

Update on Statewide Integrated Water Management Activities

Nebraska's Natural Resources Districts
(NRDs) Annual Conference
September 24, 2018

Carol Flaute, Jessie Strom,
Carrie Wiese, and Amy Zoller
IWM Coordinators, Water Planning Division

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Providing the sound science and support for managing Nebraska's most precious resource.



Water Planning



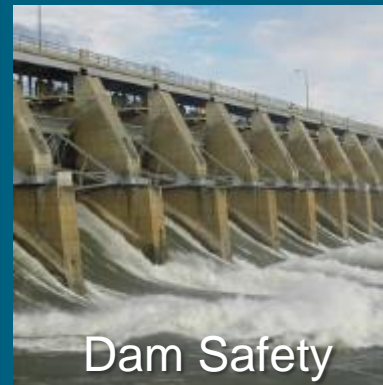
Surface Water



Groundwater



Floodplain Management



Dam Safety



Field Offices

NEBRASKA

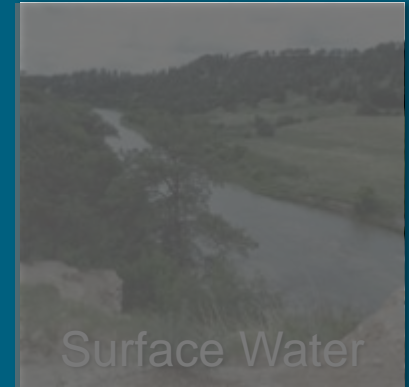
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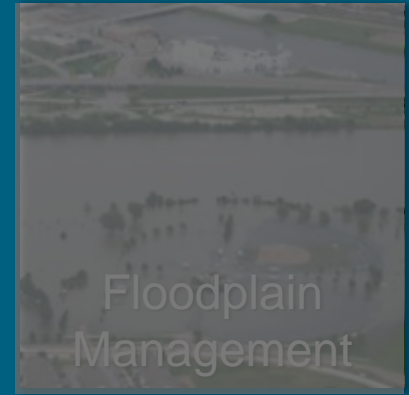
Water Planning



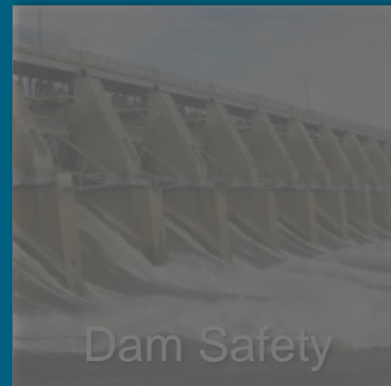
Surface Water



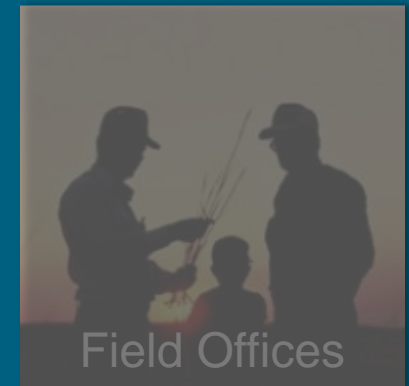
Groundwater



Floodplain Management



Dam Safety



Field Offices

IMPLEMENTATION

Water Management
Projects

Strategic Planning Actions

PLANNING AND PUBLIC PARTICIPATION

Goals and Objectives
for Water Planning

Stakeholder Involvement

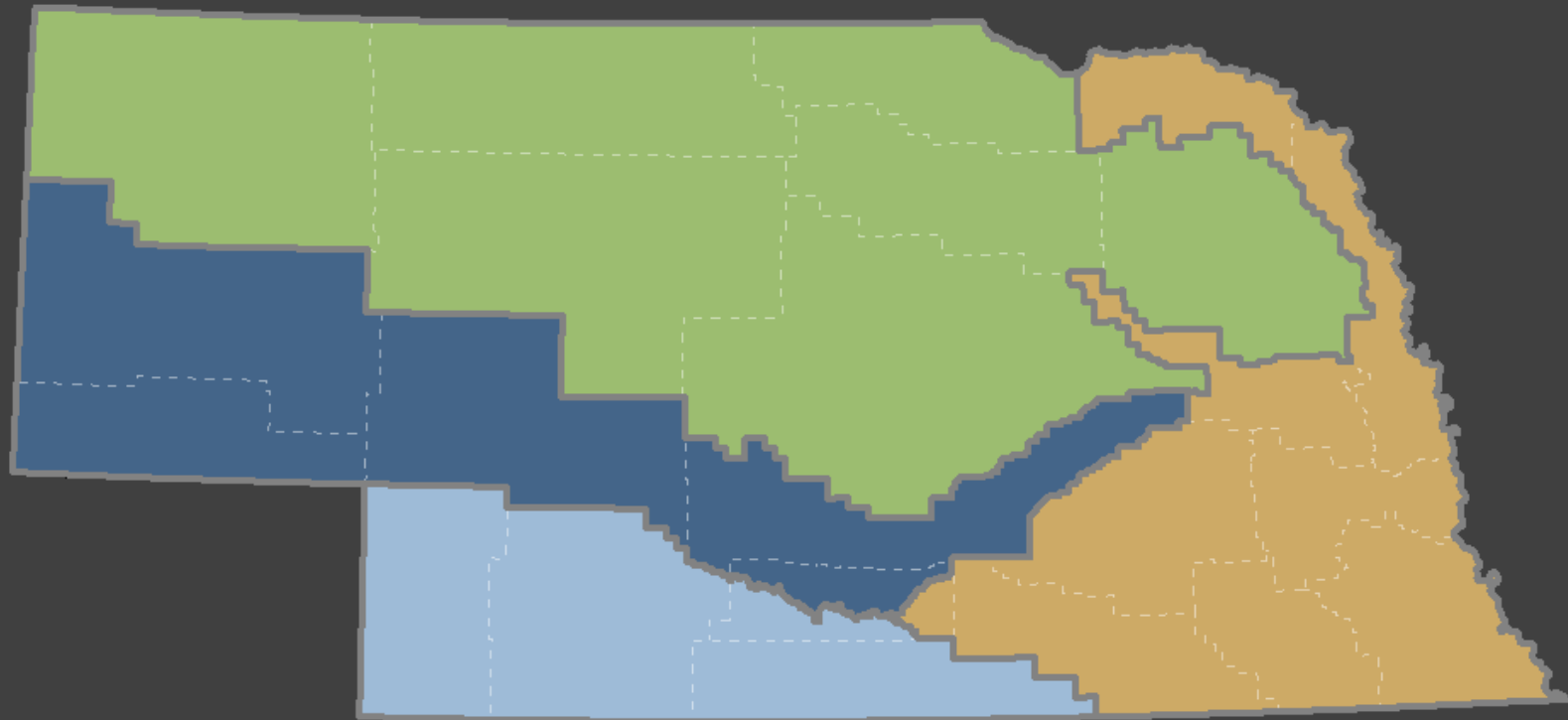
Water Availability and
Water Shortages

Water Supplies and Water Uses

SCIENCE

Hydrologic Models, Data, and Analyses

Water Planning Coordination Areas

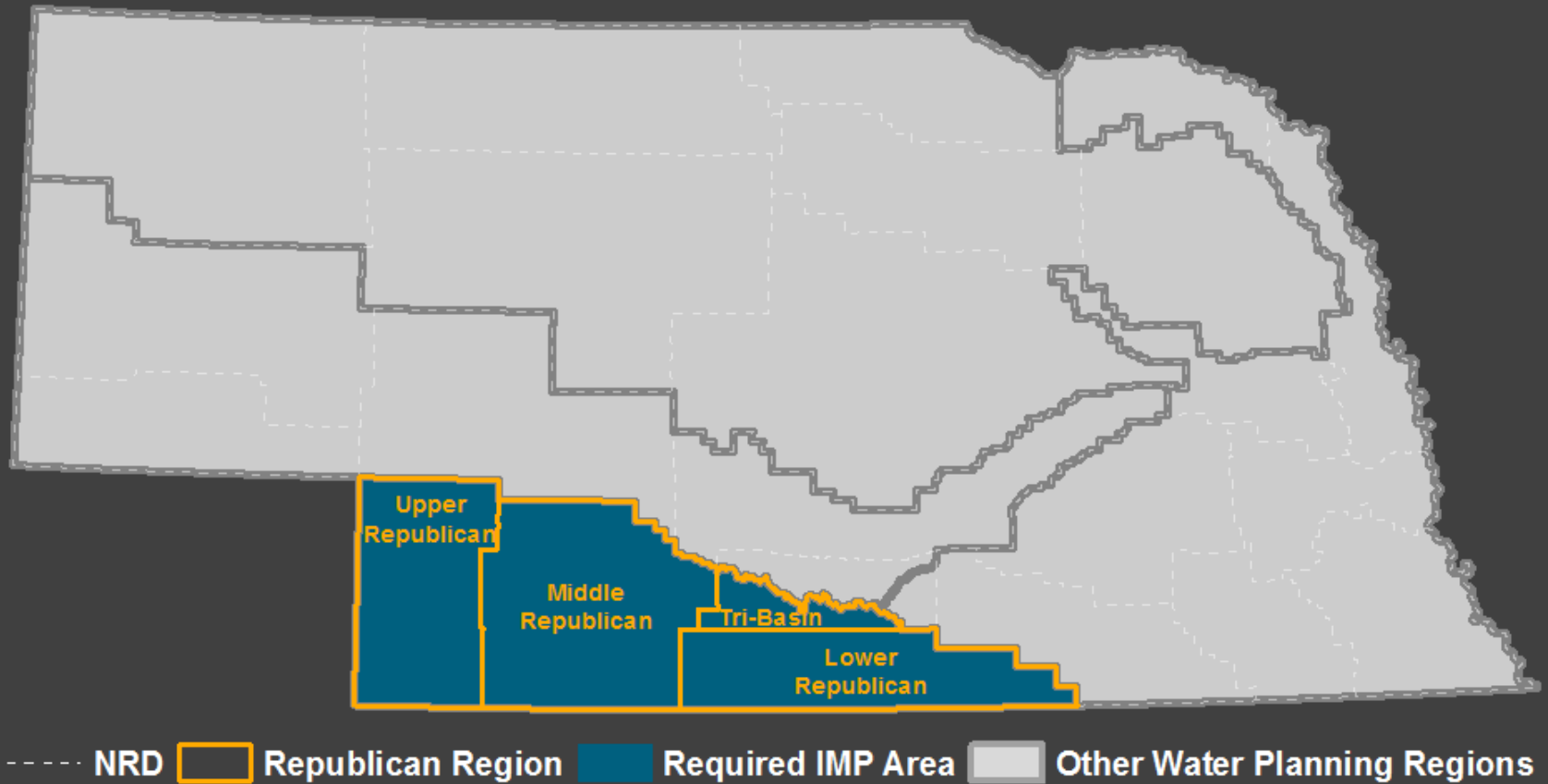


Light Green: Niobrara, Loup, and Elkhorn River Basins

Orange: Blues, Lower Platte, and Missouri Tribes Basins

Light Blue: Republican River Basin

Dark Blue: Upper Platte River Basin



Republican River Basin

Carol J. Myers Flaute



RRCA

Basin-
Wide
Plan

IMPs



RRCA

Republican River Compact **Compliance Activities**

- No augmentation or other management actions required for compliance this year so far
- Upcoming meeting (pre-Oct. 1) to determine Kansas' request for water (Oct. 1–June 1)
- Upcoming annual preliminary Republican River forecast meeting (November 14)

<http://RepublicanRiver.org>




Republican River Compact Administration

Official website of the RRCA

[Home](#) [Overview](#) [RRCA & Committees](#) [RRCA Documents](#) [The States](#) [Additional Resources](#)



The Republican River begins in Eastern Colorado and winds through Southern Nebraska and Northern Kansas before joining the Smokey Hill River to form the Kansas River at Junction City, Kansas.



Basin-
Wide
Plan

Republican River Basin-Wide Plan Development Process



- ✓ Stakeholder process concluded
- ✓ NRD board approval & NRD/NeDNR letter exchange
- ✓ Next step: public hearings (November)

Draft Republican River Basin-Wide Plan

Goals

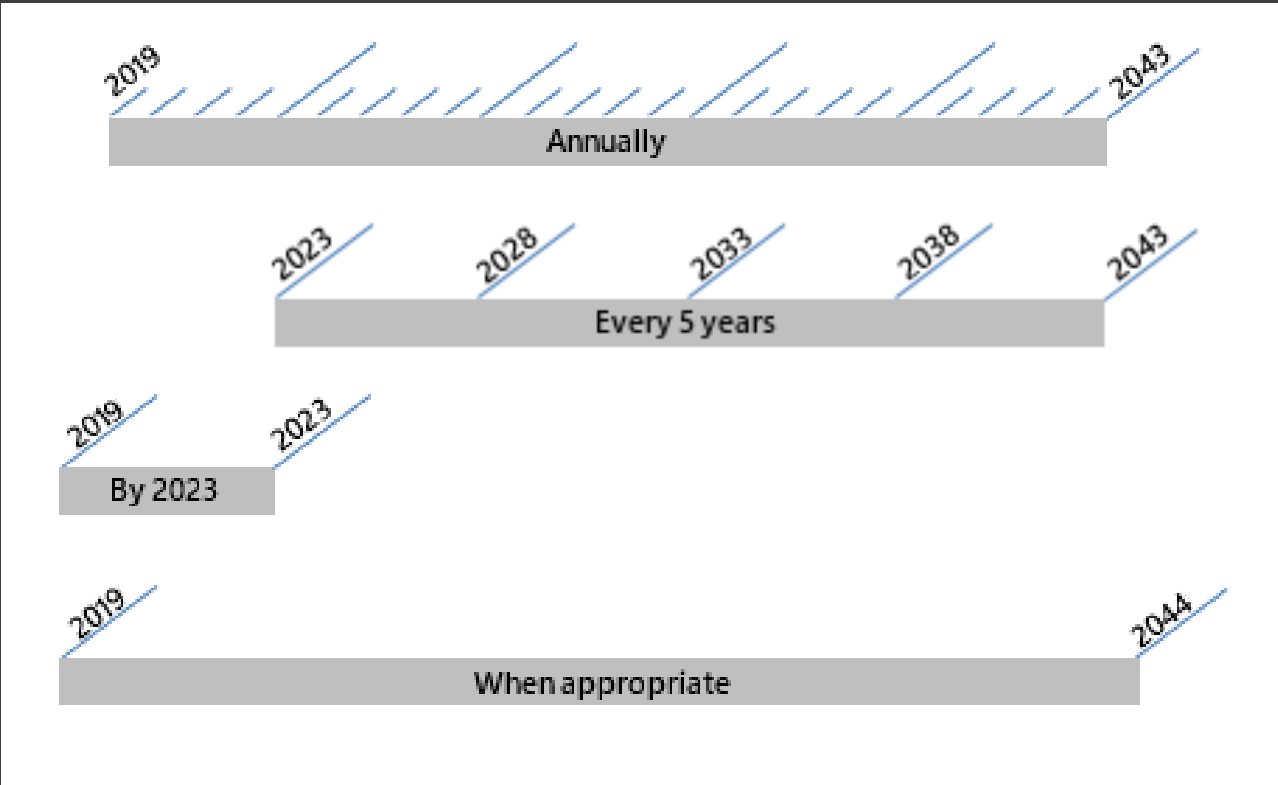
1 Maintain Nebraska's compliance with the Republican River Compact and applicable state laws

2 Maximize Nebraska's efficient and beneficial consumptive use of its portion of the water supply, increase certainty for long-range planning of water supplies to reduce the need for regulatory actions, and increase collaborative efforts among water management entities and stakeholders across the Basin

3 Positive public relations, including information sharing, within and outside the Basin

4 When possible, pursue projects that not only benefit water supplies and uses, but also create benefits for fish, wildlife, recreation, and conveyance within the Republican River Basin

Draft Republican River Basin-Wide Plan Implementation Schedule



Draft Republican River Basin-Wide Plan

Measurable Hydrologic Objectives (MHOs)

A&B

Groundwater depletions
to streamflow

C

Groundwater levels

D&E

Regulations/administration
for Compact compliance



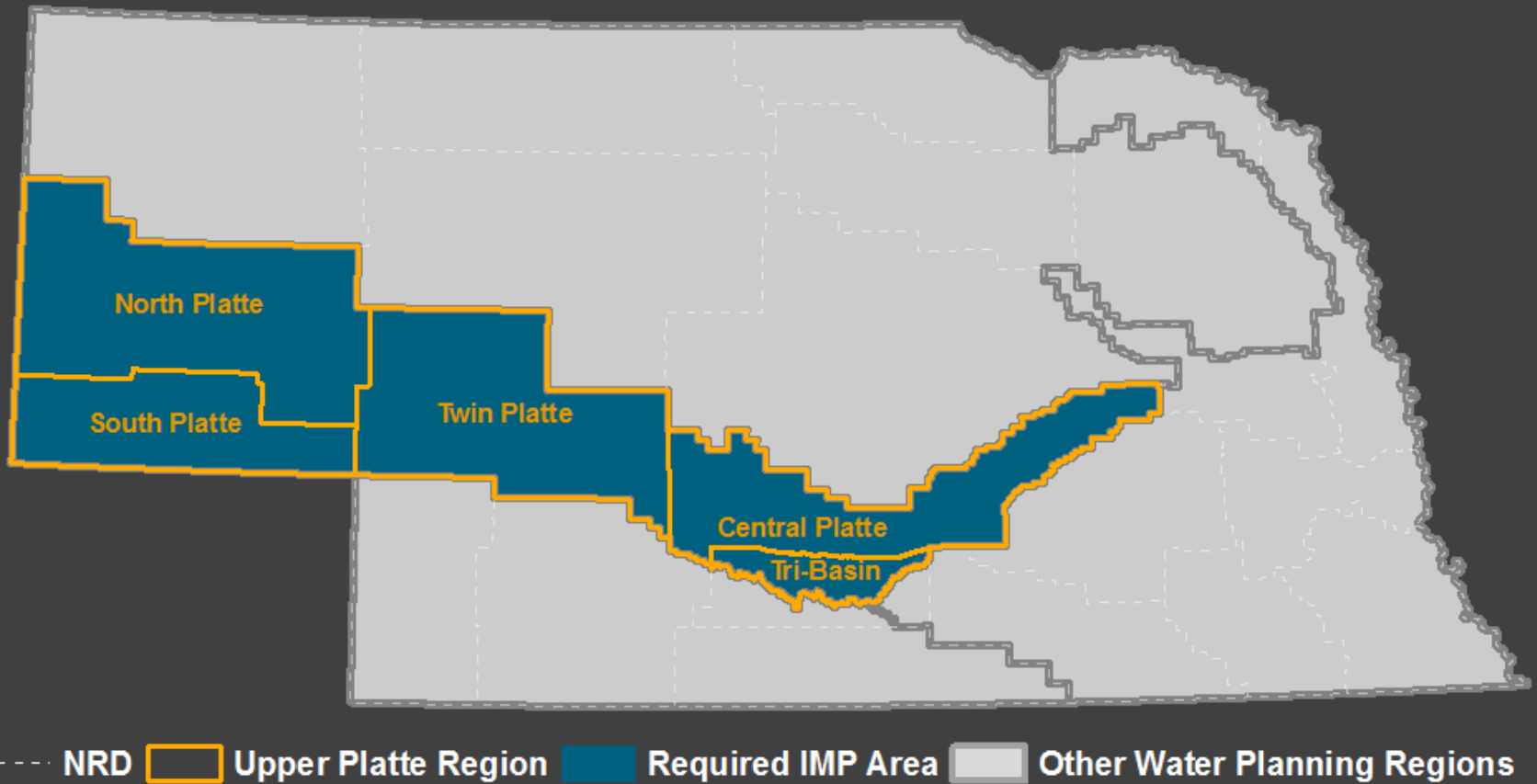


IMPs

Integrated Management Plans

Upcoming Revisions

- Lower, Middle, and Upper Republican NRDs
 - Will update for consistency with RRCA resolution (5th generation)
- All four Republican NRDs
 - Will evaluate whether any changes are needed for consistency with basin-wide plan



Upper Platte River Basin

Jessie Strom

PRRIP

Basin-
Wide
Plan

IMPs


A photograph of a river with rapids flowing over a concrete dam structure. The water is turbulent and white with foam. The background is a dense forest of green trees. In the foreground, there is a concrete ledge and some grass. A large blue circle is overlaid on the left side of the image, containing the text 'PRRIP' in white capital letters.

PRRIP

Platte River Recovery Implementation Program

- 1st increment of Program ends in 2019
- 13-year extension
- NeDNR technical analysis of progress for New Depletion Plan
- Annual reporting and updates
- BWP and IMPs to maintain compliance



A photograph of a river with rapids and a concrete dam structure. The water is turbulent and white with foam as it flows over a low concrete barrier. The background is filled with dense green trees. In the foreground, there are some dry grasses and a concrete ledge. A large, semi-transparent green circle is overlaid on the left side of the image, containing the text "Basin-Wide Plan" in white.

Basin-
Wide
Plan

Upper Platte Basin-Wide Plan Development Process

PROJECT SCHEDULE



- ✓ Stakeholder agreement on draft plan September 19, 2018
- Next Steps
 - Minor modifications based on feedback from stakeholders
 - NRD board approval & NRD/NeDNR letter exchange
 - Public meetings and hearings

Draft Upper Platte Basin-Wide Plan

Goals

- 1 Incrementally achieve and sustain a fully appropriated condition while maintaining economic viability, social and environmental 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.

Draft Upper Platte Basin-Wide Plan

Second Increment New Concepts

- Maintain previous increment mitigation efforts
- Understand economic impacts of supply variability
- Develop a drought contingency plan
- Partner with municipalities and industries
- Improve information sharing with stakeholders

A photograph of a river with rapids and a concrete dam structure. The water is turbulent and white with foam. A concrete dam structure is visible on the left side. A red circle is overlaid on the image, containing the text 'IMPs'.

IMPs

Integrated Management Plans

Second Increment Development

- Central Platte, North Platte, South Platte, Tri-Basin, and Twin Platte NRDs
- Stakeholder process
 - 3+ meetings
- Technical analysis of 1st increment progress
 - Set targets for 2nd increment
- Consistency with updated BWP
- Adopted by September 2019

Integrated Management Plans

Second Increment Development

- All NRDs have had at least one stakeholder meeting
- Focus on stakeholder education
 - BWP and IMP history
 - Planning process
 - Technical information
 - 1st increment progress and lessons learned
 - 2nd increment BWP updates



Science

INSIGHT

Planning

IMPLEMENTATION

Water Management
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Water Availability and
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SCIENCE

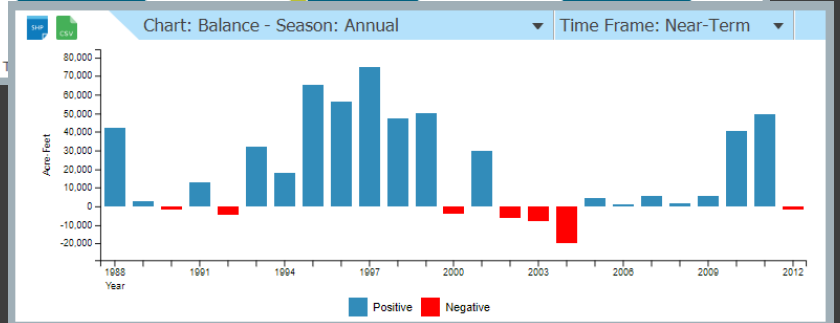
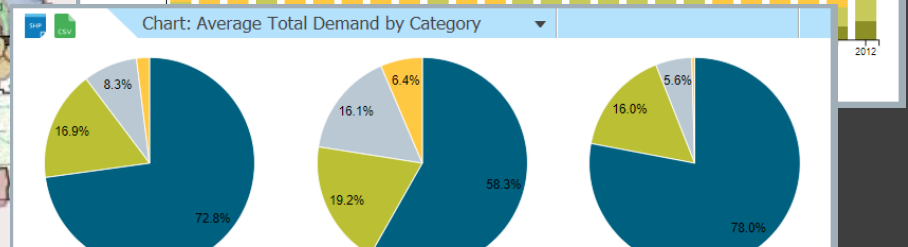
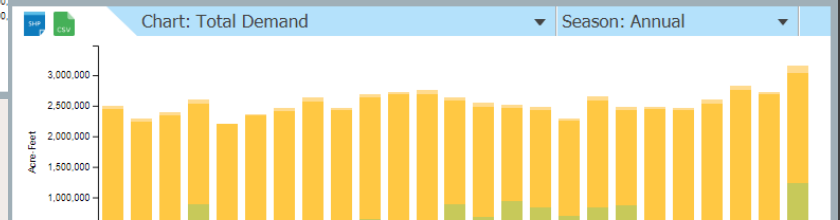
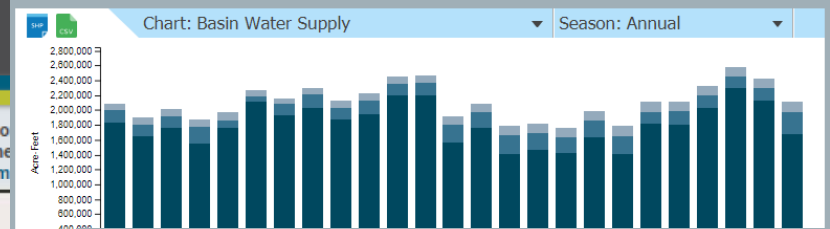
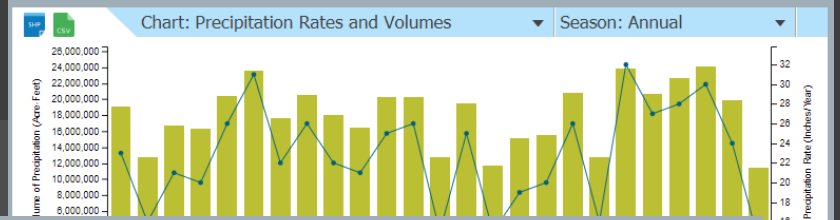
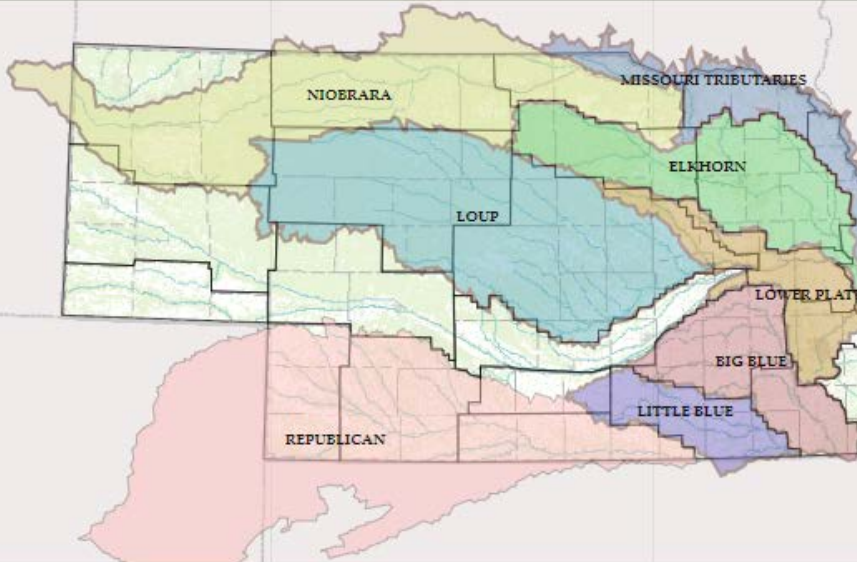
Hydrologic Models, Data, and Analyses

INSIGHT

An Integrated Network of Scientific Information & GeoHydrologic Tools

HOME ABOUT MODELING DATA STREAM GAGING

Welcome to INSIGHT! We've updated our interface and added data for the Republican River Basin. Click [here](#) to read about the analysis behind the charts in the [methodology](#) document and access the data through the [DISCLAIMER](#): The Republican River Basin analyses are made in conformance with the Republican River Com

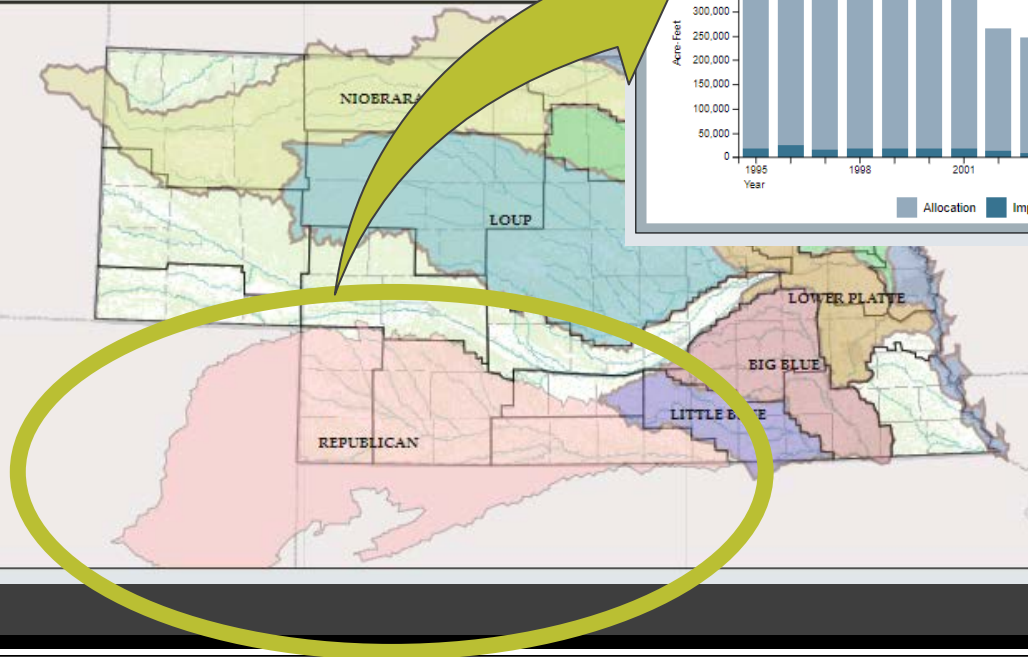
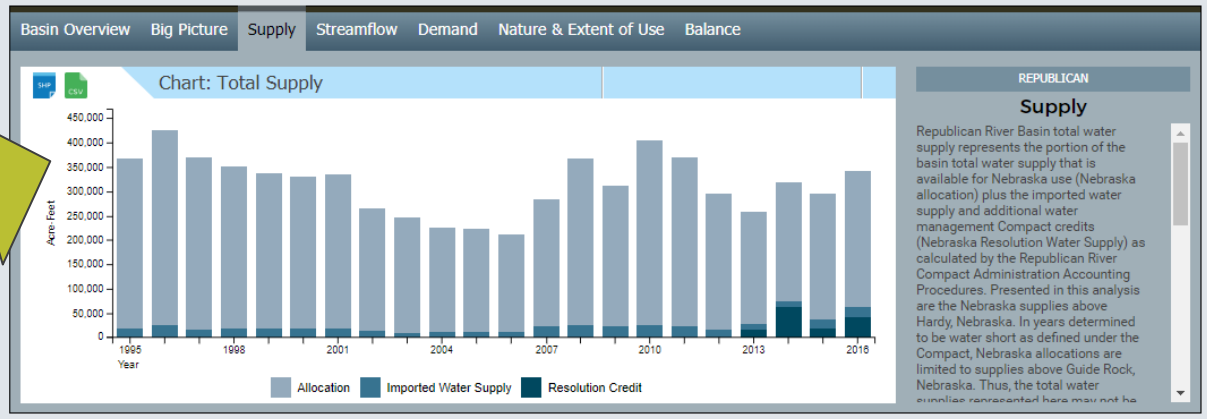
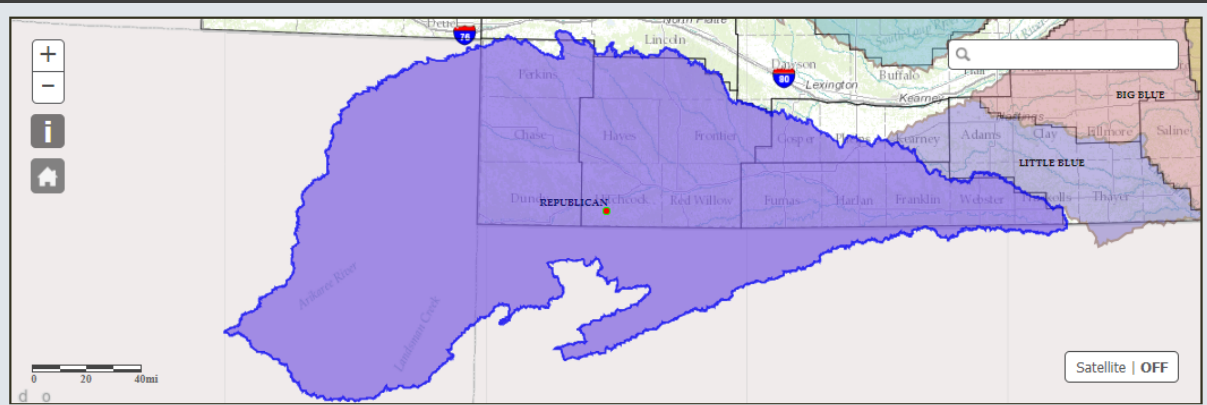


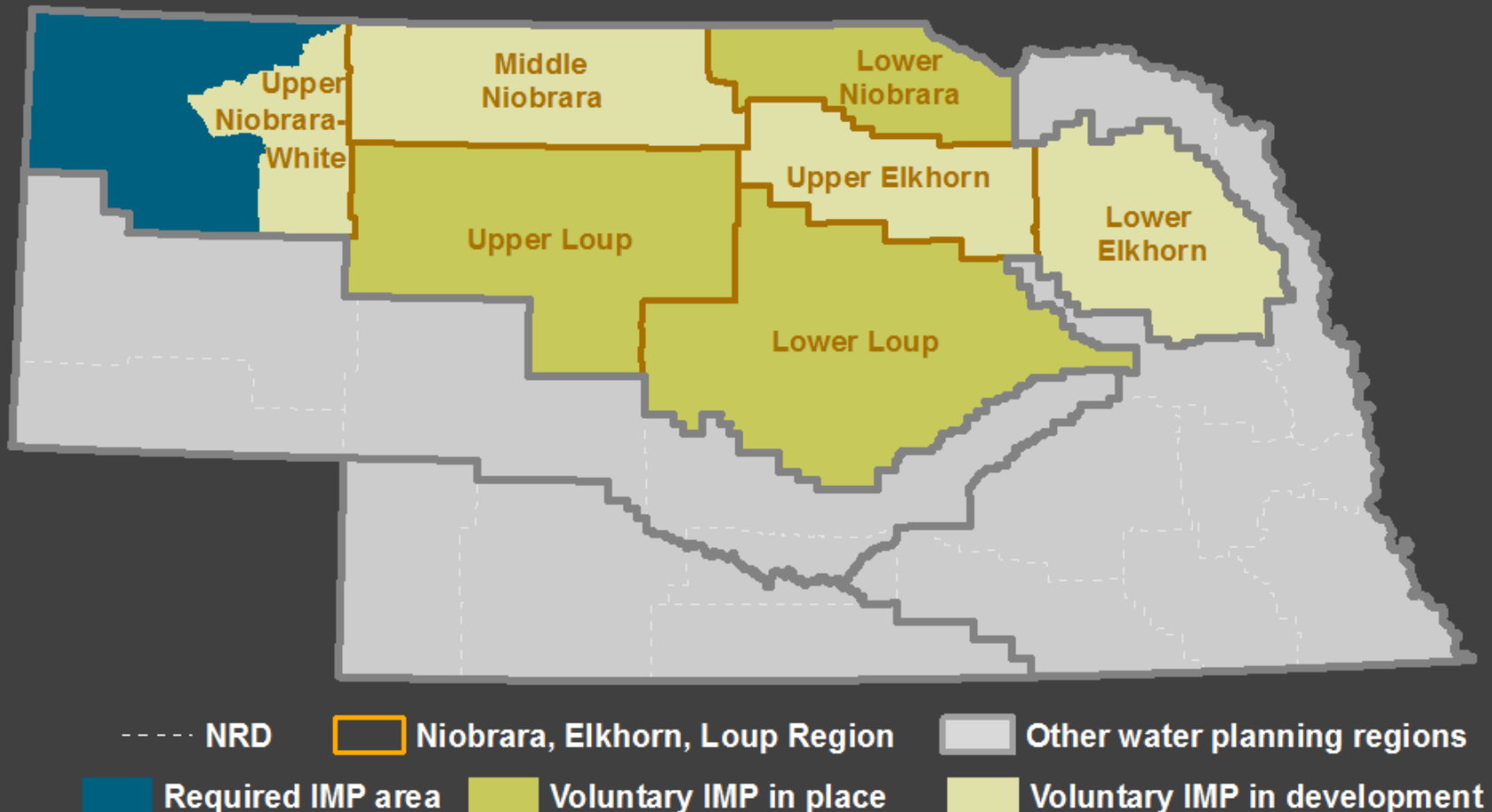
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HOME ABOUT MODELING DATA STRATEGIES

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DISCLAIMER: The Republican River Basin analyses are made in conjunction with the [Nebraska Compact](#).





Niobrara, Loup, and Elkhorn River Basins

Carrie Wiese

Niobrara

- Upper Niobrara White
 - IMP in place for FA portion of district
 - Initiating voluntary IMP for non-FA portion of district
- Middle Niobrara
 - Re-initiating voluntary IMP
- Lower Niobrara
 - Voluntary IMP in place
 - Annual reporting and meetings ongoing
- Modeling

Niobrara

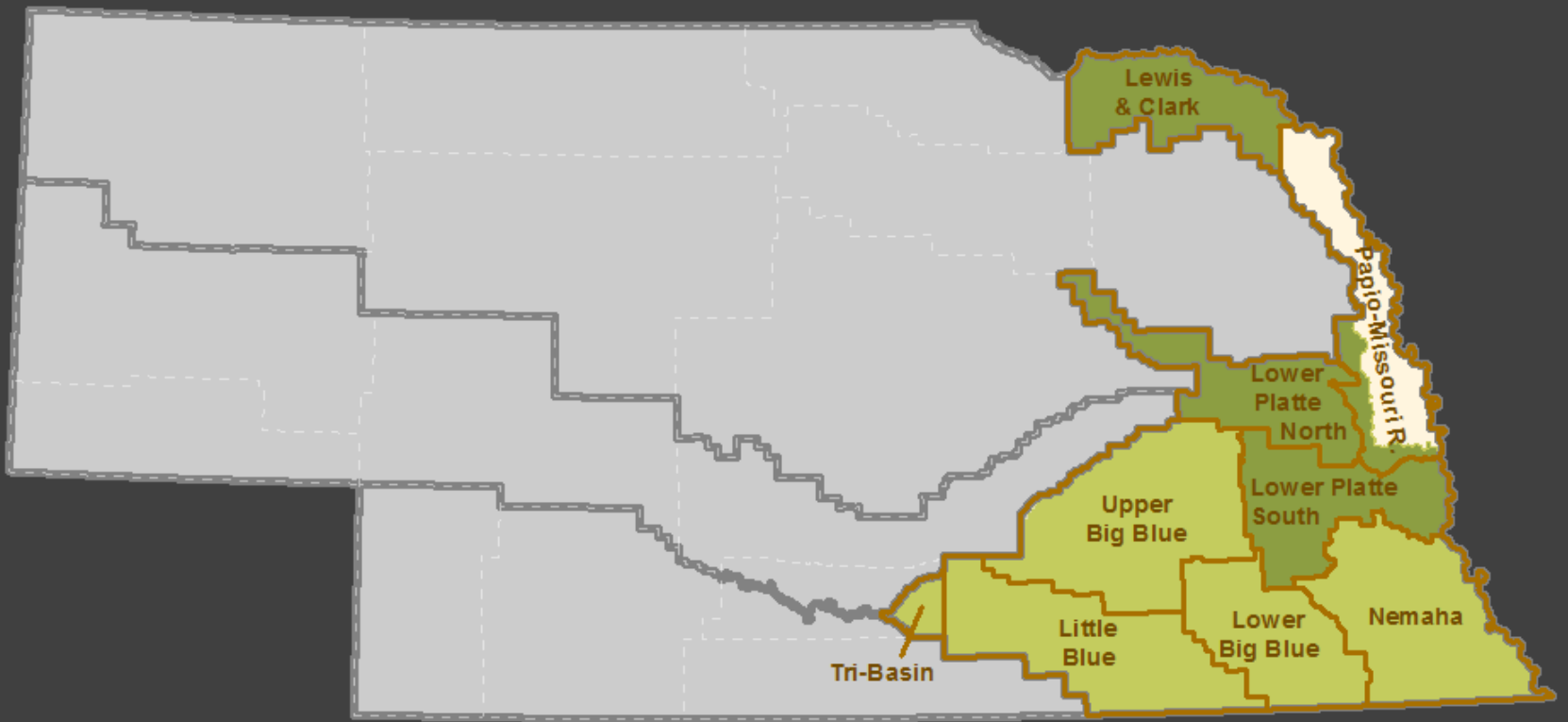
- Niobrara Compact Meetings
 - Spring technical meeting
 - Updates and current conditions
 - NRD activities
 - Studies
 - Modeling
 - Fall compact meeting (October 17)
 - Review of previous meetings
 - State reports
 - Studies
 - Compact discussion
 - Public comment

Loup

- Upper Loup and Lower Loup
 - Voluntary IMPs in place
 - Annual reporting and meetings ongoing (basin-wide plan)

Elkhorn

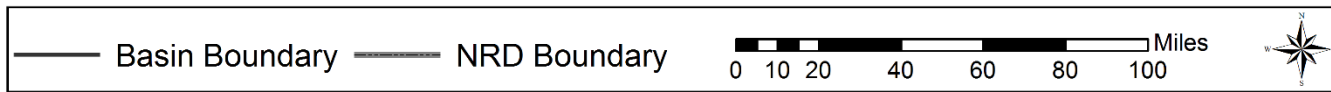
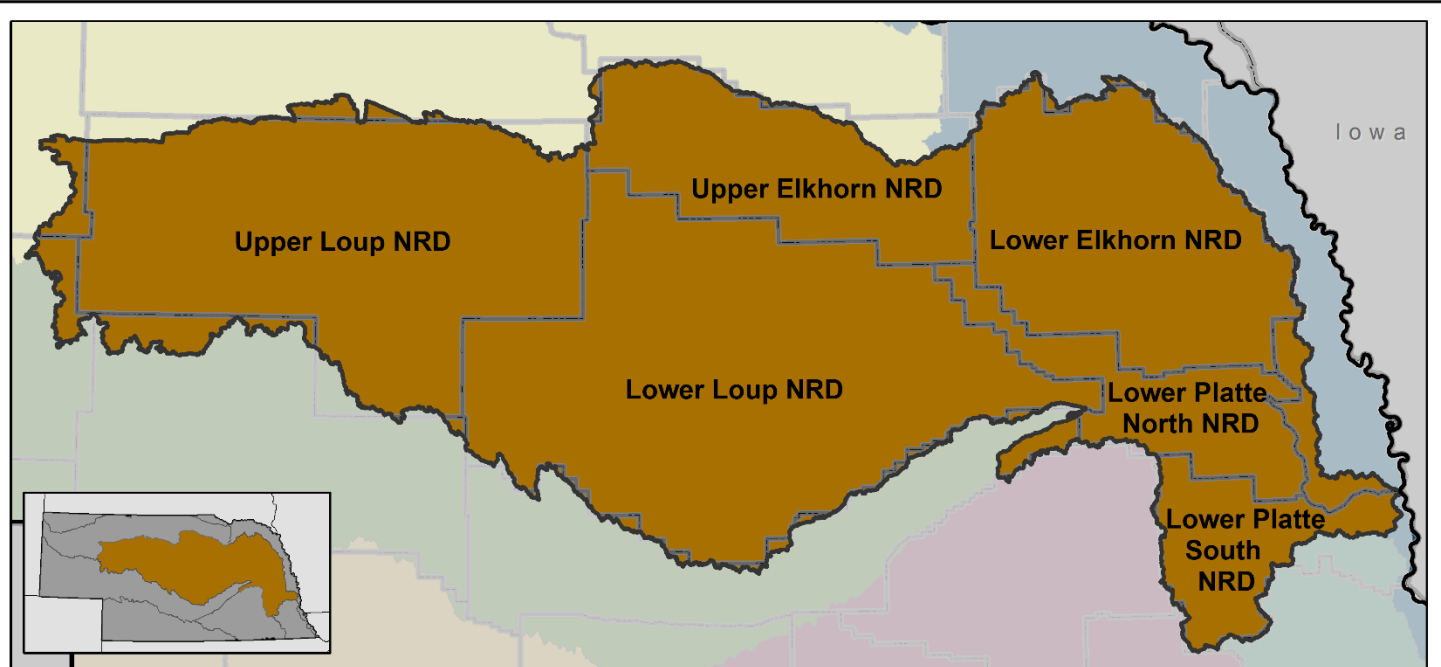
- Upper Elkhorn
 - Voluntary IMP in process
 - Final stakeholder meeting held in August
 - Public hearing scheduled for November
- Lower Elkhorn
 - Voluntary IMP in process
 - Public hearing held in August
 - Orders forthcoming



Blues, Lower Platte, and Missouri Tributaries River Basins

Amy Zoller

Lower Platte River Basin Coalition Basin Water Management Plan



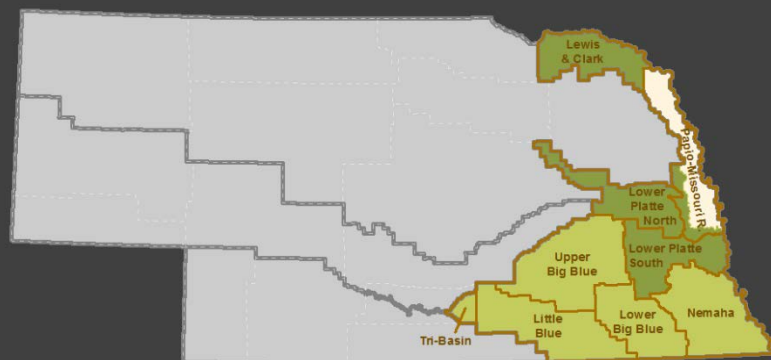
Lower Platte River Basin Coalition Basin Water Management Plan

TABLE 4.2. FIRST 5-YEAR INCREMENT ALLOWABLE NEW DEVELOPMENT (DEPLETIONS) BY NRD

NRD	Sub-Basin	First 5-year Increment Allowable New Development (Depletions) - Peak Season ¹	
		% Sub-Basin	AF
Upper Loup NRD	Loup River	32%	2,768
Lower Loup NRD	Loup River	68%	5,883
Upper Elkhorn NRD	Elkhorn River	25%	1,504
Lower Elkhorn NRD	Elkhorn River	75%	4,514
Papio-Missouri River NRD	Lower Platte River	21%	869
Lower Platte South NRD	Lower Platte River	24%	993
Lower Platte North NRD	Lower Platte River	55%	2,276

New Depletions Limits by Sub-basin and NRD

Blues, LP, Missouri Tributaries IMPs Outline



Lower
Platte

Missouri
Tributaries

Little Blue
and Big
Blue

Lower
Platte
Voluntary
IMPs



Voluntary IMPs Lower Platte South NRD

- IMP adopted May 2014
- Fourth annual review was held this August 2018
 - Jointly written annual IMP report presented to Board
- Considering updates to IMP as a part of the fifth annual review in 2019

ANNUAL
INTEGRATED
MANAGEMENT
PLAN REPORT

2017



JOINTLY PREPARED BY
THE LOWER PLATTE
SOUTH NATURAL
RESOURCES DISTRICT
AND THE NEBRASKA
DEPARTMENT OF
NATURAL RESOURCES

Submitted at the Lower Platte South Board Meeting/IMP Annual Review
August 15, 2018

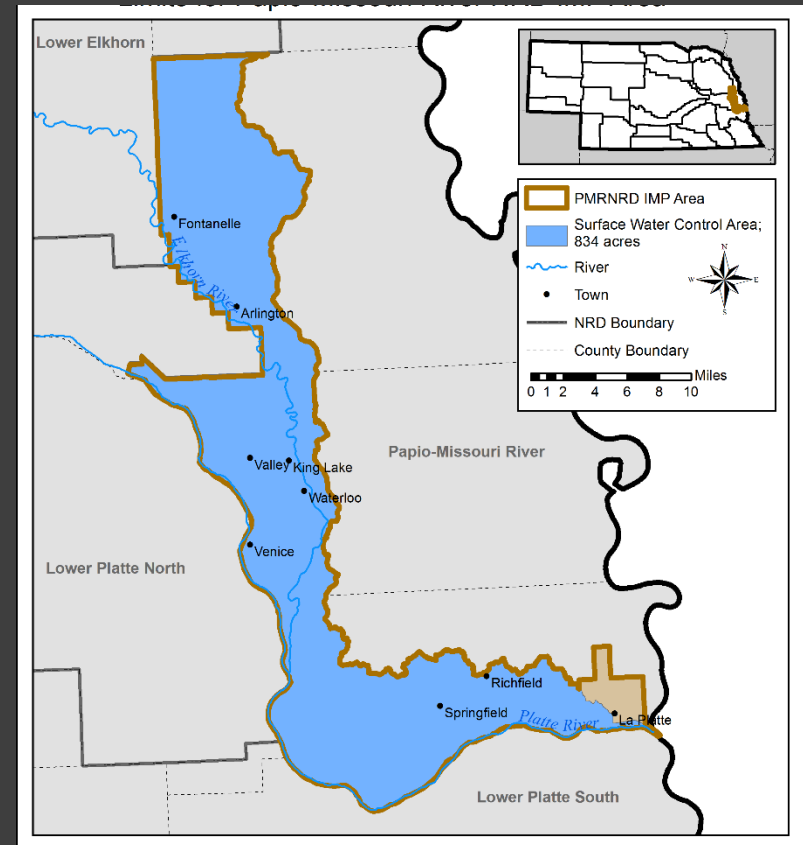
 LOWER PLATTE SOUTH
natural resources district

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Voluntary IMPs

Papio-Missouri River NRD

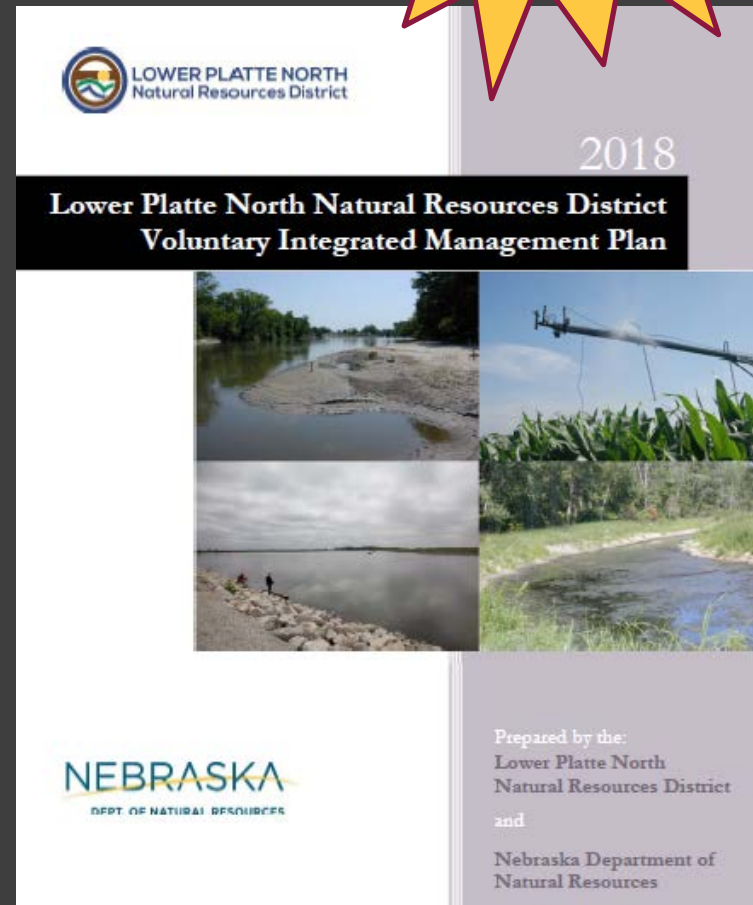
- IMP was approved August 2014
- Only covers the Elkhorn/ Lower Platte portion of NRD
- Three annual reviews
 - Last annual review (2018) was informal
 - Potential updates in 2019
 - Consistent with LP Basin Plan



Voluntary IMPs Lower Platte North NRD

New
Voluntary
IMP!

- IMP was approved July 15 2018
- Incorporates aspects of Lower Platte Basin Water Management Plan
 - Limits on development based on depletion to stream

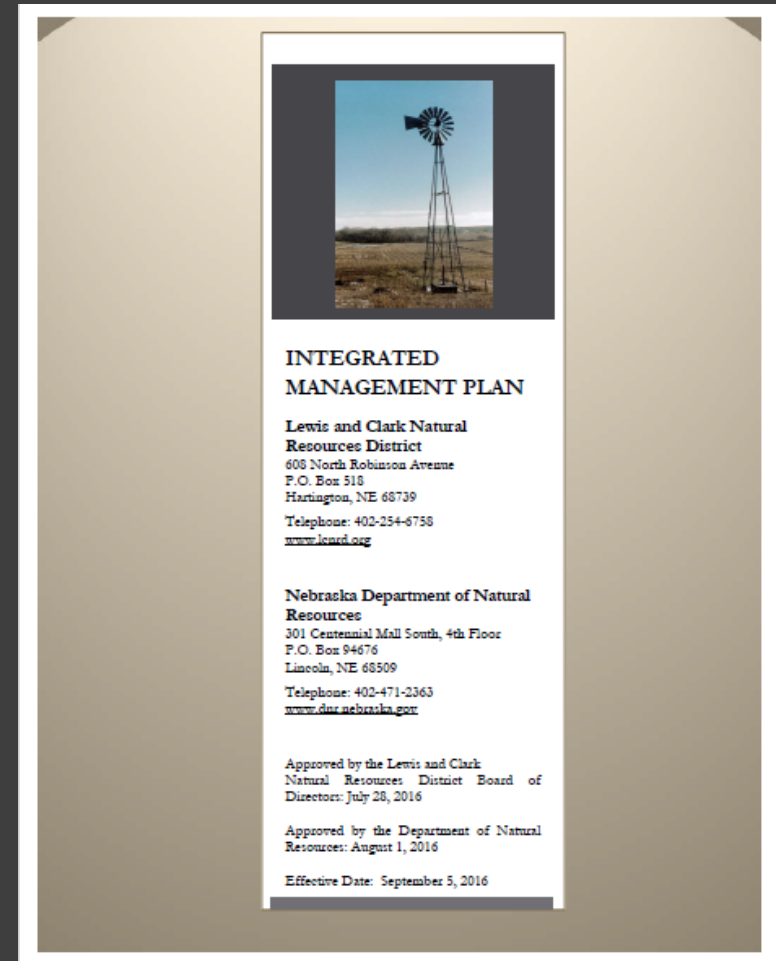


Missouri
Tributaries
Voluntary
IMPs



Voluntary IMPs Lewis & Clark NRD

- IMP was approved September 2016
- Biennial reviews
 - First will be later this year
- Education-based controls
 - Mandated education requirements for new industrial and agricultural GW and SW permits



Voluntary IMPs Nemaha NRD

- IMP initiated March 2017
 - Most recent request for a voluntary IMP
- IMP development will begin in 2019
- In 2017-18, focus largely on data collection
 - Airborne Electromagnetic (AEM) geophysical surveys

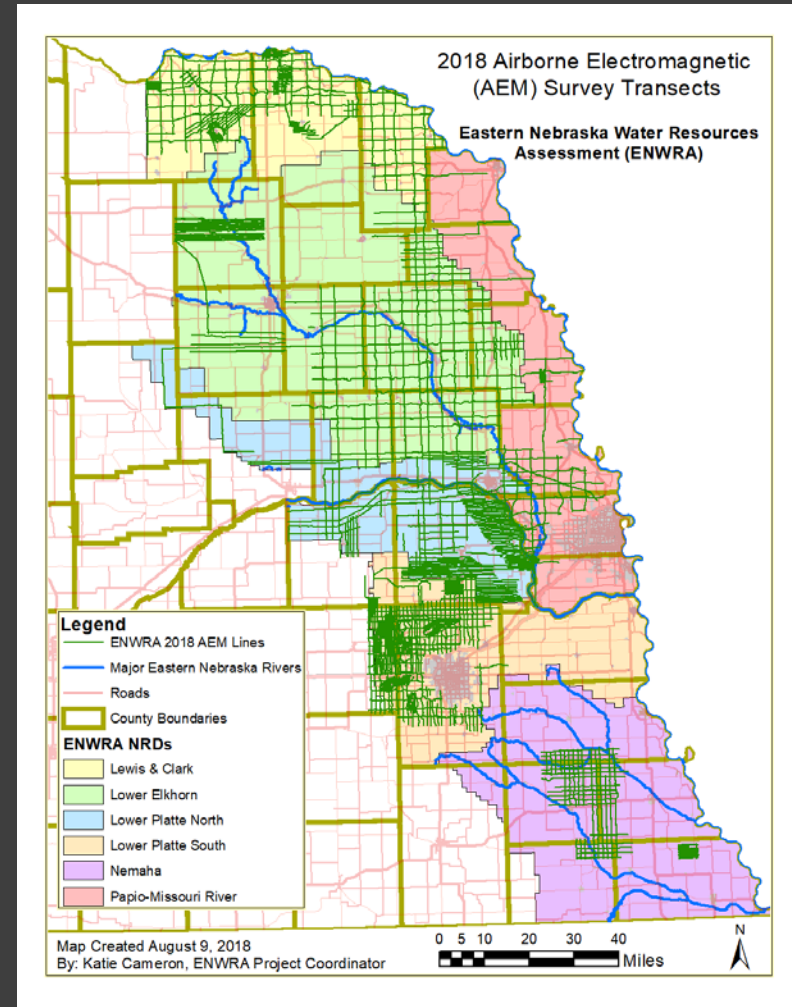
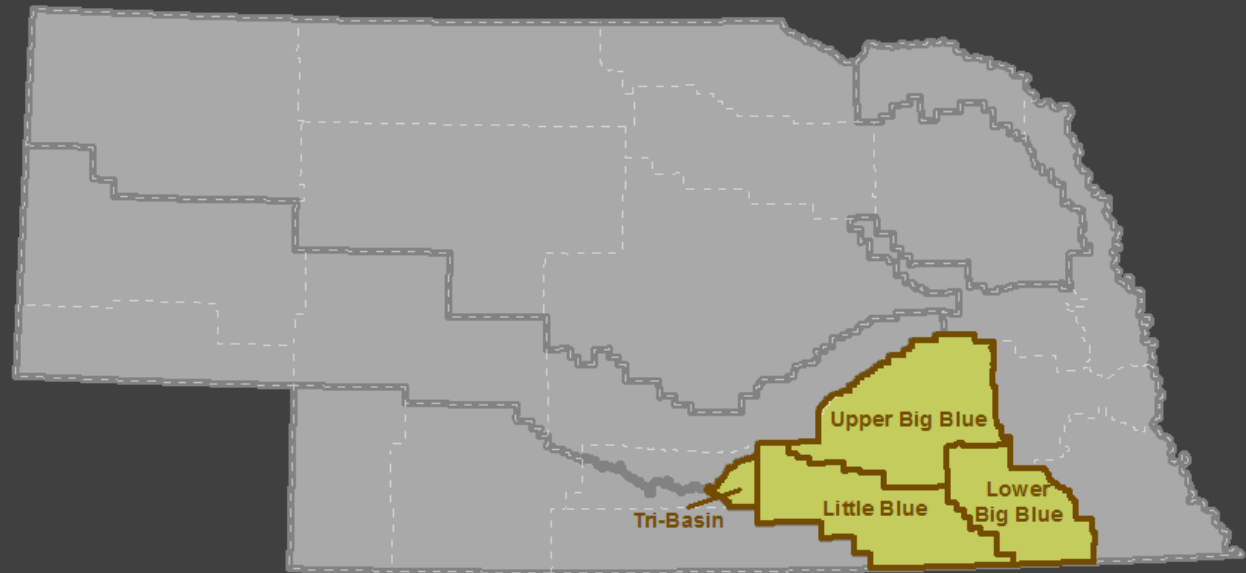


Image from: <https://www.enwra.org/aem2018.html>

Little
Blue and
Big Blue
IMPs



Voluntary IMPs Tri-basin and Little Blue NRDs

- IMPs initiated August 2015
- Bulk of stakeholder process in 2016 and 2017
 - First/last meetings include both NRD stakeholder groups
- Currently drafting the plans
 - Expected completion of both IMPs in early 2019



Voluntary IMPs

Lower Big Blue NRD

- IMP initiated August 2016
- NeDNR attended NRD Board meeting
 - September 10, 2018
- Upcoming discussions about stakeholder process



Image from https://waterdata.usgs.gov/ne/nwis/uv?site_no=06882000

Voluntary IMPs Upper Big Blue NRD

- IMP initiated February 2017
- NRD developing a Water Quality Management Plan (WQMP) the same time as the IMP
- Combined stakeholder process for WQMP and IMP
 - Both NeDNR and NDEQ at table
 - Three stakeholder meetings held so far (began in June 2018)



“One District, Two Plans, One Water”

Blue Basin Modeling

- Joint effort between Districts and Department
- Phase I complete
 - Agreement on input data, model boundaries, soil/water balance model, conceptual model, etc.
- Phase II forthcoming
 - Initiate model development

Lower Platte, Missouri Tribs and Blues IMPs Overview

LB 764

LB 1098

Basin	NRD	2010	2011	2012	2013	2014	2015	2016	2017	2018
Lower Platte	Lower Platte South	Development	Development	Development	Development	Development	Implementation	Implementation	Implementation	Implementation
	Papio-MR	Development	Development	Development	Development	Development	Implementation	Implementation	Implementation	Implementation
	Lower Platte North	Development	Development	Development	Development	Development	Development	Development	Development	Development
Blue River	Little Blue	Development	Development	Development	Development	Development	Development	Development	Development	Development
	Tri-Basin	Development	Development	Development	Development	Development	Development	Development	Development	Development
	Upper Big Blue	Development	Development	Development	Development	Development	Development	Development	Development	Development
	Lower Big Blue	Development	Development	Development	Development	Development	Development	Development	Development	Development
Missouri Tributaries	Lewis & Clark	Development	Development	Development	Development	Development	Development	Development	Implementation	Implementation
	Nemaha	Development	Development	Development	Development	Development	Development	Development	Development	Development

Development

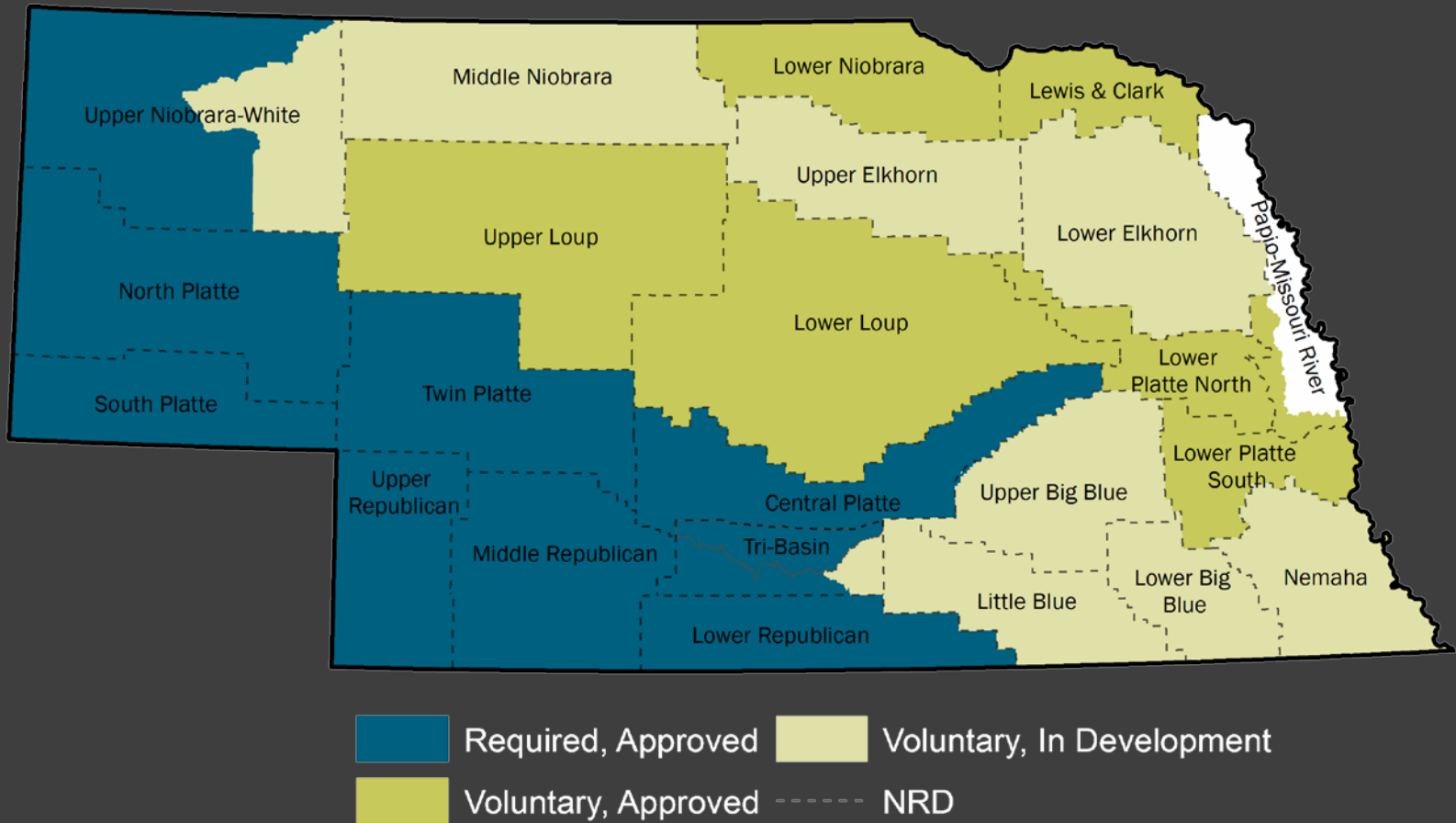


Implementation

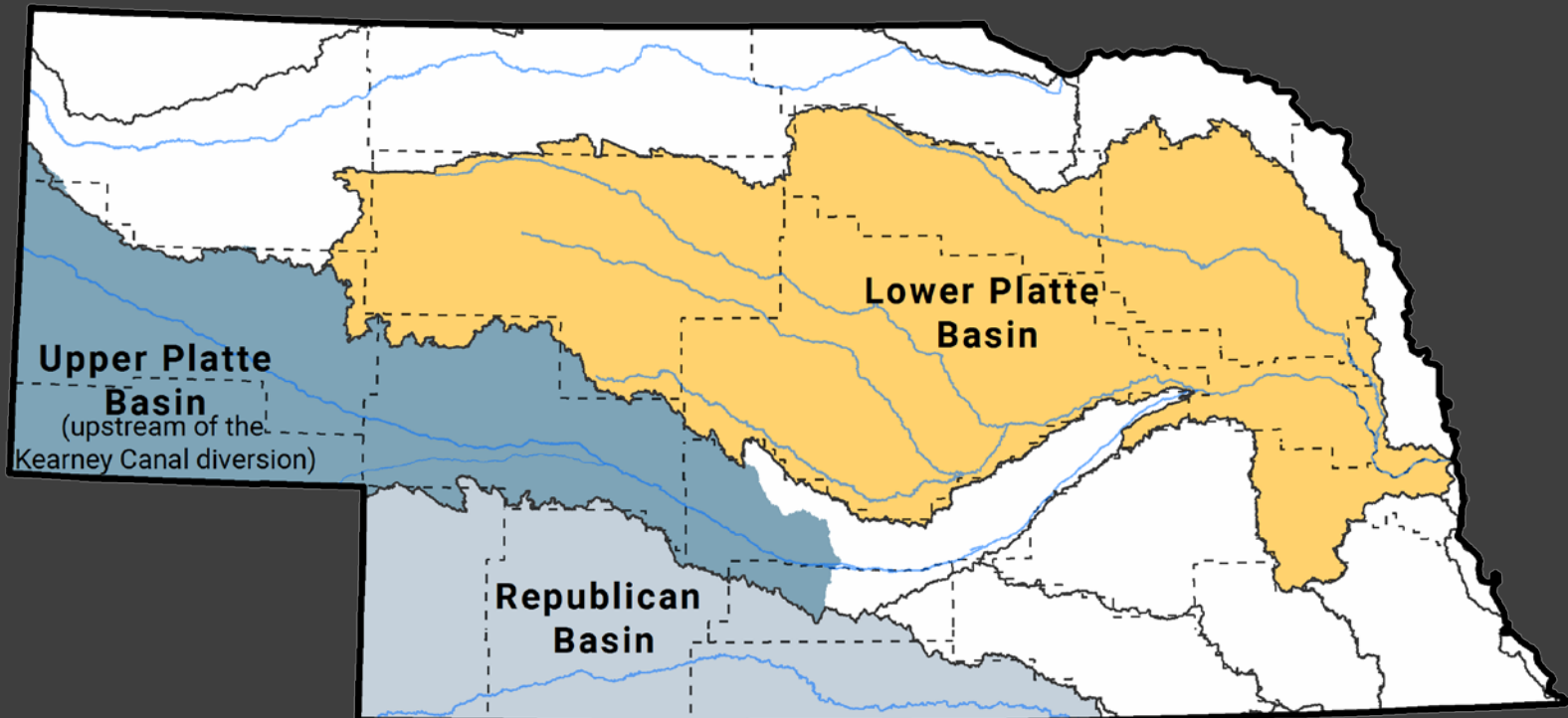


Summary and Conclusions

Integrated Management Plans (IMPs)



Basin-Wide Plans



Required, Adopted

Required, In Development

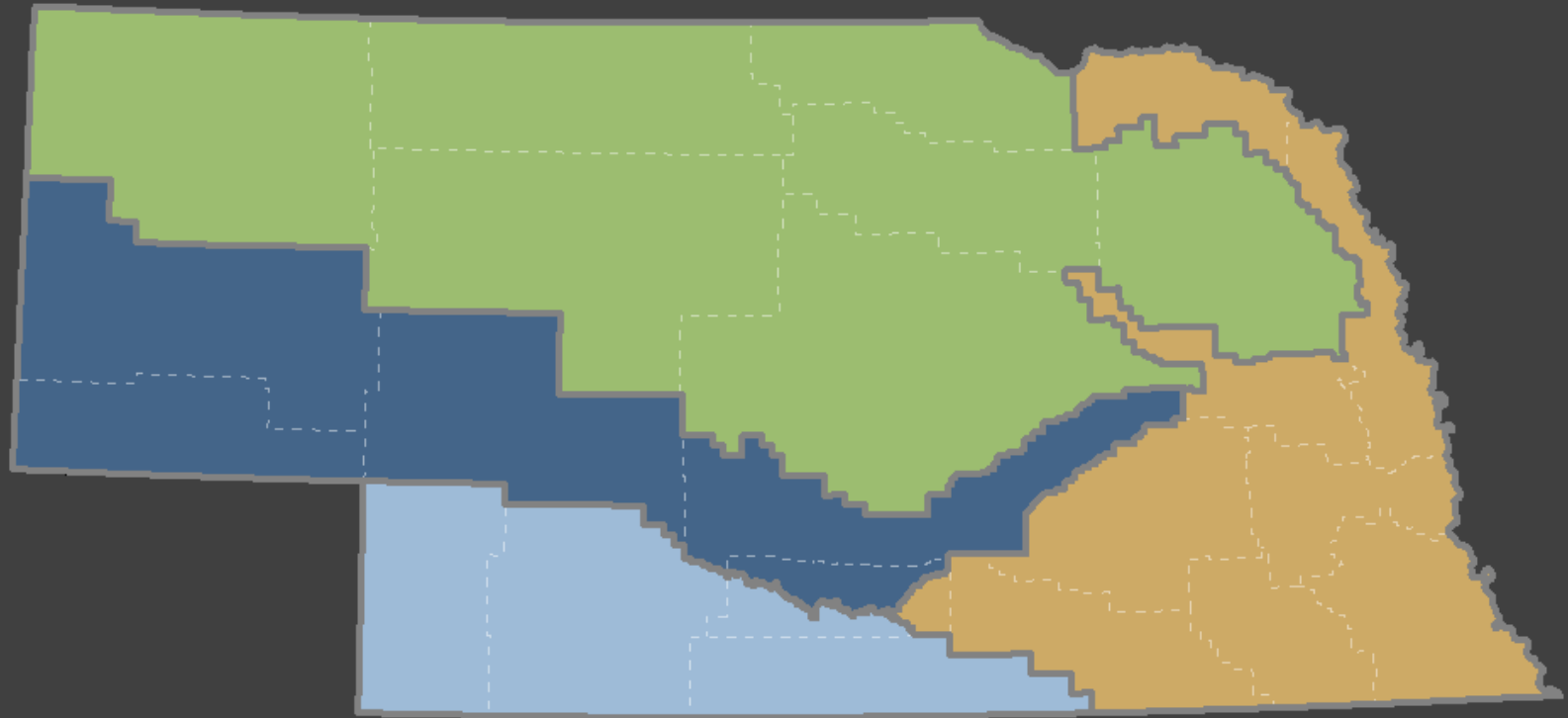
Voluntary, Adopted

NRD Boundary

Basin Boundary

River

Water Planning Coordination Areas



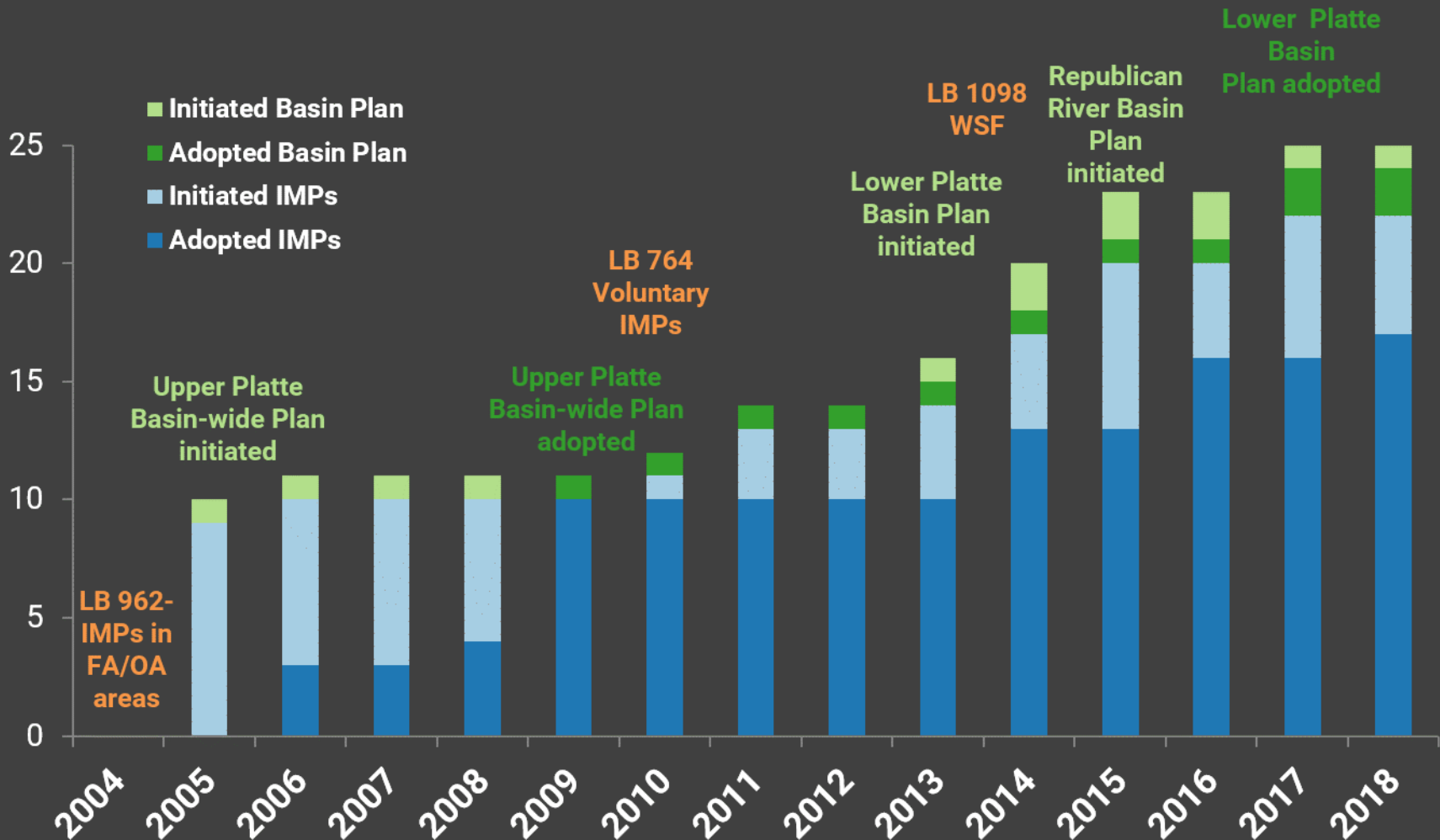
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Orange: Blues, Lower Platte, and Missouri Tribes Basins

Light Blue: Republican River Basin

Dark Blue: Upper Platte River Basin

Timeline of Integrated Water Management Planning



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Questions?

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