

CPNRD IMP

Meeting 3

TODAY'S AGENDA

- Welcome
- Administration
- Robust Review Results
- Basin-Wide Plan
- Public Comment

WELCOME

- Open meeting notice
- Safety & logistics

ADMINISTRATION

August Meeting Recap

Meeting #2 Recap

- 2nd Increment Topics
 - Conjunctive Management
 - Based on hydrological connection
 - Store excess when available for future times of shortage
 - Adaptive process that depends on cooperative partners
 - Municipal Statute – 2026 Offsets
 - Tracking based on size of municipality (2,500 pop.)
 - Simplify baseline calculations
 - Drought Planning
 - 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?

ROBUST REVIEW RESULTS



Robust Review Analysis

CPNRD Results

CPNRD IMP Stakeholder Meeting #3

November 13, 2018

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 CPNRD IMP stakeholders**



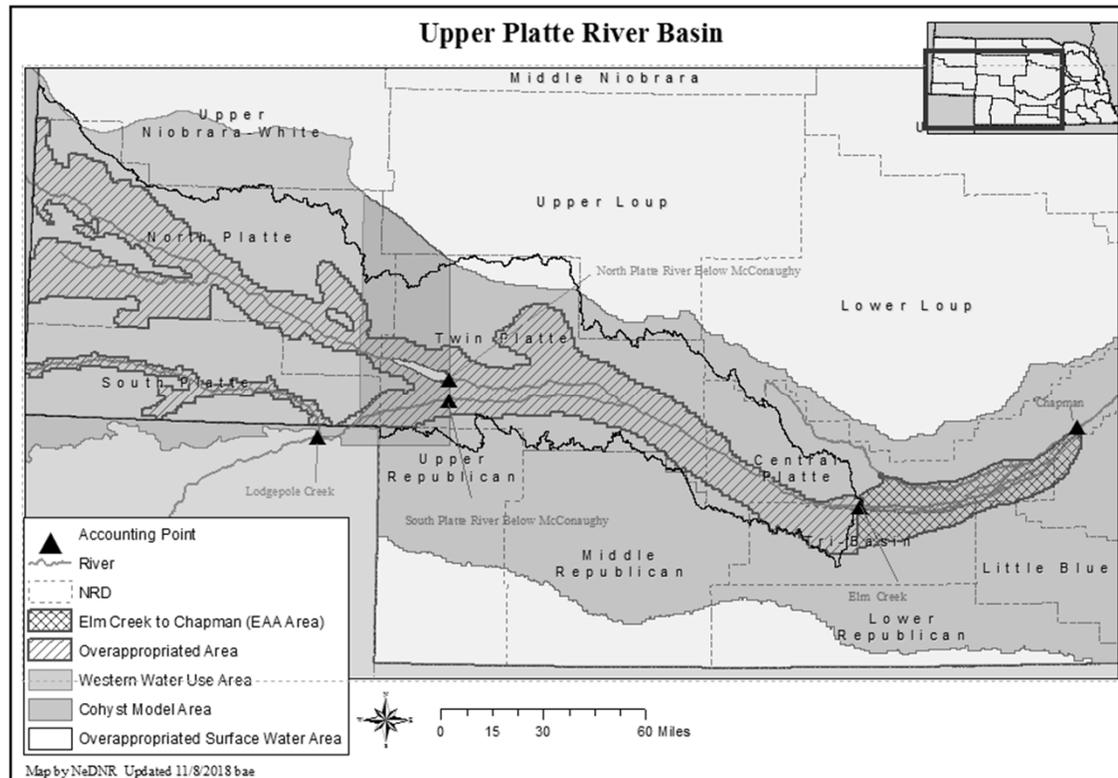
Robust Review Model Simulation Setup

COHYST Area Assumptions

- Used version 28 of the groundwater model and version 29 of the watershed model
- 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 areas of CPNRD upstream and downstream of Elm Creek



Model Areas



CPNRD - Inputs

Change in acres

Change in groundwater-only irrigated acres from 1997

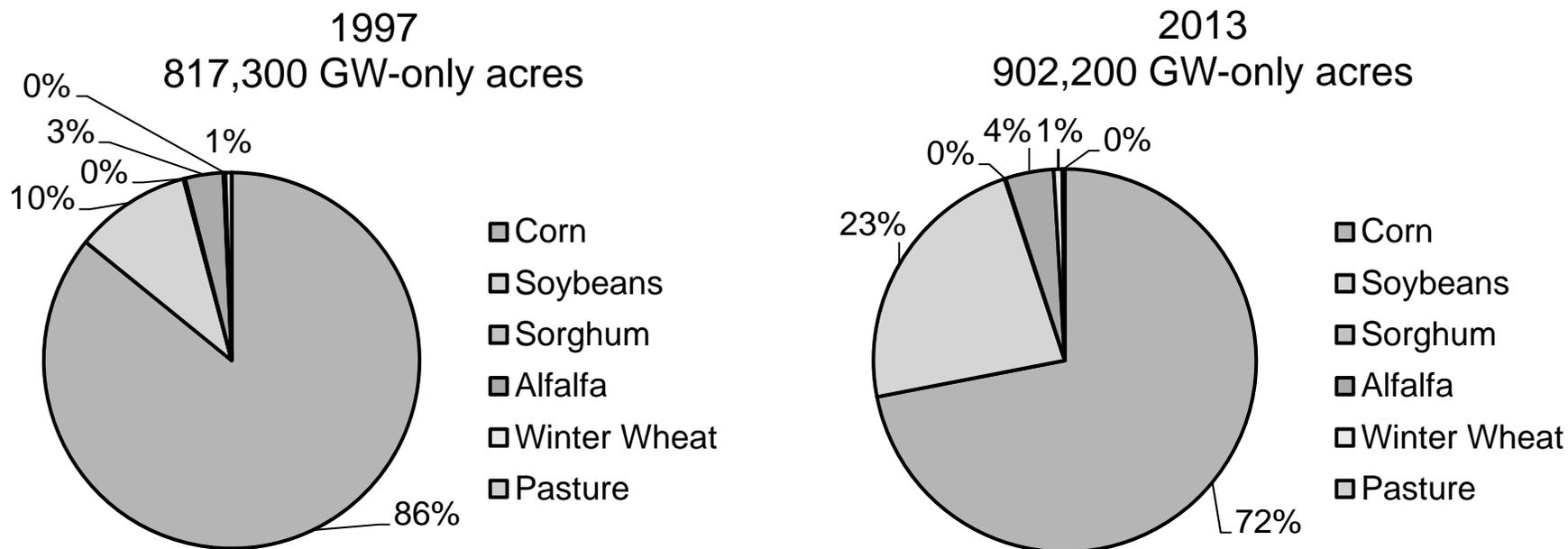
CPNRD	Total change (1997 to 2013)
District-Wide	84,900 acres
OA Area of CPNRD	12,600 acres

*OA acres included in District-Wide acres

CPNRD - Inputs

Change in crop type, District-wide

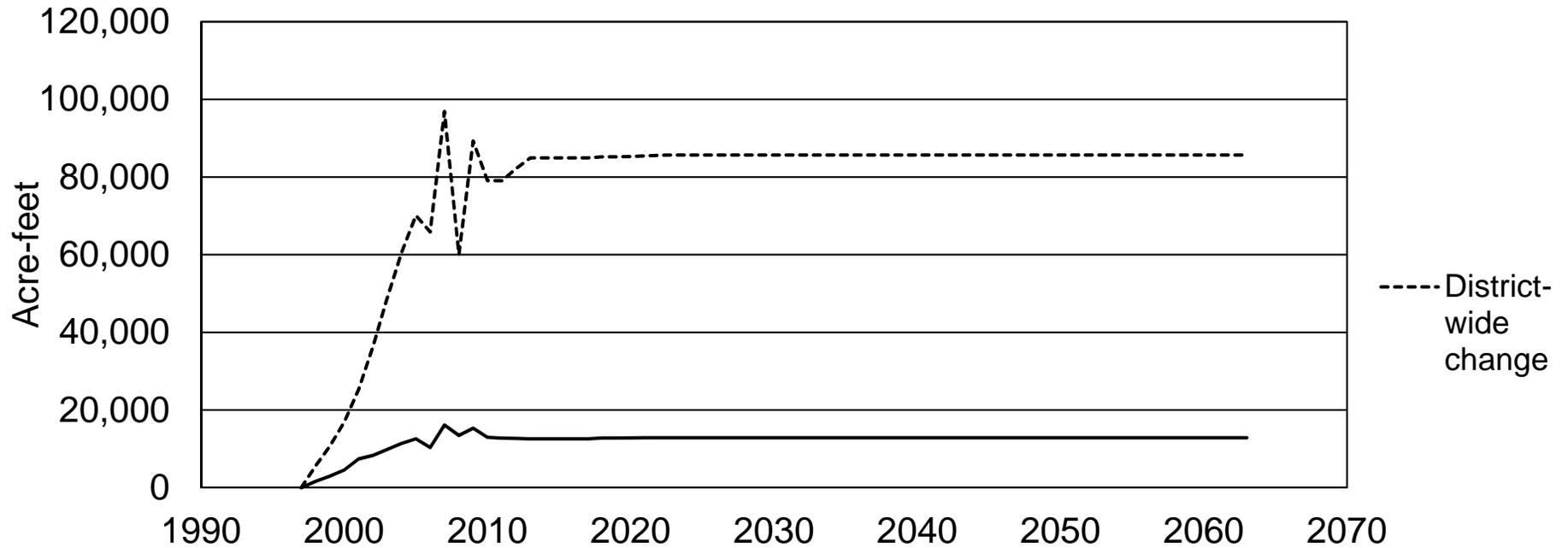
Change in groundwater-only irrigated acre crop types 1997-2013



*OA acres included in District-wide acres

CPNRD - Inputs

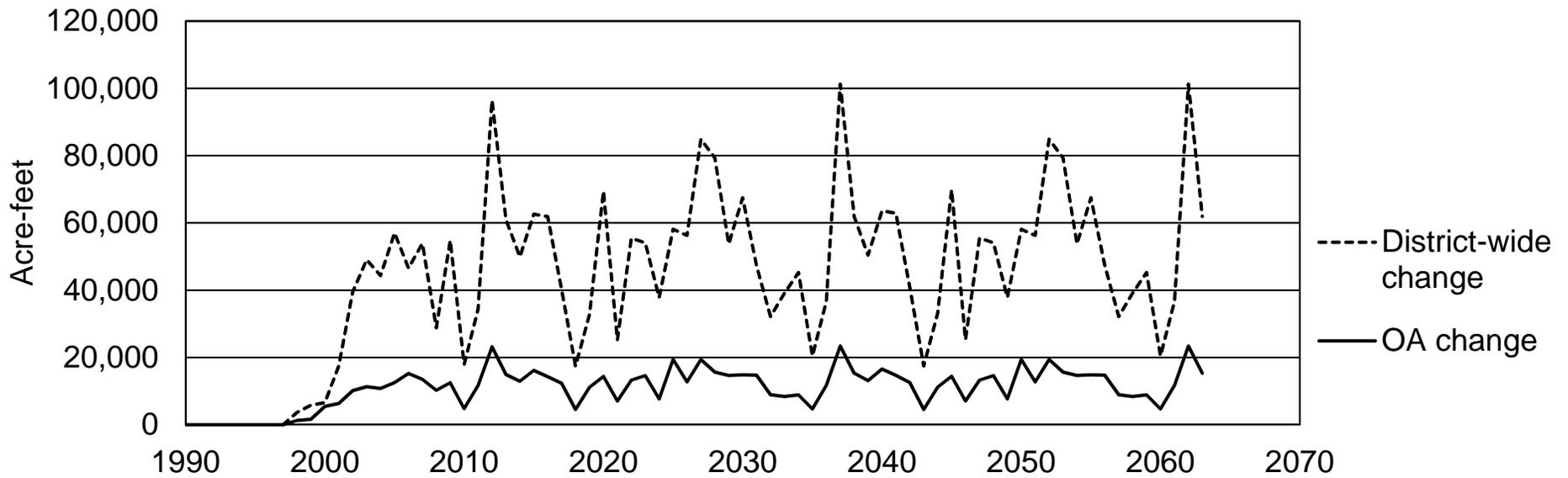
Change in groundwater-only irrigated acres from 1997



CPNRD - Inputs

*OA acres included in District-wide acres

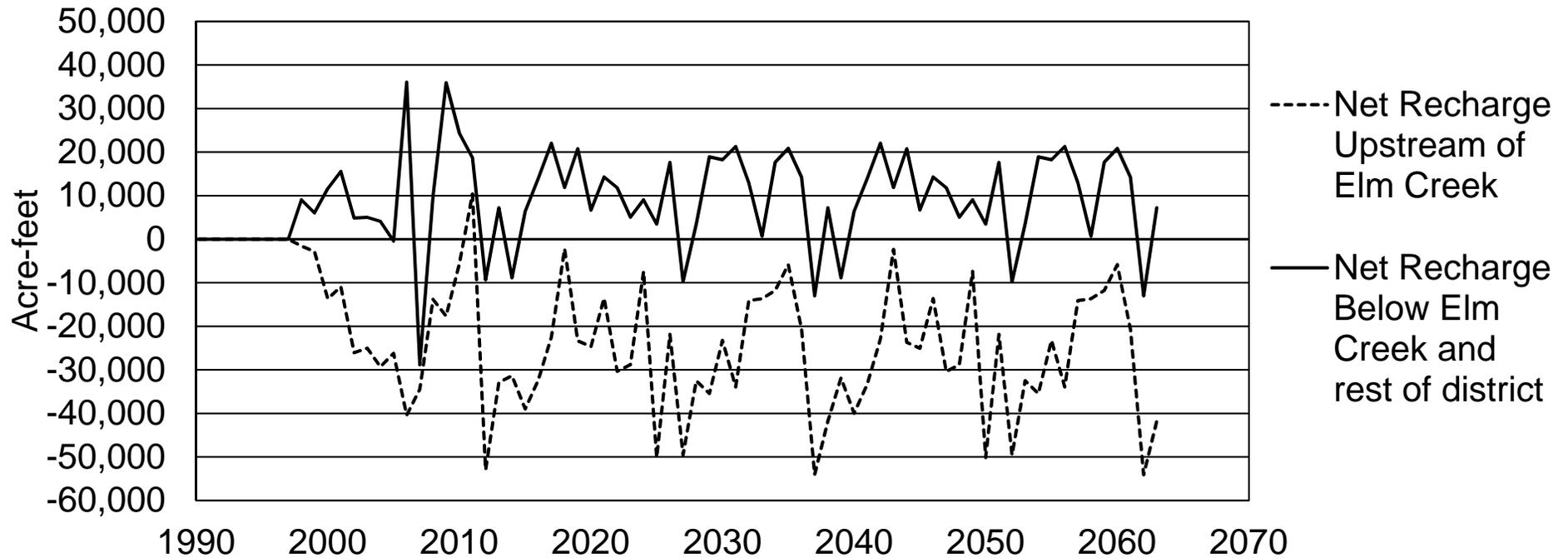
Pumping Changes, groundwater-only irrigation pumping



CPNRD - Inputs

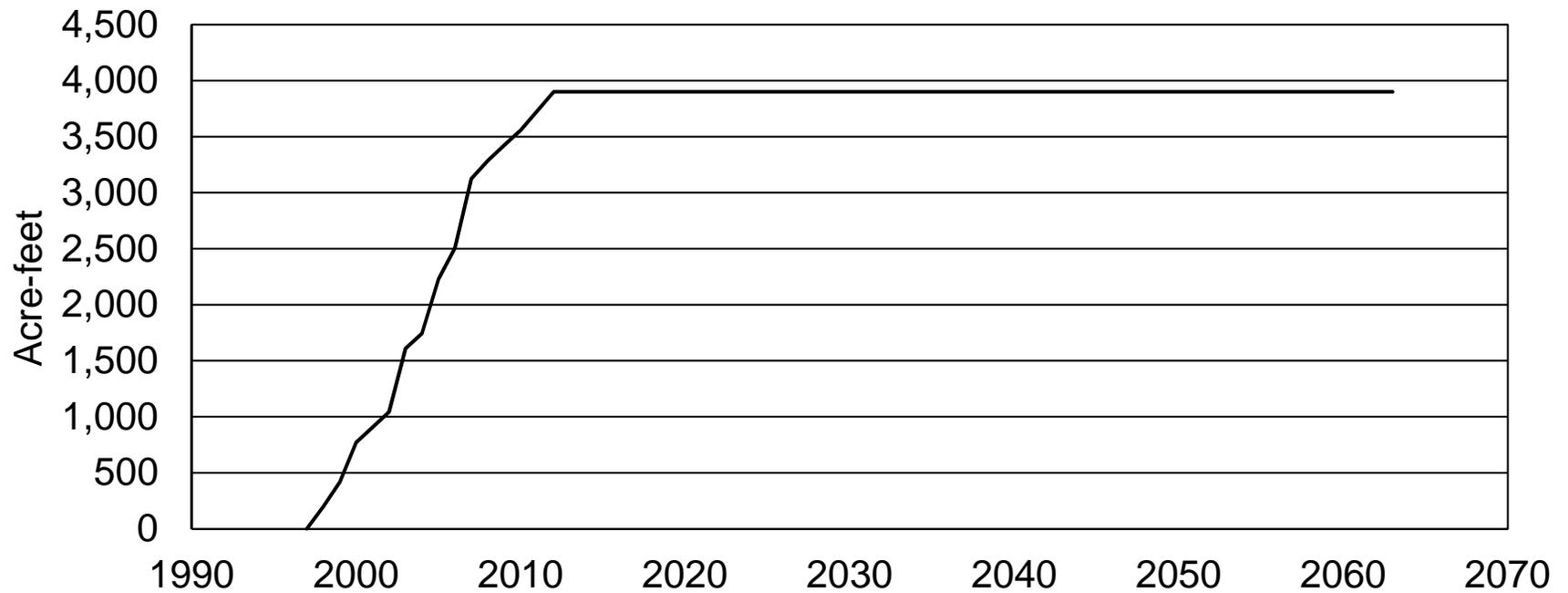
Change in net recharge from CPNRD management actions

- Positive values = accretions to the river
- Negative values = depletions to the river



CPNRD - Inputs

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

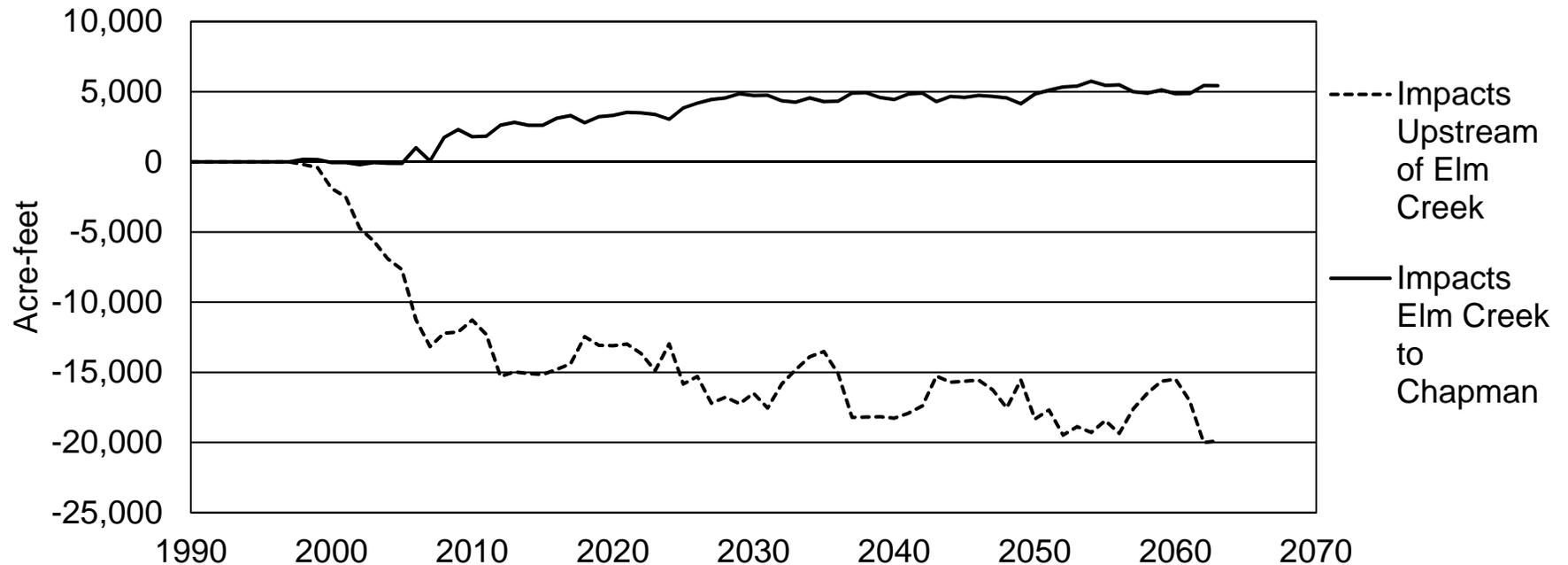


CPNRD - Results

- Positive values = accretions to the river
- Negative values = depletions to the river

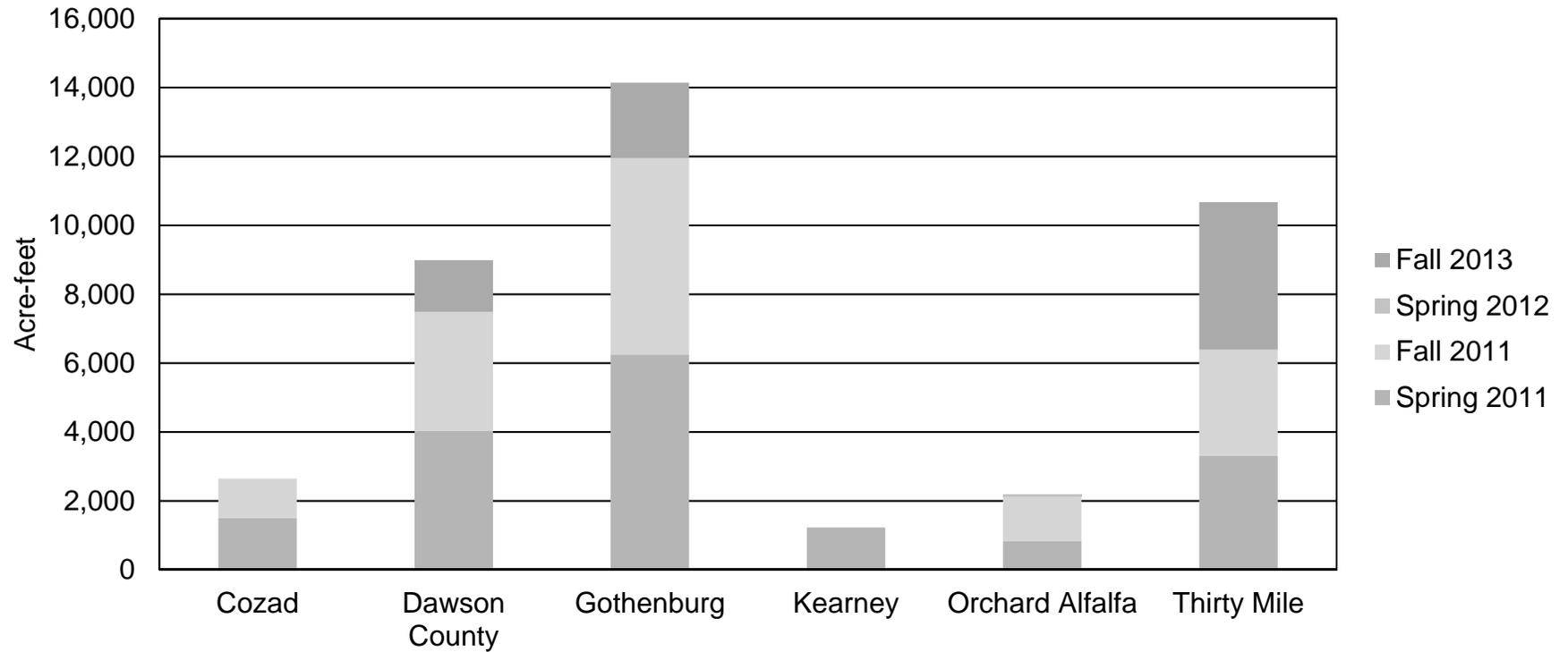
Impact to stream segments of the Platte River due to District-wide pumping

Groundwater-only irrigation pumping & municipal/industrial pumping



CPNRD - Inputs

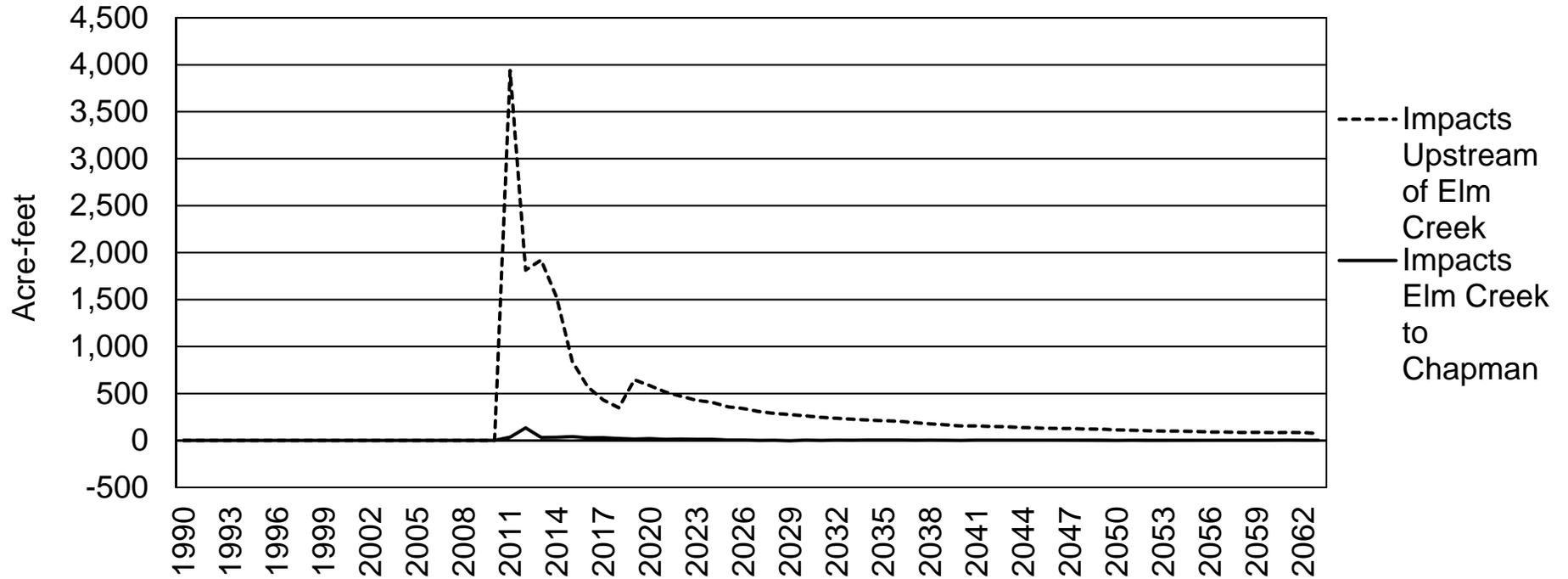
Recharge from excess flow projects



CPNRD - Results

Accretions from excess flow projects

CPNRD & NPPD canals

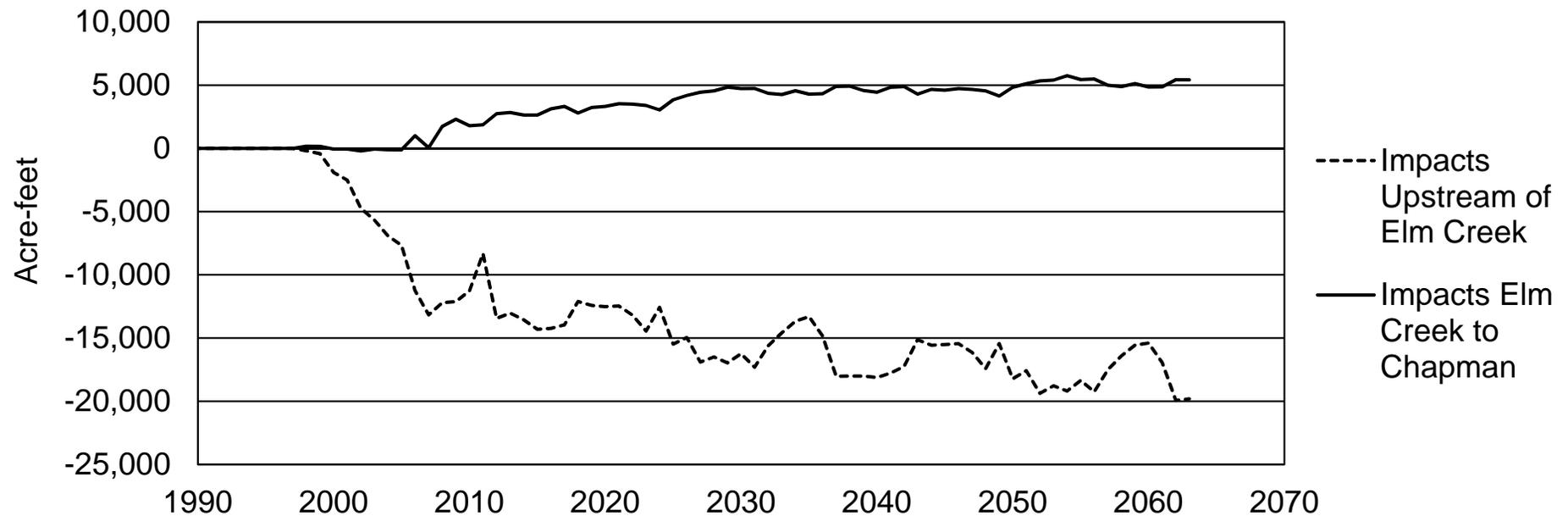


CPNRD - Results

- Positive values = accretions to the river
- Negative values = depletions to the river

Impact to stream segments of the Platte River due to total pumping and management actions

(Post-1997 gw-only irrigation + M&I) + (recharge projects - accretions sold to PRRIP)



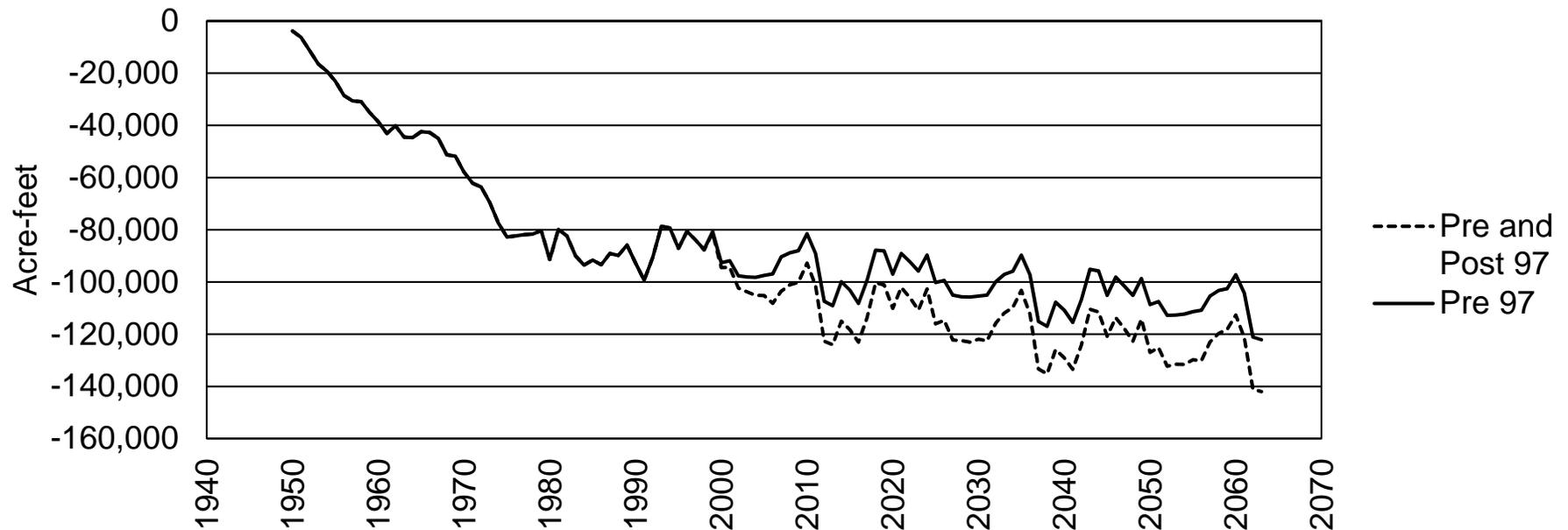
CPNRD - Results

- Positive values = accretions to the river
- Negative values = depletions to the river

Upstream of Elm Creek

Total impact to streamflow from pumping

Groundwater-only irrigated acres and municipal/industrial uses



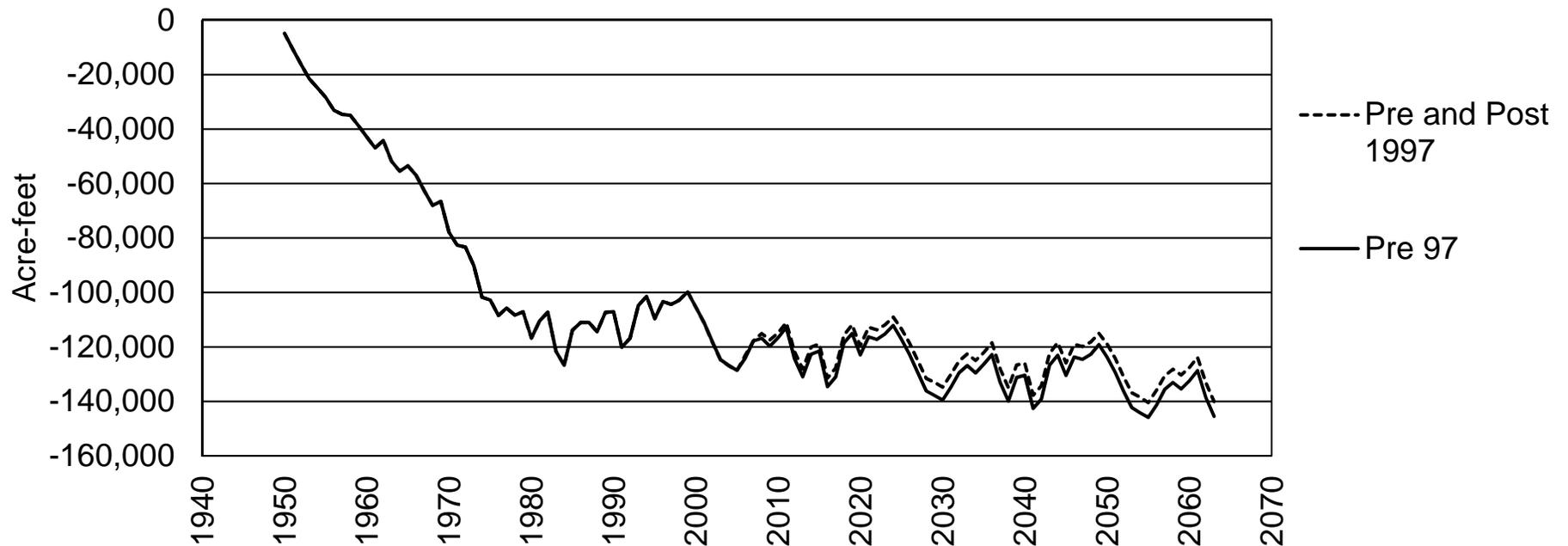
CPNRD - Results

- Positive values = accretions to the river
- Negative values = depletions to the river

Elm Creek to Chapman

Total impact to streamflow from pumping

Groundwater-only irrigated acres and municipal/industrial uses



CPNRD - Summary

Current estimate of depletions to the overappropriated Upper Platte Basin due to post-1997 activities (gw-only pumping, M&I pumping, and management activities/projects)

NRD	Activities in OA	Activities District-wide	Activities in OA	Activities District-wide
Year	2019	2019	2029	2029
North Platte	22,000	21,500	24,000	23,400
South Platte	5,800	5,300	5,700	5,100
Twin Platte	-20,000	-21,800	-22,500	-24,200
Central Platte	-6,900	-12,400	-9,900	-17,000
Tri-Basin	1,400	1,900	1,300	1,700
Total	2,400	-5,500	-1,400	-10,900

- All values in acre-feet/year

NEBRASKA

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OVERVIEW BASIN-WIDE PLAN

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

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

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

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**

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

NEXT STEPS

Anything Additional?

- Is there anything else you think should be considered for incorporation into the IMP?

Meeting Dates

- January 15, 2019

PUBLIC COMMENT

Thank you