

Missouri River Mainstem System Water Supply

- Five Surplus Water Reports
- Municipal & Industrial Reallocation Study

U.S. Army Corps of Engineers

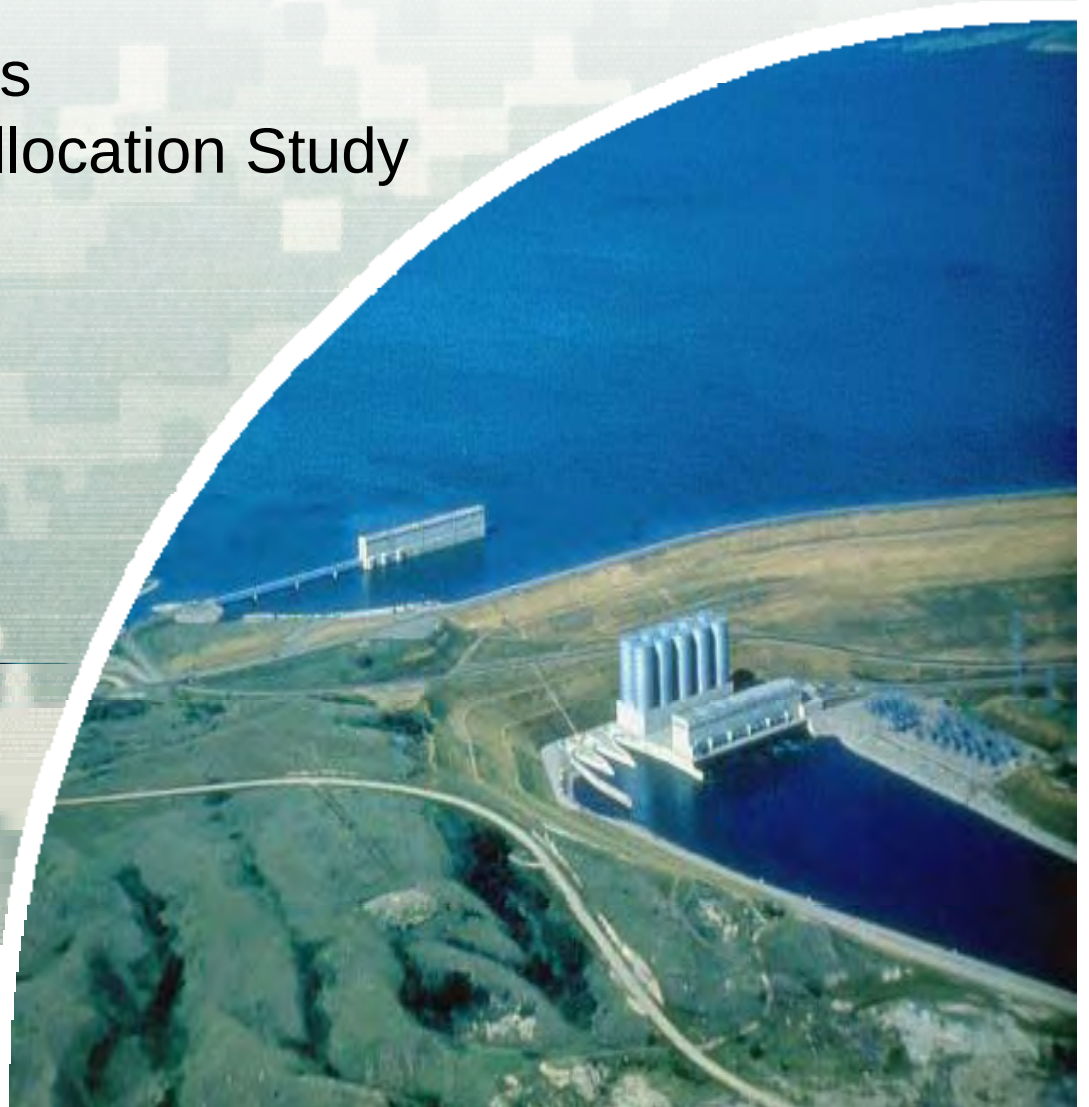
Omaha District

Public Meetings

August 20-29, 2012



US Army Corps of Engineers
BUILDING STRONG®



Report Documentation Page				Form Approved OMB No. 0704-0188	
Public reporting burden for the collection of information is estimated to average 1 hour per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing this burden, to Washington Headquarters Services, Directorate for Information Operations and Reports, 1215 Jefferson Davis Highway, Suite 1204, Arlington VA 22202-4302. Respondents should be aware that notwithstanding any other provision of law, no person shall be subject to a penalty for failing to comply with a collection of information if it does not display a currently valid OMB control number.					
1. REPORT DATE AUG 2012		2. REPORT TYPE		3. DATES COVERED 00-00-2012 to 00-00-2012	
4. TITLE AND SUBTITLE Missouri River Mainstem System Water Supply				5a. CONTRACT NUMBER	
				5b. GRANT NUMBER	
				5c. PROGRAM ELEMENT NUMBER	
6. AUTHOR(S)				5d. PROJECT NUMBER	
				5e. TASK NUMBER	
				5f. WORK UNIT NUMBER	
7. PERFORMING ORGANIZATION NAME(S) AND ADDRESS(ES) U. S. Army Corps of Engineers, Omaha District ,1616 Capitol Avenue, Omaha, NE, 68102				8. PERFORMING ORGANIZATION REPORT NUMBER	
9. SPONSORING/MONITORING AGENCY NAME(S) AND ADDRESS(ES)				10. SPONSOR/MONITOR'S ACRONYM(S)	
				11. SPONSOR/MONITOR'S REPORT NUMBER(S)	
12. DISTRIBUTION/AVAILABILITY STATEMENT Approved for public release; distribution unlimited					
13. SUPPLEMENTARY NOTES					
14. ABSTRACT					
15. SUBJECT TERMS					
16. SECURITY CLASSIFICATION OF:			17. LIMITATION OF ABSTRACT Same as Report (SAR)	18. NUMBER OF PAGES 41	19a. NAME OF RESPONSIBLE PERSON
a. REPORT unclassified	b. ABSTRACT unclassified	c. THIS PAGE unclassified			

Agenda

- Open Forum
- Welcome
- Presentation
- Public Comment



Presentation

- Part I
 - ▶ Water Supply Evolution in the Missouri River Basin

- Part II
 - ▶ Draft Surplus Water Report Overview

- Part III
 - ▶ Municipal and Industrial (M&I) Reallocation Study



Presentation

- Part I
 - ▶ Water Supply Evolution in the Missouri River Basin
 - Authorities
 - Previous Condition
 - Current Condition
 - Future Condition
- Part II
 - ▶ Draft Surplus Water Report Overview
- Part III
 - ▶ M&I Reallocation Study



Water Supply Authorities

Section 6 of the 1944 Flood Control Act

“Sec. 6. That the Secretary of War is authorized to make **contracts** with States, municipalities, private concerns, or individuals, at such prices and on such **terms as he may deem reasonable**, for **domestic and industrial uses for surplus water** that may be available at any reservoir under the control of the War Department: Provided, That no contracts for such water shall **adversely affect** then existing lawful uses of such water. All moneys received from such contracts shall be deposited in the Treasury of the United States as miscellaneous receipts.”

Title III, 1958 Rivers and Harbors Act, “The 1958 Water Supply Act”

“SEC. 301. (a) It is hereby declared to be the policy of the Congress to recognize the **primary responsibilities** of the States and local interests in developing water supplies for domestic, municipal, industrial, and other purposes and that the Federal government should participate and cooperate with States and Local interests in developing such water supplies in connection with the construction, maintenance, and operation of Federal navigation, flood control, irrigation, or multiple purpose projects.

(b) In carrying out the policy set forth in this section, it is hereby provided that **storage** may be included in any reservoir project surveyed, planned, constructed or to be planned, surveyed and/or constructed by the Corps of Engineers or the Bureau of Reclamation to impound water for present or anticipated future demand or need for **municipal or industrial** water, and the reasonable value thereof may be taken into account in estimating the economic value of the entire project...”

Corps Water Supply Guidance and References

Engineer Regulation 1105-2-100 – Planning Guidance Notebook, Paragraph 3-8, Appendix E, Section VIII

(Available online at: <http://140.194.76.129/publications/eng-regs/er1105-2-100/toc.htm>)

Institute of Water Resources “Water Supply Handbook – A Handbook on Water Supply Planning and Resource Mgmt”

(Available online at: www.iwr.usace.army.mil/docs/iwrreports/96ps4.pdf)

Water Management and Reallocation Studies Planning Center of Expertise

(Available online at: www.swd.usace.army.mil/pcx)



BUILDING STRONG®



US Army Corps of Engineers
BUILDING STRONG

Water Supply Evolution

- ASA (CW) Directive
- Reservoir Benefits Study

Agreement Required
(no charge until study
complete)

Interim:
Easement



US Army Corps of Engineers
BUILDING STRONG

Water Supply Evolution

- 1944 Flood Control Act
- Surplus Water Study

- ASA (CW) Directive
- Reservoir Benefits Study

Agreement Required
(no charge until study complete)

Interim:
Easement

Agreement Required
(no charge until rulemaking complete)

Interim:

Easement
(existing users)

Surplus Water Agreement
(new users)



US Army Corps of Engineers
BUILDING STRONG

Water Supply Evolution

- 1958 Water Supply Act
- Reallocation Study

Agreement Required
(both temporary and permanent available)

- 1944 Flood Control Act
- Surplus Water Study

Final:

Surplus Water Agreement
(temporary users)
WSA Agreement
(permanent users)

Agreement Required
(no charge until rulemaking complete)

- ASA (CW) Directive
- Reservoir Benefits Study

Agreement Required
(no charge until study complete)

Interim:

Easement
(existing users)

Surplus Water Agreement
(new users)

Interim:

Easement

Presentation

- Part I
 - ▶ Water Supply Evolution in the Missouri River Basin
- Part II
 - ▶ Draft Surplus Water Report Overview
 - Introduction
 - Project Background
 - Plan Formulation
 - Plan Implementation
 - Conclusions
 - Recommendations
 - Appendices
- Part III
 - ▶ M&I Reallocation Study



Draft Surplus Water Report Overview

- **Chapter 1. Introduction**
- Chapter 2. Project Background
- Chapter 3. Plan Formulation
- Chapter 4. Plan Implementation
- Chapter 5. Conclusions
- Chapter 6. Recommendations
- Appendices



Draft Surplus Water Report Overview

- Purpose of Study
 - ▶ Identify and quantify whether surplus water is available in the project as identified in Section 6 of the 1944 Flood Control Act that the Secretary Army may use to execute surplus water agreements
 - ▶ Determine whether use of surplus water is most efficient method of meeting M&I water needs



Draft Surplus Water Report Overview

Section 6 of the 1944 Flood Control Act

“Sec. 6. That the Secretary of War is authorized to make contracts with States, municipalities, private concerns, or individuals, at such prices and on such terms as he may

deem proper.”
ER 1105-2-100, paragraph 3-8b(4), entitled, “Surplus Water” states:
“Under Section 6 of the Flood Control Act of 1944, the Secretary of the Army is authorized to make agreements with states, municipalities, private concerns, or individuals for surplus water that may be available at any reservoir under the control of the Department. These agreements may be for domestic, municipal, and industrial uses, but not for crop irrigation.”

States as miscellaneous receipts.”



Draft Surplus Water Report Overview

■ Definition of Surplus Water

(1). Water stored in a Department of Army reservoir that is not required because the authorized need for the water never developed or the need was reduced by changes that have occurred since authorization or construction.

(2). Water that would be more beneficially used as municipal and industrial water than for the authorized purpose that, when withdrawn, would not significantly affect authorized purposes over some specified period.

■ Additional Information

- ▶ Prices and terms are as the Secretary deems reasonable, but existing policy for price setting
- ▶ Amounts of water are normally small
- ▶ Contracts for 5-years with option for renewals with updated costs
- ▶ Agreements for Municipal and Industrial (M&I) purposes



Draft Surplus Water Report Overview

- Chapter 1. Introduction
- **Chapter 2. Project Background**
- Chapter 3. Plan Formulation
- Chapter 4. Plan Implementation
- Chapter 5. Conclusions
- Chapter 6. Recommendations
- Appendices



OMAHA DISTRICT

District Overview

NORTHWESTERN DIVISION

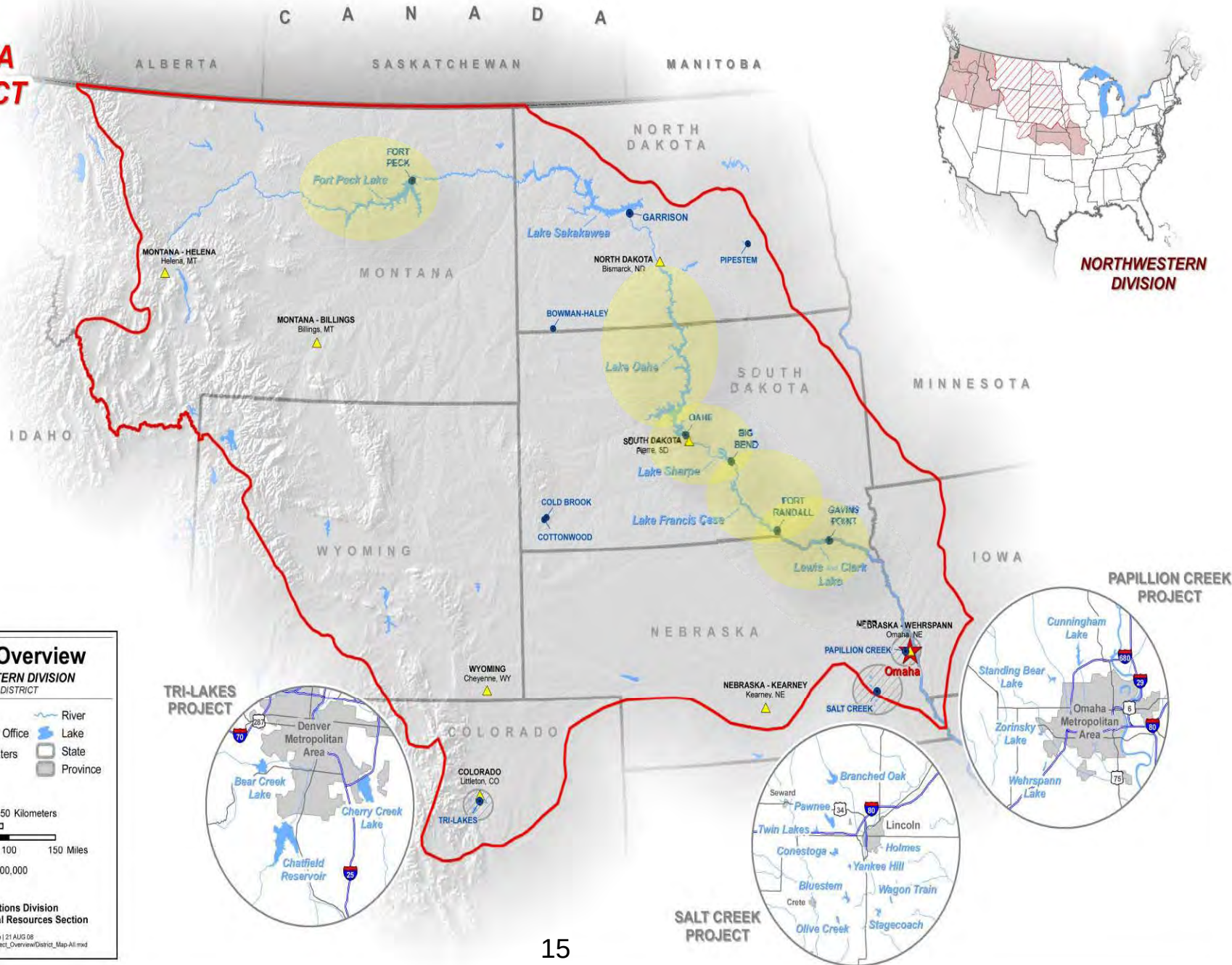
OMAHA DISTRICT

- Civil Project
- Regulatory Field Office
- District Headquarters
- Civil Boundary
- River
- Lake
- State
- Province

0 50 100 150 Kilometers
0 50 100 150 Miles
1:5,600,000

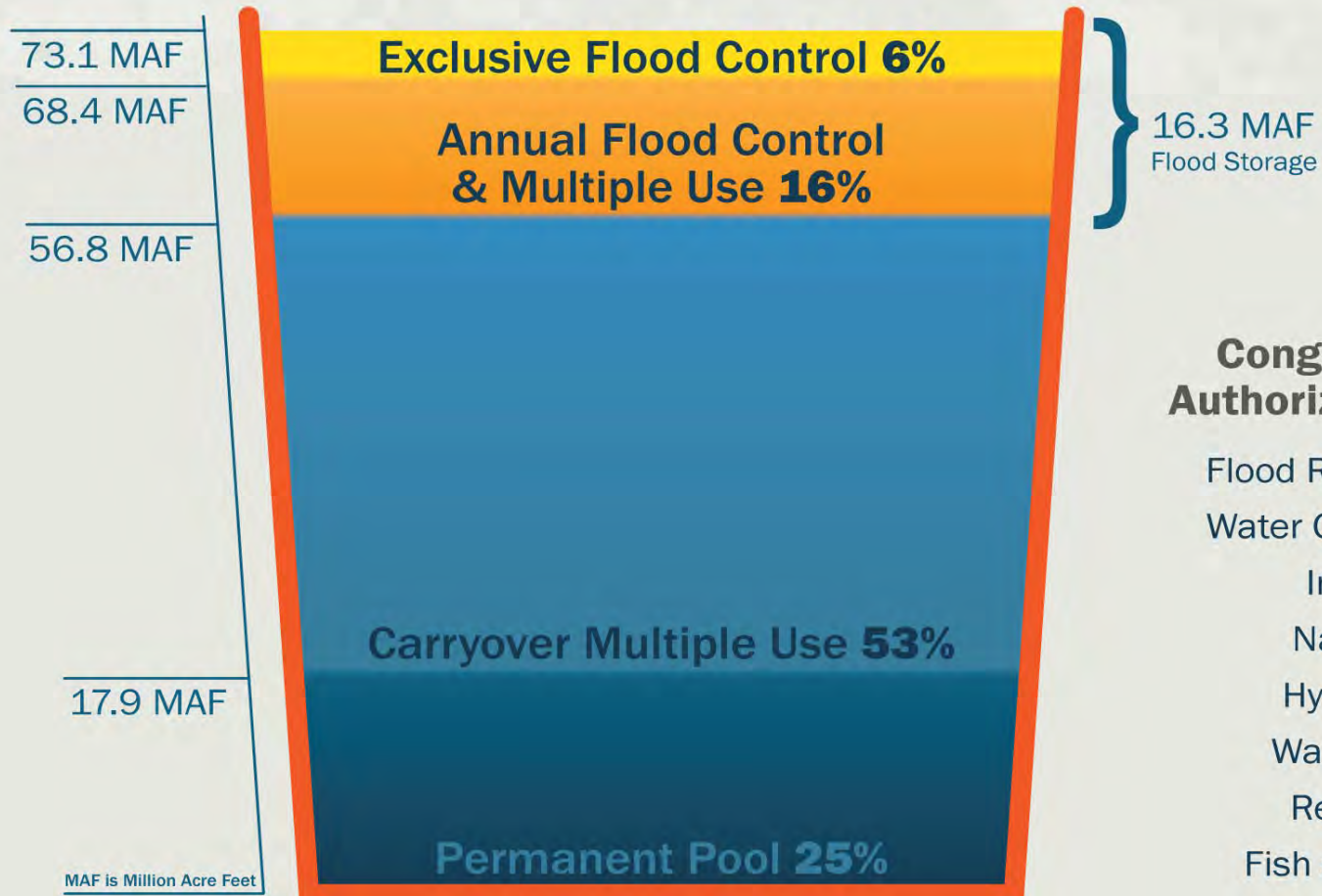
Operations Division
Natural Resources Section

J. Cowman | 21 AUG 08
OPS_Project_OverviewDistrict_Map-All.mxd



Missouri River Main Stem Reservoir System

Zones & Allocations of the Total Storage Capacity



Draft Surplus Water Report Overview

- Chapter 1. Introduction
- Chapter 2. Project Background
- **Chapter 3. Plan Formulation**
- Chapter 4. Plan Implementation
- Chapter 5. Conclusions
- Chapter 6. Recommendations
- Appendices



Draft Surplus Water Report Overview

- Plan Formulation Process
 - ▶ Specify water and related land resources problems and opportunities
 - ▶ Inventory and forecast existing conditions
 - ▶ Formulate alternative plans
 - ▶ Evaluate alternative plans
 - ▶ Compare alternative plans
 - ▶ Select the recommended plan



Draft Surplus Water Report Overview

Total Estimated Demand for Surplus Water from the Projects

Dam/Reservoir	Existing Demand (AF/Year)	Projected Demand (AF/Year)	Total Demand (AF/Year)	Equivalent Storage (AF)
Fort Peck/ Fort Peck Lake	6,302	630	6,932	17,816
Oahe/ Lake Oahe	52,106	5,211	57,317	147,305
Big Bend/ Lake Sharpe	56,607	5,661	62,268	160,028
Fort Randall/ Lake Francis Case	25,430	2,543	27,973	71,890
Gavins Point/ Lewis and Clark Lake	25,843	2,584	28,427	73,058
Garrison/Lake Sakakawea	57,837	47,163	100,000	257,000



Draft Surplus Water Report Overview

- Analysis of alternatives
 - ▶ Temporarily provide water from storage dedicated to other authorized purpose
 - ▶ Utilize water from upstream and downstream source (Missouri free flowing segments)
 - ▶ Groundwater withdrawal
 - ▶ Other surface water sources
 - ▶ Conservation/reuse
- Alternatives Studied
 - ▶ No Action (groundwater)
 - ▶ Proposed Action (surplus water from reservoir)



Draft Surplus Water Report Overview

- Economic Analysis
 - ▶ Benefits foregone, revenues foregone, replacement cost, updated cost of storage
 - ▶ Storage vs. yield
 - ❖ Dividing the carryover multiple use storage (39 million acre-feet) by the net yield (15.2 million acre-feet) results in a storage-yield ratio of 2.57
 - ❖ Important to understand that 1 acre-feet of yield does not equal 1 acre-feet of storage
 - ▶ Updated cost of storage



Draft Surplus Water Report Overview

- Cost/Price Determination

Dam/Reservoir	Cost (per AF of Yield)	Cost (per AF of Storage)
Fort Peck/ Fort Peck Lake	\$38.59	\$15.02
Oahe/ Lake Oahe	\$17.19	\$6.69
Big Bend/ Lake Sharpe	\$36.65	\$14.26
Fort Randall/ Lake Francis Case	\$51.86	\$20.18
Gavins Point/ Lewis and Clark Lake	\$174.66	\$67.96
Garrison/Lake Sakakawea	\$20.91	\$8.13

- Cost/Price Recommendation



Draft Surplus Water Report Overview

- Chapter 1. Introduction
- Chapter 2. Project Background
- Chapter 3. Plan Formulation
- **Chapter 4. Plan Implementation**
- Chapter 5. Conclusions
- Chapter 6. Recommendations
- Appendices



Draft Surplus Water Report Overview

- Letters to Tribes
- Letters to Governors
- Agency Coordination Meetings



Draft Surplus Water Report Overview

- Chapter 1. Introduction
- Chapter 2. Project Background
- Chapter 3. Plan Formulation
- Chapter 4. Plan Implementation
- **Chapter 5. Conclusions**
- Chapter 6. Recommendations
- Appendices



Draft Surplus Water Report Overview

- Purpose of Study
 - ▶ Identify and quantify whether surplus water is available in the project as identified in Section 6 of the 1944 Flood Control Act that the Secretary Army may use to execute surplus water agreements
 - ▶ Sufficient surplus water is available to provide
 - ▶ 6,932 AF/year (yield) from Fort Peck/ Fort Peck Lake
 - ▶ 57,317 AF/year (yield) from Oahe/ Lake Oahe
 - ▶ 62,268 AF/year (yield) from Big Bend/ Lake Sharpe
 - ▶ 27,973 AF/year (yield) from Fort Randall/ Lake Francis Case
 - ▶ 28,427 AF/year (yield) from Gavins Point/ Lewis and Clark Lake
 - ▶ Determine whether use of surplus water is most efficient method of meeting M&I water needs
 - ▶ It is the most efficient



Draft Surplus Water Report Overview

- Chapter 1. Introduction
- Chapter 2. Project Background
- Chapter 3. Plan Formulation
- Chapter 4. Plan Implementation
- Chapter 5. Conclusions
- **Chapter 6. Recommendations**
- Appendices



Draft Surplus Water Report Overview

- Surplus water, in the quantities identified, be approved and made available for municipal and industrial (M&I) water supply at each of the reservoirs; and
- Rulemaking, according to the Administrative Procedure Act, be conducted to establish a nationwide policy for uses and pricing of surplus water for M&I water supply under Section 6 of the Flood Control Act of 1944



Draft Surplus Water Report Overview

- Chapter 1. Introduction
- Chapter 2. Project Background
- Chapter 3. Plan Formulation
- Chapter 4. Plan Implementation
- Chapter 5. Conclusions
- Chapter 6. Recommendations
- **Appendices**



Draft Surplus Water Report Overview

- National Environmental Policy Act (NEPA) agencies must make informed decisions
 - Agencies must use a specific environmental planning process (NEPA) that is interdisciplinary, considers reasonable alternatives, and includes documentation for public review
 - Environmental Assessment (EA) is a document prepared for an action... where the significance of the social, economic, and environmental impacts are evaluated
 - Agencies must make diligent efforts to inform and involve the public in this NEPA process



Draft Surplus Water Report Overview

- Summary of Environmental Impacts of Proposed Alternative
 - ▶ Depletion Impacts
 - Due to very small change between Proposed Action and No Action Alternatives, no measurable change is expected to the environment
 - ▶ Cumulative Effects
 - No discernible change to the authorized purposes of flood control, navigation, hydropower, water supply or recreation



Presentation

- Part I
 - ▶ Water Supply Evolution in the Missouri River Basin
- Part II
 - ▶ Draft Surplus Water Report Overview
- Part III
 - ▶ M&I Reallocation Study
 - Study Area
 - Purpose of the Study
 - Study Components
 - Authorities
 - Proposed Schedule
 - Public Involvement



M&I Reallocation Study Area



M&I Reallocation Study Purpose

The Missouri River Municipal & Industrial Water Storage Reallocation Study will systemically and comprehensively examine whether some amount of the **storage** originally included in the U.S. Army Corps of Engineers' mainstem Missouri River reservoirs for authorized project purposes may be allocated solely to municipal and industrial (M&I) water supply. The study will also examine the effects of such a reallocation on the authorized purposes and operations of the mainstem reservoirs.



M&I Reallocation Study Components

- Identify current and future demand and potential need for reallocated storage to support the demand.
- Evaluate impacts on project purposes. Are they significant?
- Determine environmental effects on proposed actions and whether mitigation would be required.
- Determine price to be charged purchasers of storage.
- Determine appropriate compensation, if any, to lawful existing users.
- Alternative sources of water supply will be evaluated and compared to the use of Missouri River storage.



M&I Reallocation Study Authority

Section 216 of the 1970 Flood Control Act (Public Law 91-611, as amended) provides the “general authority for the Secretary of the Army for Civil Works [ASA(CW)] to review operations of completed projects when found advisable due to changed **physical, economic or environmental** conditions.”



M & I Reallocation Study

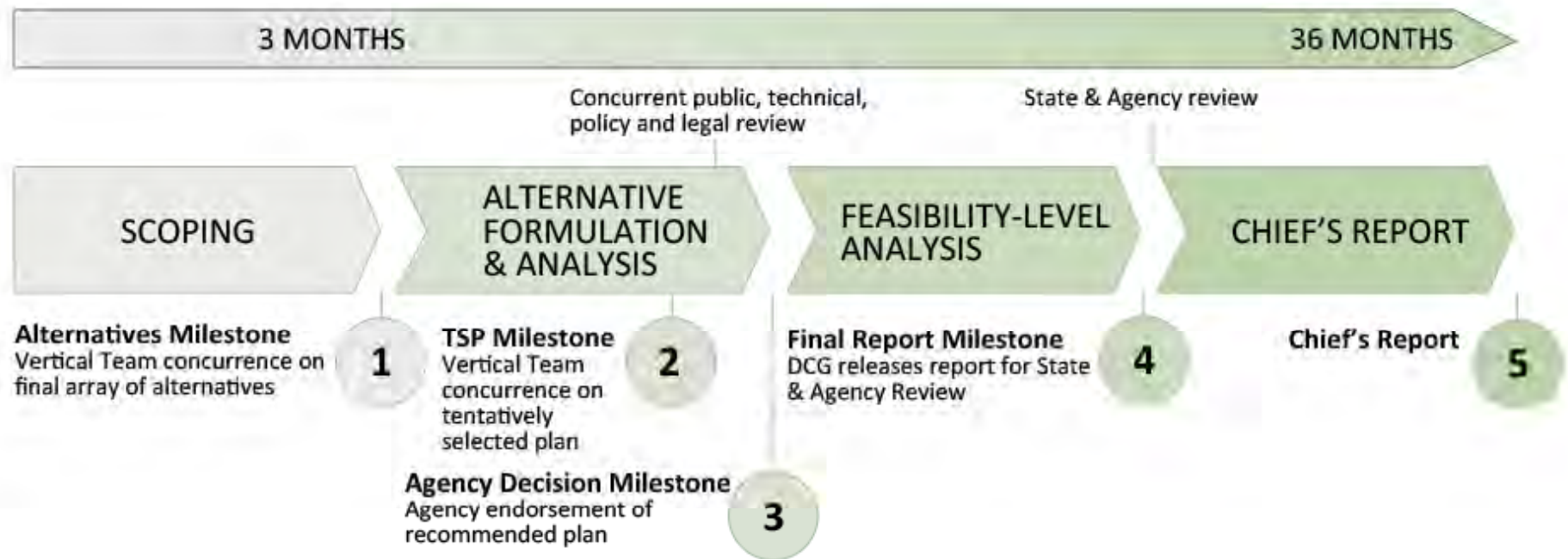
Authority for Storage

The Water Supply Act of 1958 (Title III, P.L. 85-500, as amended) authorizes the Corps' Assistant ASA(CW) to include storage for M&I water supply storage space in any Corps of Engineers reservoir provided that the modification does not seriously affect authorized purposes or involve major structural or operational changes.

- ▶ Water Supply is state/local responsibility
- ▶ Includes M&I storage in new reservoirs
- ▶ Allows storage in existing projects to be allocated to M&I
- ▶ All costs to be repaid by local Sponsor in reallocation
- ▶ If reallocation to M&I affect other authorized purposes, congressional authorization is required



M&I Reallocation Study Proposed Schedule



M&I Reallocation Study

Public Involvement

- Coordination throughout the Study
 - ▶ Various communications including: interim product reviews, public and tribal meetings, web site, press releases
- Website will be developed to provide information on:
 - ▶ Public and tribal meeting announcements
 - ▶ General descriptive information and documents available for download
 - ▶ Progress and status information as study moves forward



Agenda

- Open Forum
- Welcome
- Presentation
- **Public Comment**



Public Comment

- Ground Rules

- ▶ Those who wish to comment must sign up at the front desk prior to speaking and sign a numbered comment card
- ▶ Elected officials will speak first then the general public
- ▶ Numbers will be called. Come up to the microphone, state your name, and please spell your first and last name
- ▶ Please limit comments to 3 minutes or less out of respect for others who wish to speak

