

INSIGHT: A New Look at the Water Supplies and Uses in Nebraska

Presented to the
UNL Water Symposium
Changes: Climate, Water and Life on the Great
Plains

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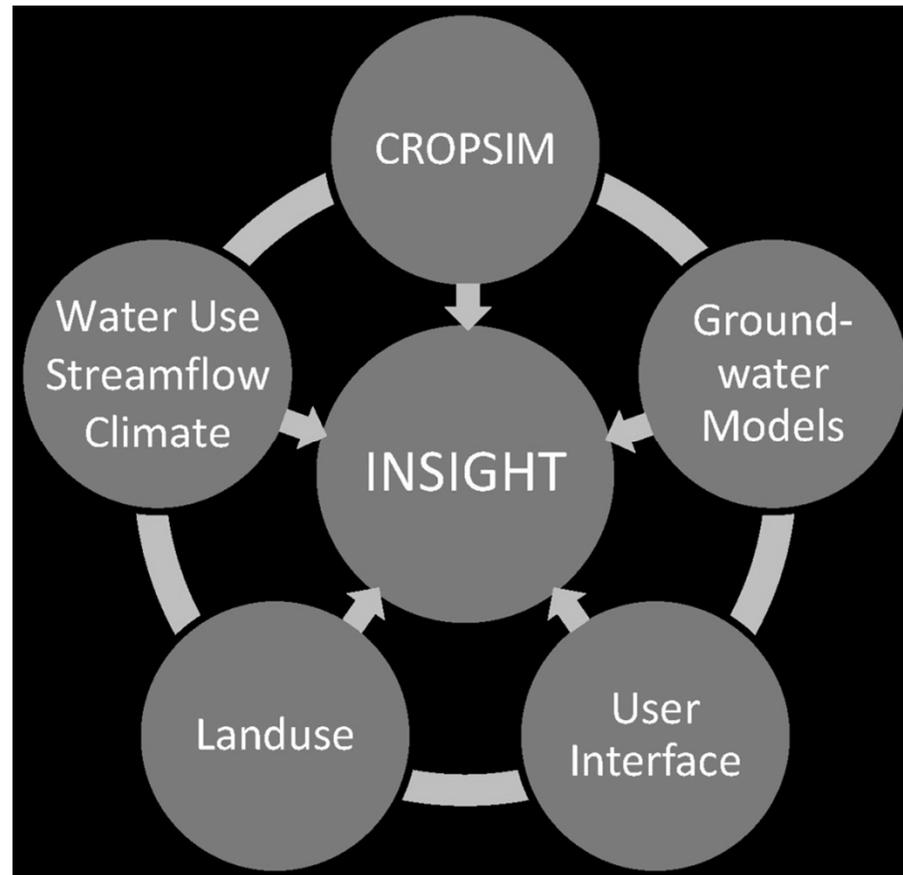
Department of Natural Resources

Outline

- Primary purpose of INSIGHT
- Concepts behind statewide data
- Concepts behind basin & sub-basin data
- A professional & public resource

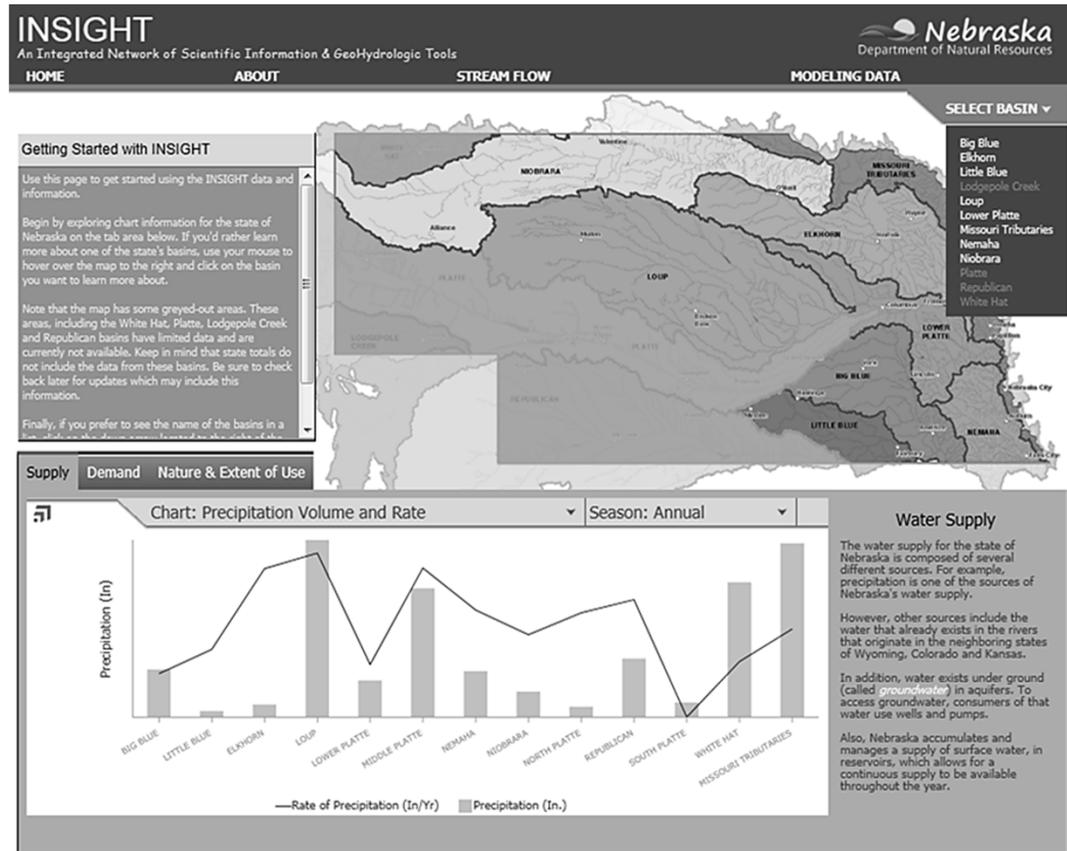


INSIGHT – *Integrated Network of Scientific Information & GeoHydrologic Tools*



INSIGHT – Statewide Data

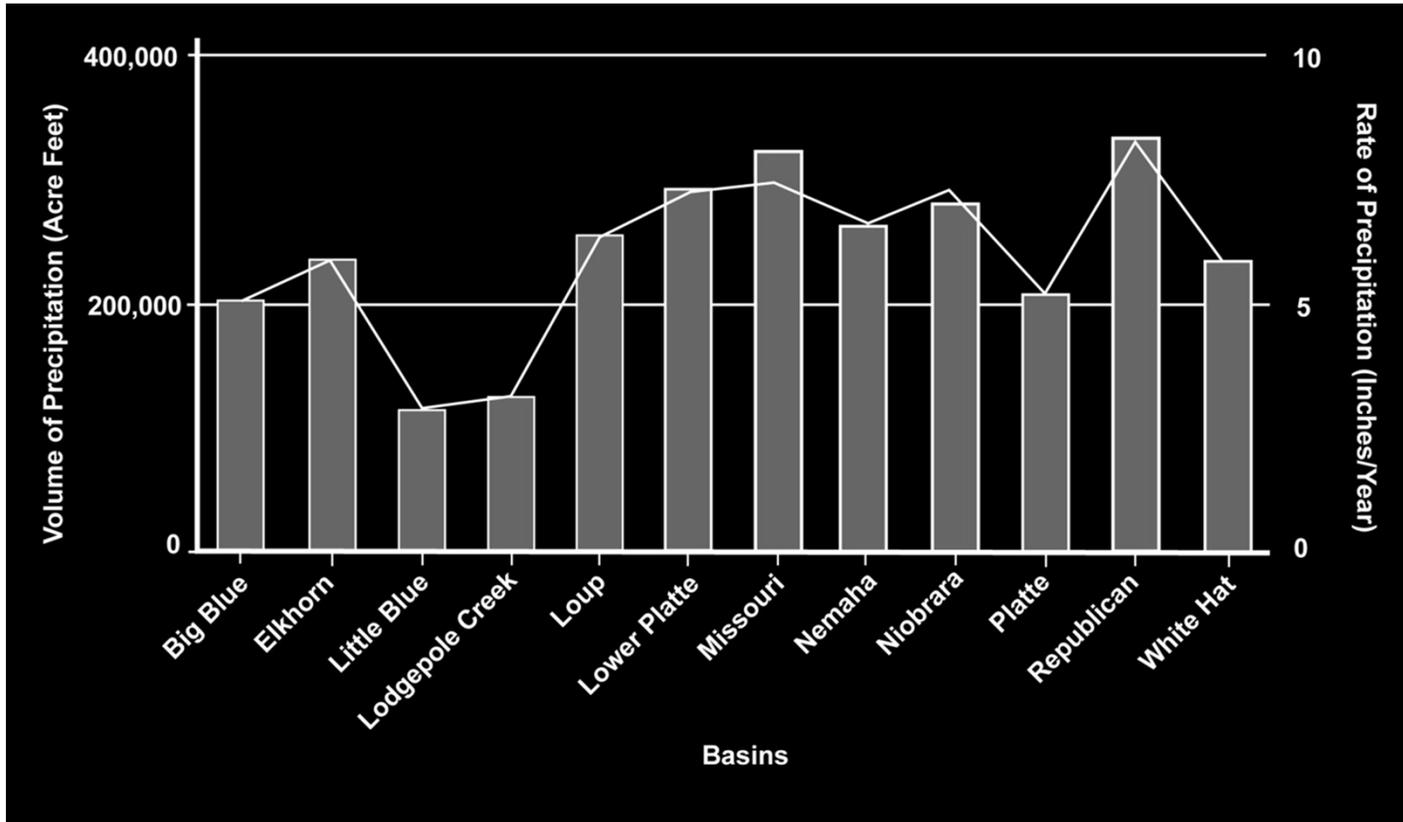
- ✓ Big Picture
- ✓ Supply
- ✓ Demand
- ✓ Nature & Extent of Use



The chart on this slide depicts fictitious data.

Statewide: Supply

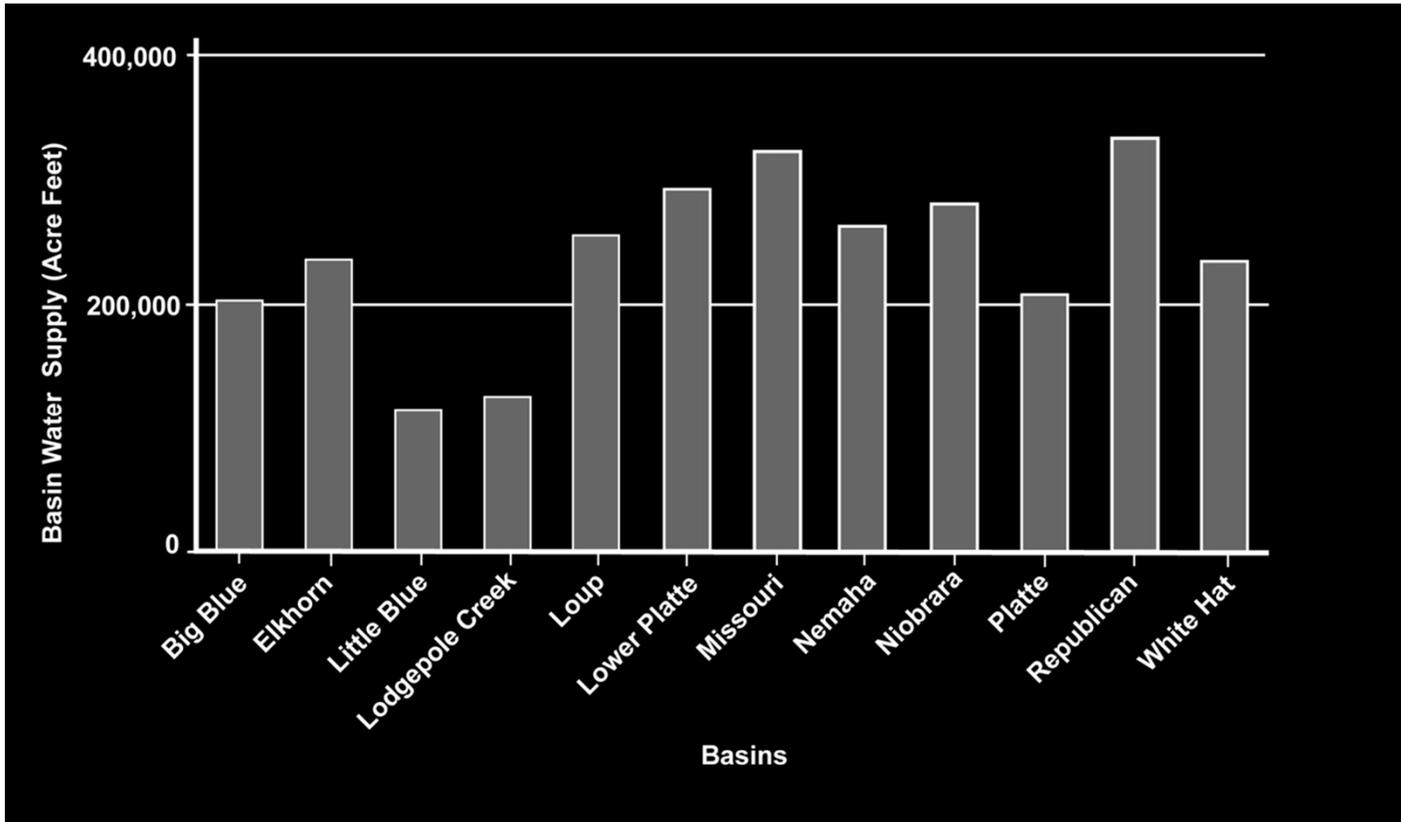
Precipitation Rates and Volumes by Basin



The chart on this slide depicts fictitious data.

Statewide: Supply

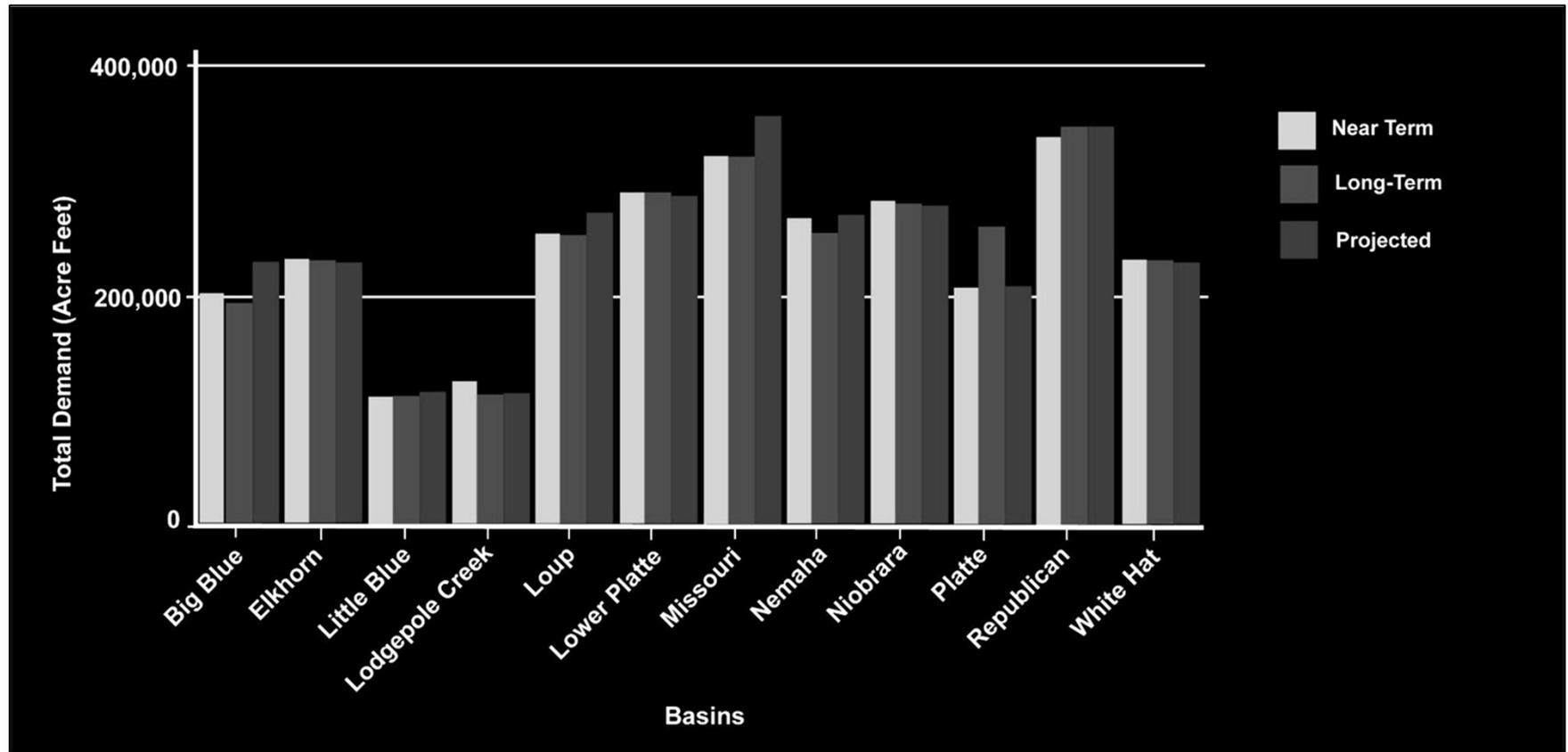
Average Basin Water Supply



The chart on this slide depicts fictitious data.

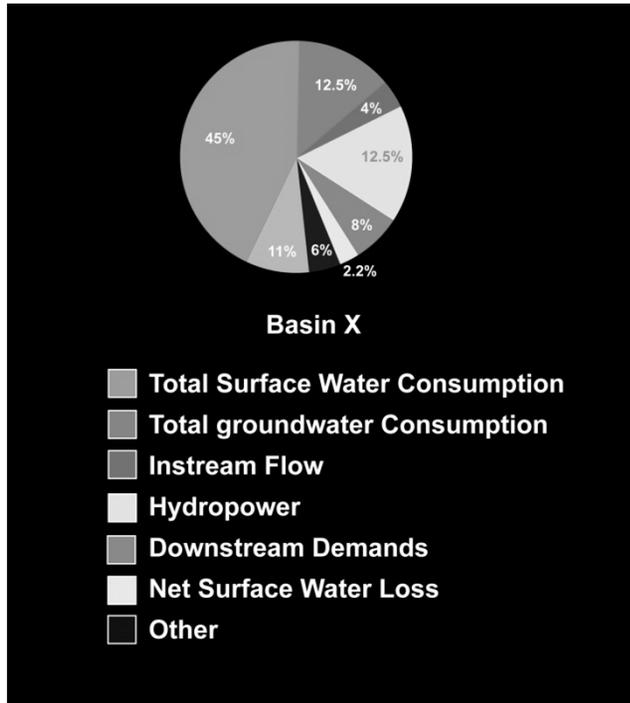
Statewide: Demand

Average Total Demand



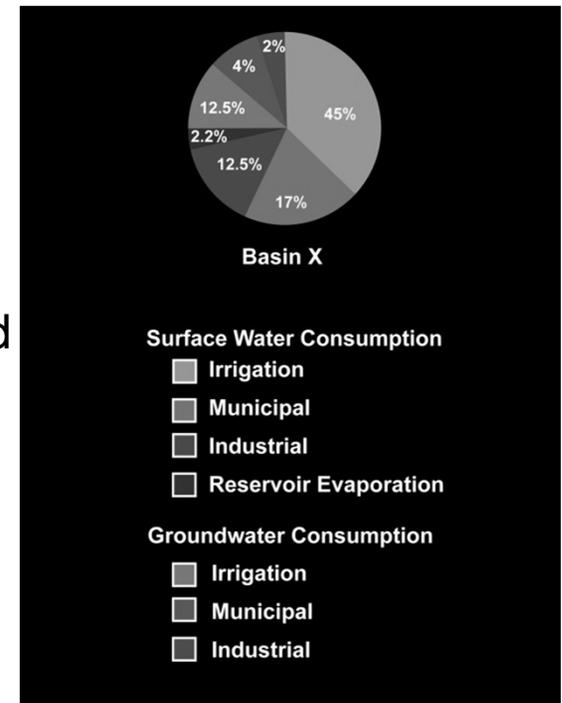
The chart on this slide depicts fictitious data.

Statewide: Nature & Extent of Use



Average Long-Term Total Demand by Basin by Category

Average Long-Term Surface Water Consumption and Groundwater Consumption by Basin by Category



The charts on this slide depict fictitious data.

INSIGHT – Basin & Sub-Basin Data (12 Basins)

- ✓ Big Picture
- ✓ Supply
- ✓ Demand
- ✓ Nature & Extent of Use
- ✓ Balance

INSIGHT

An Integrated Network of Scientific Information & GeoHydrologic Tools

HOME
ABOUT
STREAM FLOW
MODELING DATA

Explore the Loup Basin

Use this page to get started using the INSIGHT data and information.

Begin by exploring chart information for the Loup basin on the tab area below. If you'd rather learn more about one of the Loup's sub-basins, use your mouse to hover over the map to the right and click on the sub-basin you want to learn more about.

If you prefer to see the name of the basins in a list, click on the down arrow located to the right of the SELECT BASIN area to see a menu of basin names. Clicking on one of these basin names has the same effect as clicking on the basin in the map.

Basin Overview
Supply
Demand
Nature & Extent of Use
Balance

At a Glance

Basin: **LOUP**

Area (square miles): **1,234,567**

Population: _____

Current Supply Sources: **sources**

Current Water Demand: **1,293,871 acre-feet/year (19% of state total)**

Largest Demand Sector: **largest sector (63% of regional total)**

Projected Demand: **1,293,872 acre-feet/year**

Growth (1999-2010): **1 acre-feet/year**

Average Demand by Sector

	Surface Water	Groundwater
Irrigation	825,541 18%	825,541 18%
Municipal	465,156 22%	465,156 22%
Industry	45,565 4%	45,565 4%
Hydropower	344,504 16%	344,504 16%
Instream Flow	1,445,565 50%	1,445,565 50%

The Loup Basin is located in central Nebraska, and is entirely contained within the state. The Loup Basin, with an area of approximately 14,200 square miles, has more area in Nebraska than any other basin.

At its farthest western extent, the Loup Basin boundary is about halfway between Alliance, Nebraska, and Hyannis, Nebraska, in Sheridan and Garden Counties. The Loup River headwaters are about seven miles northwest of Hyannis, Nebraska. The basin is defined as draining to the confluence of the Loup River and Beaver Creek, about 25 miles upstream from Columbus, Nebraska. The Loup River extends beyond the basin boundary to its junction with the Platte River at Columbus, Nebraska.

According to the 2010 U.S. Census, the largest city in the basin is Broken Bow, with a population of about 3,600. In descending order, the next largest cities include St. Paul (2,300), Ord (2,100), Ravenna (1,400), and Fullerton (1,300).

The topography of more than half of the upstream end of the Loup Basin consists of sand hills, which are sand dunes stabilized in place by a grass cover. The downstream portion of the basin consists mostly of dissected plains, with small areas of upland plains. The upland plains are land that is flat to gently rolling and dissected plains are where streams have cut into former plains creating hilly land with steep slopes and sharp ridge crests, along with remnants of the plains on the hilltops. There are several valleys in the Loup Basin, which are the flat-lying areas along the Loup River and its major tributaries.

The primary aquifer in the Loup Basin is the Ogallala Formation, which consists of poorly sorted, generally unconsolidated clay, silt, sand, and gravel. The Ogallala Formation is part of a vast system of

Category	Value	Unit	Value	Unit
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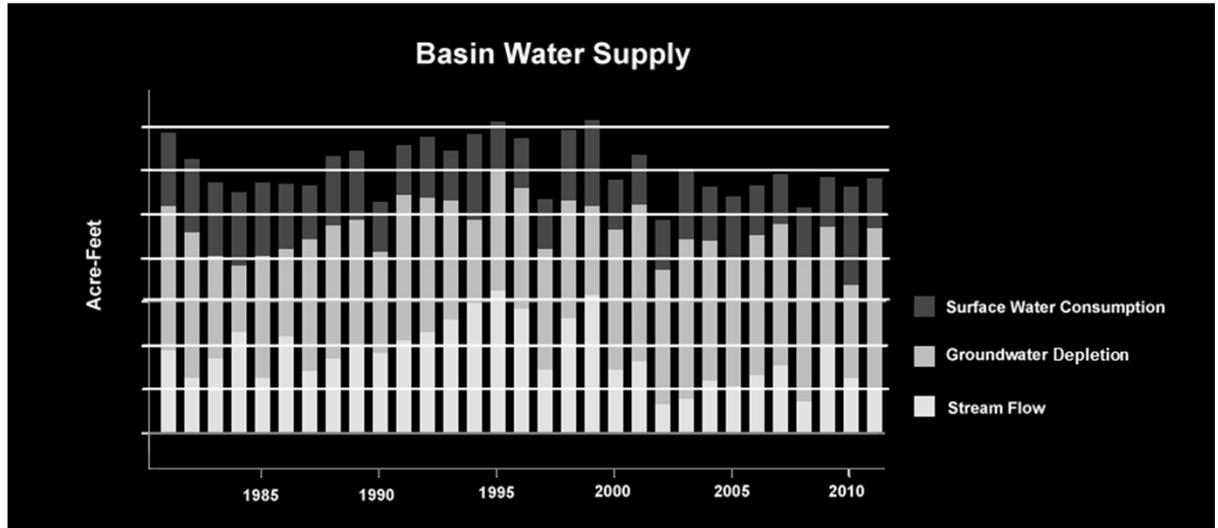
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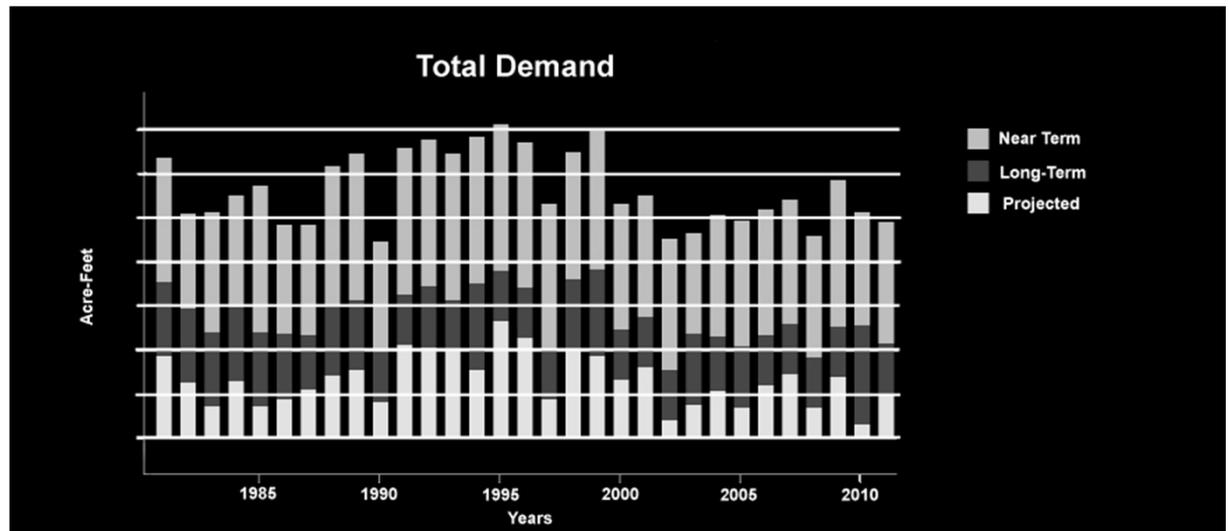
Data depicted on this slide is fictitious.

Basin/Sub-Basin: Supply & Demand

Basin Water Supply



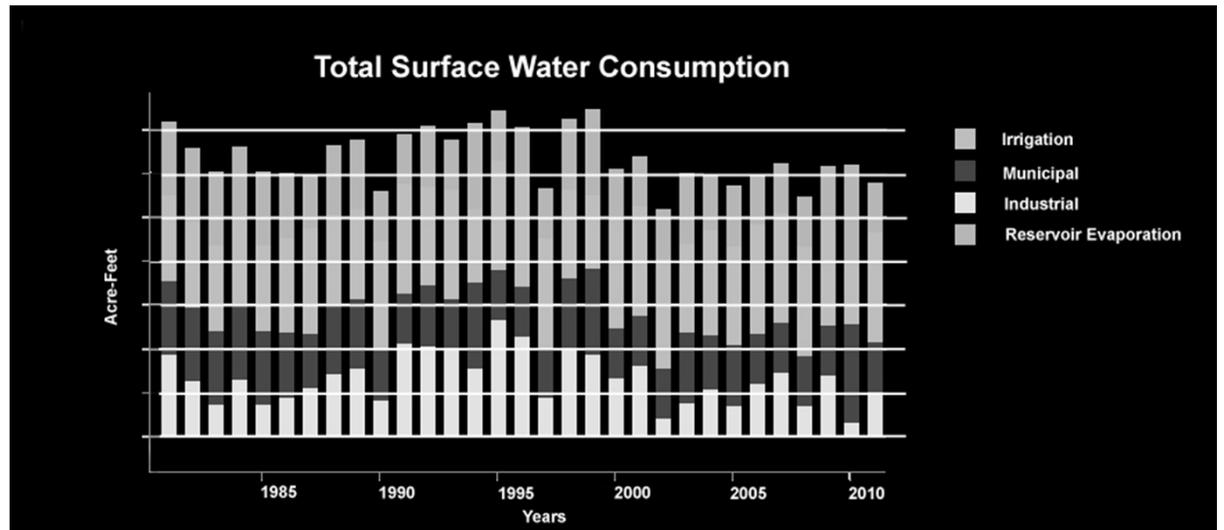
Total Demand



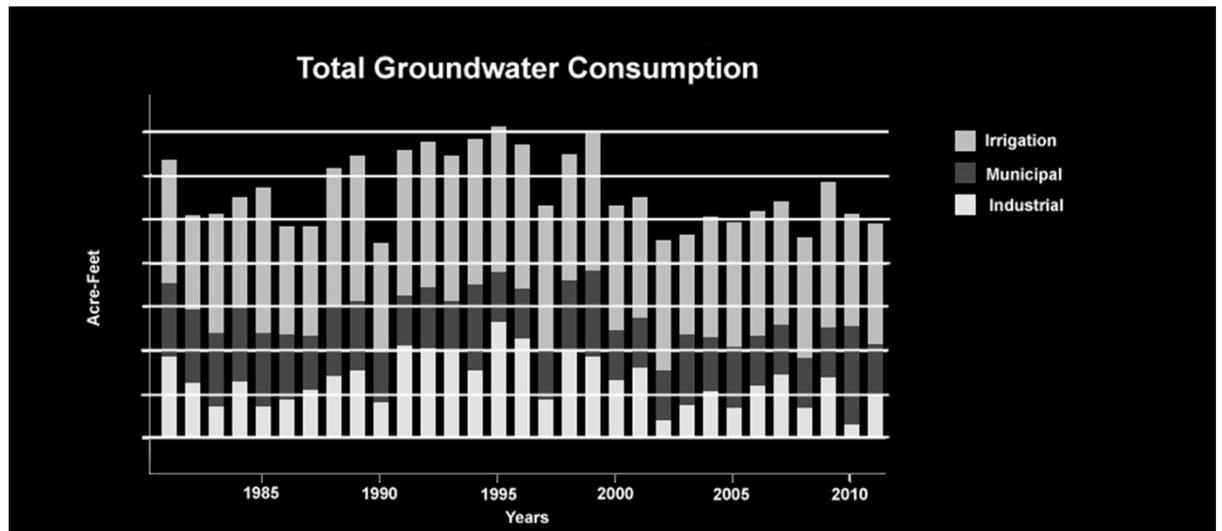
The charts on this slide depict fictitious data.

Basin/Sub-Basin: Demand

Total Surface Water Consumption



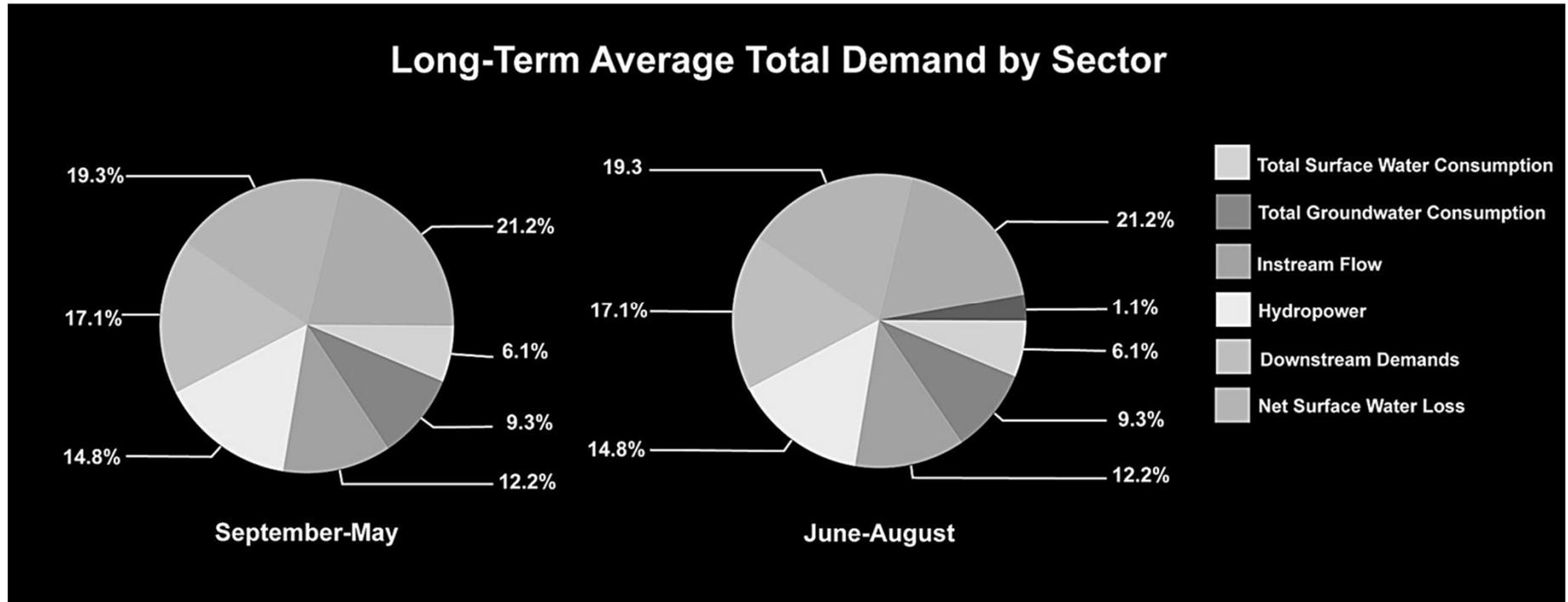
Total Groundwater Consumption



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Basin/Sub-Basin: Nature & Extent of Use

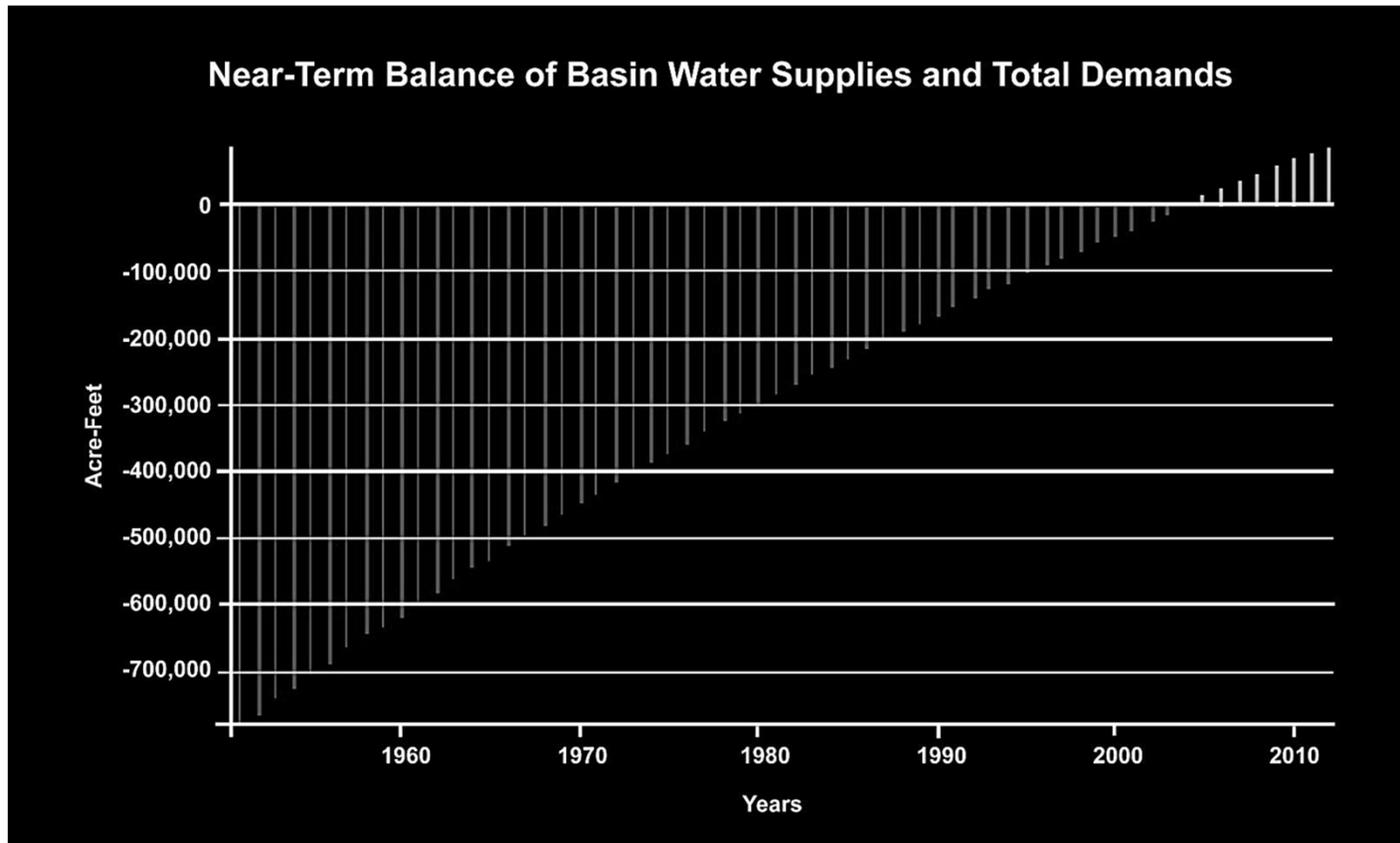
Long-Term Average Total Demand by Sector



The charts on this slide depict fictitious data.

Basin/Sub-Basin: Balance

Near-Term* Balance of Water Supplies and Total Demands



**INSIGHT will include long-term & projected balance data as well.*

The chart on this slide depicts fictitious data.

A Professional & Public Resource

- INSIGHT is designed to be a resource for professionals and the public
 - Professional resource = One-stop shop for hydrologic data and analyses maintained by the state
 - Public resource = Easy access to data pertaining to local basins and the water-related issues that affect them

INSIGHT will be available by the end of 2013

<http://dnr.ne.gov>



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