition, while maintaining economic viability, social and environment health, safety, and welfare of the basin

1.3 Make progress toward a fully appropriated condition

- 1.3.1: Understand the economic impacts of supply variability on water users
- 1.3.2: Assess short- and long- term basin water supply and demand
- 1.3.3: Explore and implement potential measures to mitigate impacts (hydrologic and economic) of basin supply variability due to human-made depletions on surface water and groundwater users
- 1.3.4: Develop a basin drought contingency plan for management of supplies during times of shortage

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Goal 2: Prevent or mitigate human-induced reductions in the flow of a river or stream that would cause non-compliance with an interstate compact or decree or other formal state contract or agreement

- 2.1 Prevent human-induced streamflow depletions that would cause non-compliance by Nebraska with the Nebraska New Depletion Plan included within the Platte River Recovery Implementation Program, for as long as the Program exists

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Goal 3: Partner with municipalities and industries to maximize conservation and water use efficiency

- 3.1 Continue to collect **data on water use and existing conservation plans** of municipalities and industries within the basin
- 3.2 Invite municipalities and industries to the **annual meetings**
- 3.3 **Establish baseline water use levels** for each municipal and industrial user by **January 1, 2026**

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Goal 4: Work cooperatively to identify and investigate disputes between groundwater users and surface water appropriators and, if determined appropriate, implement management solutions to address such issues

- 4.1 **Identify disputes** between groundwater users and surface water appropriators
- 4.2 **Investigate and address issues** between groundwater users and surface water appropriators, based on investigation results

Goal 5: Keep the Upper Platte River Basin-Wide Plan current and keep stakeholders informed

- 5.1 Meet at least annually to review progress toward achieving the goals and objectives of this Upper Platte River Basin-Wide Plan and those portions of the individual NRD IMPs that implement this plan
- 5.2 Improve information sharing with interested stakeholders
- 5.3 Conduct planning for subsequent increments of the plan, as necessary

2ND INCREMENT TOPICS

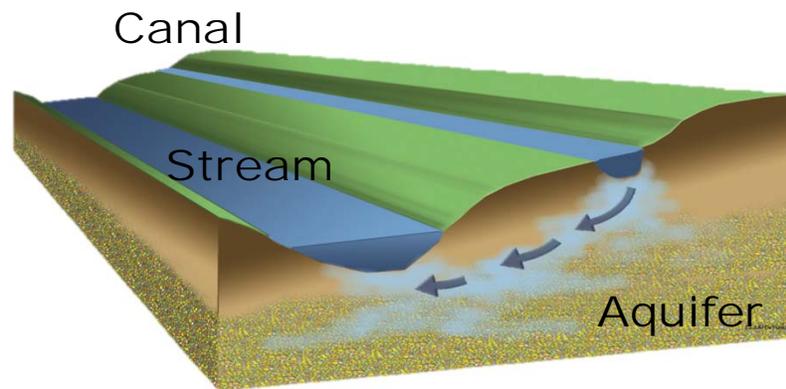
CONJUNCTIVE MANAGEMENT

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

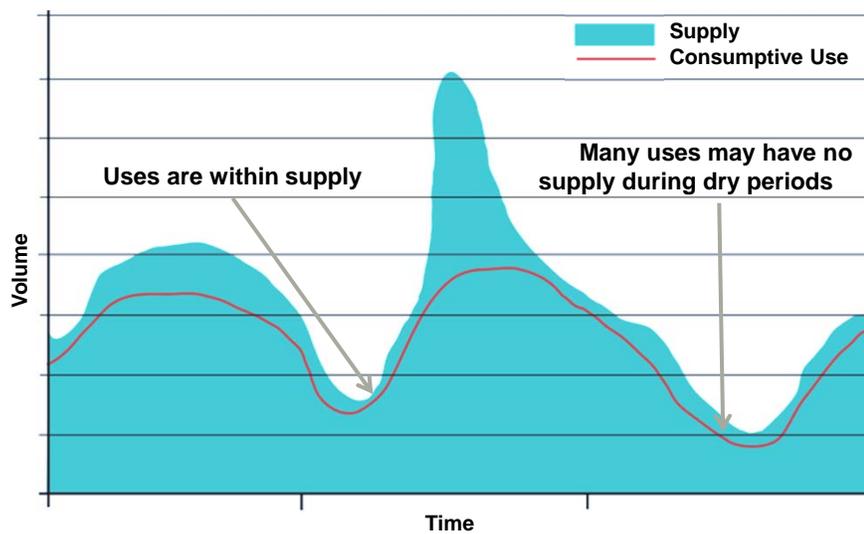


Conjunctive Water Management is an adaptive process that utilizes the connection between surface water and groundwater to increase sustainability of both water sources, by increasing the overall water supply of a region.

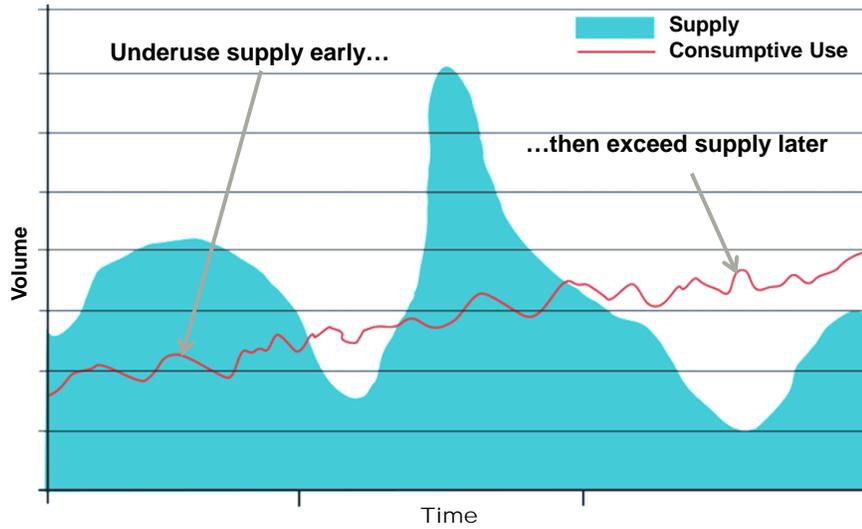
HOW IS CWM ACCOMPLISHED?

- 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

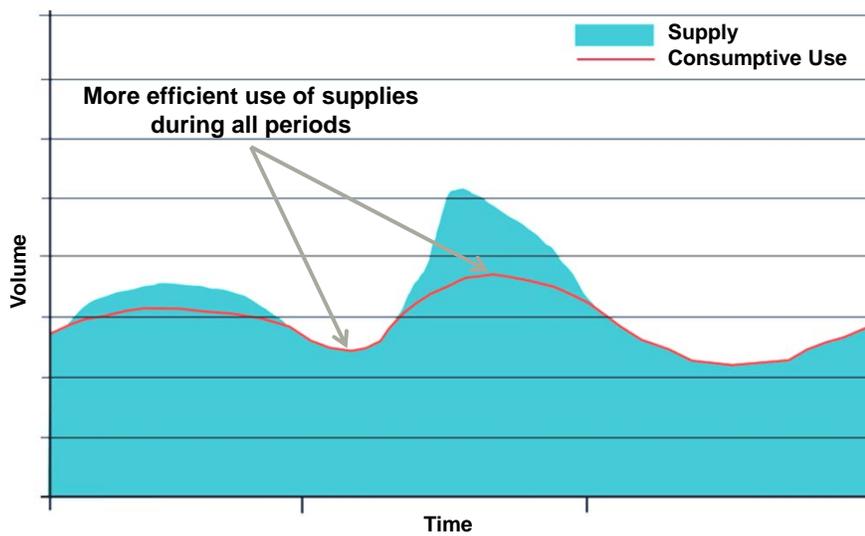
SCENARIO 1: USING SURFACE WATER ONLY



SCENARIO 2: USING GROUNDWATER ONLY



SCENARIO 3: MANAGING SUPPLIES THROUGH CWM



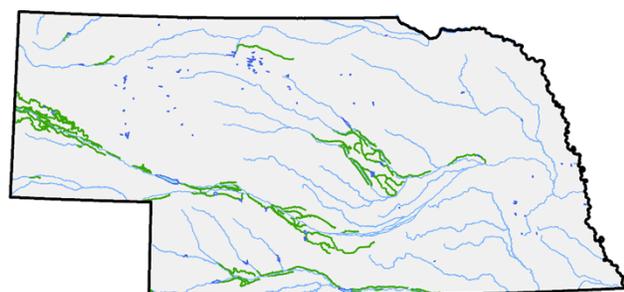
COMPONENTS OF CWM

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



BENEFITS OF CWM

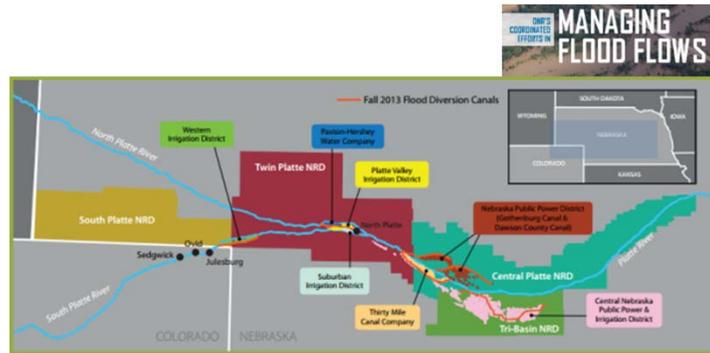
- Maximize available water supplies
- Leverage existing infrastructure
- Use existing planning framework
- Minimize the need for regulatory actions
- Customize to local opportunities or needs
- Maintain viability of existing uses



● Lake — Canal — Stream

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)



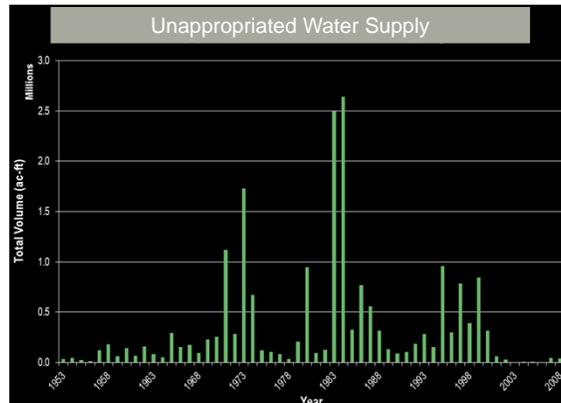
APPLYING CONJUNCTIVE MANAGEMENT

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



Slide 23

MM1 Would like to reformat this an maybe a few other charts if we have time.

Mosier, Melissa, 3/12/2018

2013 FLOOD FLOWS

Friday, September 20, 2013

Saturday, September 21, 2013

South Platte River Highway 83 Bridge, North Platte, NE



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

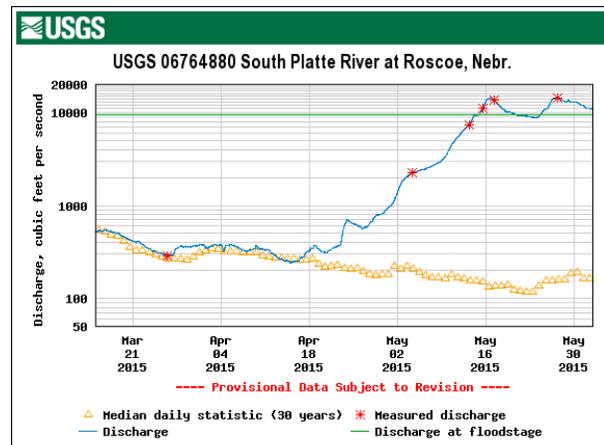


2015 FLOOD FLOWS

- 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

E65 Canal
 Elwood Canal
 Phelps Canal



Year	Diversion	Recharge
2011	2,800	2,800
2013	17,500	17,500
2014	24,000	<i>Analysis in progress</i>
2015	13,400	<i>Analysis in progress</i>
2016	4,200	<i>Analysis in progress</i>

All values in acre-feet/year

CWM FUTURE ACTIVITIES

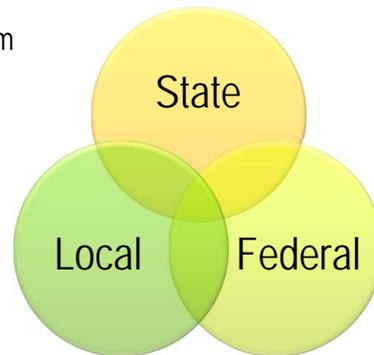
- Expand implementation of CWM projects
- Enhance adaptation strategies based on management goals
- Support continued investment in maintaining and enhancing infrastructure
- Ensure that sound science and monitoring are available to support management decisions



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



NEBRASKA REVISED STATUTE 46-740

- January 1, 2026 = Changes required by municipal and industrial statute
 - Responsibility for offsetting municipal growth?
 - Municipality
 - NRD
 - Responsibility for offsetting industrial growth?
 - Industry
 - NRD

2ND INCREMENT TOPICS DROUGHT PLANNING



Stakeholder Feedback

- What problems do you face in drought?
- What important components should be included in a drought plan?
- Would you be interested in participating in a drought workshop?

2ND INCREMENT TOPICS ROBUST REVIEW RESULTS





Robust Review Analysis

TBNRD Results

TBNRD IMP Stakeholder Meeting #2
December 12, 2018

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Robust Review Goals

- **Complete monitoring activities outlined in the current IMP**
- **Assess progress on first increment goals and objectives**
- **Provide for more informed discussion of second increment objectives with the TBNRD IMP stakeholders**

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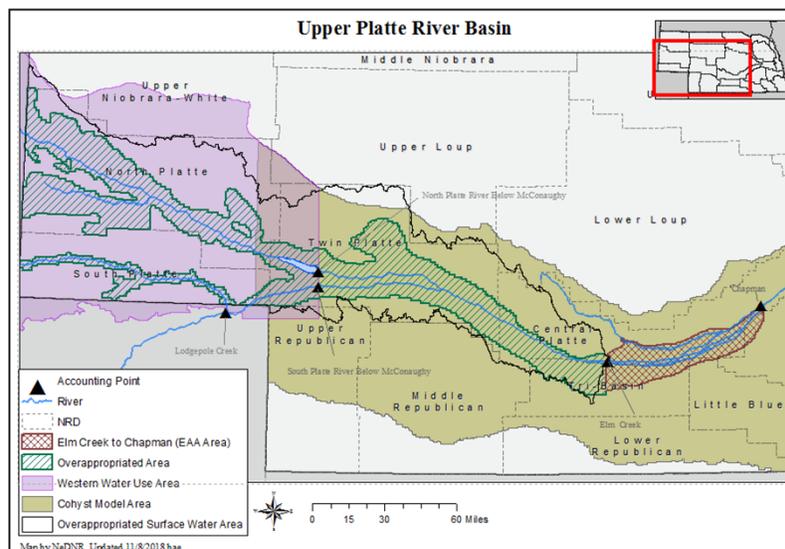
Robust Review Model Simulation Setup

COHYST Area Assumptions

- Used version 28 of the groundwater model and version 29 of the watershed models
- Models are simulated from 1950 – 2063
- Climate repeats 1989-2013 twice for 2014-2063
- Historical groundwater irrigated acres and crops are used in the baseline simulation and the 1997 level of groundwater irrigated acres and crops are used in the “1997” simulation
- Surface water and commingled acres remain constant in the baseline and 1997 simulations to cancel out commingled effects
- Results are summarized for the: 1) area upstream of Elm Creek (OA), and 2) area between Elm Creek and Chapman

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Model Areas



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TBNRD - Inputs

(Change in acres)

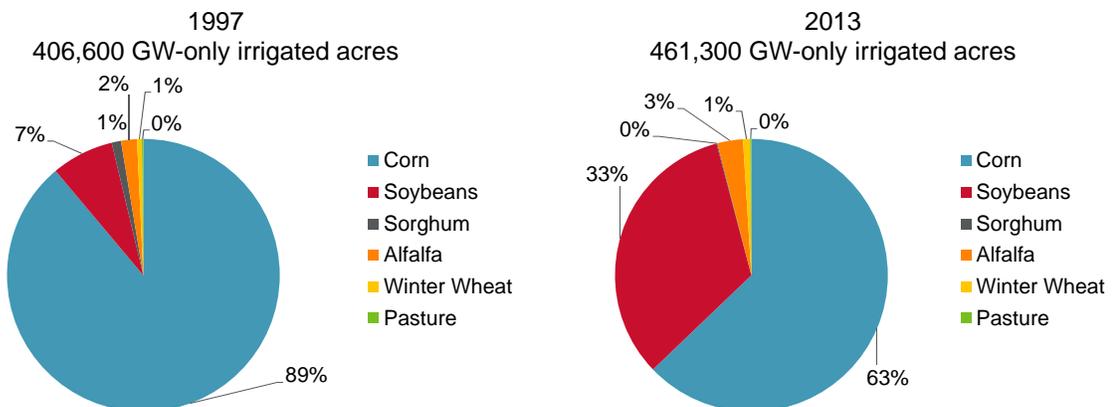
Change in groundwater-only irrigated acres 1997-2013

TBNRD	Total change (1997 to 2013)
District-Wide	54,700 acre increase
TBNRD OA*	7,000 acre increase

*Total change in OA acres included in total change in District-wide acres

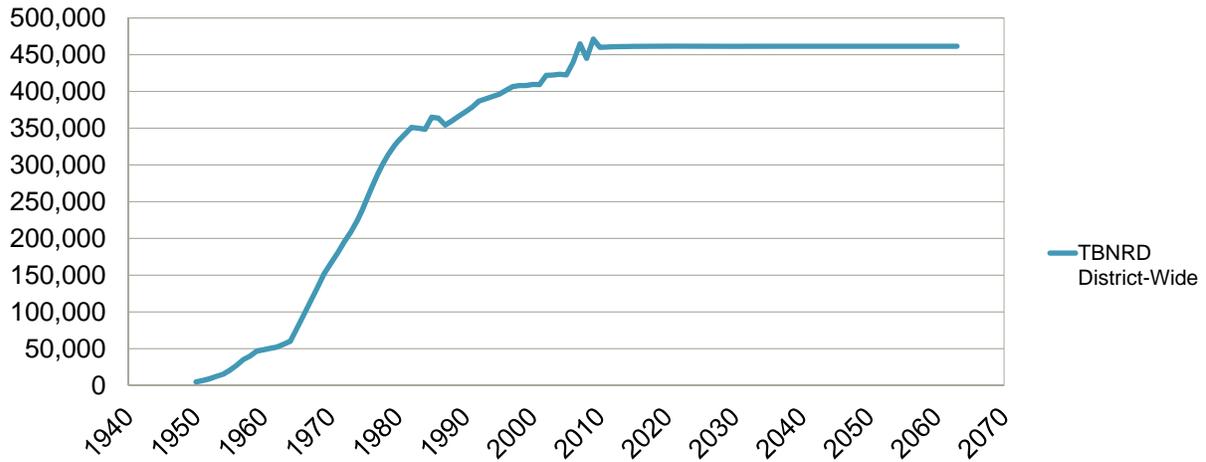
TBNRD - Inputs

Changes in crop type in Platte Basin portion of TBNRD
 Groundwater-only irrigated acre crop types 1997-2013



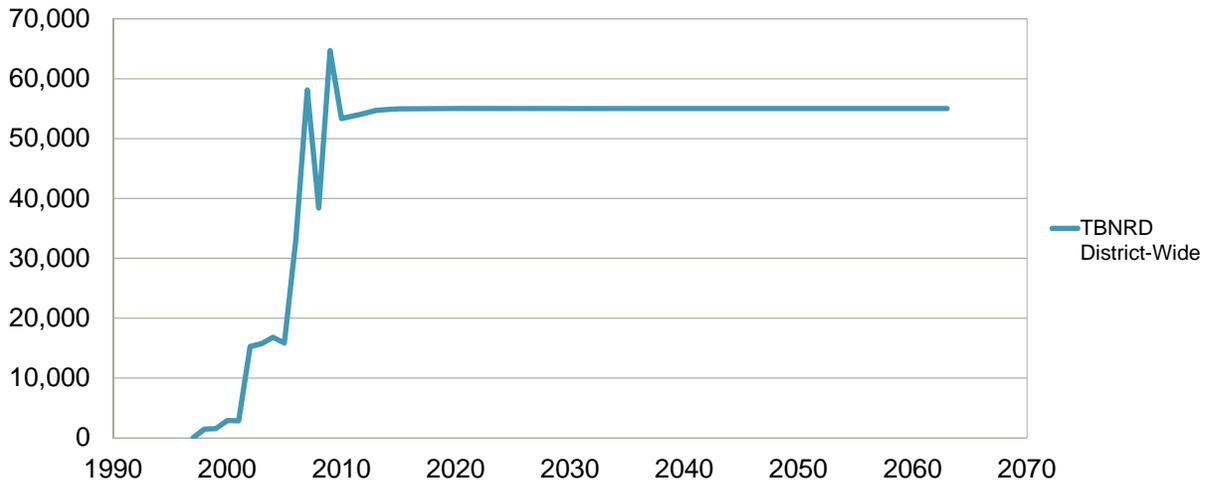
TBNRD - Inputs

Change in groundwater-only irrigated acres



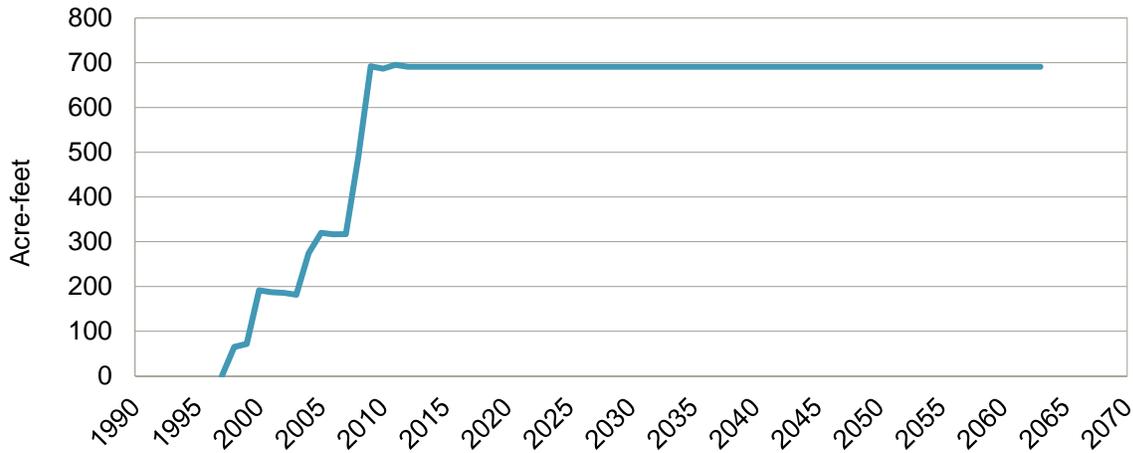
TBNRD - Inputs

Change in post-1997 groundwater-only irrigated acres



TBNRD - Inputs

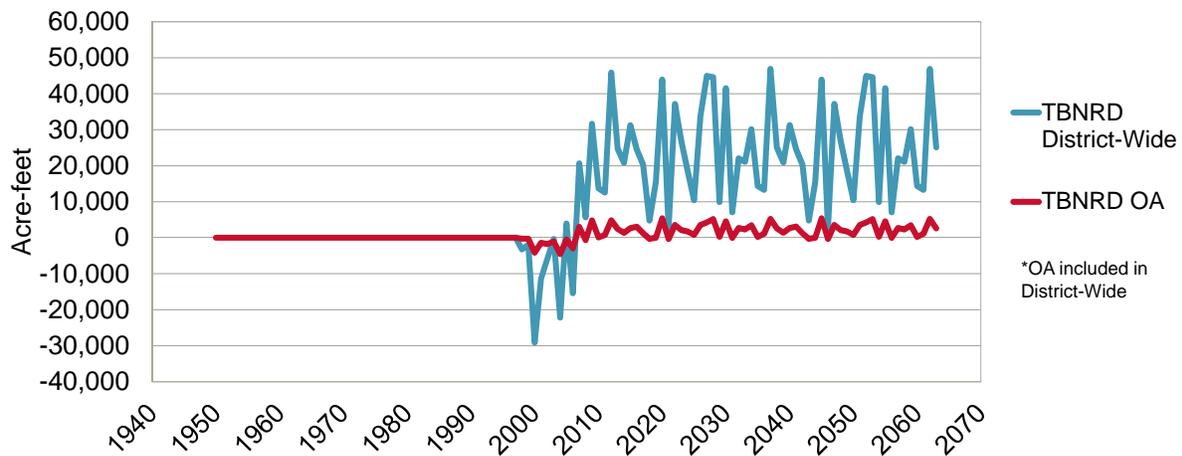
Change in municipal and industrial pumping from 1997, District-wide



TBNRD - Inputs

Pumping changes compared to 1997

Groundwater-only irrigation pumping



TBNRD Results

Positive values = accretions to the stream
 Negative values = depletions to the stream

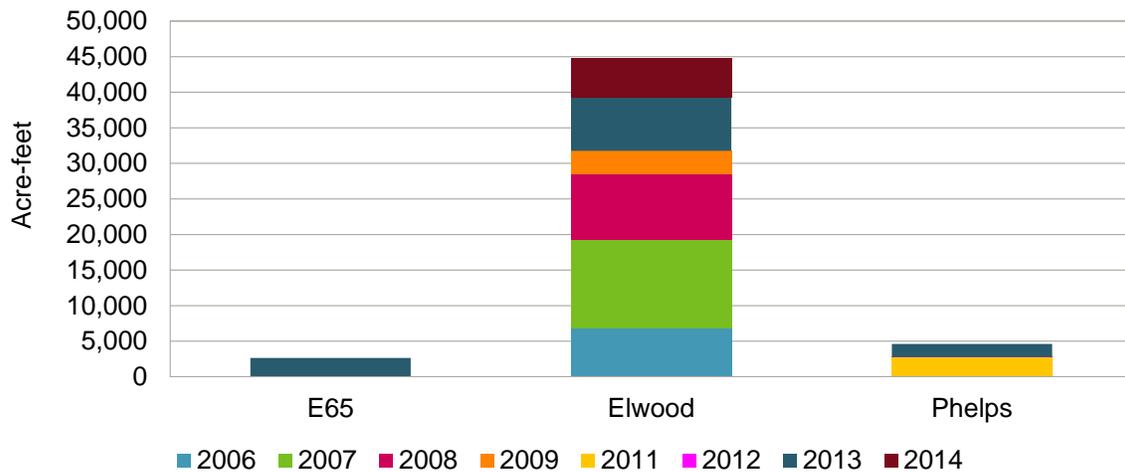
Impact from District-Wide changes in groundwater pumping

Groundwater-only irrigation pumping & municipal/industrial pumping



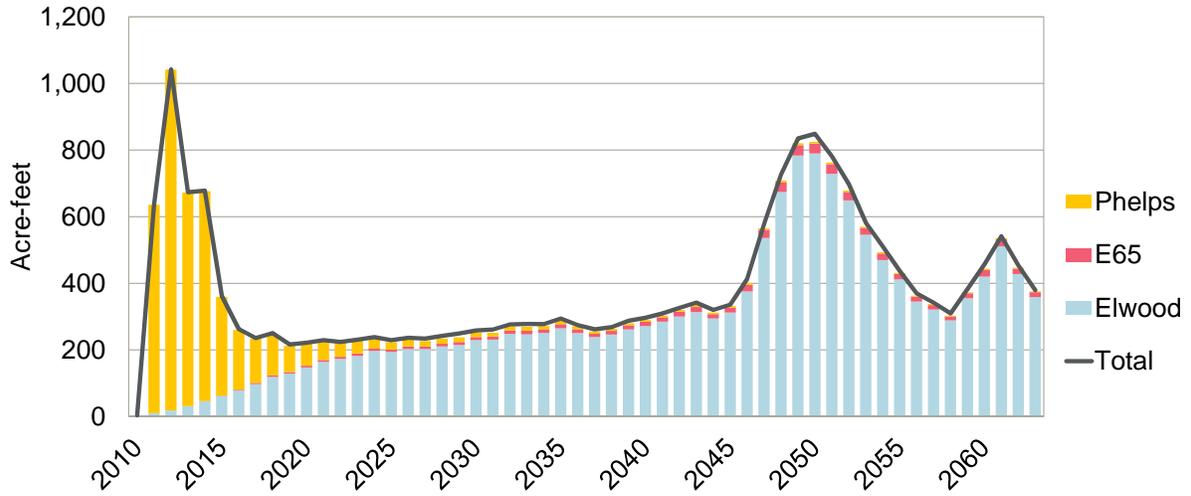
TBNRD - Inputs

Recharge from excess flow projects



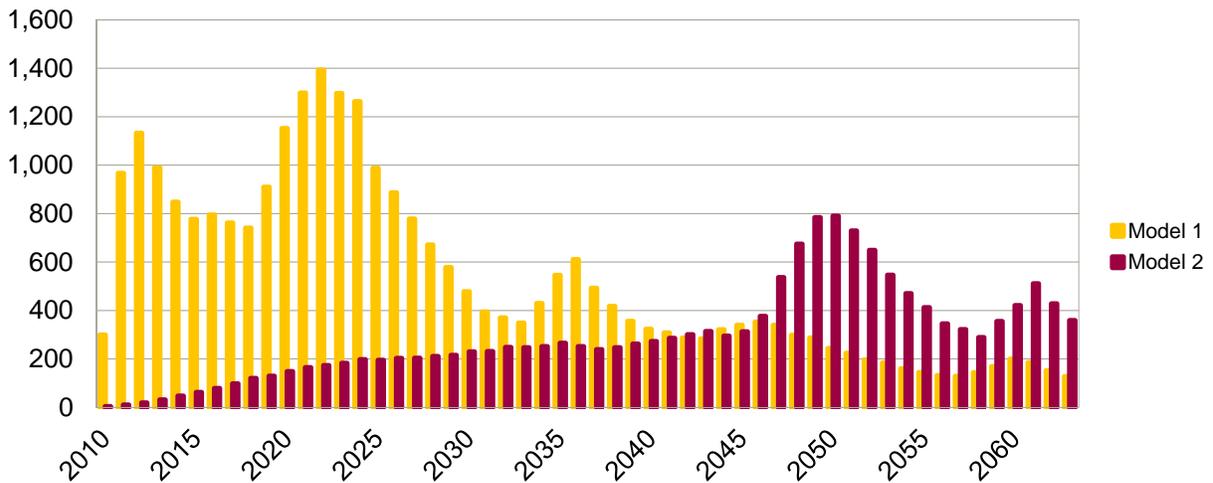
TBNRD - Inputs

Accretions from excess flow projects upstream of Elm Creek



TBNRD - Inputs

Elwood accretions comparison – Summary of different model assumptions



TBNRD - Inputs

Positive values = accretions to the stream
 Negative values = depletions to the stream

Pumping & impacts from North Dry Creek augmentation project (2011, 2012 & 2013)

Augmentation pumping, depletions, and net impact

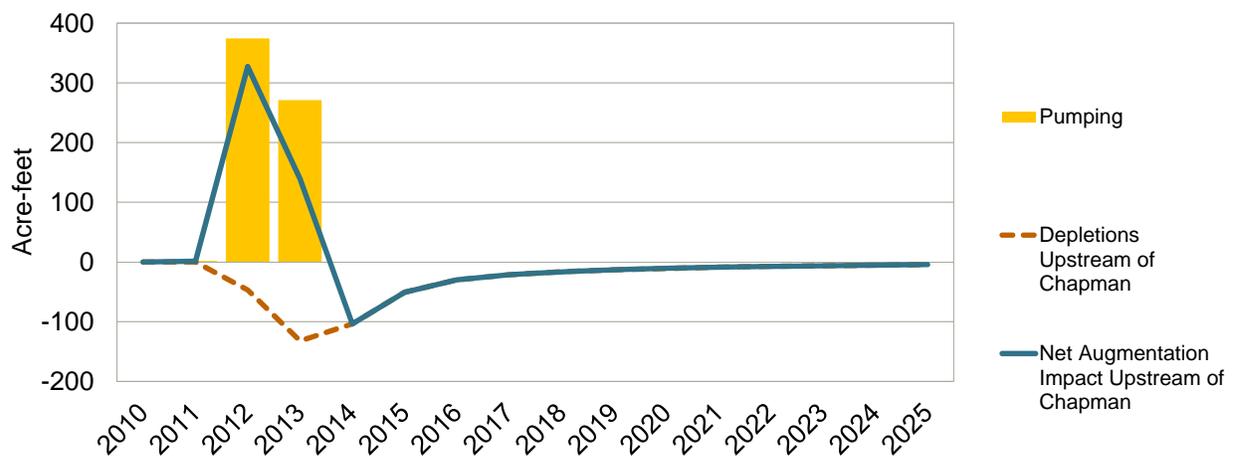
Total pumping	647 acre-feet
Total depletions (upstream of Chapman)	-517 acre-feet
Net augmentation impact (upstream of Chapman)	130 acre-feet

TBNRD - Inputs

Positive values = accretions to the stream
 Negative values = depletions to the stream

Pumping & impacts from North Dry Creek augmentation project (2011, 2012 & 2013)

Augmentation pumping, depletions, and net impact

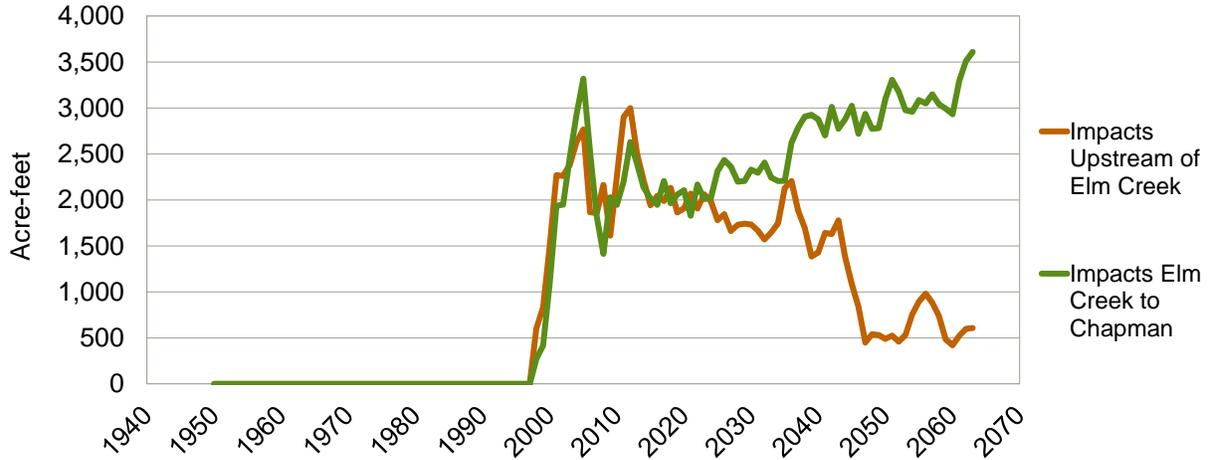


TBNRD Results

Positive values = accretions to the stream
Negative values = depletions to the stream

Impacts from District-Wide activities

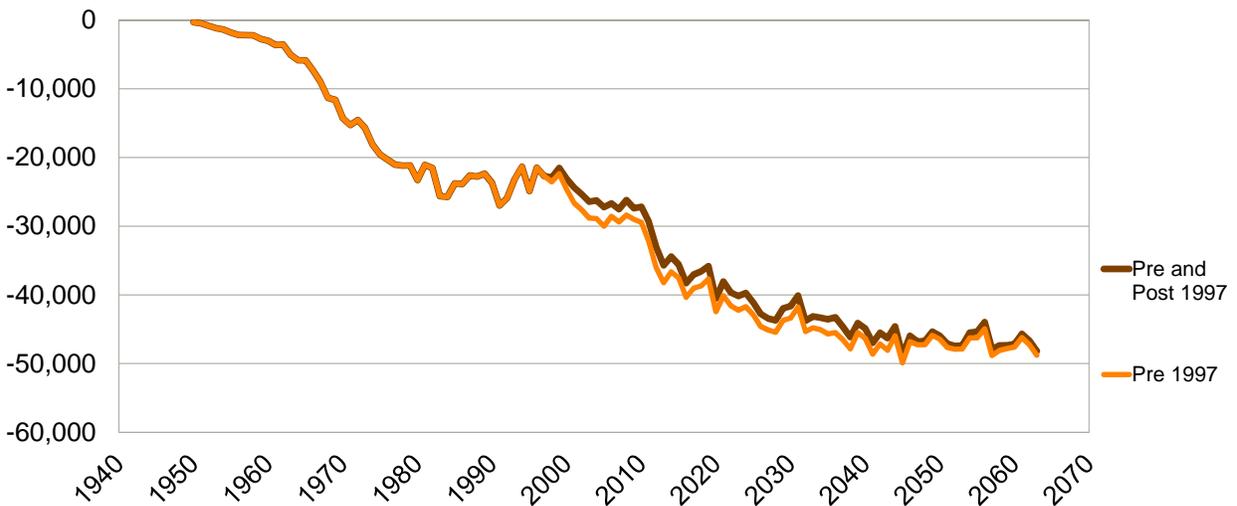
Groundwater-only irrigation and M&I pumping, retirements, recharge projects, and net augmentation



TBNRD Results

Positive values = accretions to the stream
Negative values = depletions to the stream

All groundwater-only and M&I (total) depletions to the TBNRD Upstream of Elm Creek



TBNRD Summary

Post-1997 impacts from District-Wide activities

Includes groundwater-only irrigation pumping, municipal & industrial pumping, impacts from augmentation and excess flow projects.

Year	2019	2019	2029	2029
Stream segment	Upstream of Elm Creek (OA)	Elm Creek to Chapman	Upstream of Elm Creek (OA)	Elm Creek to Chapman
Impact (a/f)	1,900	2,100	1,700	2,200

2ND INCREMENT TOPICS STAKEHOLDER DISCUSSION

What's missing?



2ND INCREMENT TOPICS

NEXT STEPS



Next steps

- Next IMP stakeholder meeting
 - February 13, 2019 at 1:00 pm, TBNRD Office
- Upper Platte Basin-Wide Plan - Public information meeting
 - April 18, 2019, North Platte Holiday Inn Express
- Hearings on Upper Platte Basin-Wide Plan and TBNRD IMP
 - July 16, 2019, TBNRD Office

2ND INCREMENT TOPICS

PUBLIC COMMENT

