BELLE FOURCHE RIVER WATERSHED PARTNERSHIP
Belle Fourche River Watershed
Belle Fourche Irrigation District

Projects

- 28 automated gates
- 25 real-time sites
- 13,000 feet of lining
- 16,144 feet of pipeline
- Upgraded water card order system
- Operational model
Belle Fourche Irrigation District
Existing Radio Network
Vale Automated Check

Vale 2005 Vs. 2006

Upstream Level (Ft)

2005 Nonautomated  2006 Automated
Producer Irrigation Projects

- 34,470 feet of pipeline
- 17 sprinkler systems
Range Implementation Projects

- 237,749 feet of pipe
- 48 tanks
- 41,723 feet of fence
- 8 wells
Range Acres Impacted

- Total range acres impacted by Belle Fourche River Watershed Partnership (BFRWP) 271,320
  - Planning on 120,564 acres
  - Implementation projects 200,680 acres (overlap with planning projects)
Producer Follow-Up

- Monitoring available upon request or need
  - Forage utilization
  - Qualitative photograph points
Uniqueness of Project

- Pooling resources
- Strengthening relationships between producers and state and federal agencies
- Creating additional conservation and economic opportunities
NRCS Conservation Innovation Grant
Project Overview

■ 3-Year Project
■ Components
  ■ Extensive weather network—installed three weather stations and nine rain gauge sites
  ■ Web-based irrigation scheduling consultant for individual fields (add ten producers/year)
Water Balance

- Water Balance = Current Balance + Rainfall + Irrigation - (ET × Kc × Ka)
- Rainfall—Collected From Installed Rain Gauges
- Irrigation—Entered by the Producer
- Evapotranspiration (ET) Estimates—Data From Installed Weather Instruments Input Into ASCE Penman Monteith Equation
- Kc—Crop Coefficient
- Ka—Plant Available Water Coefficient
Soil Moisture Sensors

- Project Will Provide Two Per Field

Soil Moisture Readings

Day

Soil Moisture

0 5 10 15 20 25 30 35 40
NRCS Rapid Watershed Assessment

- Rapid Watershed Assessment
  - Compile resource information
  - Identify and prioritize resource concerns
  - Identify best use of conservation implementation
  - Priority funding for NRCS Programs
Challenge to performing a watershed-based assessment is the integration of disparate data models into a common geospatial framework.
Proposed Implementation
Grants

- Agriculture Water Enhancement Program (AWEP)- $800,000/year Cheyenne and Belle Fourche Watersheds
- Cooperative Conservation Partnership Initiative (CCPI)