Garrison Diversion Conservancy District

Water-Related Topics Overview
Committee Meeting
August 12, 2009

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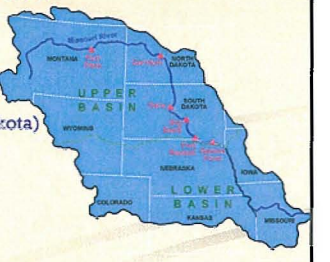
History – Federal Legislation

Flood Control Act of 1944

- Purpose
  - Flood Control
  - Navigation
  - Hydropower
  - Irrigation (North Dakota)
    - 1.2 million acres



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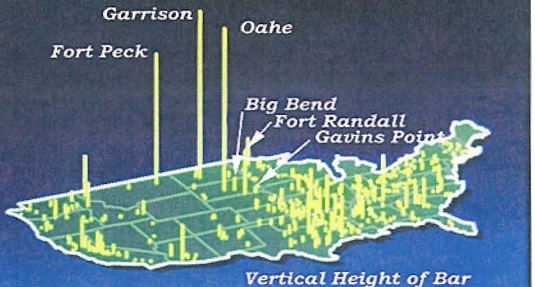
Storage Capacity of Corps Lakes



History – Federal Legislation Cont'd

- **Missouri – Souris Project**
  - 1,275,000 acres in Northwest North Dakota to be irrigated
- **1944-1965**
  - Soil surveys and studies indicated the soil in NW North Dakota was not suitable for irrigation according to federal irrigation standards

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History – Federal Legislation Cont'd

- **1965 – Congress enacted new legislation**
  - Garrison Diversion Unit (GDU)
    - Irrigation reduced to 250,000 acres
    - Added:
      - Municipal, rural and industrial water
      - Fish and wildlife development
      - Recreation
    - 1968-1984 construction of many features

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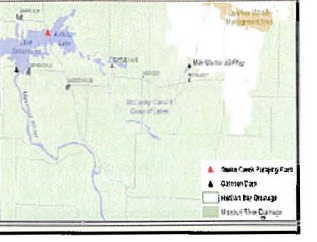
Construction of GDU Principal Supply Works

- **Snake Creek Pumping Plant**
- **Lake Audubon**
- **McClusky Canal**
- **New Rockford Canal**
- **Oakes Test Area**



Snake Creek Pumping Plant

- **Groundbreaking**
  - 1968
- **Completed**
  - 1976

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Snake Creek Pumping Plant

- **Uses**
  - Maintains water level in Lake Audubon
  - Provides water for fish & wildlife mitigation features
  - Provides water for the McClusky Canal and associated lakes

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McClusky Canal

- **Groundbreaking** - 1970
- **Completed** - 1976
- **74 miles long**
- **Designed to provide water to irrigate 250,000 acres**

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McClusky Canal

- **Physical Attributes**
  - 90 feet across the water surface
  - Normal depth – 17 feet
  - Series of 4 pools
  - Controlled by check structures
  - 5-foot elevation drop

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New Rockford Canal

- **Groundbreaking** - 1984
- **Completed** – 1991
- 44 miles long

Oakes Test Area

- **Completed in 1985**
- **Designed to irrigate** ~~5,000~~ 45,000 **acres of land**

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History – Federal Legislation Cont'd

- **Garrison Diversion Unit Commission**
  - Commission appointed – August 11, 1984
  - Commission Hearing - December 13 & 14, 1984
  - Commission Report – December 20, 1984
    - Resulted in 1986 GDU Reformulation Act

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History – Federal Legislation Cont'd

- **GDU Reformulation Act of 1986**
  - Reduced irrigation development to 130,940 acres
  - $200 million grant Municipal, Rural and Industrial (MR&I)
  - $20 million grant Tribal irrigation
  - $12 million grant Wetlands Trust
  - Enhancement of wildlife lands
    - 60,000 acres
  - Water treatment and recreation

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History – Federal Legislation Cont'd

- **Dakota Water Resources Act of 2000**
  - MR&I Grant Program
    - State - $200 million (total $400 million)
    - Tribal - $200 million
  - Recreation
    - $6.5 million grant
  - Natural Resources Trust
    - $25 million grant
  - Irrigation development
    - Reduced to 75,480 acres

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History – Federal Legislation Cont'd

- **Dakota Water Resources Act (cont)**
  - Red River Valley Water Supply Project
    - $200 million (reimbursable)
    - Needs & Options Report
    - Environmental Impact Statement (EIS)
  - Oakes Test Area
    - Title transfer 2 years after Record of Decision
  - Tribal Irrigation
    - ~~2,000~~ 17,580 acres

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Garrison Diversion Conservancy District

- **The Garrison Diversion Conservancy District was created in 1955, to construct the Garrison Diversion Unit (GDU)**
- **Special district created to work with the Bureau of Reclamation**

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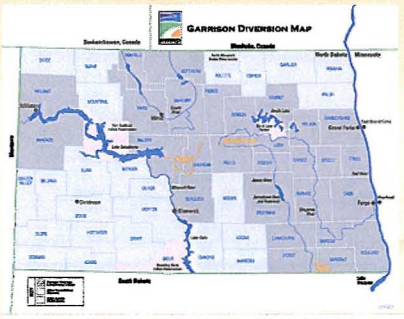

Mission: "To provide a reliable, high quality, affordable water supply for the benefit of North Dakota"

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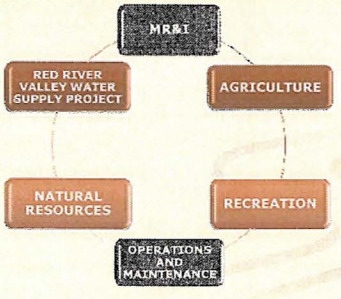
Programs



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Garrison Diversion Program Areas

- **MR&I Grant Program**
  - Garrison Diversion is fiscal agent, administers program
  - Joint committee between Garrison Diversion and State Water Commission

GARRISON DIVERSION BOARD MEMBERS	STATE WATER COMMISSION MEMBERS
Committee Chair Alan Walter	Commissioner Arne Berg
Director Ward Koeser	Commissioner Maurice Foley
Director Jeff Breker	Commissioner Larry Hanson
Director Thomas Olson	Commissioner Harley Swenson
Director Bill Ongstad	Commissioner Douglas Vosper
Secretary Dave Koland	Secretary Dale Frink

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Garrison Diversion Program Areas

- **Agricultural Irrigation**
  - Federally authorized – 75,480 acres
    - McClusky Canal Service Area Development – 24,700 acres
    - Oakes Test Area – 5,000 acres

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Garrison Diversion Program Areas

- **Recreation**
  - Matching Recreation Grant Program (mill levy funded)
    - $2.3 million since program began in 1990
  - Chain of Lakes Recreation Development
  - DWRA Recreation Program
    - $6.5 million grant program

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Recreation at Chain of Lakes

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Garrison Diversion Program Areas

- **Operations & Maintenance**
  - Maintain GDU Principal Supply Works
  - Assists with maintenance on other GDU facilities
  - 21 skilled employees (stationed at McClusky, New Rockford, & Oakes)
  - $3 million of specialized equipment

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Chain of Lakes -New Johns Day Use Area

McClusky Canal Work

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Devils Lake Outlet Maintenance

Annual installation and removal of intake

Garrison Diversion Program Areas

- **Natural Resources**
  - Wetland restoration
  - Wildlife mitigation
    - Every acre of habitat that was destroyed in the construction of GDU facilities was replaced with an acre of habitat
  - Wildlife areas
    - Lonetree Wildlife Management Area
    - Audubon National Wildlife Refuge
    - Arrowwood National Wildlife Refuge

Garrison Diversion Program Areas

- **Red River Valley Water Supply Project**
  - Garrison Diversion
    - Represents the state of North Dakota in EIS
    - Will construct the Project
  - State Water Commission
    - Makes the policy decisions - "The State Engineer will continue to be responsible for interstate, international, and general policy issues."

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Red River Valley Water Supply Project - History -

- **Collaborative Process**
  - 1994 - 2000
  - *Red River Valley Water Needs Assessment Phase II; Appraisal of Alternatives to Meet Projected Shortages* – released January 2000
  - Report concluded: "If no action is taken the Red River Valley would experience significant water shortages. Additional studies are needed before a preferred alternative can be selected."

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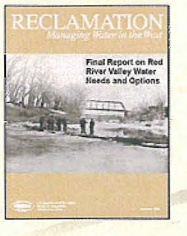
Red River Valley Water Supply Project - History -

- **Needs and Options Report**
  - 2001 - 2005
  - Quantified the water supply problem
  - Identified options to solve the problem from an engineering standpoint
  - Completed by the Bureau of Reclamation



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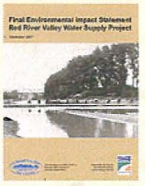
Red River Valley Water Supply Project - History -

- **Environmental Impact Statement**
  - 2003 - 2007
  - Completed jointly by the Bureau of Reclamation and State of North Dakota (represented by Garrison Diversion)



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Red River Valley Water Supply Project - History -

- **Lake Agassiz Water Authority**
  - Created by state legislature in 2003
  - Represents the local affected communities in the studies
  - Hired own engineer to look at study from their perspective
  - Meeting monthly since February 2004

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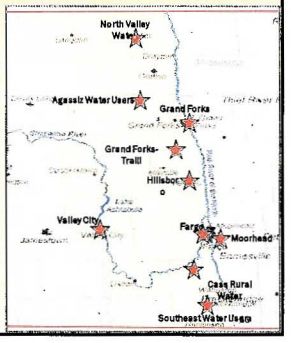
Red River Valley Water Supply Project - History -

Lake Agassiz Water Authority

- **Board of Directors**
  - 10 members
    - 5 – city members
    - 5 – rural members



Members of the LAWA Board of Directors

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Red River Valley Water Supply Project - History -

- **State Agency Meetings**
  - 9 meetings
  - 53 monthly status reports on the Project (August 2004 – July 2009
  - Agencies:
    - Governor's Office
    - Department of Transportation
    - Department of Health
    - Department of Commerce
    - Department of Agriculture
    - Department of Tourism
    - Parks & Recreation
    - ND Forest Service
    - State Water Commission
    - Game & Fish Department
    - ND Geological Survey

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State Process

- **State Water Commission**
  - Full day workshop held for commissioners regarding Project
    - October 18, 2006
  - Briefed about Project at 33 SWC meetings
    - Aug 2002 – August 2009
  - Received 53 Monthly Status Reports on the Project
    - August 2004 – July 2009
  - SWC official recommendation of GDU Import to Sheyenne River as preferred alternative
    - November 1, 2006

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State Process

State Legislature

- Natural Resources Committee
  - Received presentations at committee meetings in 2004, 2006, 2007 & 2008
- Red River Valley legislators
  - March 3, 2006, Bismarck
  - December 12, 2005, Fargo
  - January 24, 2006, Fargo
  - December 12, 2006, Fargo
  - December 21, 2006, Grand Forks
  - February 11, 2008, Fargo

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Red River Valley Water Supply Project - History -

- **State Preferred Alternative Selection**
  - October 4, 2005 - Lake Agassiz Water Authority – Recommend GDU Import to Sheyenne River Alternative as the Preferred Alternative
  - October 7, 2005 - Garrison Diversion Conservancy District - Concurred with the Preferred Alternative
  - November 1, 2005 - State Water Commission - Recommend the Preferred Alternative to Governor Hoeven
  - November 1, 2005 – Governor Hoeven – Selected the State Preferred Alternative and notified the Secretary of Interior

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Red River Valley Water Supply Project

Cost: $659.8 million

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Water Supply Problem

- Red River has historically gone dry for months at a time (five months in 1934)
- Region's only backup water supply is the storage capacity in Lake Ashtabula
  - Capacity 69,000 acre-feet
  - Current region's demand 66,000 acre-feet
- In a multi-year drought there is not enough water to meet today's demands
- As the region grows, the problem escalates

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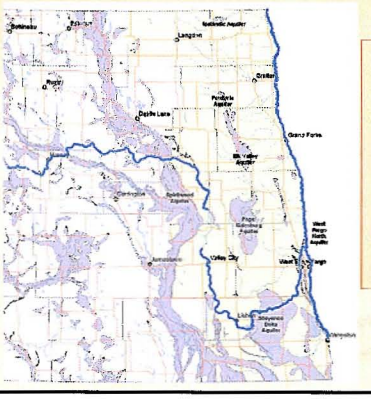

Project Area – Existing Water Supplies

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Potential Water Supplies

- **Studied:**
  - Minnesota groundwater
  - Lake of the Woods
  - Red Lake River
  - North Dakota groundwater
  - Devils Lake
  - Missouri River

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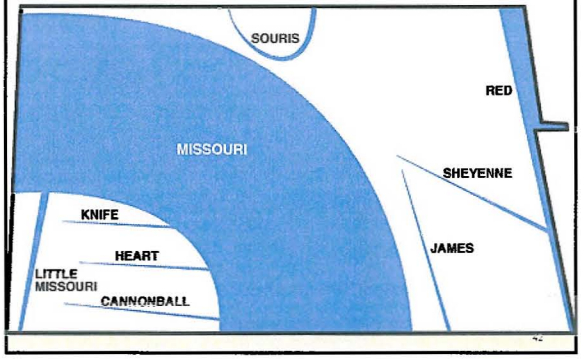
Average Discharge of Principal Rivers in North Dakota



Missouri River Facts

- Accounts for 95% of North Dakota's surface water
- 1930s flows – daily average 17,727 cfs
- North Dakota consumes slightly over 1% of what flows through the state

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Snake Creek Pumping Plant

Lake Audubon

McClusky Canal

Biota Treatment Plant

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Biota Treatment Plant

- Prevents spread of invasive species
- Located in Missouri River basin
- Meets the recommended treatment goals submitted by Canada
- Provides first lift out of canal to continental divide
  - Hydraulic head 346 feet

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Biota Treatment Plant → Buried Pipeline

- McClusky Canal to Sheyenne River
- Approximately 125 miles
- Operates by gravity

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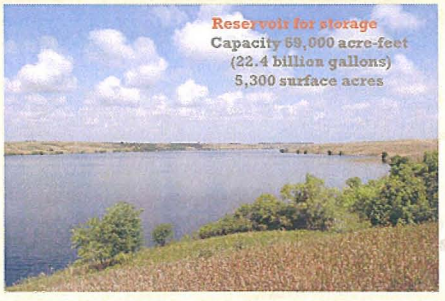
Buried Pipeline → Lake Ashtabula



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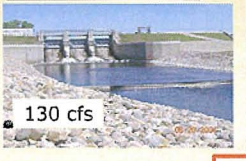
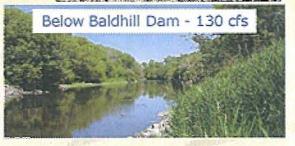
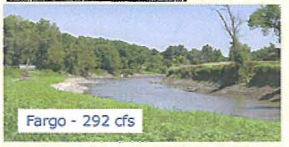
Baldhill Dam



Sheyenne River



Red River



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Red River Valley Water Supply Project - Current Efforts -

- **Comprehensive Report to Congress**
  - Submitted December 2008
  - Identified four points:
    - Selected alternative – GDU Import to Sheyenne River Alternative
    - Summarized Environmental Impact Statement
    - Effects on Minnesota and Missouri River states
    - Compliance with the Boundary Waters Treaty of 1909

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Red River Valley Water Supply Project - Current Efforts -

- **2009 Work Plan**
  - Right-of-Way
  - Permitting and Environmental Services
  - Operational Plan
  - Preliminary Design

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Red River Valley Water Supply Project

- **Next Steps**
  - Record of Decision
  - Missouri River authorization
- **Future Reclamation Contracts**
  - Master Repayment Contract
  - Red River Valley Water Supply Project Construction Contract

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Questions?

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Additional Information

Garrison Diversion Conservancy District

- **Current Contracts**
  - **Bureau of Reclamation**
    - O&M – GDU Principal Supply Works
      - **McClusky Canal, New Rockford Canal, Oakes Test Area**
    - MR&I Program
    - DWRA Recreation Program
    - Chain of Lakes Recreation
    - O&M Carrington Headquarters Building

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Additional Information

Garrison Diversion Conservancy District

- **Current Contracts**
  - **Other Agencies**
    - ND Game & Fish
      - Enhancement of GDU Features
    - ND State Water Commission
      - Maintenance of the Devils Lake Outlet
    - Southwest Water Authority
      - MOU for Emergencies Pumping Services
    - Other Misc. Agencies
      - Corps of Engineers
      - Fish & Wildlife Service

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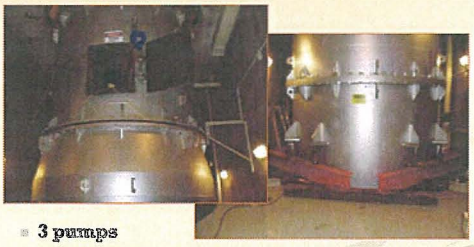
Snake Creek Pumping Plant



- 3 pumps
- NAWS is planning to use the space of one of the pumps
- Leaves two redundant pumps (700 cfs each)

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Snake Creek Pumping Plant

- **Potential Uses**
  - Provide water for the Red River Valley Water Supply Project
  - Provide water for authorized irrigation
    - 13,700 acres in Turtle Lake area
    - 10,000 acres in McClusky Canal area
  - Provide water for NAWS

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Impacts to Lake Sakakawea

- Average annual water loss due to evaporation on Lake Sakakawea is 903,000 ac-ft, or about three feet annually. *(Corps of Engineers 2004)*
- Studies show that the change in storage due to the RRVWSP would lower the level of Lake Sakakawea about an inch a year.

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