

Integrated Water Management: New Data and Information/Studies

Platte River Basin-Wide Plan Meeting

Grand Island, Nebraska

July 21, 2011

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Nebraska Department of Natural Resources



Overview

- General Education / Information
 - IMP process
- Platte OA Basin New Data and Studies
 - Other projects (PBHEP)
 - Excess flow
 - Conjunctive management (STELLA / Western)
 - Federal programs (EQIP/AWEP/CREP)
 - Overappropriated –
Fully Appropriated Analysis



Information & Education Programs

- Fully appropriated determination,
- Overappropriated designation,
- IMP,
- Nebraska New Depletion Plan (NDP),
- Platte River Recovery and Implementation Program (PRRIP),
- Hydrologically connected ground water and surface water,
- Invasive species management,
- Conversion of irrigated acres to dryland agriculture or wildlife habitat,
- Limited irrigation cropping systems,
- Soil residue and tillage management,
- Alternative crops, and
- Funding sources for programs that enhance water supply.

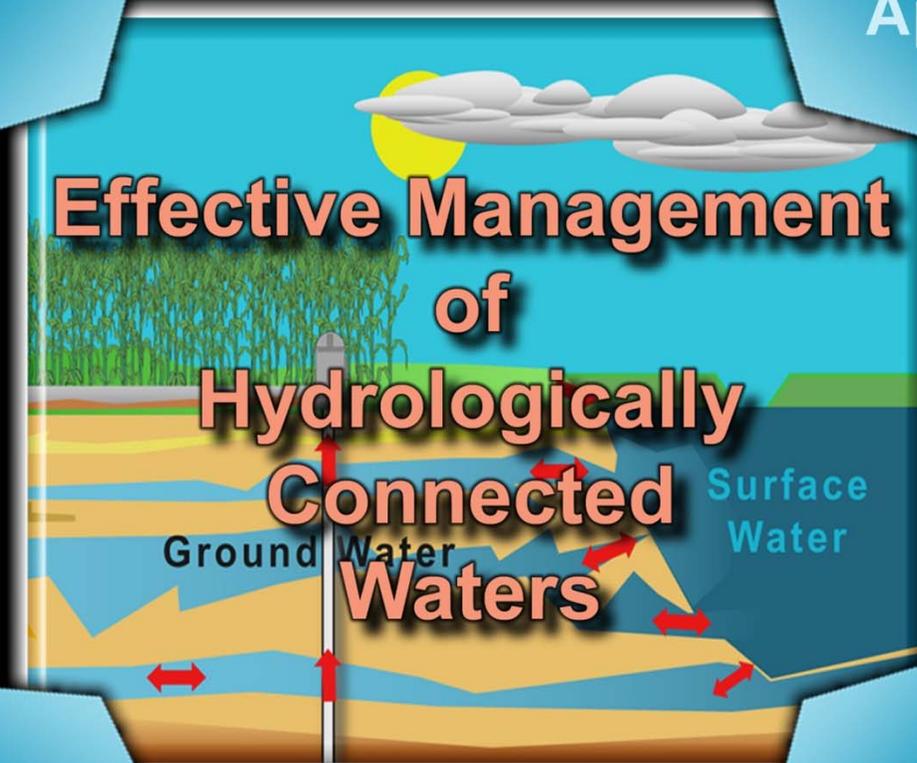
Information & Education Programs (cont.)

- How to disseminate and educate with this information?
 - Annual Basin-Wide Meeting
 - Other public meetings
 - Pamphlets
 - Website

Integrated Management

Groundwater
Correlative
Rights

Surface Water
Prior
Appropriations



Groundwater
Regulated by
NRDs

Surface Water
Regulated by
DNR

Pro-Active Annual Evaluation



- Annual Evaluation of Availability of Hydrologically Connected Water Supplies (also known as the Fully Appropriated Basin Report or FAB report) - http://dnr.ne.gov/IWM/AnnualReport_2011/AnnualReport_2011_Final.pdf
- Long-term availability
- Prevents conflicts

What is Fully Appropriated?

(DNR's Annual Evaluation)

- Supply insufficient:
 - some time
 - some place
- Conflict
- **NOT** balanced supply/use



Fully Appropriated Designation

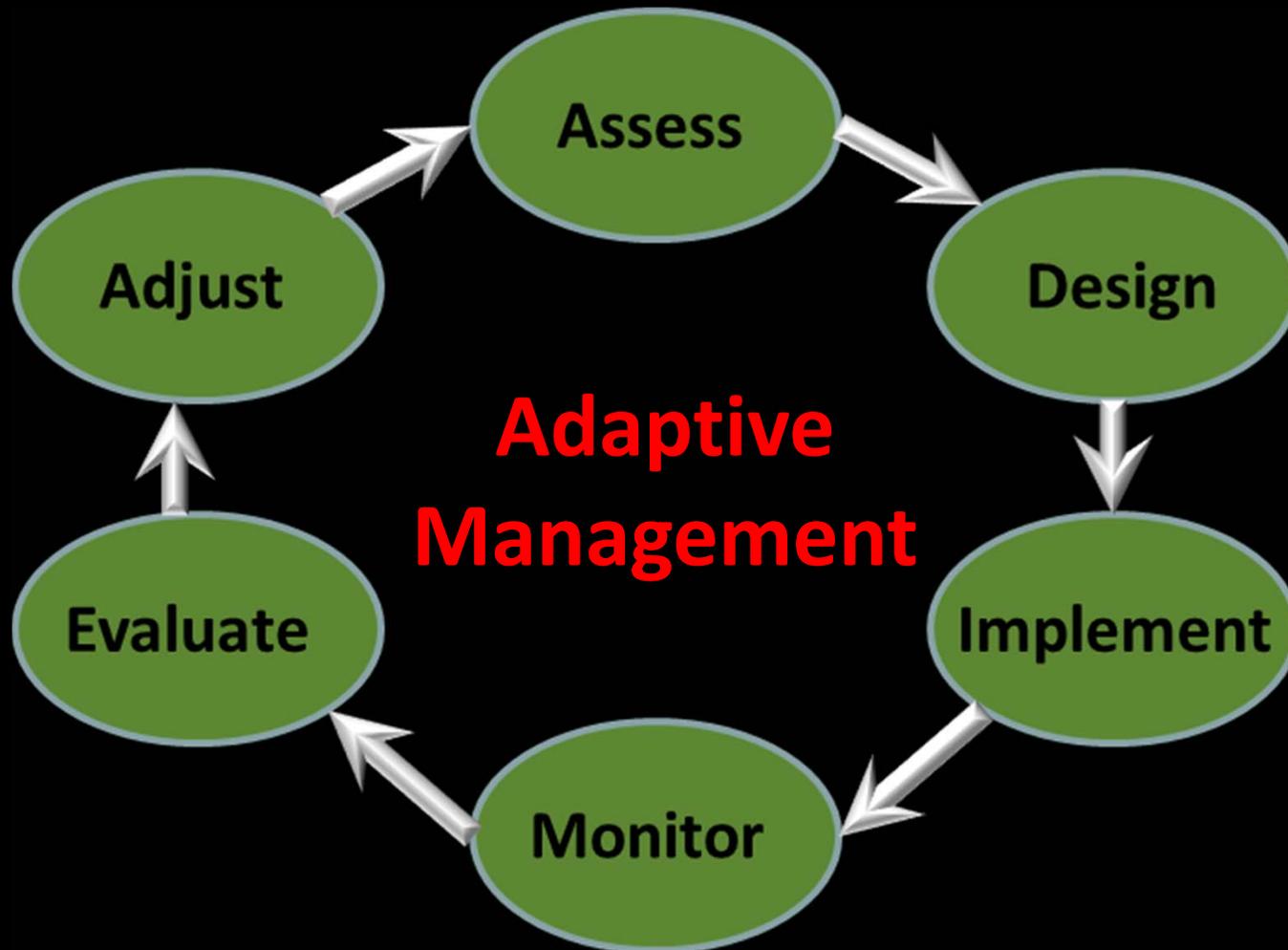
- IMP
- Key goal: Balance supply and use
- Begins Adaptive Management

Integrated Water Management Planning in Nebraska

- What is it?
- What is it not?
- How is Nebraska applying it?



What is it?

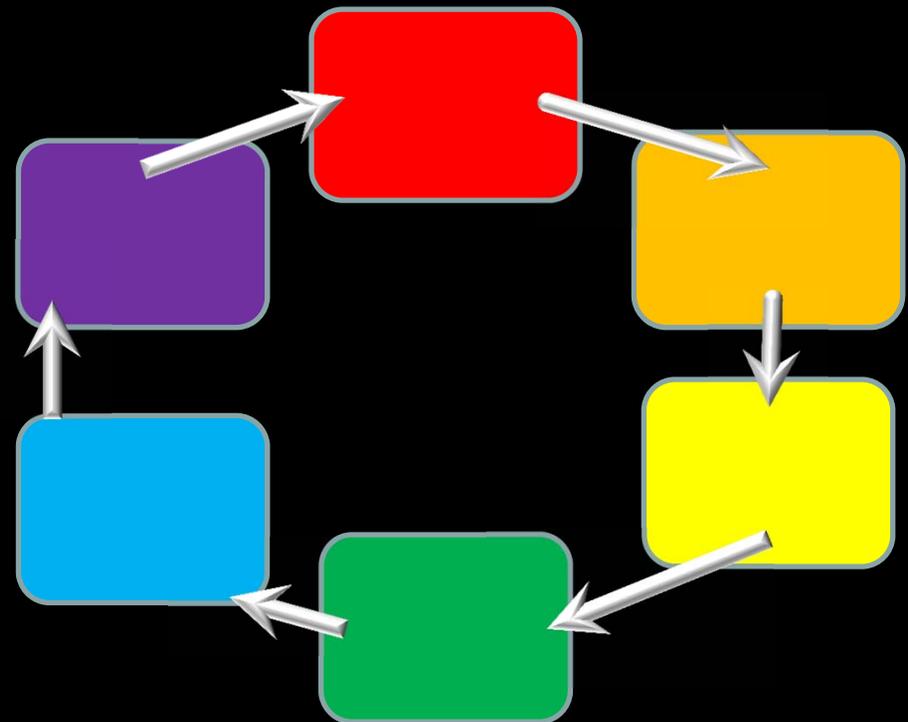


What is it not?

- Static
- Mandatory restrictions on new development
 - Irrigation
 - Municipal
 - Industrial
- Without local input & concerns

Integrated Management Plans: Adaptive Water Management

- **Assess** supply and demand
- **Design** tools
- Set Goals
(implement)
- Management Actions
(monitor)
- **Evaluate** project ability to meet goals
- **Adjust** basin goals



Platte Overappropriated Basin

Data and Studies

New Data and Studies

- Basin-Wide Plan Goal 3, Objective 1.B
 - At the Basin-Wide meeting report on
 - revisions to this Plan
 - revisions to the IMPs
 - **new data and information**
 - disputes related to implementation of IMPs
 - any other topic on which the DNR and the Platte Basin NRDs have mutually agreed

IMP Language

- (b) These other programs may include, but are not limited to, the following:
 - (1) transfer existing surface water appropriations within the TPNRD to instream flow appropriations
 - (2) transfer existing surface water appropriations or apply for new appropriations for intentional recharge, and recovery when appropriate, in existing canals during the irrigation or non-irrigation season

TPNRD IMP Language (cont.)

- (3) develop new infrastructure (e.g. dams or canals) that may include intentional recharge projects, and recovery when appropriate
- (4) develop groundwater projects for the purpose of providing net accretions to the river
- (5) facilitate contractual agreements between water users

Incentive and Other Programs

- Platte Basin Habitat Enhancement Project (PBHEP)
 - Federal Programs
 - AWEF, CREP, EQIP
 - Purchase/Lease of Surface Water Appropriations and/or Groundwater Rights
 - GW Recharge Pilot Project
 - Western Canal Reuse Pit Recharge Project
 - North Dry Creek Augmentation Project

Implementing 'Other' Programs

- The IMP describes the process for implementing these 'other' programs:
 - Inventory of available GW and SW is made
 - Dec. 31, 2010 Excess flow report
http://dnr.ne.gov/IWM/Reports/PlatteRiverStreamflow_1210.pdf
 - Conjunctive management design template (will be posted soon)
 - http://dnr.ne.gov/IWM/docs/IWM_TechnicalReports.html
 - Standard contract template (will be posted soon)
 - <http://dnr.ne.gov/docs/surfaceforms.html>

ARRA Project

Water Lease Contract Number _____
DNR SW Form 300
Page 1 of 6

Surface Water Lease Contract

Nebraska Department of Natural Resources Water Leasing Program

The Water Lease Contract is comprised of two sections:

Section 1 is the completed application for transfer of the appropriation with attachments.
Section 2 is the specific lease contract terms with attachments.

SECTION ONE:

Application for a Transfer of the Type of Use and Transfer of the Location of Use

1. Check One Below:

Attached is a completed application (and attachments) for transfer described above for privately held appropriations, (DNR SW Form # 100)

OR

Attached is a completed application (and attachments) for transfer described above for appropriations held by an Irrigation District, Reclamation District, Public Power and Irrigation District, Mutual Irrigation Company, Canal Company or the US Bureau of Reclamation. (DNR SW Forms 200 & 200-A)

Evaluation of Historic Platte River Streamflow in Excess of State Protected Flows and Target Flows



Nebraska Department of
Natural Resources

December 2010



Conceptual Design of a Conjunctive Management Project



Nebraska Department of
Natural Resources

March 2011



Next Steps for Excess Flow

- Scope of Work to mine the data further
 - Examine operational constraints
- Develop list of criteria to evaluate the projects

GW Recharge Pilot & Flood Reduction Project

- Collaboration of DNR, NRDs, and local irrigation canals
- DNR analysis will be published
- Benefits will be determined

Spring 2011 GW Recharge Project Chart

Canal	NRD	Project Dollars	CFS Min	CFS Max	First Date Diversion Allowed	Date Diversion Began	Date Diversion Ended	Total Days Diverted
North Platte Canal NPR	TPNRD	\$10,000	60	120	4/4/2011	4/3/2011	5/18/2011	45
Suburban Canal NPR	TPNRD	\$10,000	25	45	4/4/2011	4/3/2011	5/18/2011	45
Keith-Lincoln NPR	TPNRD	\$10,000	30	60	4/10/2011	4/6/2011	6/2/2011	37
Paxton-Hershey NPR	TPNRD	\$10,000	30	60	4/10/2011	4/4/2011	5/16/2011	30
Enterprise fr NPR	NPNRD	\$8,000	20	40	4/4/2011	3/10/2011	5/3/2011	30
Minatare NPR	NPNRD	\$8,000	20	40	4/4/2011	4/1/2011	5/5/2011	32
Interstate	NPNRD	\$50,000	250	500	3/31/2011	3/31/2011	4/15/2011 ⁶	16
Chimney Rock Canal NPR	NPNRD	\$10,000	25	50	4/1/2011	4/1/2011	5/3/2011	33
Tri-State Canal	NPNRD	\$50,000	250	500	4/7/2011	4/5/2011	5/9/2011	30
Belmont NPR	NPNRD	\$6,000	15	30	4/1/2011	4/1/2011	5/11/2011	41
Lisco NPR	NPNRD	\$8,000	20	40	4/10/2011	4/13/2011	5/18/2011	36
Nine Mile Canal	NPNRD	\$4,000	10	20	4/1/2011	4/1/2011	5/23/2011	44
Castle Rock NPR	NPNRD	\$8,000	20	40	4/6/2011	4/5/2011	5/10/2011	35
Central Canal of NPR	NPNRD	\$4,000	10	20	4/6/2011	4/6/2011	6/15/2011	65
Thirty Mile Canal PR	CPNRD	\$15,000	-	75	4/15/2011	4/22/2011	5/30/2011	39
Cozad Canal PR	CPNRD	\$10,000	-	50	4/15/2011	4/18/2011	5/19/2011	32
Orchard-Alfalfa Canal PR	CPNRD	\$5,000	-	25	4/15/2011	4/18/2011	5/23/2011	36
Western Canal SPR	SPNRD TPNRD	\$12,000	-	150	4/22/2011	4/10/2011	6/2/2011	42
Dawson Co. Canal from PR			-	90	4/15/2011	4/18/2011	5/26/2011	39
Gothenburg Canal PR	CPNRD	\$43,000	-	75	4/15/2011	4/11/2011	5/19/2011	35
Kearney Canal from PR			-	50	4/15/2011	4/15/2011	5/15/2011	31

More Projects

- COHYST 2010 / Conjunctive Management
- Western Water Use Conjunctive Management
- STELLA modeling tool
- Management Options Plan (MOP)

Overappropriated – Fully Appropriated Analysis

- Basin-Wide Plan Goal 1 Objective 3
 - Continue to develop the methodology to calculate the difference between the current and fully appropriated levels of development in each NRD.
 - Develop methodology to calculate the difference between current levels and levels that would cause fully appropriated conditions
 - Use of water budget/consumption approach to understand water supplies and uses in the basin

Defining Fully Appropriated

- Joint project
- Funded by IWMPP and CPNRD
- Consultant: HDR

History of Project

- LB 962 passed in 2004
- DNR annual evaluation by January 1
- Develop IMP within 3 – 5 years
- CPNRD began discussions on funding the study to develop a proposed methodology on OA/FA difference

Scope of Project

- Phase I
 - Literature Review
 - Review other states' methodology
- Phase II
 - Case Study Evaluation
 - Upper Niobrara River Basin
 - Central and Lower Platte River Basins

Project Approach

- Historical water uses and supplies (virgin water supply and demands)
- Considers spatial and temporal variability in supplies and demands
- More seamlessly facilitates the development of IMP goals and objectives

Project Next Steps

- Stakeholder Meeting May 2011
 - <http://dnr.ne.gov/IWM/Presentations/EngelHDRFullyAppropriatedMethodology.pdf>
- Interim report on literature review and proposed methodology concepts
- Opportunity for review and comments
- Two parallel activities
 - Analysis of Platte River
 - Begin rulemaking process

Information & Education

- Feedback on future education and outreach efforts
- Please contact:
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