

Administration of Water Rights on the Big Horn River System

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Presentation to Big Horn River Long-term Issues Group

June 8, 2007

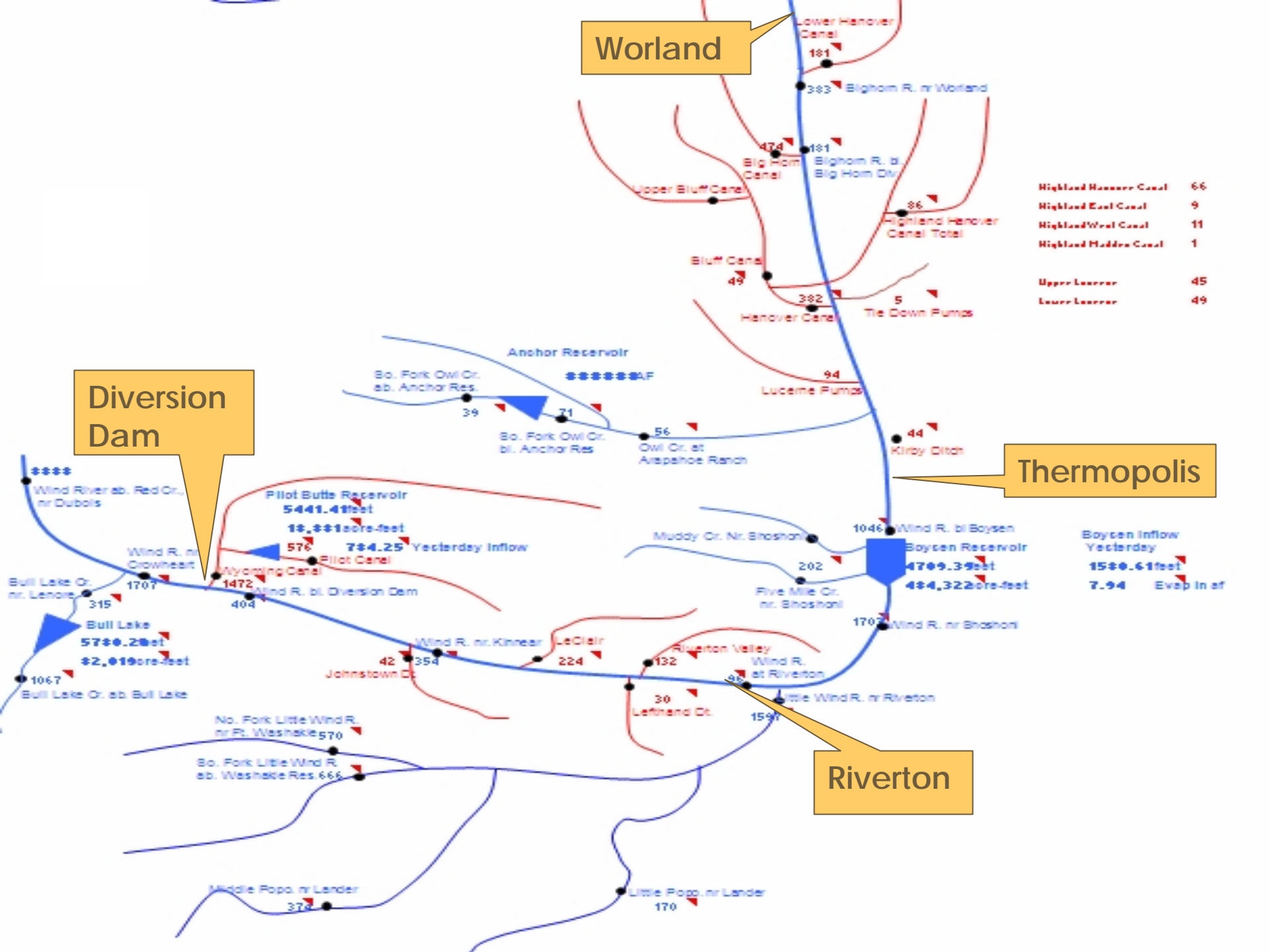


Worland

Diversion Dam

Thermopolis

Riverton



Highland Hanover Canal	66
Highland East Canal	9
Highland West Canal	11
Highland Middle Canal	1
Upper Laramie	45
Lower Laramie	49

Boysen Inflow Yesterday	1580.61 feet
Evap In at	7.94

Big Horn Basin Administration

Modeled Shortages considering a full supply to all permitted rights

Basin	Full Supply Diversion (ac-ft)	Shortages (ac-ft)			Shortages (percent)		
		Dry	Normal	Wet	Dry	Normal	Wet
Clarks Fork	106,293	30,402	18,786	11,645	29%	18%	11%
Yellowstone	0	0	0	0	0%	0%	0%
Sub-Total	106,293	30,402	18,786	11,645	29%	18%	11%
Upper Wind	933,909	192,930	54,067	43,948	21%	6%	5%
Little Wind	344,734	97,916	38,741	29,206	28%	11%	8%
Lower Wind	80,635	20,537	15,839	11,634	25%	20%	14%
Sub-Total	1,359,278	311,384	108,648	84,788	23%	8%	6%
Upper Bighorn	329,300	12,220	7,499	5,450	4%	2%	2%
Owl Creek	116,769	39,790	24,919	19,590	34%	21%	17%
Nowood	117,327	7,482	5,273	3,362	6%	4%	3%
Lower Bighorn	170,209	26,747	11,169	6,943	16%	7%	4%
Greybull	505,395	172,142	47,001	29,905	34%	9%	6%
Shoshone	829,711	29,097	18,348	9,801	4%	2%	1%
Sub-Total	2,068,711	287,478	114,210	75,050	14%	6%	4%
Total	3,534,282	629,263	241,644	171,483	18%	7%	5%

Notes:

- (1) Shortages are for historical Full Supply Conditions without Futures projects.
- (2) The modeled shortages do not include releases from Greybull Valley Reservoir.

Big Horn Basin Administration

- Irrigation season accounting.
 - When system is not in a surplus water condition
 - Voluntary process and compliance by canals
 - Only affects the major diverters but accounts for use by all diversions from the main stem.
 - Based on priorities
 - Accounts tribal water use on diversions below Diversion Dam.

Big Horn River Administration

- Irrigation accounting system operational from April 1 through October each year
- Accounting diversions between Diversion Dam and Worland
- Mix of Burec and Private Irrigation Districts
- Burec Accounting Year vs. Non-Accounting years

Big Horn River Administration

- Accounting Program includes 9 sheets of data and multiple graphs
- Requires Daily input of 30 data values
- Daily web posting of diversion rates
 - http://seo.state.wy.us/Wind_BigHornFlows/Division3.pdf
- Multiple primary goals:
 - Tracking usage above Boysen to meet SE order of equal access to water
 - Tracking of storage use for Burec contracts

UPPER WIND RIVER BASIN ACCOUNTING

AS OF ToDays Tracking -2.3% -7.4% 0.0

Table with 3 columns: MW, LC, RV. Values: MW (0.0), LC (0.0), RV (0.0)

Upper Wind River Basin Accounting - Daily Summary Report - From 1/1/2006 to 12/31/2024. Total Available Supply: 1,190,311. Total Demand: 1,190,311. Total Surplus: 0.00.

Main data table with columns for dates (1-31), Bull Lake Creek Above, Bull Lake Reservoir, Bull Lake Reservoir, Wind River, Bull Lake Creek Below, Bull Lake Creek Below, Wyoming Canal, Pilot Butte Inflow, Pilot Butte Outflow, Pilot Butte Storage Release, MID Surplus Available, MID % of TNP use, % Including Bull & Pilot, Diversion From LeClaire, LeClaire Canal Total, LeClaire Storage Use, LeClaire Surplus Available, LeClaire % of TNP use, Riverton Canal, Riverton Storage Use, RMD surplus available, RMD % of TNP use, Wind River @ HWY 26, Wind River @ Kinnebec, Hurdado, Aragon Ditch, Johnson Ditch, Letha Ditch.

Big Horn River Administration

- Only one call for administrative regulation in recent history
 - July 2002 call from Worland area canals on the Big Horn River
 - Call was to bring senior direct flow water intended to satisfy these canals from above diversion dam through Boysen Reservoir.
 - Affected all main stem diversions as well as all diversions on all tributary streams
 - Exchange contracts became valid

Big Horn River Administration

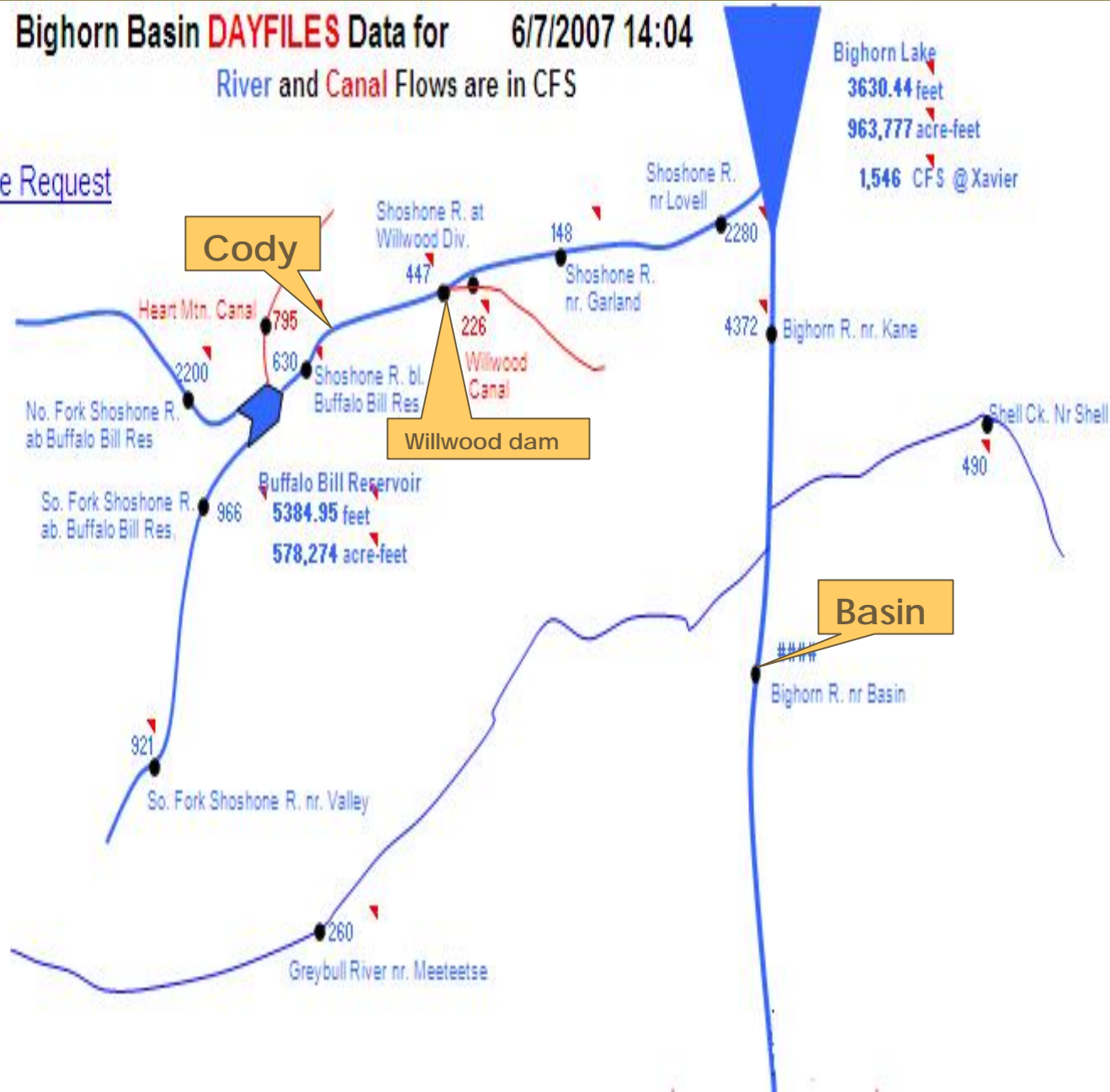
- **Goals**
 - Satisfy senior direct flow appropriations
 - Most senior rights are near Worland
 - Make the greatest beneficial use of available natural flows.
 - Efficient delivery
 - Track use of storage water contracts
 - Permanent Contracts (28)
 - Temporary Contracts (8)
 - Storage use is based on Direct Flow in priority at any time.

Shoshone River Administration

Bighorn Basin **DAYFILES** Data for 6/7/2007 14:04
River and Canal Flows are in CFS

Bighorn Lake
3630.44 feet
963,777 acre-feet
1,546 CFS @ Xavier

Dayfile Request



Shoshone River Administration

- Approximately 94,000 acres of project land in 4 Burec projects
 - Shoshone, Heart Mountain, Deaver and Willwood Districts
- Non-project lands served under:
 - Hunt, Globe, Cody Canal, Lakeview, Sidon & Elk/Lovell Districts
- Daily water orders taken through Shoshone District with State Engineer oversight
- Accounting system dictates amount available for diversion
- Accounting Year round
- Voluntary program

Buffalo Bill Reservoir and Shoshone River Accounting Sheet

Basic Condition info.

Content (AF)	Area (Acres)	Evaporation Factor (Ft):		. . MT2111	DAM TO WILL	
Buffalo Bill Reservoir Total	561138	Reservoir Evaporation (AF):	145	HTM-139	15%	
North Fork Shoshone (cfs):		Municipal Pipeline (cfs):	5	G-513	55%	64%
South Fork Shoshone (cfs):		Outflow to River-QRIVS-(cfs)	1059	D-209	22%	26%
Measured Inflow (cfs):	0	River Passing Willwood (cfs):		W-74	8%	10%
		Accrual BB to Willwood (cfs):	82	TOTAL-935	100%	
		Required Bypass at Willwood (cfs):			AF	CFS
				Direct flow to Distribute (inflow + gain - past will)	4726	2383

Current Usage info.

	Heart Mtn. Canal	Garland Canal	Deaver Canal	Willwood Canal	Total Canals	RIGHT	AMOUNT CFS	DIRECT FLOW CFS	REMAINING CFS
Canal Readings (cfs)	857	610	268	263	1998	HTM 2111	139	139	2244
2111 D.F. res. inflow (cfs)	278	557	188	148	1171	G 2111	513	461	1783
2111 D.F. below res. (cfs)	---	52	21	8	82	D 2111	209	188	1595
Enl. Direct Flow (cfs)	482		58	107	647	W 2111	74	74	1521
Total D.F. Diversion (AF)	1507	1209	530	522	3769	HTM 1189E	185	185	1336
Storage Diversion (AF)	192	0	0	0	192	W 1191E	87	87	1249
Cumulative D.F. Div. (AF)	27331	29389	12071	14254	83045	D 10138	79	58	1191
Cumulative Storage Div. (AF)	8529	1559	282	2835	13204	HM 6099E	49	49	1142
Cumulative Total Div. (AF)	35860	30948	12352	17089	96249	HM 2111 (2ND)	139	139	1003
Computed Inflow (AF):	4726		Storable Inflow (AF):	1120		G 2111 (2ND)	513	96	907
Measured Inflow (AF):	0					D 2111 (2ND)	209	0	907
Reservoir Balance (AF):	4726		[computed minus measured inflow]			W 2111 (2ND)	74	74	833
						HM 1189(2ND)	185	185	648
						W 1191E(2ND)	87	20	628
						D 10138 (2ND)	79	0	628
						HM 6099(2ND)	49	49	579
						HTM 6425E	7	7	572
						W 6579E	1	0	572
						HM 6425(2ND)	7	7	565
						W 6579(2ND)	1	0	565

Direct flow distribution by priority

Reservoir status info.

	A C C O U N T S				Total Accounts	Total Reservoir
	Shoshone	Polecat	Private	State		
Storage Brought Forward (A)	303847	68971	14211	131591	518619	560367
Reservoir Balance (AF)					0	
Daily Storage Release (AF)	194		10		204	
Daily Storage Evap. (AF)	85	19	4	37	145	
Inflow Distribution (%)	0.956	0.000	0.044	0.000	1.000	
Daily Storage Accrual (AF)	1071	0	49	0	1120	
Fill Allowed (AF)	44053	2389	1703	4818	52963	
Stored To Date (AF)	21974	2389	1000	4818	30180	
Fill Remaining (AF)	22079	0	703	0	22783	
Storage Carried Forward (A)	304639	68951	14246	131554	519390	561138

Notes:

Shoshone River Administration

- Goals
 - Bypass minimum necessary at Willwood Dam to satisfy downstream users
 - Generally about 50 CFS
 - Return Flows plus bypass satisfies downstream rights.
 - Track reservoir accounts
 - Storage use is based on Direct Flow in priority at any time and whether or not Buffalo Bill Reservoir has achieved permitted fill.

Big Horn River Administration

- Other basin streams:
 - Priority Regulation requests generally on about a dozen stream systems in the basin each year.
 - Reservoir delivery administration on Greybull River and Owl Creek drainages
 - Cover the basin with a staff of 8 hydrographers, 1 assistant- superintendent and an administrative assistant

Big Horn Basin Administration

Thank you

Questions ?????

