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International Souris River Board Winter Meeting  
USFWS Boardroom, 134 Union Boulevard, Lakewood, CO  
February 23, 2010  
**Final Minutes**

1. Introduction and Opening Remarks. Dale Frink convened the meeting at 8:45 a.m.
2. Approval of Agenda. Dale Frink added Update on Water Projects. Paul Pilon added SharePoint Site.

**Col. Jonathan Christensen motioned to accept the agenda. Doug Johnson seconded the motion. Carried.**

3. Approval of Minutes of Sept 25, 2009 conference call.

**Megan Estep motioned to accept the minutes. Col. Jonathan Christensen seconded. Carried.**

4. Review of Action Items,  
See attached table, Appendix A.

### **Hydrology**

5. Update from Hydrology Committee

- a. Development of a model to evaluate changes in the operating level of Lake Darling

Megan Estep reported that the Hydrology Committee has met by conference call. The Committee felt unsure about direction. The scope has grown beyond simply evaluating the impact of changing the operating water level for Lake Darling. It has grown beyond hydraulics and hydrology to include water quality. The Hydrology Committee felt it would be premature to collect data without knowing what type of modeling may be done.

Ed Eaton suggested modeling the basin from Lake Darling and upstream first and putting forth a proposal to that effect. He noted that a model has been developed using existing USGS digital elevation data. A lumped parameter model would require less detailed data than another type of data.

Russ Boals thought the discussion should be centered from a broader perspective on the IWI proposal both from a viewpoint of water quantity and quality. He also reviewed some specific objectives that he saw

- i. Implication of the change in operating level on Lake Darling
- ii. Implication of application of drought criteria

iii. The methodology of determining consumptive use of the reservoirs

He suggested that it is not solely the responsibility of the Hydrology Committee as the Aquatic Ecosystem Committee would need to provide input as well. He was looking for a review of the IWI proposal with some thinking on the above 3 objectives. He was not looking for a comprehensive model at this time but rather simply some input from the Hydrology Committee on the implications and what type of modeling and data collection might be required to address those implications.

Dale Frink noted that the reservoirs are interdependent. Allen Schlag said the new National Weather Service river forecasting model will handle reservoirs better. Ed Eaton noted that the NWS model handles reservoirs in a lumped way. He noted that both he and Ferris Chamberlain would like a better reservoir operation model for the Souris River basin. It does not handle reservoirs like the USACE ResSim.

Doug Johnson suggested that a combined basin-wide reservoir operating model like ResSim would be useful. Ed Eaton said such a model would enable release scenario simulation and allow optimization of releases to hit certain targets downstream. Dale Frink noted that the present system of management through inter-agency communications seems to work. Doug Johnson felt that is working because of the involvement of experienced staff. With the retirement of experienced staff, like Alf Warkentin, expertise will be lost and a reservoir operating model would be a useful tool to help less experienced staff in making knowledgeable decisions.

Ed Eaton noted that a hydrologic reservoir operating model would not require LIDAR. Routing parameters could be determined from the existing hydrometric data. LIDAR is only needed for detailed inundation mapping; it is not needed for flood routing. Allen Schlag also questioned the need for LIDAR. He suggested that IFSAR (Interferometric Synthetic Aperture Radar) may meet needs and it is more cost effective (about 1/3 cost of LIDAR).

Russell Boals noted that LIDAR may supply valuable information for identifying effective drainage areas for a particular event. The contributing drainage area will grow and shrink particularly in the prairie pothole region. He also supported the point raised by Doug Johnson with the loss of expertise as people retire and the model may help in decision-making when that expertise is lost.

Doug Johnson noted that SWA has done HEC-RAS modeling for Estevan and Roche Percee flood plain mapping. SWA does not have LIDAR for this area. Cross-sections were surveyed of the river cross-sections and overbank flooded areas. He suggested that LIDAR mapping may help in addressing water management issues related to related to relieving inundation from flooding.

Dale Frink noted that floodplain mapping in Minot and other major urban areas in North Dakota are available, however, floodplains in rural areas of North Dakota are not mapped.

Paul Pilon suggested that we need a system model with reservoir routing.

David Donald added that LIDAR would be very useful in the Yellowgrass area where there is very little relief.

Russell Boals suggested the committee put together a summary table of what models are currently being used in the basin, the characteristics of the models, the responsible agency, the geographic area of application, etc. Needs requirements for models for the future should also be examined.

ACTION: Hydrology Committee to prepare a spreadsheet format compilation of models used in the Souris River Basin and review future needs and requirements.

b. Update on lowering of outlet sill on Pool 357.

Ed Eaton reviewed the background on the issue. A carp barrier was installed that presents some operational difficulty in lowering Pool 357 to levels required by USFWS. The USFWS had a report with six recommendations including installation of a permanent pump station, a temporary pump station and modifying the structure in various ways. The USACE has solutions but currently lacks funding to investigate solutions.

Dale Frink noted that North Dakota is required to release 20 cfs from June to October and the installation of the carp barrier has caused some operational issues in meeting that release. Megan Estep noted that the USFWS attempts to hold water in upstream structures at levels to meet refuge objectives. To meet the minimum flow criteria, when there is wind blowing upstream at the outlet structure on Pool 357, then water must be moved from upstream pools to achieve sufficient head to make the release at Pool 357. David Donald asked how often the 20 cfs criterion has not been met. Russ Boals noted that it will generally only occur in dry years when Manitoba will be seeking to ensure the 20 cfs minimum flow is met, while at the same time, the dry conditions may lead to difficulty on delivering that flow. Only if flows are low enough to the point where the Board decides that severe drought conditions exist, then the minimum flow may not need to be met.

c. Funding for gauging on the Souris River.

Megan Estep reported that the USFWS continues to fund 50% of gauging on the Souris River in North Dakota. No changes to that funding are expected.

d. Update on Committee Membership

Doug Johnson and Megan Estep are co-chairing the Hydrology Committee. No single chair has yet been identified.

6. Update from Flow Forecasting Liaison Committee

Doug Johnson presented a report written by Martin Grajczyk, chair of the SRFFLC. There was very good liaison between all agencies of the SRFFLC in 2009. The crest for the Souris River at Westhope was not as high as expected. There were significant changes in membership of the committee. The Terms of Reference have not been reviewed by the members due to other priorities. The co-chairs of the Committee are Brian Connelly, US NWS and Martin Grajczyk of SWA. Brian Yee noted that he had some email discussion with Alf Warkentin. He had apprised Alf and Martin that the Board had agreed that only one chair was required. Dale Frink said that if the Committee functions well with two co-chairs that is acceptable. The Board's main concern is active participation from member

agencies.

7. Determination of Souris River flows to December 31, 2009

Dave Helfrick reviewed the determination of natural flow of the Souris River at Sherwood to December 31, 2009. He noted that 2009 had the highest flows since 2001. The total diversion in the Long Creek basin was 10,579 dam<sup>3</sup>. The total diversion in the Upper Souris basin above Estevan was 94,657 dam<sup>3</sup>. The total diversion in the Lower Souris basin below Estevan to Sherwood was 4,191 dam<sup>3</sup>. The total diversion in the Moose Mountain Creek basin was 19,961 dam<sup>3</sup>. Total additions from non-contributory basins was 34,670 dam<sup>3</sup>. The surplus delivered to the USA at Sherwood was 20,273 dam<sup>3</sup>. The surplus from the USA on Long Creek at Eastern Crossing was 9,506 dam<sup>3</sup>. There were no comments.

**Gregg Wiche motioned to accept the determination. Megan Estep seconded. Carried.**

8. Review of 2009 hydrologic conditions and forecast for spring 2010

a. Saskatchewan

Doug Johnson presented the Saskatchewan Watershed Authority forecast as of February 15. Median to above normal flows in the basin (approximately a 1 in 10 year event) are expected with precipitation in the Saskatchewan portion of the basin being 100 to 150% of normal from November 1, 2009 to February 16, 2009. Antecedent conditions are wet with depression storage in Saskatchewan being full. Dale Frink asked when the Board would make a decision on flood operations. Ed Eaton suggested that March 1 or 15 would be an appropriate target date depending on how precipitation and runoff ensues and decreasing or increasing potential for flooding. Russell Boals noted that there are 2 issues: flood operations which is independent of the 60/40 vs 50/50 apportionment, and the 60/40 vs. 50/50 apportionment which is triggered by a forecasted volume of more than 50,000 dam<sup>3</sup> and Lake Darling being at a certain elevation. It appears that 2010 will be a 60/40 apportionment year, but it is too early to determine if flood operations will be invoked. Gregg Wiche asked if a 1 in 10 year event could rapidly turn into a 1 in 50 year event. Doug Johnson replied that if the runoff does not occur until April 15, there is a greater probability to a high runoff due to a rapid melt and greater possibility of a rain on snow event. If there is a slow melt in March, there is more sublimation and lower runoff.

b. North Dakota

Gregg Wiche presented a report on the 2009 hydrologic conditions in North Dakota. The flows in Souris basin were fairly significant for the calendar year 2009. The total volume of flow past the Long Creek at Noonan gage, for calendar year 2009, was 83.9% (45,260 ac-ft; 55,810 dam<sup>3</sup>) of the total combined flows for calendar years 2003 – 2008 (53,933 ac-ft; 66,499 dam<sup>3</sup>). The flows past the Souris River at Sherwood were 43.5% (76,167 ac-ft; 93,910 dam<sup>3</sup>) of the total combined flows for calendar years 2003 – 2008 (175,237 ac-ft; 216,067 dam<sup>3</sup>). The total flow recorded at the Sherwood gage for the first 5 months of 2009 exceeded all years since 2003, except for 2005 (12-months) when a total flow of (78,660 ac-ft; 96,988 dam<sup>3</sup>) was recorded.

While the recorded volumes were fairly high, the peak stages and corresponding peak discharges were not as high as expected. The peak daily stage at Long Creek near

Noonan did not exceed the highest four recorded peak stages. The Souris River at Sherwood did not exceed the National Weather Service flood stage of 18.0 feet.

Flows in the lower reaches of the Souris River were higher. A peak-of-record stage of 17.92 ft was recorded on the Souris River near Verendrye on April 15 which is +0.08 ft higher than the previous peak-of-record recorded on April 19, 1976. All recording stations downstream were above the long-term median flow from early April through May 31.

The Souris River at Westhope was 6 ft above flood stage, though the stage did not exceed the highest four recorded peak stages.

Allen Schlag reviewed the NWS forecast for the 2010 runoff. The Souris River basin has an unusually heavy snowpack and accompanying snow water equivalent. The runoff will be highly dependent on the amount of precipitation that is yet possible before the eventual spring melt. If the next month follows the normal cycle for precipitation, snow water equivalents will be about 130% of current values.

c. Manitoba

Dwight Williamson presented a report on the 2009 hydrologic conditions in Manitoba.

The 2009 spring flood on the Souris River produced the highest stages since 1999 in the Manitoba portion and in some areas the second highest stages for the past 30 years. Significant flooding of hay lands occurred from the U.S. boundary to near Melita during April and May and there were minor overbank flows from Melita to Souris from late April to mid May. Following the spring flood, flows and levels of the Souris River were suitable for the remainder of 2009, aided by above average releases from the J. Clarke Salyer Refuge in North Dakota.

The spring flood of 2009 was generated mainly in North Dakota where soil moisture and snowcover were above average. Runoff from the Manitoba portion ranged from average to slightly above average. Runoff began in March but was delayed by cool weather in early April. Souris River crests in Manitoba occurred from late April to early May. The duration of flooding in Manitoba was much less than in 1999 due to less runoff from Saskatchewan and due to normal spring rainfall as opposed to the record high May and June rains of 1999.

The 2009 spring runoff in Manitoba was sufficient to at least partially replenish surface and groundwater supplies which had been very low in 2008. Souris River flows in Manitoba ranged from 100 cfs to 300 cfs from May to November due to plentiful releases from the J. Clarke Salyer Refuge in North Dakota. These above average flows did not result in any complaints about flooding of low lying hay lands in the Coulter area where the bankfull capacity is 150 cfs. The higher than usual summer flows were welcome in other portions of the river.

Flows in the Souris River at the end of 2009 ranged from near zero at Coulter to about 25 cfs at Wawanesa, which is in the suitable range for that time of year.

Dwight Williamson presented the spring runoff forecast for 2010 prepared by Alf Warkentin. Basin conditions as of mid-February, 2010 suggest that spring runoff will be above average. Soil moisture appears to be close to normal but snowcover is well

above average. Flooding is expected along the Manitoba portion of the Souris River but peak stages based on average future precipitation should be about half a metre lower than 2009 crests. While some agricultural lands near the river will likely be flooded, no buildings will be threatened unless weather conditions from now through April are severe. Dale Frink noted that North Dakota is forecasting that inflow into Manitoba will be higher than normal.

#### 9. Operating Conditions – Rafferty Reservoir

Doug Johnson gave a PowerPoint presentation and also provided a handout on the seepage occurring at Rafferty Dam. The seepage was found inadvertently when a SWA crew drove through the seepage spot. The source of the water is a coal seam. He reviewed the remediation and instrumentation installed to date and future plans. Two additional drains are being constructed prior to the 2010 spring runoff, piezometers and slope inclinometers have been installed. The objective of the remediation is to raise the factor of safety.

Dale Frink noted that the Rafferty and Alameda Dams in Canada combined with works in North Dakota, provide the City of Minot with 1 in 100 year flood protection. Dale asked if that level of flood protection is affected by situation at Rafferty Dam. Doug Johnson replied that Rafferty Reservoir has been lowered to provide storage for the forecasted spring runoff to meet the flood protection requirements.

#### 10. Review Water Quantity Monitoring Plan for 2010

Dave Helfrick stated that an automatic water level recorder will be installed on the Unnamed Tributary near Outram station which is a tributary inflow to Rafferty Reservoir. To date, this has been operated as a miscellaneous station meaning water quantity measurements are taken but water levels have not been collected. He also noted that there are plans to install an acoustic velocity meter on the mainstem Souris River inflow to Rafferty. This existing station has been affected by backwater and it is hoped that the acoustic velocity meter will provide more accurate flow measurements.

Gregg Wiche indicated that the USGS has no plans for changes to its monitoring network.

#### 11. Water appropriations in the Souris River Basin during 2009

Doug Johnson reported there were no additional water appropriations in Saskatchewan in 2009.

Bob White provided a handout of water appropriations in ND. Dale Frink noted that there has been some additional water license requests related to fracking (fracturing of rock) to improve oil recovery.

#### 12. Operation of U.S. Refuges and Reservoirs on the Souris River in 2009 and plans for 2010.

Kelly Hogan reviewed operations of the USFWS refuges and reservoirs in 2009 and proposed operations in 2010.

##### a. Operations in 2009

The total provisional inflow measured at Sherwood for the first five months of 2009 was 61,117 acre-feet (75 388 cubic decametres). This was 86 percent of the historic

January-May inflow, which was 71,033 acre-feet (87 620 cubic decametres) for the period from 1938 through 2009. Total Upper Souris Refuge pool volume increased 71,331 acre-feet (87,746 cubic decametres) during the first five months. Total provisional outflow measured at Foxholm on the south end of Upper Souris Refuge for the first five months was 2,599 acre-feet (3 205 cubic decametres). This was 4 percent of the historic January-May outflow, which was 64,491 acre feet (79 550 cubic decameters) for the period from 1938 to 2009. Lake Darling elevation increased 7.68 feet (2.34 metres) from 1589.82 feet (484.58 metres) on January 1 to 1597.5 feet (486.92 metres) on May 31.

The lake elevation on June 1 was 1597.5 feet (486.92 metres).

Total measured flow from the Souris River to the J. Clark Salyer Refuge from January 1 through May 31 was 177,819 acre-feet (219 340 cubic decametres). Pool volume on May 31 was 64,789 acre-feet (79 917 cubic decametres). This was 9,961 acre-feet (12 287 cubic decametres) above the January 1 volume, and approximately 427,687 acre-feet (527 552 cubic decametres) were passed to Manitoba during the period.

Total outflow measured at Westhope for 2009 (water year) was 403,911 acre-feet (498 224 cubic decametres). Total outflow was 184,564 acre-feet (227 660 cubic decametres) more than total measured inflow on the Souris River at Bantry. Outflow during the June 1 to October 31 period was 86,262 acre-feet (106 405 cubic decametres), or 80,192 acre-feet (98 917 cubic decametres) above the 6,070 acre-feet (7 487 cubic decametres) required minimum.

b. Proposed Operations for 2010

i. Upper Souris National Wildlife Refuge

With Lake Darling nearly full and a relatively heavy snowpack in the basin plans for releases in late winter will be considered to evacuate water and increase storage capacity. The first forecast for spring runoff is a 1:7 flood event. At this time it is anticipated that little if any water will be released for downstream commitments.

As needed, water will be released from Lake Darling to manage marsh pools on two national wildlife refuges and to provide water to fulfill North Dakota's obligation to provide a 20 cubic feet per second (0.57 cubic metres per second) release to Manitoba from June through October. Water release schedules from Lake Darling and/or the Refuge will be determined following the spring runoff and may be changed during the summer as weather events and refuge water management needs occur.

ii. J. Clark Salyer National Wildlife Refuge

Pools will be operated to pass inflows, protect over water nesting migratory birds, and maintain target levels. Depending on the inflow, Pools 320, 341, and 357 will be refilled to spillway elevations and held at management level to encourage development of emergent and submergent vegetation for wildlife habitat. If conditions allow, Pool 326 will be lowered in an attempt to dry it up. Pool 332 will need to be held at a lower level to facilitate the drawdown of Pool 326. All the pools will be allowed to decline slowly throughout the summer to

mimic a natural seasonal water level decline.

13. Update on the Northwest Area Water Supply (NAWS) projects

Dale Frink gave an update on the NAWS project. The pipeline from Lake Sakawea has been put on hold due to an injunction related to a lawsuit filed by Manitoba. A pipeline has been constructed to supply water from Minot to Kenmare and Foxholm. That pipeline is currently in operation supplying treated water from the City of Minot water treatment plant to Kenmare and Foxholm.

14. Update from Aquatic Ecosystem Health Committee

a. AEHC membership

Mike Sauer reported on latest membership of AEHC. The AEHC has been established but has not yet met.

b. Phenol monitoring

The AEHC polled its members and they all agreed that phenol monitoring was not required for the following reasons: it is expensive, there have been no hits, and it had been established as a parameter of interest at a threshold level. Dale Frink asked how the phenol objective had been established. Mike reported that the Souris River Bilateral Water Quality Monitoring Group had reviewed objectives of the provinces of Saskatchewan and Manitoba and the state of North Dakota and had thought that phenol would be a parameter of interest. Gregg Wiche reviewed a discussion he had with Bob Lundgren. Bob had questioned the need for phenol monitoring when there have been no detections. There are no aquatic health criteria for phenols. The human health threshold on phenols is quite high. Mike reported that seven or eight samples have been taken/year since 1989 and there have been no detections. David Donald said that it is time to drop phenol monitoring considering the long period of monitoring. Bruce Holliday noted that Environment Canada has stopped analysis for phenols in 1990.

**Gregg Wiche motioned to suspend phenol monitoring for 2010. David Donald seconded. Carried.**

ACTION: Aquatic Ecosystem Health Committee to review the phenol data and provide a written report to the Board.

c. Winter anoxia

Mike Sauer noted that it is highly likely that dissolved oxygen levels have dropped to anoxic levels over the winter due to the heavy snowpack. Joel Galloway noted that USGS staff will be conducting a measurement and sampling for water quality at Sherwood in the next week.

15. Compliance with water quality objectives for 2009

Mike Sauer noted that the 2009 water quality data are not yet available from USGS.

Bruce Holliday reported on EC sampling. In 2009, eleven samples were taken at Westhope and one sample was taken at Sherwood with USGS as part of a joint QA/QC program. Exceedances (as a percent of samples) were: phosphorus (100%), sodium (70%), sulphates (10%), iron (10%), chloride (10%) and TDS (10%).

## 16. Water Quality Monitoring Plan for 2010

Bruce Holliday reported that in 2008, he had proposed to the Board to discontinue total coliform sampling in favour of e.coli. Bruce conducted total coliform and fecal coliform joint sampling in 2009. He noted that total coliform sampling will be discontinued effective January 1, 2010. He had canvassed all the members of the AEHC and they all agreed to dropping total coliform and replacing it with e. coli except for the Province of Saskatchewan as they were unsure with a direction.

Dale Frink suggested that changes in monitoring require approval by the Board similar to the motion made on phenol

David Donald asked for more information on the sampling and how much extra effort is required to analyze for total coliform. Bruce replied that total coliform, fecal coliform, e. coli, and fecal streptococcus analysis are done. Bruce said the analysis is done by a dual test. There is no extra effort to do the dual test. There are about 30 years of data.

Paul Pilon asked who set the monitoring objectives and has the authority to change the objectives. Russell Boals said that the IJC has given the authority to the Board through its directive to review and update the objectives. Bruce Holliday noted that there is only an objective for fecal coliform. There is no objective for total coliform, e. coli., or fecal streptococcus. Paul Pilon reviewed the directive, under item 6.3, 4<sup>th</sup> bullet. The directive says the Board is to provide recommendations on a monitoring program. Paul noted the example of the Red River Board which has written a letter to the Commission requesting a change from fecal coliform to e. coli. Bruce Holliday noted that the ISRB does not have an objective for Total Coliform, e.coli, and fecal streptococcus; there is only an objective for fecal coliform. Since Total Coliform is not an objective, then the Board has the authority to drop it.

Paul Pilon noted that since phenols is an objective then a letter will need to go from the Board to the Commission seeking to drop phenols from the monitoring program. The motion made in agenda item 14b will need a follow-up letter from the Board to the Commission and the Commission will need to accept the recommendation and submit the recommendation to governments. The governments must then approve the request before phenols can be dropped. Russ Boals questioned the process of the Board having to seek approval from the Commission to change the sampling program. Russ and Dale noted that the phenols objective would not be dropped, rather the monitoring program would be adjusted to less frequent analysis to once every 5 years. Paul agreed that if the objective is not changed or dropped, then the Board can approve a change in the monitoring program.

David Donald noted that Total Coliform is a good indicator for aquatic ecosystem health but it does not have value as a human health indicator. Dale Frink suggested that the AEHC prepare a report to the Board on the sampling and analysis for Total Coliform, e. coli., fecal coliform, and fecal streptococcus. Analysis and reporting for Total Coliform is to continue until the report is completed.

**ACTION:** AEHC to prepare a report on the sampling and analysis for Total Coliform, e. coli, fecal coliform, and fecal streptococcus.

## 17. Review of Water Quality Standard in the State of North Dakota

Mike Sauer reported on the review of water quality standards in the state of North Dakota. Some numeric parameters have been added based on toxicological science on impact on human health and aquatic ecosystem health. Fecal coliform is being deleted and replaced with e. coli.

## 18. Funding of Water Quality Monitoring

Ferris Chamberlain introduced Jim Noren who will be involved in the Aquatic Ecosystem Health Committee. Col. Jonathan Christensen reported that the US Army Corps of Engineers will continue to fund water quality monitoring in flood and non-flood years as per the past arrangements.

## 19. Board and Committee Membership

All Committees have identified a chair except for the Aquatic Ecosystem Health Committee.

ACTION: Russell Boals will talk to Richard Zitta about selecting a chair for the AEHC.

## 20. Update on International Watershed Initiative Projects

### a. IWI Modeling Steering Committee

Paul Pilon reviewed the IJC's request for two representatives from the ISRB to sit on the IWI Modeling Steering Committee. Paul Pilon suggested the Board send a letter to the IJC IWI coordinators (Ted Yuzyk and Bob Reynolds). Dwight Williamson and Russell Boals had been identified as representatives back in June 2009. These were confirmed.

ACTION: Brian Yee to send a reply to Ted Yuzyk and Bob Reynolds that Dwight Williamson and Russell Boals will represent the ISRB on the IWI Modeling Steering Committee.

Russ Boals asked about the status of the IWI Water Quality Monitoring proposal. Paul Pilon indicated that proposal was related to a review of the water quality monitoring network. Gregg Wiche indicated that the IJC is focusing its efforts on larger proposals at this time.

### b. IJC SharePoint

Paul Pilon introduced the IJC SharePoint which could serve as an electronic means of storing key files and to improve communication in the Board and its Committees. Paul noted that the Rainy and Red River Boards have expressed interest in SharePoint sites. The Board agreed a SharePoint for the ISRB would be of value.

ACTION: Brian Yee to contact John Yee, IT support for the IJC Ottawa, to set up a SharePoint for the ISRB.

## 21. Update Work Plan.

There were no updates to the work plan. Dale Frink suggested adding leads (board member or a committee) to the workplan. Russ Boals agreed to do that.

**ACTION:** Russ Boals to provide suggested leads for each work plan item and send out the revised work plan to the Board.

22. Next meeting

The public meeting was scheduled for the evening of June 14. The Board meeting will be held morning of June 15. The meeting will be held in North Dakota at a location TBD.

A conference call will be held the afternoon of March 23 to discuss possible flood operations. This date is after the SWA flow forecast of March 15 and the NWS flow forecast of March 19.

23. Adjournment – Dale Frink adjourned the meeting at 1:15 p.m.

## **List of Attendees, International Souris River Board meeting, February 23, 2010**

### **Board Members in Attendance**

Dale Frink, USA Co-chair, ND State Water Commission, Bismarck, ND  
Dennis Fewless, Member for the USA, ND Department of Health, Bismarck, ND  
Doug Johnson, Member for Canada, Saskatchewan Watershed Authority, Moose Jaw, SK  
\*Dwight Williamson, Member for Canada, Manitoba Water Stewardship, Winnipeg, MB  
Gregg Wiche, Member for the United States, US Geological Survey, Bismarck, ND  
Megan Estep, Member for the USA, US Fish and Wildlife Service, Denver, CO  
Russell Boals, Canadian Co-chair, Environment Canada, Regina, SK  
Col. Jonathan Christensen, Member for the USA, US Army Corps of Engineers, St. Paul, MN  
David Donald, Member for Canada, Environment Canada, Regina, SK

### **Regrets**

Bob Harrison, Member for Canada, Manitoba Water Stewardship, Winnipeg, MB  
Richard Zitta, Member for Canada, Saskatchewan Ministry of the Environment, Regina, SK  
Scott Gangl, Member for the United States, North Dakota Game and Fish,

### **Support Staff in Attendance**

Allen Schlag, Service Hydrologist, National Weather Service, Bismarck, ND  
Brian Yee, Canadian Co-secretary, Environment Canada, Regina, SK  
Dave Helfrick, Hydrometric Supervisor, Environment Canada, Regina, SK  
Ed Eaton, IJC Technical Specialist, US Army Corps of Engineers, St. Paul, MN  
Kelly Hogan, Project Leader, US Fish and Wildlife Service, Berthold, ND  
Ken Bottle, Hydrologist, US Fish and Wildlife Service, Denver, CO  
Mark Colisomo, Engineering Advisor, IJC, Washington, DC  
Mike Sauer, Water Quality, North Dakota Department of Health, Bismarck, ND  
Paul Pilon, Engineering Advisor, IJC, Ottawa, ON  
Robert White, USA Co-secretary, ND State Water Commission, Bismarck, ND  
Scott Hill, Operations Manager, Environment Canada, Regina, SK  
Jim Noren, Water Quality, US Army Corps of Engineers, St. Paul, MN  
Ferris Chamberlain, Water Management, US Army Corps of Engineers, St. Paul, MN  
\*Kevin Johnson, Environmental Contaminants Program, USFWS, Denver, CO  
\*Joel Galloway, Upper Souris NWR, USFWS, ND  
\*Tom Pabian, Upper Souris NWS, USFWS, ND  
\*Bruce Holliday, Water Quality Monitoring, Environment Canada, Regina, SK

### **Observers**

Paul Coren, Refuge Supervisor, North and South Dakota, USFWS, Denver, CO

\* attended by conference call

**International Souris River Board**  
**February 23, 2010 Meeting**  
**APPENDIX A - STATUS OF ACTION ITEMS**

<b>PERSONS RESPONSIBLE</b>	<b>AGENDA ITEM</b>	<b>MINUTE</b>	<b>ACTION</b>	<b>STATUS Updated Feb 23, 2010</b>
Doug Johnson	Hydrology Committee	Sep 25/09-3 June 18/09-9a. Feb 27/09-10a.	Doug Johnson to provide a copy of the revised draft Terms of Reference of the Hydrology Committee to the Board and Secretary. Doug to send out by June 25.	Completed.
Doug Johnson	“	Sep 25/09-3 Feb 27/09-10a.	Doug Johnson to coordinate and call a meeting of a Canadian team for production of a draft procedures manual.	Incomplete.
Russell Boals	“	Sep 25/09/3 June 18/09-4. Feb 27/09-10b.	Russell Boals to determine what analysis has been done on Inflow/Outflow vs. Change in Storage for Rafferty Reservoir and provide a report to the Hydrology Committee.  At the June 18 meeting Russell noted that he had a brief discussion with Mike. Russell was to follow-up with Mike to request a summary of his activity.	Incomplete. Russell has spoken to Mike Renouf. Mike no longer has the files. This is now on the work plan for the Hydrology Committee.
Gary Erickson Alf Warkentin Doug Johnson Kelly Hogan	Hydrology -- Apportionment Requirements and Actions	Sep 25/09-5d	Gary Erickson, Alf Warkentin, Doug Johnson, and Kelly Hogan to discuss water management operations (for the fall and winter of 2009-10 in preparation for spring runoff 2010)	On agenda
Bob Harrison	Flow Forecasting Liaison Committee	Sep 25/09-3 June 18/09-10a	Bob Harrison will contact Martin Graczyk to confirm the members of the committee and arrange a process to review the Terms of Reference.	Incomplete. Bob will contact Martin for follow-up.
Bob Harrison Martin Graczyk Ed Eaton	“	Sep 25/09-3 June 18/09-10d.	SRFFLC to write a report on the spring 2009 flood. The report is to document what happened, provide a chronology of events, examine why the forecast (at Minot) was too high, lessons learned, and make recommendations for improvements for the future.	Incomplete.
Russell Boals	“	Sep 25/09-3 June 18/09-10b.	Russell Boals will provide Brian Yee with the new committee member for the Water Survey of Canada	Completed. Colin Angus is the new member for the Water Survey of Canada.
Richard Zitta Russell Boals	Aquatic Ecosystem Health Committee	June 18/09-11c	Richard Zitta to follow-up with Susan Cosen as rep from DFO.	Russell Boals sent a note to Dr. Wheatley, RD of DFO. Still waiting for word from DFO.
Russell Boals Brian Yee	International Watershed Initiative Projects	Sep 25/09-3 June 18/09-12a.	Russell Boals and Brian Yee to revise the IJC IWI proposals to address the review committee's conditions.	Superseded. Russell Boals reported that this proposal has been changed to reflect the hydrologic/hydraulic workshop (see below).
Paul Pilon Mark Colosimo	“	June 18 - 12c	IJC to provide leadership in developing hydrologic/hydraulic modeling workshop(s). Russell Boals and Dwight Williamson to participate on workshop organizing committee.	Russell reported that the IJC has sent out a letter seeking members on a workshop steering committee. On agenda as item 19.

**International Souris River Board  
February 23, 2010 Meeting  
APPENDIX A - STATUS OF ACTION ITEMS**

<b>PERSONS RESPONSIBLE</b>	<b>AGENDA ITEM</b>	<b>MINUTE</b>	<b>ACTION</b>	<b>STATUS Updated Feb 23, 2010</b>
Megan Estep Richard Zitta Bob Harrison	“	Sep 25/09-3 June 18/09-12b.	The three committees to review the IWI proposal and provide comments to the Board. Megan to contact the Hydrology Committee, Richard to contact the Aquatic Ecosystem Committee, Bob Harrison to contact the Flow Forecasting Liaison Committee.	This action was no longer relevant following discussion of the hydrologic/hydraulic modeling workshop.
Doug Johnson	“	Sep 25/09-3 June 18/09-12 f June 18/09-4 Mar. 18/09-4a	Doug Johnson to lead on the development of the IWI LIDAR Proposal. Doug Johnson to setup a conference call of the Hydrology Committee for the end of May to discuss the IWI proposal. (Doug Johnson was to ask some of this staff to prepare a cost estimate for LIDAR surveys in the Souris River basin. Doug Johnson volunteered to lead on preparing the IWI proposal at the June meeting).	Incomplete. Doug reported that this is on hold until there is a direction on the modeling to be done (which will be an outcome of the IJC workshops).
All Board members Brian Yee	Other Business – review of water information kits	Sep 25/09-12	Board to provide comments (on the draft water information kits produced by the consultant) to Brian Yee by mid-October. Brian to forward comments to the consultant by the end of October.	Completed.
Megan Estep	Other business – Hydrology Committee	Sep 25/09-3 June 18/09-13c.	Megan Estep to organize a meeting of the Hydrology Committee at the USFWS office in Minneapolis for early October.	Megan reported that the meeting in Minneapolis was not held. A conference call was held. Also, part of the group met in Bismarck, ND.

Note: When two or more meetings are referenced to an item; that indicates a carry-forward of an action item from previous meetings.