



NEBRASKA'S WATER MANAGEMENT RESOURCE

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

Voluntary Integrated Management Plans

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Nebraska Department of Natural Resources


Overview

- Background
- Roles of agencies/stakeholders
- IMP Components
- IMP Process
- INSIGHT Web Tool

**Ground Water
Correlative
Rights**

**Surface Water
Prior
Appropriations**

**Effective Management
of
Hydrologically
Connected
Waters**



Ground Water

Surface Water

**Ground Water
Regulated by
NRDs**

**Surface Water
Regulated by
DNR**

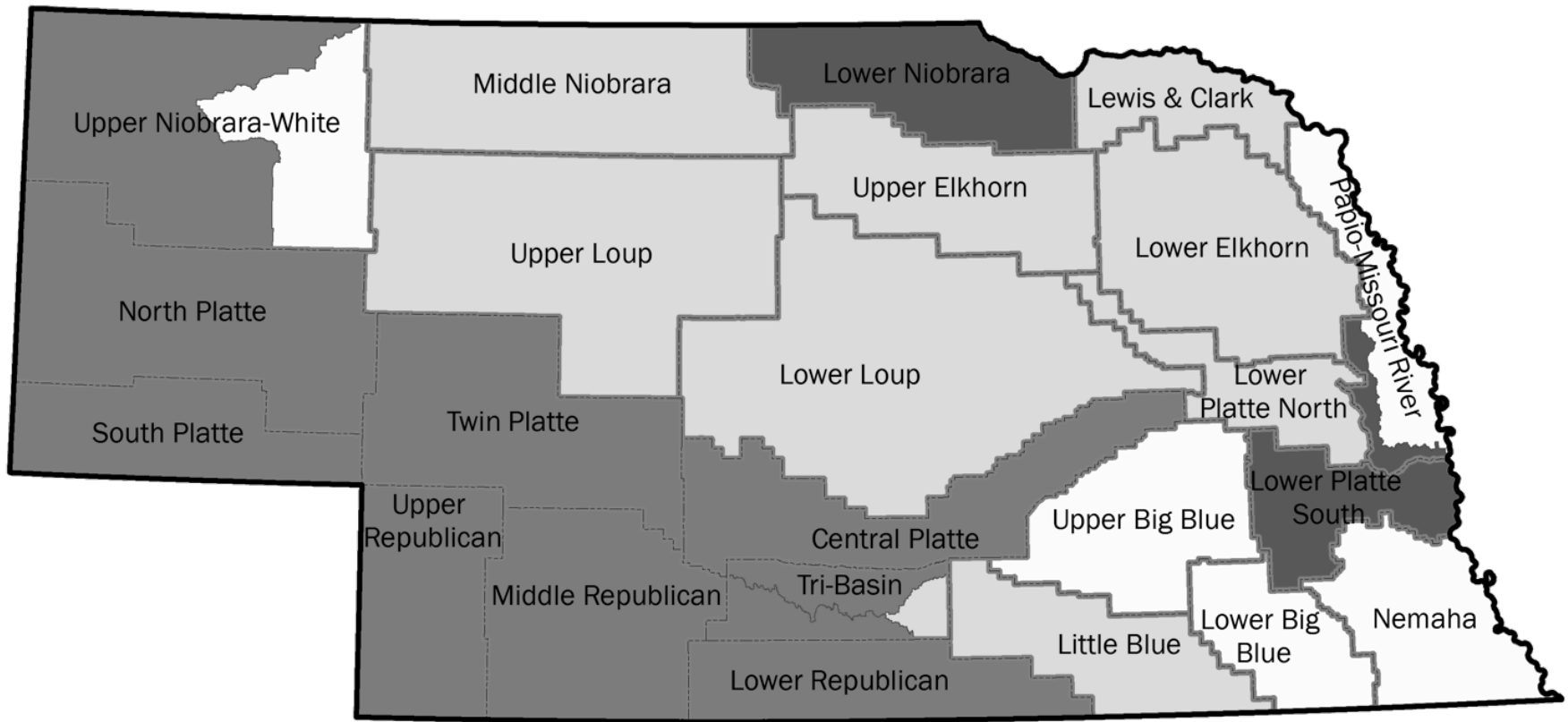
Background

- LB962 (2004)—Legally acknowledged hydrologically connected ground and surface waters
- Process for NRDs and NDR to work together to developing IMPs
 - IMPs initially in fully or over-appropriated basins
 - LB 764 (2010)-inclusion of voluntary IMP process

Background

- Voluntary IMP overarching objective
 - Achieve and sustain a balance between water uses and water supplies for the long term
- Protect existing water uses
- Proactive approach to water management
 - Example: If FA designation occurs in future, the Department and NRD may amend the IMP

Status of IMPs in Nebraska



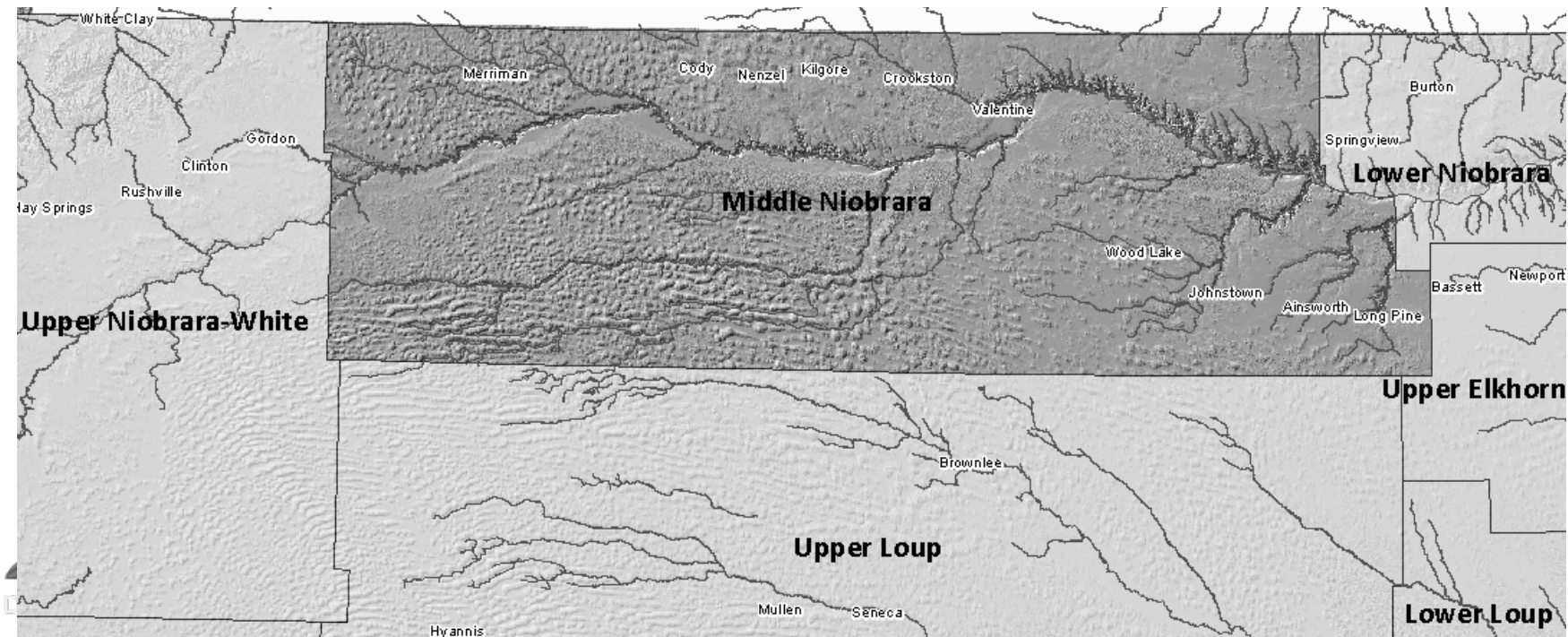
■ Required, Adopted ■ Voluntary, In Development
■ Voluntary, Adopted — NRD Boundary



ROLES

NRD Role

- As a partner in writing the IMP
- Groundwater monitoring and controls
- Link for local involvement in the strategic development of the IMP



NDNR Role

- Also a joint partner in writing the plan
- Surface water monitoring and controls
- Provide technical support

NDNR's IMP Goals

- Build a foundation of data and tools to more effectively managed water uses/supplies
- Framework for efficient, transparent, comprehensive data acquisitions and exchanges
- Identify opportunities to better adapt to changing conditions
- Listen to local inputs to increase understanding of future water uses/needs

Stakeholder Roles

- Attend meetings and convey local water issues/concerns
- Provide input to development of IMP goals and objectives
- Inform/educate local groups about IMP process



IMP DEVELOPMENT

Components of an IMP

➤ Required components

- Goals/Objectives
 - Purpose to achieve a balance between uses and supplies
- Map of Geographic Area
- One or more GW controls (§ 46-739)
- One or more SW controls (§ 46-716)
- Monitoring Program

➤ Additional components

- Action items to achieve goals/objectives
- Evaluation and review process
- Education and outreach plan
- Incentive programs

Goals, Objectives and Action Items

- **Goals:** Define what a group wants to accomplish
 - Provide the context from which meaningful objectives and action items are developed
- **Objectives:** Define the measurable outcomes that a group seeks to accomplish in working toward goals
- **Actions items:** Describe the specific tasks that the NRD and NDNR will undertake

Controls

- **Statutes require that IMPs have one or more GW and one or more SW control**
 - Appropriate to achieve goals and objectives

GW controls authorized by § 46-739

- Limit GW expansion
- Transfers
- Municipal/Industrial Tracking
- Well-spacing
- Meters
- Educational requirements
- Certified Acres
- Allocations
- Rotations
- Acres Reduction

SW controls authorized by § 46-716

- Increased Monitoring
- Variance/Transfers
- Conservation Measures
- Moratoriums

Voluntary IMP Process

- NRD contacts NDNR to initiate process
- Determine integrated management area
- Stakeholder Meetings - Consultation
 - Develop Goals and Objectives
 - Develop action items to achieve goals and objectives
- NRD/NDNR draft IMP

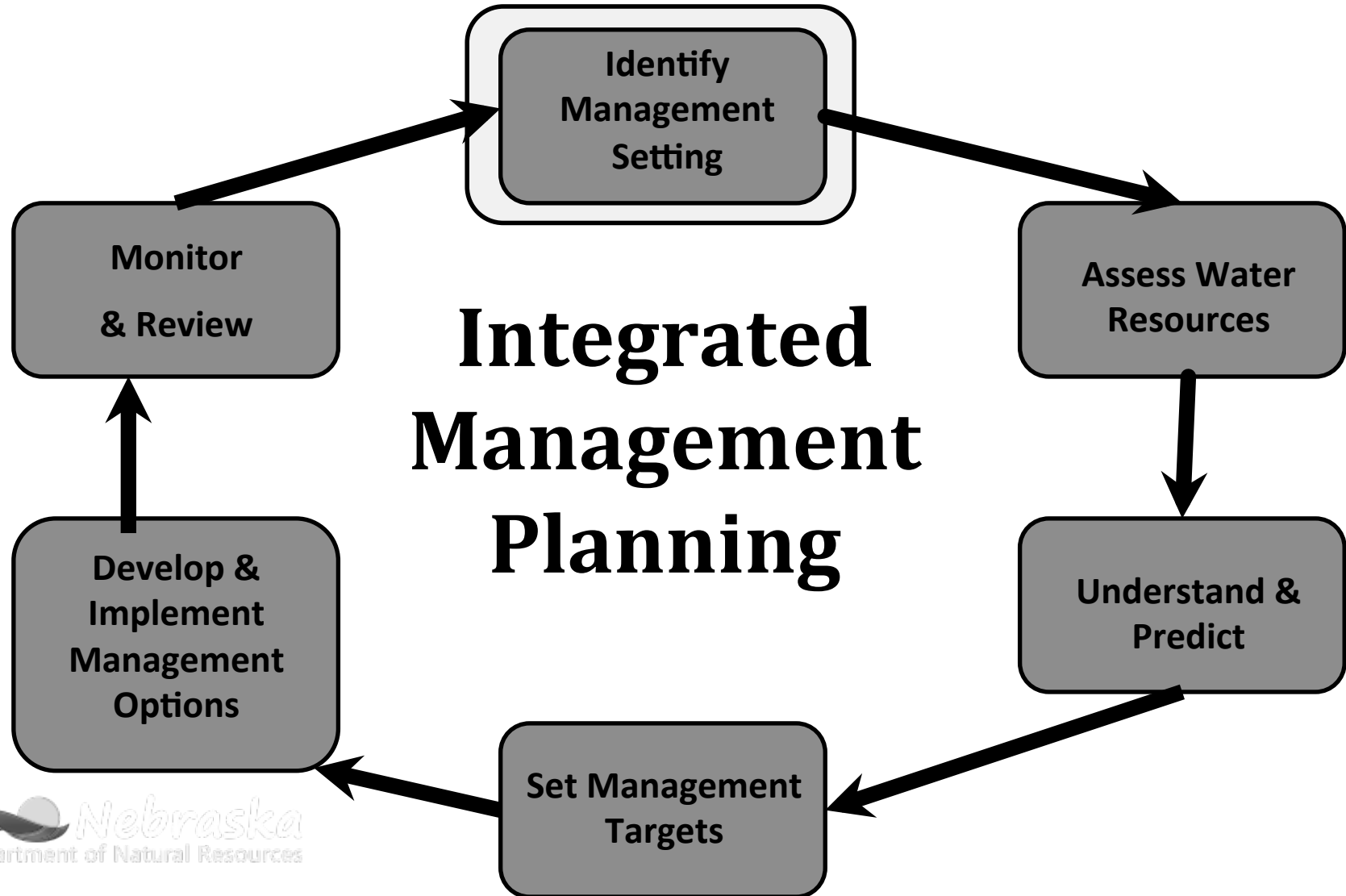
IMP Process

- Letter exchange between NRD and NDNR agreeing to draft plan
- Set and publish hearing date
- Joint public hearing
- NRD/NDNR consider testimony, if no changes to required components of plan...
- Publish orders to make IMP effective

IMPs Generally

- Evolve as the need arises
- No mandatory restrictions on new development
 - Irrigation
 - Municipal
 - Industrial
- Include local input and concerns
- Do not regulate water quality

IMP Long-term process



The INSIGHT Web Tool

The screenshot shows the INSIGHT web tool interface. At the top, there is a navigation bar with 'HOME', 'ABOUT', and 'MODELING DATA' links. A 'SELECT REGION' dropdown menu is visible on the right. Below the navigation bar, a welcome message states: 'Welcome to INSIGHT! The data and charts represent our second release which contains updated data and new features for viewing and downloading data. The "Getting Started with INSIGHT" box explains more about using the new features. See the updated methodology and the data available through the Modeling Data page for more detailed information. The data is in review and will be finalized by the end of the year.'

On the left, a 'Getting Started with INSIGHT' box provides instructions: 'Begin by exploring hydrologic data for supplies, demands, and nature and extent of use for the state of Nebraska in the charts and graphs found below. If you would rather learn more about one of the state's basins and corresponding subbasins, start by double-clicking the map to zoom in to the basin level. The red dot in the center of the map will hover over the basin whose data will be displayed. Use your mouse to pan to the basin of interest by clicking and dragging until the red dot is in that basin or simply click on the basin you wish to view. You may double-click again to zoom in to the subbasin level and use your mouse to pan to or click on the subbasin of interest. The plus and minus buttons in the upper left of the map also allow you to zoom in and out. Alternatively, you can select a basin or subbasin from the SELECT REGION drop down menu above the map on the right.'

The main map area shows a map of Nebraska with various basins labeled: BIG BLUE, ELKHORN, LITTLE BLUE, LOUP, LOWER PLATTE, MISSOURI TRIBUTARIES, and NIobrARA. A search bar and 'Satellite OFF' toggle are also present. A 'Drop down Menu' callout points to the 'SELECT REGION' dropdown.

Below the map, a chart titled 'Chart: Precipitation Rates and Volumes by Basin' is displayed. The chart has a dropdown menu set to 'Season: Annual'. The chart shows two data series: 'Volume of Precipitation (Acre-Feet)' and 'Rate of Precipitation (Inches/Year)'. The 'Supply' section on the right explains: 'Basin water supplies represent the streamflow water supply that is available for total use within a river basin or subbasin. If no surface water or groundwater use was occurring by humans in a basin, the basin water supply would be represented by the streamflow data captured at a streamflow gaging station. However, streamflow is impacted by human activity; therefore, to calculate a total basin water supply, four water supply components are added together. These four water supply components include:'. The 'Drop down Menu' callout also points to the chart's dropdown menu.

Basin	Volume of Precipitation (Acre-Feet)	Rate of Precipitation (Inches/Year)
BIG BLUE	~6,000,000	~18
ELKHORN	~10,000,000	~15
LITTLE BLUE	~4,000,000	~18
LOUP	~16,000,000	~15
LOWER PLATTE	~6,000,000	~18
MISSOURI TRIBUTARIES	~1,000,000	~18
NIobrARA	~12,000,000	~12

Drop down
Menus

The INSIGHT Web Tool

Getting Started with INSIGHT

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Basin Overview Big Picture Supply Demand Nature & Extent of Use Balance

CSV PDF

Chart: Basin Water Supply Season: Annual

Streamflow
 Surface Water Consumption
 Groundwater Depletions
 Required Inflows

NIOBRARA

Supply

For INSIGHT purposes, basin water supply represents the streamflow that is (or would have been) present if no surface water or groundwater use was occurring by humans. To recreate the streamflow that would have occurred without human activity, the depletive effects of surface water consumptive use and groundwater depletions are added to the actual stream gage measurements.

For basin level calculations of basin water supply, the stream gage measurement from the most downstream point is combined with

The INSIGHT Web Tool

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Big Picture
Supply
Demand
Nature & Extent of Use
Balance

Chart: Average Total Demand by Category

Annual
Total: 543,680 Acre Feet

June - August
Total: 135,885 Acre Feet

September - May
Total: 407,795 Acre Feet

Niobrara River Gordon to Sparks

Nature & Extent of Use

The Nature and Extent of Use tab provides information on the general distribution of water demands for a given basin. This tab provides information on the source that supplies water demands (i.e., aquifer/groundwater pumping or stream/surface water diversion) and the sector that uses the water (i.e., municipal, industrial, irrigation). This tab also includes information on the distribution of irrigated acreage including breakdowns of acres irrigated by surface water, groundwater, and commingled.

The charts found in this tab include:

Integrated Water Management

- Voluntary IMP
- Balance water uses and supply
- NRDs and NDNR joint effort
- Stakeholder Input
- Continuous Process



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