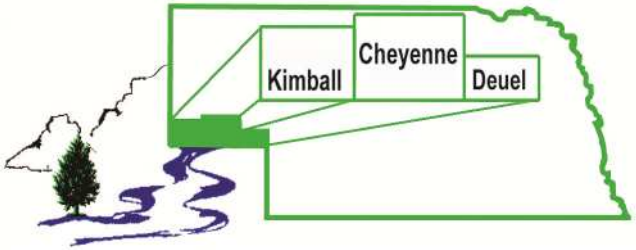
SOUTH PLATTE



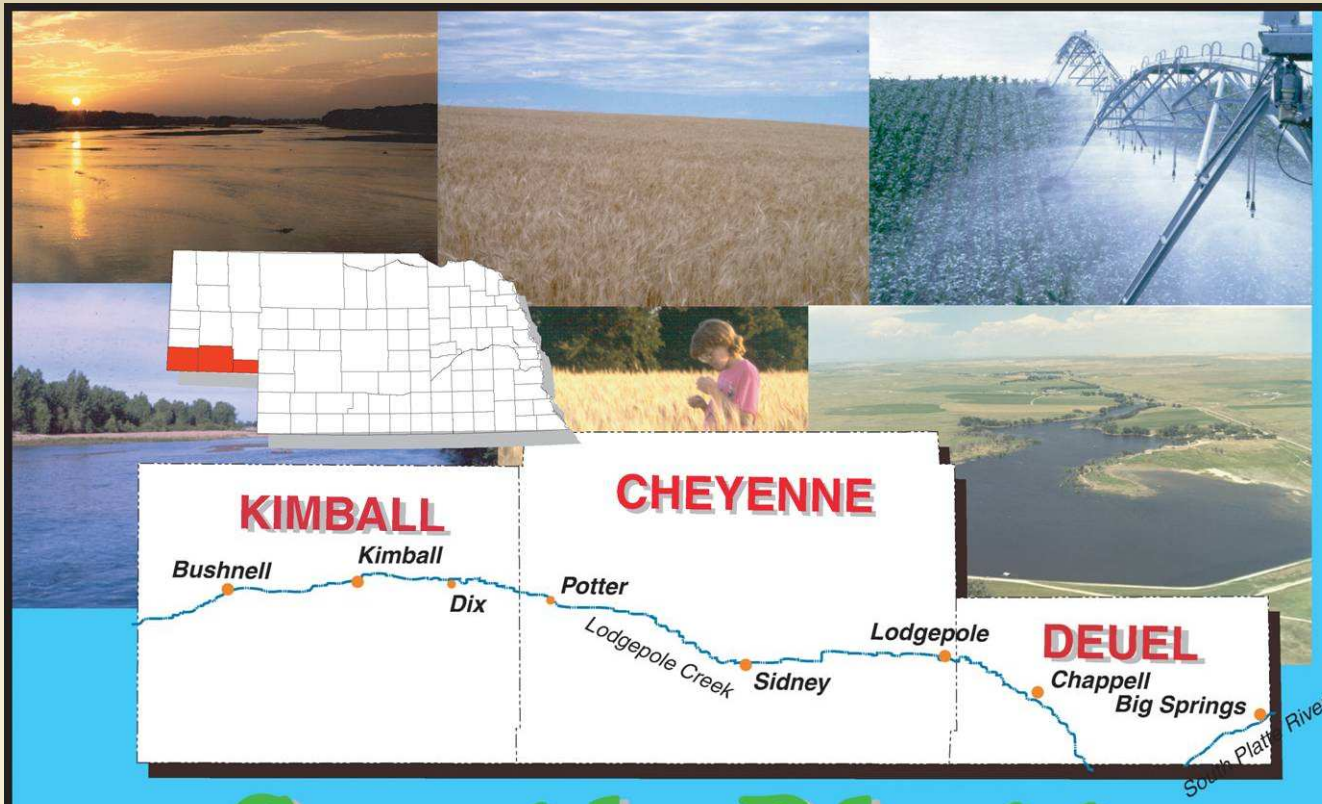
NATURAL RESOURCES DISTRICT

Overview of Water Issues, Projects/Programs and Water Funding Needs

Water Funding Task Force Meeting

Sidney, Nebraska

October 25, 2013



South Platte
Natural Resources District

Our Mission:

Formulate and instigate forward-looking plans and programs through a cooperative process that will provide for the long-term protection and enhancement of the district's natural resources while ensuring that major economic and social impacts are fully considered.

South Platte NRD

- Background
  - Geographically located in the southern portion of Nebraska's Panhandle and is comprised of an area over 1.65 million acres
  - Two distinct regions characterize the District
    - "Upland Plains", cut by the valley of the Lodgepole Creek
    - "South Platte River" creating the Platte Valley Lowlands
  - The District has many water-bearing formations. Among these formations, the Brule Formation of the White River Group and the Ogallala Group are principle aquifers

South Platte NRD

- Background Con't.
  - The climate throughout the District is primarily influenced by light precipitation (14 to 18 inches annually), a high rate of evaporation, and a wide range of temperatures
  - The contributions of agribusiness to the economy are substantial
    - The largest land use in the District is non-irrigated cropland, followed by rangeland and finally irrigated cropland

South Platte NRD

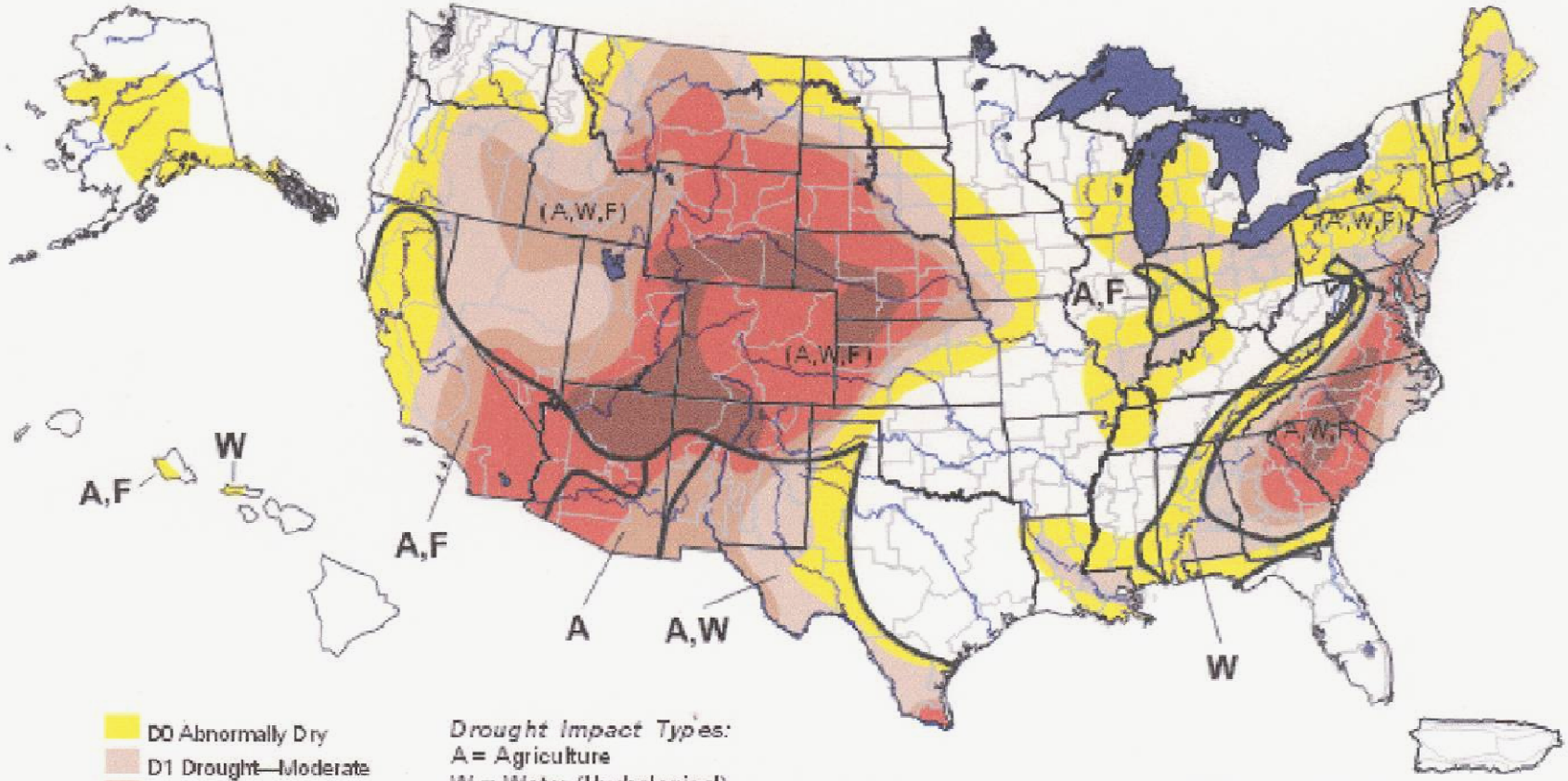
- Background Con't.
  - Both ground and surface water are used for irrigation within the District.
  - The Western Irrigation Canal in the South Platte Valley (Deuel County, NE) supplies most of the surface water for irrigation
  - The supply of ground water is vital to the economy of the District. The sole source of supply for domestic, municipality and industrial use comes from ground water

Challenges Regarding Water Resources

- Drought
- Ground Water Quality Issues
- Ground Water Declines

U.S. Drought Monitor

July 30, 2002
Valid 8 a.m. EDT



D0 Abnormally Dry
D1 Drought—Moderate
D2 Drought—Severe
D3 Drought—Extreme
D4 Drought—Exceptional

Drought Impact Types:
A = Agriculture
W = Water (Hydrological)
F = Fire danger (Wildfires)
Delineates dominant impacts
(No type = All 3 impacts)

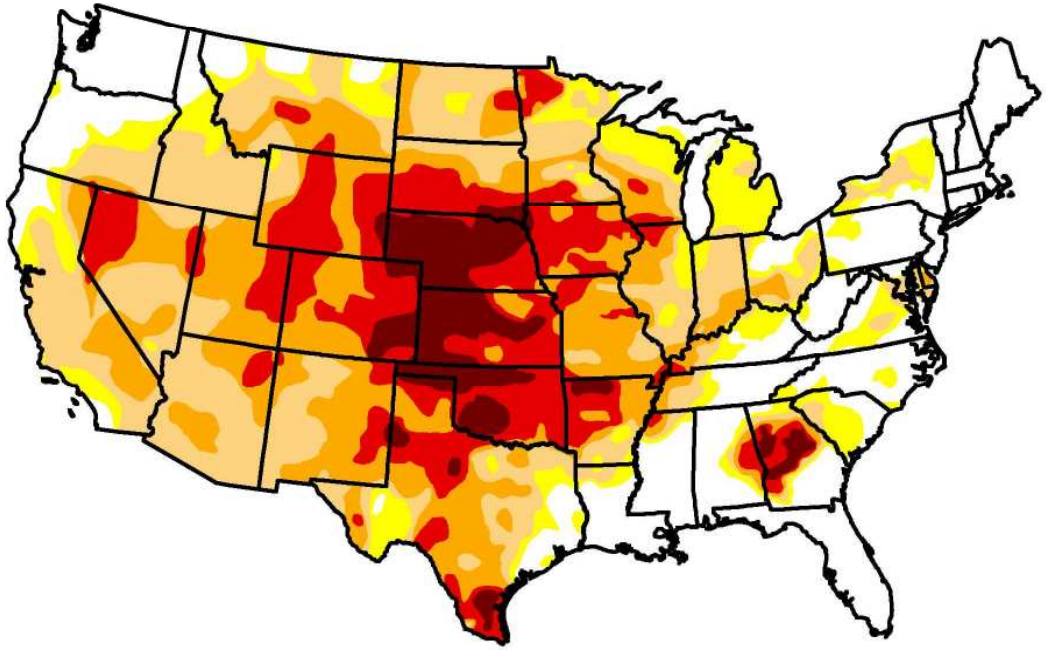
The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

http://drought.unl.edu/dm

Released Thursday, August 1, 2002

Author: *Rich Tinker, CPC/NWS/NOAA*

U.S. Drought Monitor
CONUS



September 25, 2012
(Released Thursday, Sep. 27, 2012)
Valid 7 a.m. EST

Drought Conditions (Percent Area)

	None	D0-D4	D1-D4	D2-D4	D3-D4	D4
Current	23.41	76.59	65.45	42.12	21.48	6.12
Last Week *9/18/2012*	21.85	78.15	64.82	41.07	20.74	5.96
3 Months Ago *6/26/2012*	27.99	72.01	51.13	30.73	8.54	0.41
Start of Calendar Year *1/3/2012*	50.41	49.59	31.90	18.83	10.18	3.32
Start of Water Year *9/27/2011*	56.45	43.55	29.13	23.44	17.80	11.37
One Year Ago *9/27/2011*	56.45	43.55	29.13	23.44	17.80	11.37

Intensity:

- D0 Abnormally Dry
- D1 Moderate Drought
- D2 Severe Drought
- D3 Extreme Drought
- D4 Exceptional Drought

The Drought Monitor focuses on broad-scale conditions. Local conditions may vary. See accompanying text summary for forecast statements.

Author(s):
Anthony Artusa
NOAA/NWS/NCEP/CPC

USDA National Drought Mitigation Center

http://droughtmonitor.unl.edu/


I WISH TO SAVE THE MINNOW!
I WISH FOR ABUNDANT CROPS!
I WISH FOR NEW INDUSTRY!
I WISH FOR MORE GOLF COURSES!
I WISH TO RESTORE RIPARIAN HABITAT!
SNAP!
LODGEPOLE CREEK VALLEY

The Longest Creek in the U.S.

"…there was not a drop of water in the creek-bed, nor did I ever in fact see a drop of water in it.

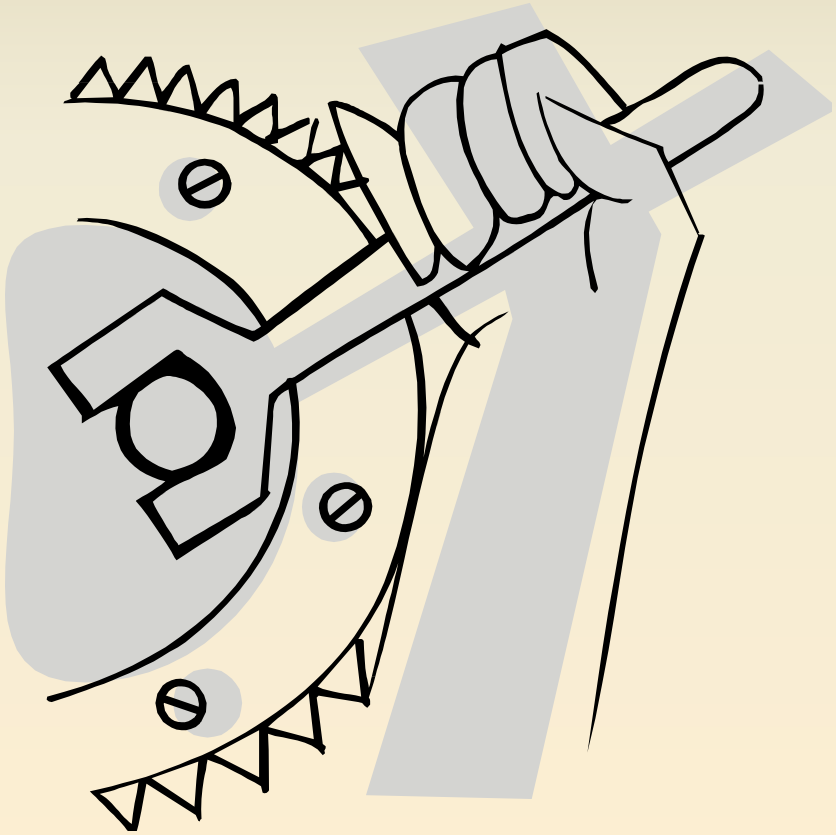
We could get water by digging, but we had to dig down two or more feet, and the supply seemed

at this time to be scanty."

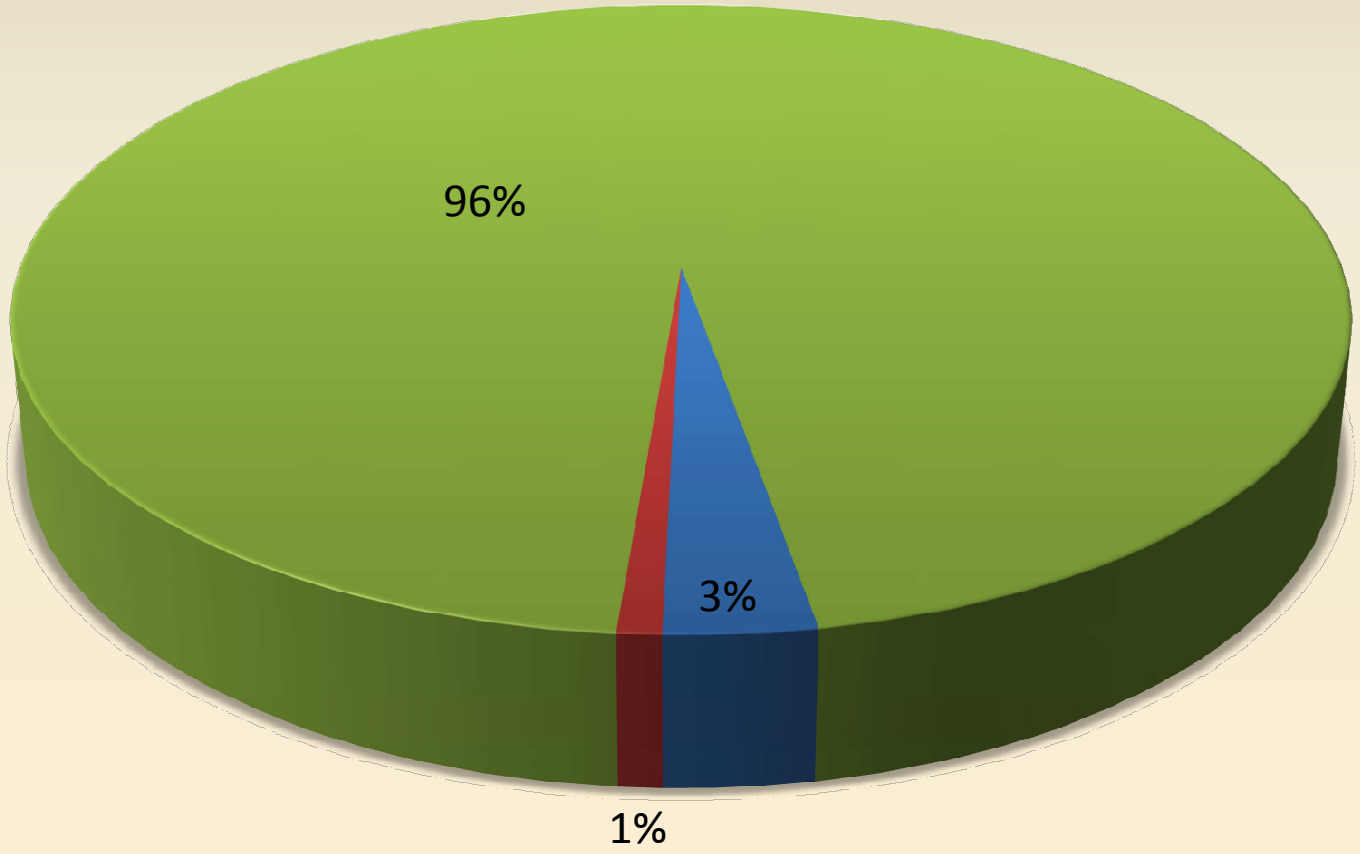
Chapter 26 of the book "The Indian War of 1864" by Eugene Ware near Sidney

South Platte River - Deuel County, NE

What is being done?



Ground Water Accounting and Usage

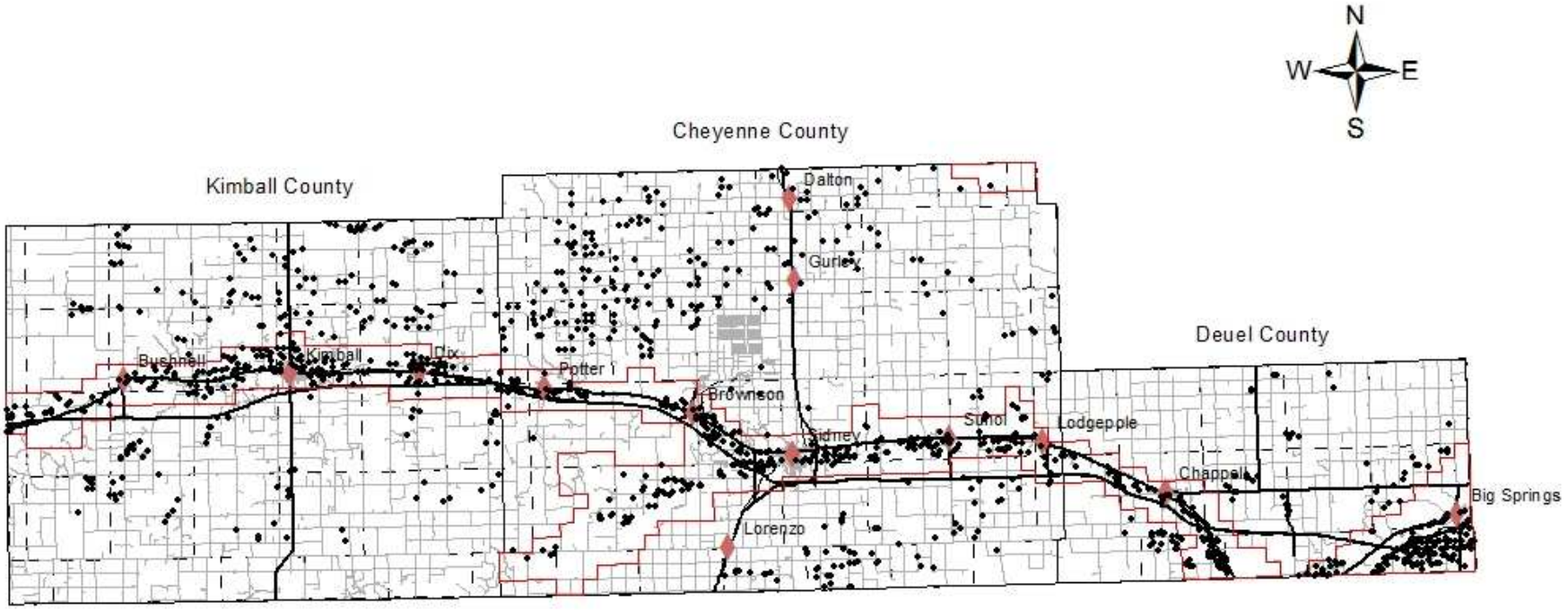


South Platte NRD

- Agricultural/Irrigation Ground Water Usage
  - Districtwide
    - Approximately 133,000 Certified Irrigated Acres
      - Irrigated Acres Certified in 2002
      - About 1,100 Active Irrigation Wells
      - About 1.5% of the Irrigated Acres in Nebraska

2009	2010	2011	2012
8.39”/acre	9.99”/acre	9.78”/acre	17.48”/acre

South Platte NRD
Distribution of Irrigation Wells



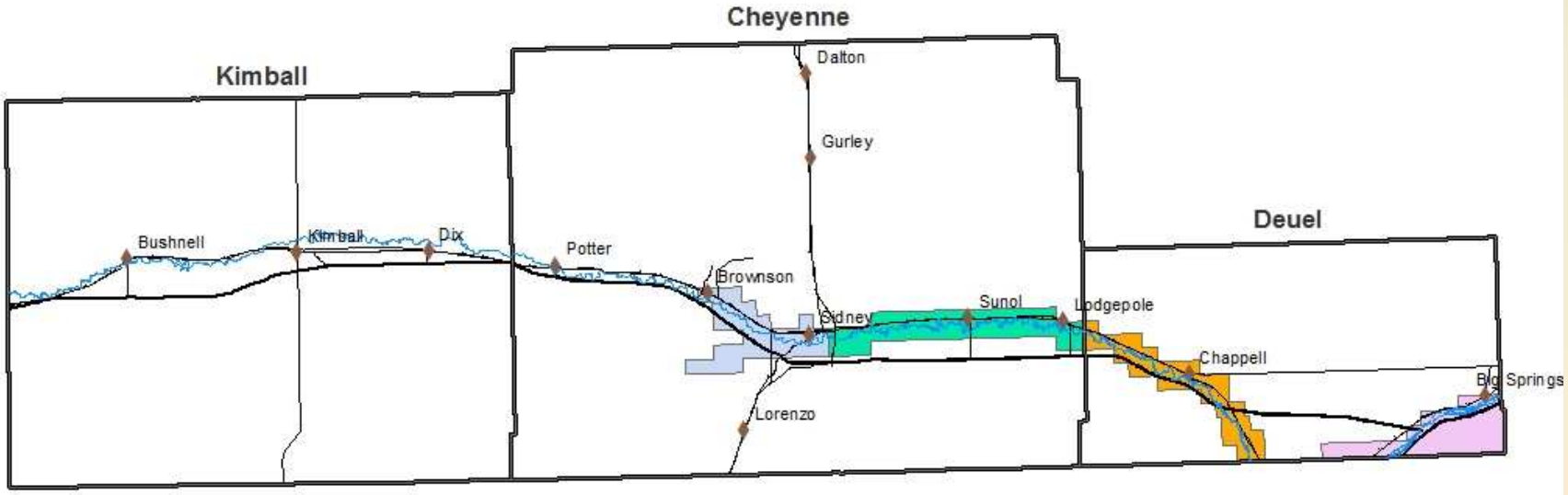
South Platte NRD

- Goals
  - Maintain sufficient water supplies (quality and quantity) for use by present and future generations.
  - Maintain, enhance and protect the regions agricultural economy and the viability of it’s cities and villages.
  - Promote the growth of economic activities while seeking to avoid adverse impacts on the environment.

South Platte NRD

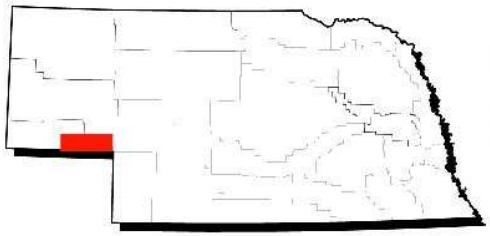
- Proactive Approach
  - Ground Water Quality Monitoring
  - Tracking Ground Water Levels
  - Districtwide Ground Water Management Area Rules and Regulations
    - General Provisions and Procedures for Enforcement
    - Ground Water Quality Controls
    - Ground Water Quantity Controls
  - Integrated Management Plan (IMP)
  - Western Water Use Management Model
  - Agriculture, Municipal and Commercial/Industrial Water Usage Accounting
  - Advisory Committees
  - Information and Education Components

1980's Expansion of Ground Water Monitoring and Observation Wells
1990's Water Quality Areas



South Platte NRD

- Quality Phases
  - Phase I: 65% MCL
    - Training Certification: Irrigation and Nitrogen Management
  - Phase II: 80% MCL
    - Samples: soil, water, manure, biosolids
    - Annual Reporting
  - Phase III: 95% MCL
    - Fertilizer prohibited between Oct. 1 and Feb. 28
    - Spring fertilizer: split or inhibitor



South Platte Natural Resources District
Ground Water Quality Management Subareas

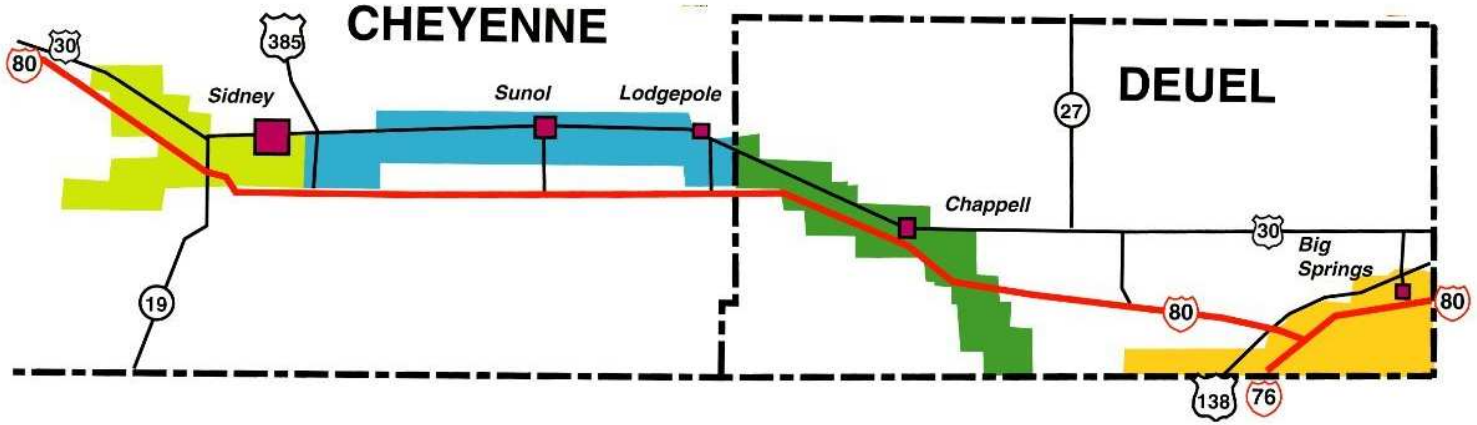
Scale in Miles
2 0 2 4 6 8 10

Sidney Ground Water Management Subarea (Phase 2)

East Lodgepole Valley Ground Water Management Subarea (Phase 1)

Lodgepole Valley Ground Water Management Subarea (Phase 1)

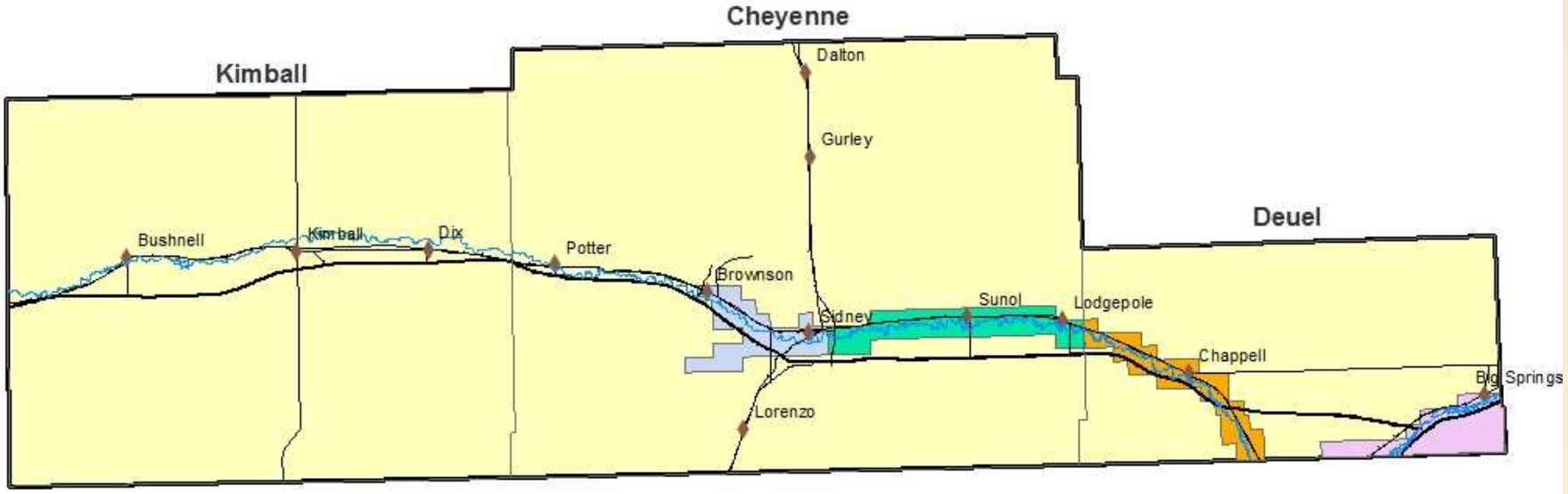
South Platte Valley Ground Water Management Subarea (Phase 2)



Phase 1: Workshops in nitrogen and irrigation management

Phase 2: Workshops and 3 ft. soil samples, irrigation water samples, manure samples

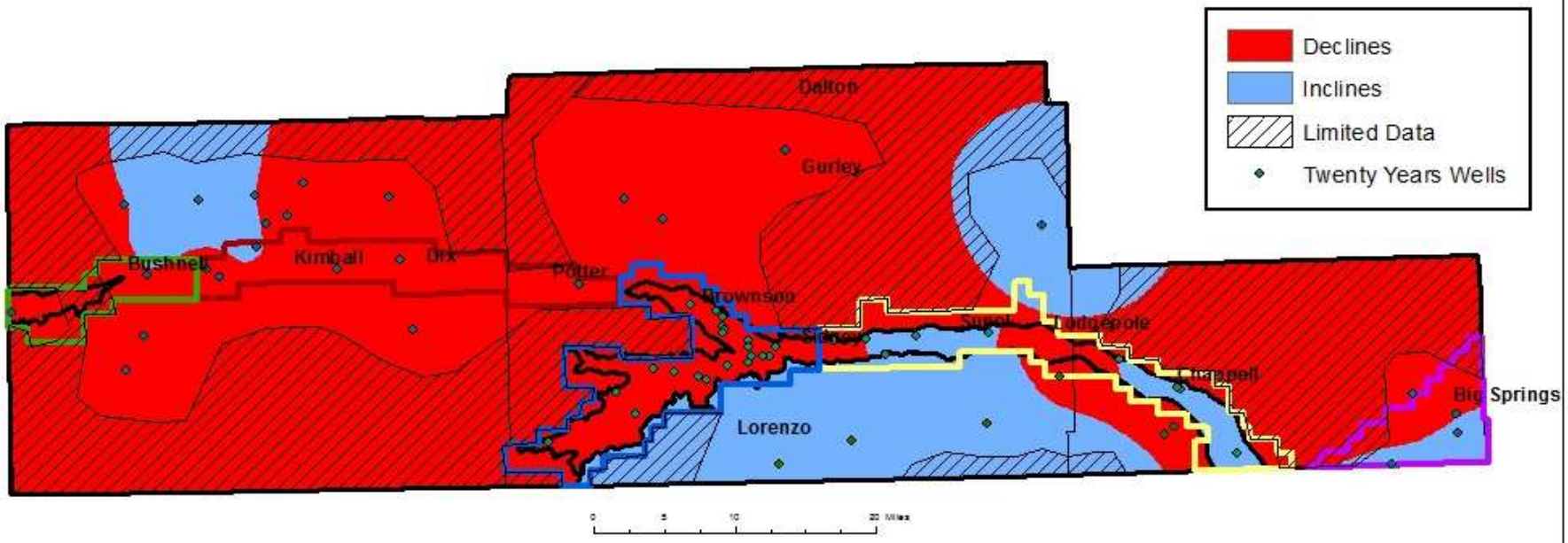
2001 Districtwide Area Established



WATER QUANTITY / INTEGRATED MANAGEMENT PROGRAM

Period of Transition and Balance between the District's Ground Water Management Area Rules and Regulations and the Integrated Management Plan (IMP) process pursuant to the Nebraska Ground Water Management and Protection Act

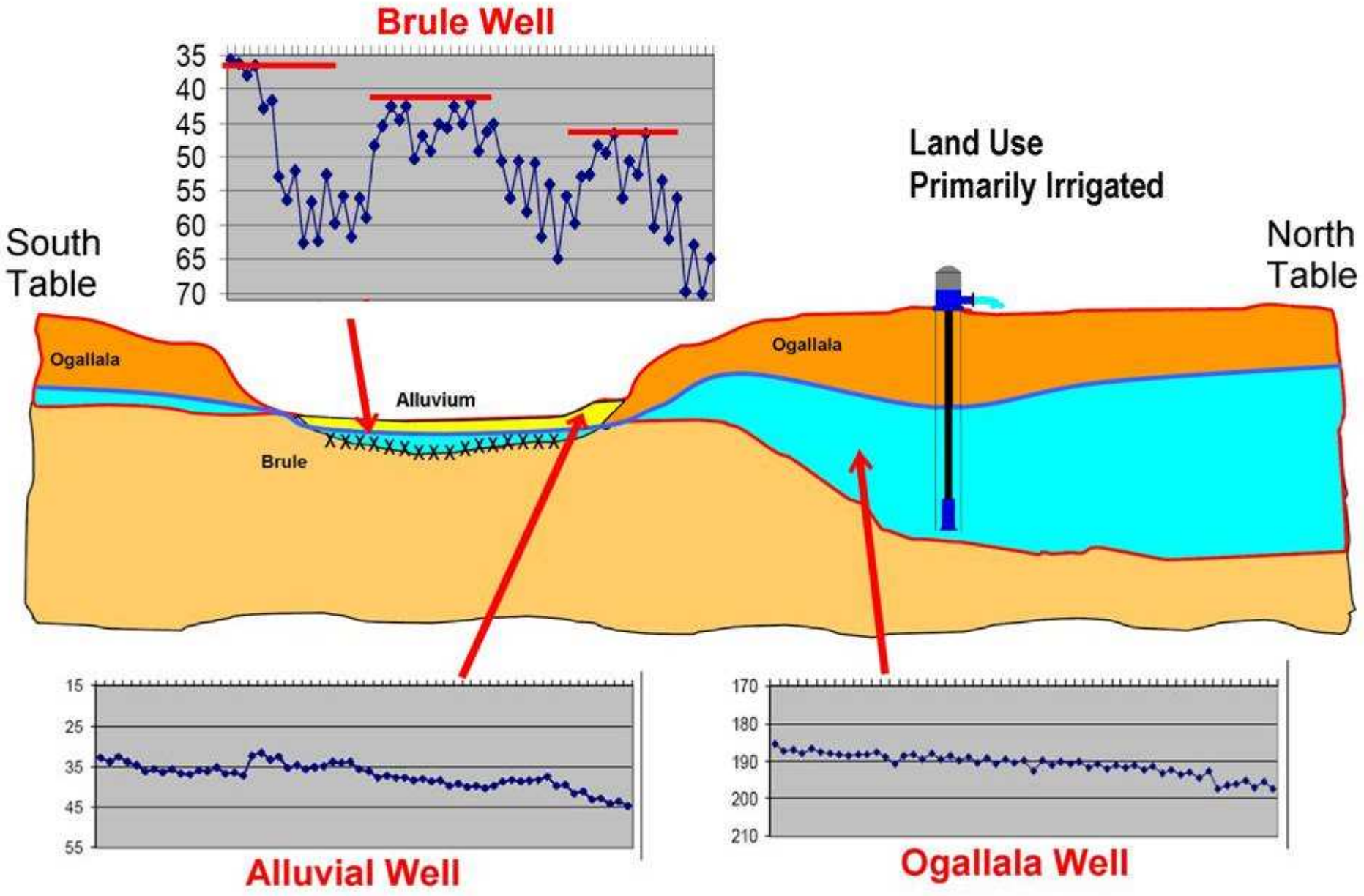
20 Year
Inclines vs. Declines



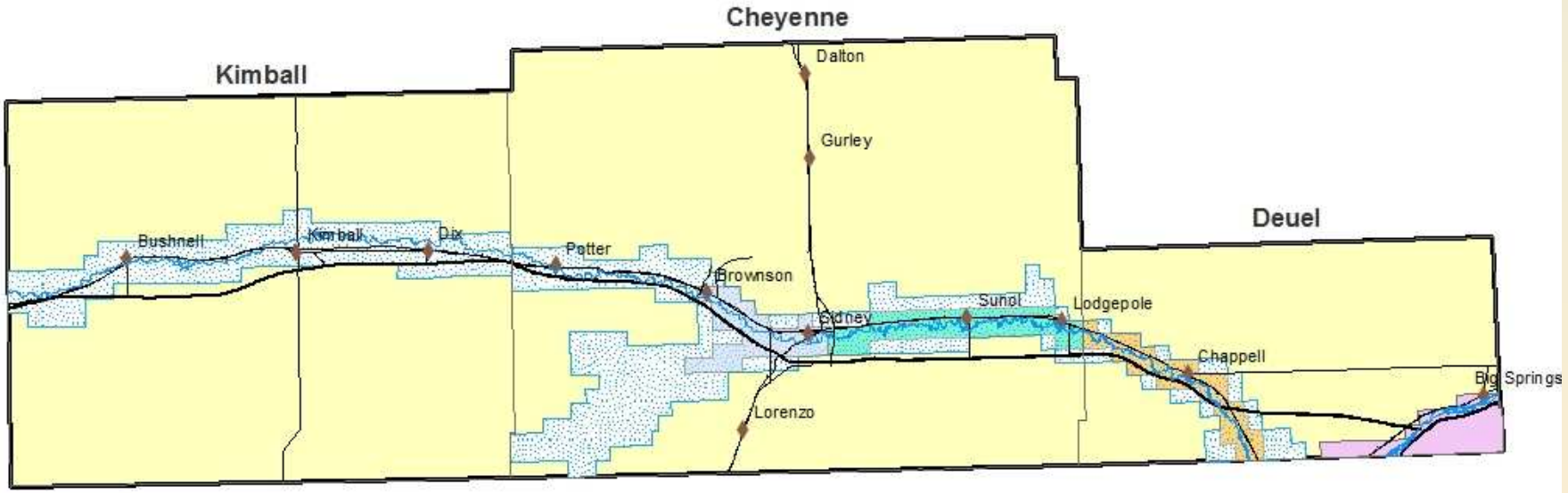
SOUTH PLATTE
NATURAL RESOURCES DISTRICT

Spring 1992- Spring 2012

Diagrammatic Cross Section of the South Platte NRD



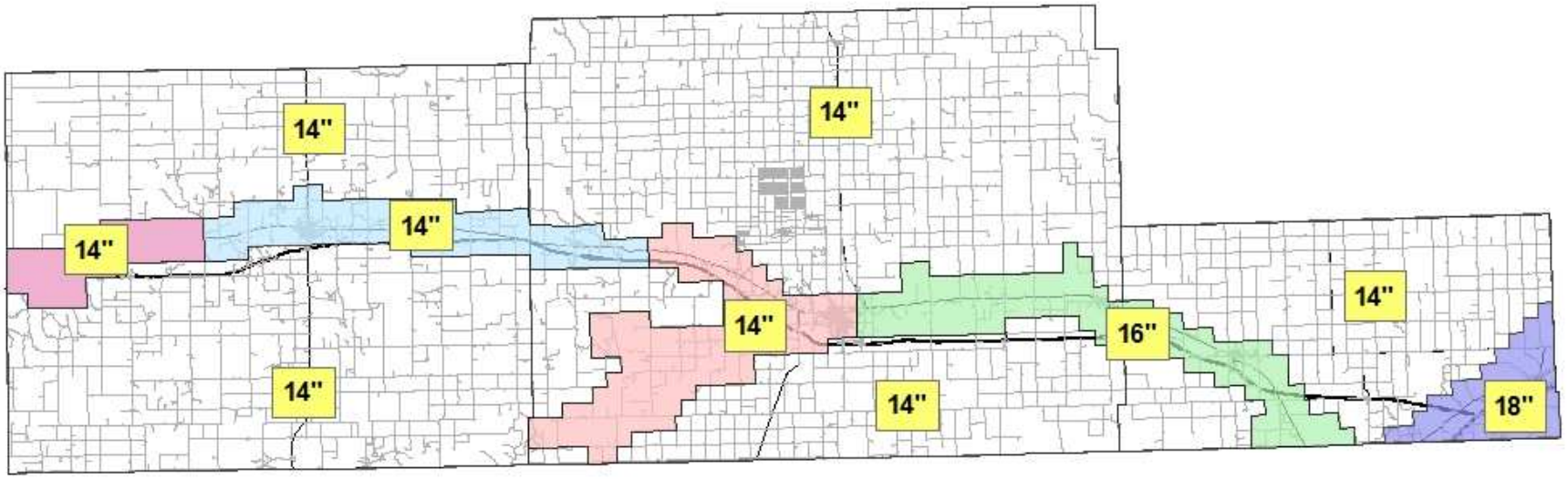
2002 Lodgepole Creek Subarea




GALLONS PER MINUTE
0
100
200
300
400
500
600
700
800
900
1000
1100
1200
1300
02971
GALLONS x 100
HEMET, CALIFORNIA
McCROMETER

South Platte Natural Resources District

Allocation Subareas & Annual Base Allocations for the 2013 through 2015 Allocation Period

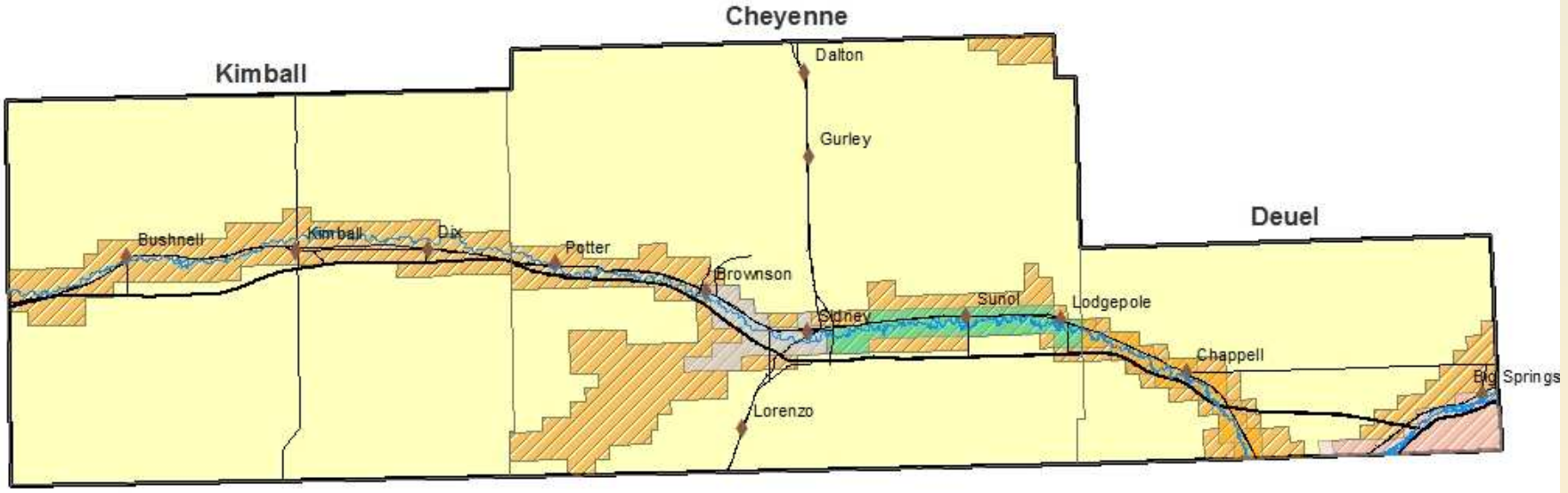


Legend

- A - Wyoming State Line to Oliver Reservoir (RD 27)
- B - Oliver Reservoir to Buffalo Bend (RD 87)
- C - Buffalo Bend to Sidney (RD 115)
- D - Sidney to Colorado State Line
- E - South Platte Valley
- F - Tablelands
- Start 2013

03/20/2012

2004 – LB 962 Designations

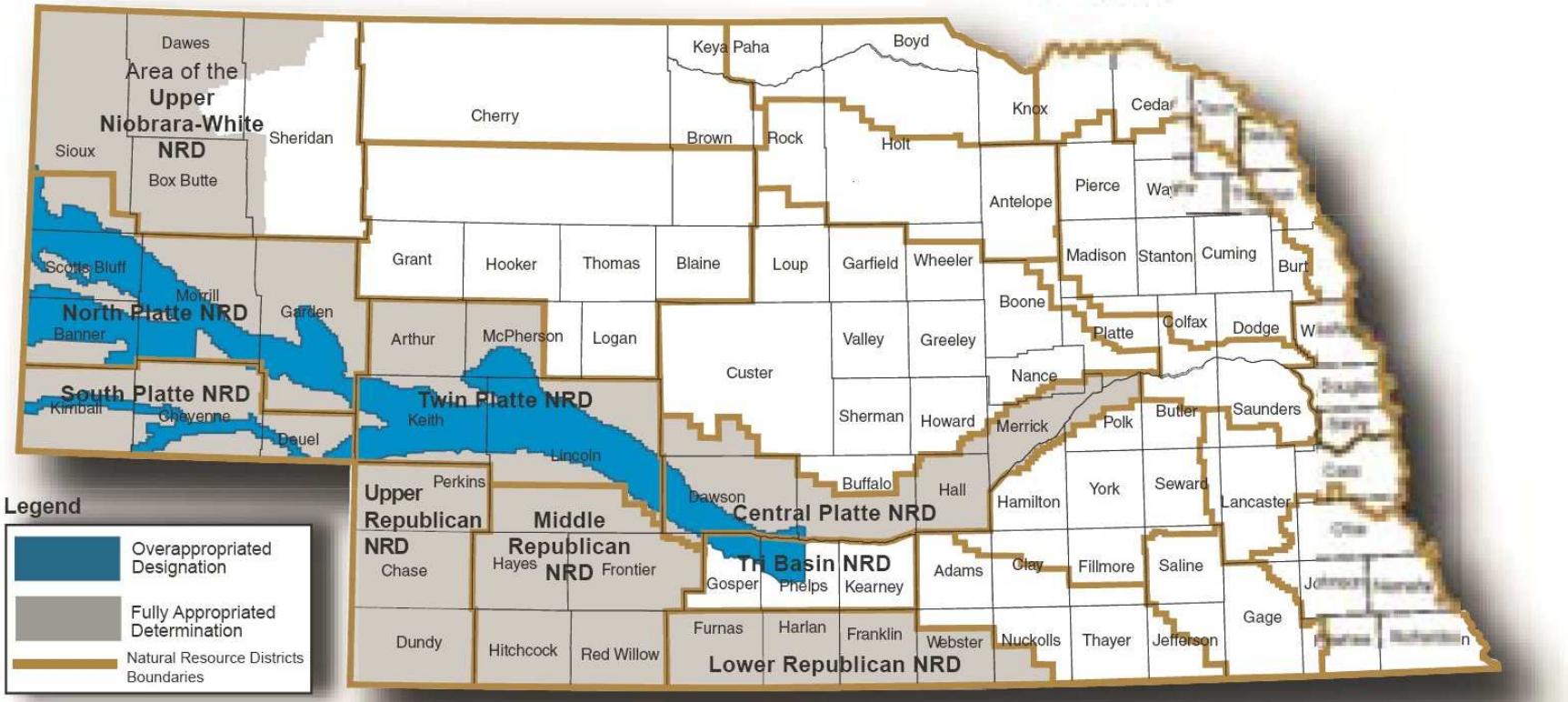


Effect of LB 962 on Integrated Management Planning (IMP) in the South Platte NRD

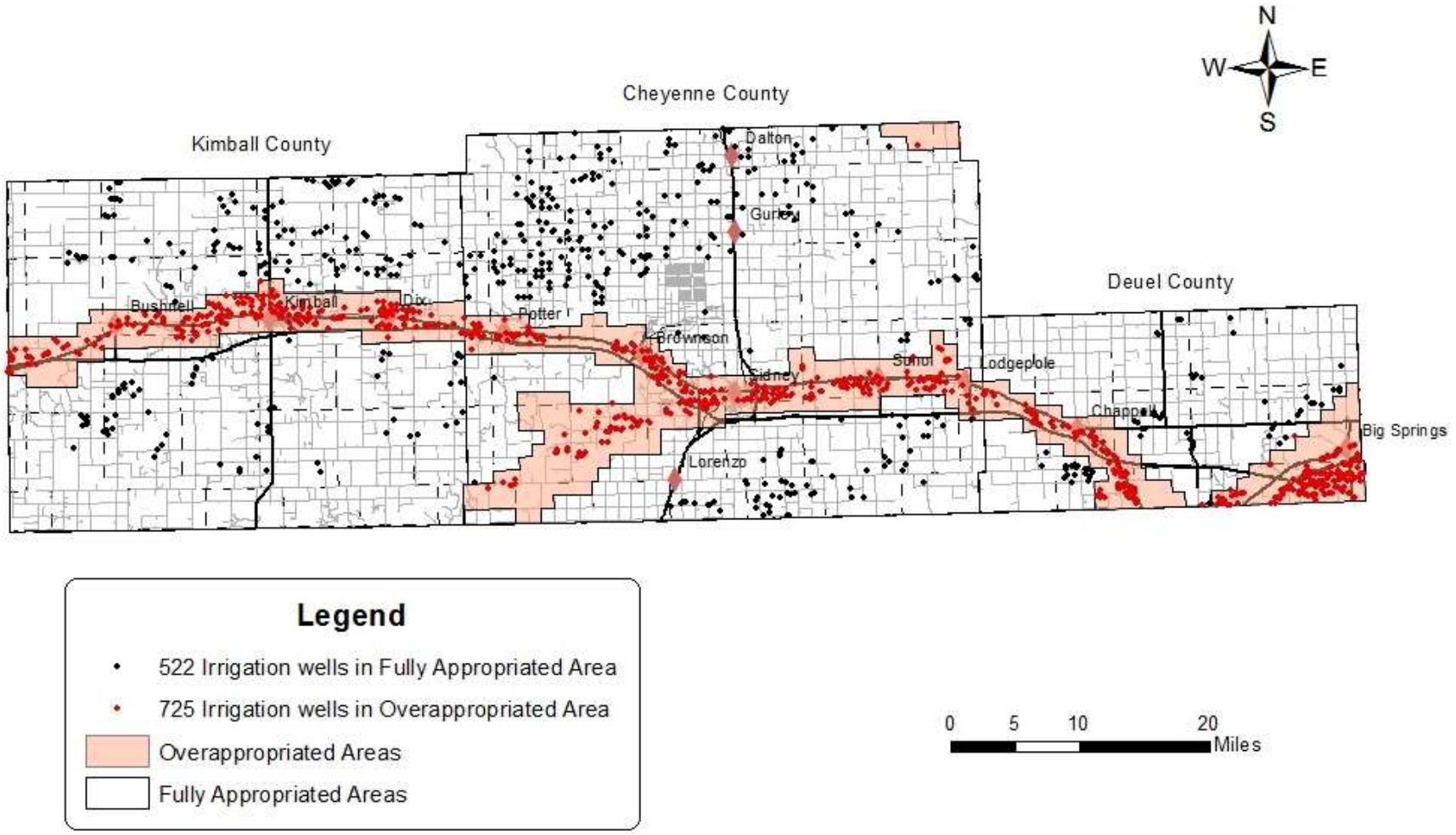
- July 16, 2004: The entire SPNRD was preliminarily determined to be “fully appropriated”
- The Lodgepole Creek Integrated Ground Water Management Subarea and the South Platte River Valley declared an “overappropriated” area
- Stays were placed on new water uses
- 2008 SPNRD and NDNR adopted first IMP. The plan was amended in 2009

Fully appropriated areas must find sustainable level of use, Overappropriated areas must return to 1997 level of use (700 acre-feet) and eventually to Fully Appropriated statues

Areas Subject to Joint DNR/NRD Integrated Management Planning Process



South Platte NRD
Irrigation Wells in
Fully and Over Appropriated Areas



Funding Sources

- SPNRD Budgeted General Funds
- Nebraska Soil and Water Conservation Program Funds (NSWCP)
- Natural Resources Water Quality Funds (NRWQ)
- Nebraska Environmental Trust Funds (NETF)
- Platte Basin Habitat Enhancement Program Funds (PBHEP)
- Interrelated Water Management Plan Program Funds (IWMPPF)
- Water Well Decommissioning Funds
- Water Resources Cash Fund
- Clean Water Act 319 Non-Point Source Funds
- DOI-Bureau of Reclamation Funds
- Agricultural Water Enhancement program (AWEP)
- Environmental Quality Improvement Program Funds (EQIP)

Funding Needs

- Western Water Use Management Modeling Effort
- Permanently Retiring/Decertifying Irrigated Acres and Water Banking Activities
- Oliver Reservoir Project (IMP)
- South Platte River Recharge/Augmentation Projects

Oliver Reservoir Project

Oliver Reservoir

August 2013

South Platte River Recharge/Augmentation Projects

- Western Canal Out Flow Gauge to South Platte River – Installed by DNR

South Platte River - Deuel County, NE

South Platte River Recharge/Augmentation Projects

Re-use Pits Recharge Project

Using existing structures to recharge the under ground aquifer

Questions? Comments

Rod L. Horn, General Manager
South Platte Natural Resources District

P.O. Box 294
Sidney, NE 69162

Cell # 308-249-5671
Office # 308-254-2377

Protecting Lives, Protecting Property, Protecting the Future

SOUTH PLATTE
Kimball
Cheyenne
Deuel
NATURAL RESOURCES DISTRICT