

North Dakota State Water Commission

900 EAST BOULEVARD AVENUE, DEPT 770 • BISMARCK, NORTH DAKOTA 58505-0850
(701) 328-2750 • TTY 1-800-366-6888 or 711 • FAX (701) 328-3696 • <http://swc.nd.gov>

Missouri River Draft AOP Meeting

**Garland Erbele, P.E., State Engineer
North Dakota State Water Commission**

**October 6, 2016, 6pm
Bismarck State College
National Energy Center of Excellence, Bldg. 15, Room 335**

Good evening and welcome to North Dakota, my name is Garland Erbele. I am the North Dakota State Engineer. We want to thank the Corps for coming to Bismarck to take comments on the 2017 AOP.

The AOP (pg. 4) mentions the efforts of the Corps, US Fish and Wildlife Service, and MRRIC (Missouri River Recovery Implementation Committee) in the development of a new recovery plan that would incorporate adaptive management for the recovery of the listed species. Adaptive management could result in significant changes in Corps actions for recovery of the species, including changes in operations of the mainstem dams. Changes to the Master Manual should only be made after adequate public input in addition to these AOP meetings. Also, each State has responsibilities through various Federal and State statutory and constitutional authorities, for management of water quantity, water quality, flood risk management, and fish and wildlife resources within their boundaries that could be affected by these changes. We strongly urge the Corps to work with the Missouri River Basin States to determine how best the States' input can be incorporated into the adaptive management process.

We support the Corps continued collaboration with other Federal, State, and local agencies for plains snowpack monitoring (AOP pg. 5). The ND State Water Commission survey crew has participated in this effort for many years. We encourage the Corps to use not only their own monitoring network, but also other existing plains snowpack monitoring networks to the extent possible, such as those established by the ND Atmospheric Resource Board, National Weather Service, and CoCoRaHS. Utilizing these networks will increase sampling coverage in the basin and potentially improve runoff forecasts.

The Water Resources and Reform Development Act (WRRDA) of 2014 authorized the Corps to coordinate with various Federal agencies to improve soil moisture and snowpack monitoring in the Upper Missouri River Basin. These monitoring improvements were recommended in a 2014 Government Accountability Office report. The AOP states (pg. 5) that progress has been limited due to lack of funding. We advise the Corps to pursue funding for this effort because basin conditions drive operation of the dams, and better monitoring would improve forecasts.

The AOP discusses (pg. 23-24) the authorized purpose of flood control and how the dams would be operated during a flood. We encourage the Corps to include language in the AOP that describes “flood control” as “flood risk management” or “flood risk reduction”. It is impossible to control a flood, which we learned in 2011, but it is possible to reduce or manage flood risk. It is important for the public to understand the distinction so that they can make informed decisions.

Ice jam induced flooding are a special concern on the Missouri River in North Dakota, especially in the Bismarck-Mandan area. One location of particular concern is

the confluence of the Heart and Missouri Rivers. Since the 2011 flood, sediment has accumulated just downstream of the mouth of the Heart River reducing conveyance and increasing the risk of ice-induced flooding. The AOP specifies (pg. 14) that releases will be temporarily reduced to prevent ice-induced flooding during freeze-in followed by a gradual increase as conditions permit. The flood stage at the Missouri River at Bismarck stream gage station is 14.5 feet. In both the AOP and Master Manual, the Corps has indicated that they plan on preventing the exceedance of a stage of 13 feet. We recommend the operating plan be based on avoiding the exceedance of a stage of 11.5 feet, to better reduce the flood risk. We also recommend continued communication with other federal, state, and local entities during periods of freeze-in and ice-out to ensure awareness of rapidly changing conditions.

North Dakota supports the Corps working with water supply intake owners to ensure modifications are made to intakes affected by drought conditions. A letter was sent in 2013 to intake owners encouraging them to take necessary action to modify inadequate intakes. It is not clear from the AOP if the Corps has followed-up with intake owners since 2013. We urge the Corps to again contact these intake owners and ensure that intakes can operate during drought conditions.

The graphs on Plate 12 of the AOP (attached) display actual dam releases since January 2015, as well as Missouri River flows that would have resulted if the reservoirs were not in place, also known as “Unregulated Flows”. The graphs show that the “Unregulated Flow” is nearly zero fairly frequently. One example is the “Unregulated Flow” at Fort Peck, which decreases to zero at the end of July in 2015. An analysis using USGS gage daily flows, Corps’ daily reservoir inflows, and Corps’ monthly runoff

for this time period shows that the minimum daily flow on the Missouri River near Fort Peck should be about 5,000 cfs, not zero (attached). This raises questions about how “Unregulated Flow” is calculated, because the upper basin has not experienced a prolonged severe drought since the 2000-2007 drought. It is not clear from reading the AOP how “Unregulated Flows” are calculated. We recommend that the Corps clarify how these flows are calculated in their AOP’s.

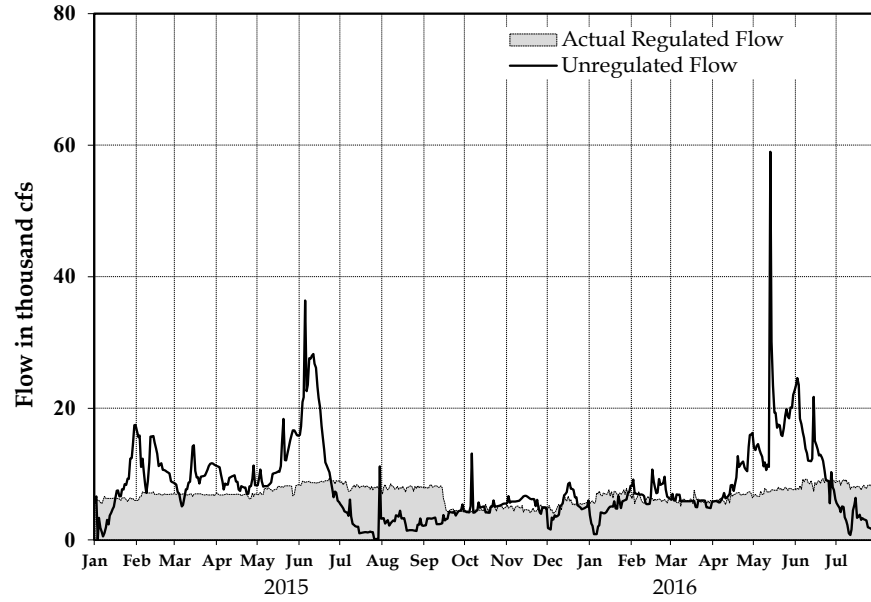
While not an AOP issue, we remind the Corps that the State of North Dakota is adamantly opposed to any effort by the Corps to charge our water users or interfere with their use of water that rightfully belongs to the people of North Dakota. The basin States and Tribes have a clear right to the use of the natural flow of the Missouri River without obligation to the federal government.

Again, thank you for the opportunity to provide comments on the 2017 AOP. We want to work with the Corps in the management of this great water resource.

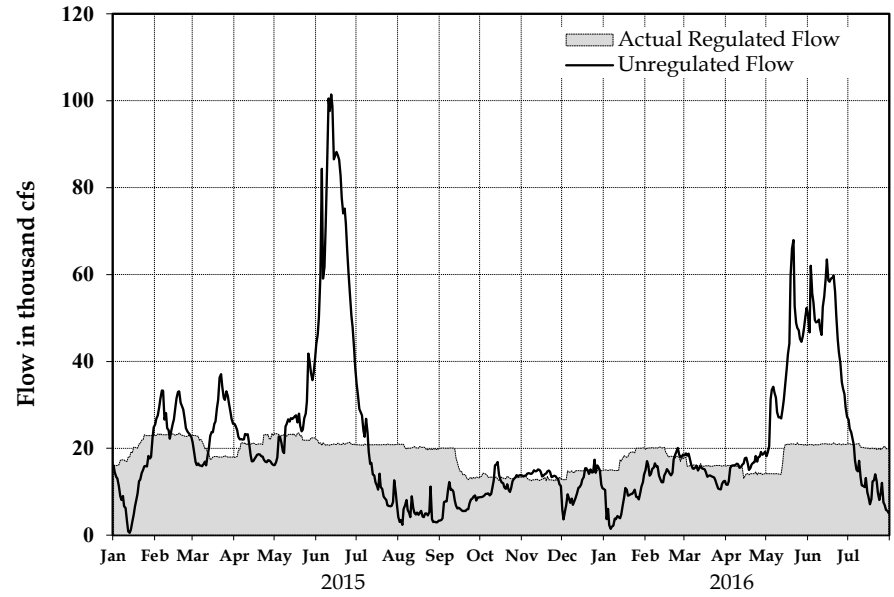
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Reservoir Release and Unregulated Flow

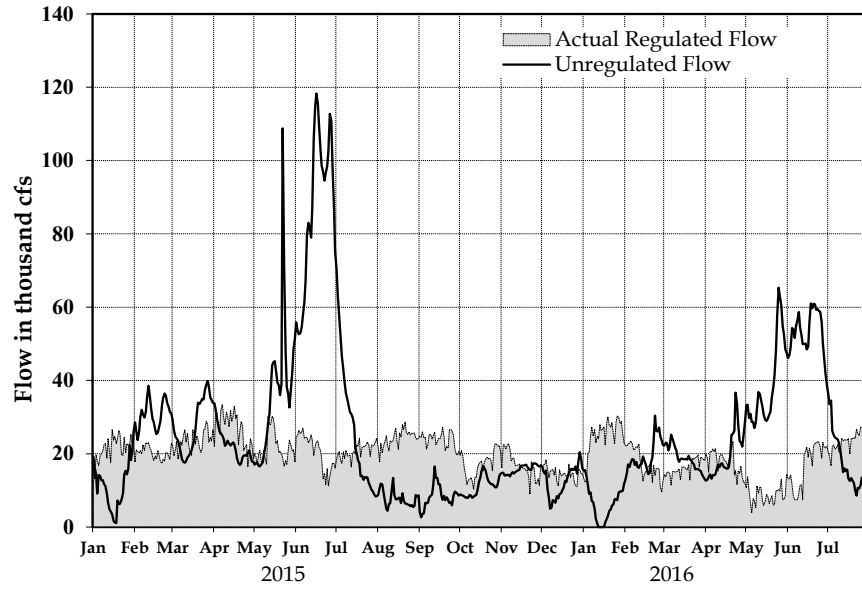
Fort Peck



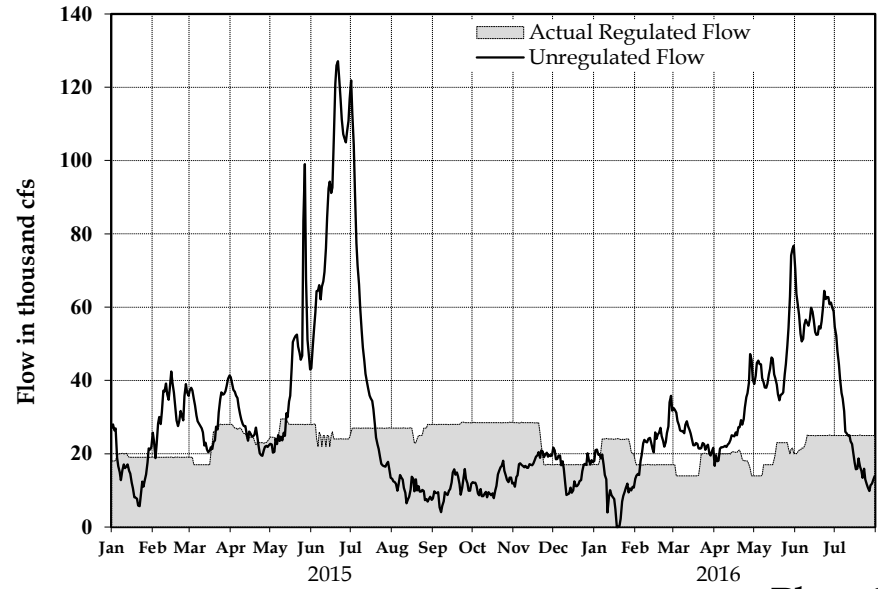
Garrison



Oahe



Gavins Point



	Corps' Monthly Runoff for Above Fort Peck Reach*			Corps' Daily Inflows for Fort Peck**			USGS Daily Data for Missouri River near Landusky, MT***		
	Monthly Runoff (ac-ft)	Average Daily Runoff for the Month (ac-ft/day)	Average Daily Flow for the Month (cfs)	Average Daily Inflow for the Month (cfs)	Minimum Daily Inflow for the Month (cfs)	Maximum Daily Inflow for the Month (cfs)	Average Daily Flow for the Month (cfs)	Minimum Daily flow for the Month (cfs)	Maximum Daily flow for the Month (cfs)
January 2015	399,000	12,871	6,489	8,839	3,000	18,000	No data	No data	No data
July 2015	508,000	16,387	8,262	6,774	5,000	16,000	6,575	6,120	7,450
August 2015	336,000	10,839	5,464	6,129	5,000	8,000	5,935	5,570	7,020

*Source: Monthly runoff numbers are from Corps' *Missouri River Mainstem Reservoir System Summary of Actual 2015 Regulation*

**Source: Daily inflows are from Corps' Missouri River Monthly Reservoir Summaries (0168's)

***Source: Daily flow data is from USGS Missouri River near Landusky, MT gage

(http://waterdata.usgs.gov/mt/nwis/dv/?site_no=06130500&agency_cd=USGS&referred_module=sw)

The "Unregulated Flow" at Fort Peck, as shown on Plate 12 of the Corps' 2016-2017 Draft AOP, indicates that the flow in the absence of the dam would be zero (or nearly zero) at several points in time. Two instances of zero, or nearly zero, flows are shown to occur in January 2015 and July/August 2015. An analysis using (1) Corps' monthly runoff, (2) Corps' daily inflow, and (3) USGS daily data for the Missouri River near Landusky, MT shows that the minimum flow near Fort Peck for January 2015 and July/August 2015 is about 3,000 cfs and 5,000 cfs, respectively.

L.C. Ackerman
9/29/2016