INTERNATIONAL
SOURIS RIVER
BOARD

CONSEIL
INTERNATIONAL
DE LA RIVIÈRE SOURIS

International Souris River Board

Agriculture and Agri-Food Canada
300 - 2010 12th Avenue

Regina, SK

February 23, 2017

Final Minutes

Board Members:
Russell Boals, Garland Erbele, John-Mark Davies, Frank Durbian, Nicole Armstrong, Gregg Wiche, Jeff Woodward, David Pattyson, Joe Goodwill, Lorinda Haman, David O'Connell, Shelly Weppler

Via conference call – Mark Lee, David Glatt, Debbie McMechan**.**
Regrets: John Fahlman, COL. Samuel Calkins, Scott Gangl

Attendees:
Commissioner Lana Pollack, Mark Gabriel, Wayne Jenkinson, Scott Jutila, Bob White, Ken Bottle, Jim Olson – KXMC TV Station, Minot; Cody Garbutt, Laura Diamond, Heather Husband, Tim Fay, Dan Jonasson, Steve Robinson, Elizabeth Nelson, Wanda McFadden, Ryan Ackerman, Curtis Hallborg, Tom Barry, Judy DesHarnais, James Bay, Mitch Weier, Girma Sahlu.

Via conference call - Kristina Farmer, Bill Werick (IJC), Kelsey Kolars (USGS)

1. Introduction and Opening Remarks.

   Russell Boals opened the meeting at 9:30 a.m. and welcomed Garland Erbele, the new US Co-Chair, from the North Dakota State Water Commission. R. Boals also welcomed IJC Commissioner Lana Pollack and Advisors Mark Gabriel and Wayne Jenkinson; Board members, and other participants to the meeting. R. Boals extended his welcome to other attendees including those on the conference call. R. Boals then invited Board members and participants to introduce themselves. ISRB currently has 18 members of which 6 are public members; 3 from Canada and 3 from the United States, respectively.

R. Boals reminded attendees that the focus of the meeting would be to report on natural flow and basin conditions in 2016 and to discuss preparations for the spring 2017 freshet.

2. Approval of Agenda.

The agenda was approved as circulated.

Motion: Nicole Armstrong motioned to accept the agenda as presented. Gregg Wiche seconded the motion. **Carried**.

3. Approval of Minutes:

Face-to-Face Meeting on June 14, 2016 - Correction to remove Ken Bottle from the Board membership list.

Motion: Lorinda Haman motioned to accept the minutes with the minor modification noted. Jeff Woodward seconded the motion. **Carried.**

4. Review of Action Items

Russell Boals went through the action items that were carried over from past meetings:

a. Development of Natural Flow Procedures – The Hydrology Committee is working on the procedures and will report on progress during the meeting.

b. The action item related to the Spring 2009 Flood Report has been completed by the US ACE. A draft copy was sent to Board members for their review and comments.

c. Joel Galloway to investigate the reason for the discrepancies of the results of the joint water quality sampling between Canada and the USGS (Not sure. Steve Robinson will follow-up). Outstanding.

d. Presentation from DU - DU noted that there was nothing significant to report at this time and the item was deferred to the summer Board meeting.

e. Mark Gabriel (IJC) will present the results from review of the Souris River Water Quality Objectives under agenda item 12. The report has been completed.

5. Determination of Natural Flow of the Souris River at Sherwood to December 31, 2016

Cody Garbutt reported on the results of natural flows determined by Environment Canada for the period ending December 31, 2016. The total diversion in the Souris Rivers basin was 6,634 dam^3. Recorded flow at Sherwood was 41,291 dam^3. The natural flow computed at Sherwood was 47,925 dam^3. According to these computations, the US share at 50% was 23,960 dam^3.The flow received by the US was 43,119 dam^3 which constitutes a surplus delivery of 19,159 dam^3. The annual flow requirement / apportionment at Long Creek station has also been met with a surplus of 5,288 dam^3.

Motion: Frank Durbian motioned to accept the Natural Flow Computation to December 31, 2016. Gregg Wiche seconded. **Carried.**

6. Hydrology Committee

a. Report on Activities of the Hydrology Committee

Ken Bottle reported that the Hydrology Committee is working on the ***Apportionment Procedures Manual*** for the Souris River. The report is almost 80% complete.

b. Report on any Changes to the Current Water Quantity Monitoring.

Ken Bottle, US FWS, stated there are plans to make the monitoring program better in the future. Cody Garbutt mentioned there are no major planned changes for the Canadian side in 2017. However, Jeff Woodward mentioned there could be some minor changes as some stations change designation from federal to provincial in Saskatchewan. Steve Robinson and Mark Lee reported no changes to their monitoring programs in the North Dakota and Manitoba, respectively.

K. Bottle noted that currently there is no Canadian Co-Chair to lead the Committee. After some discussion, the Board agreed to appoint Martin Grajczyk from the Saskatchewan Water Security Agency as the Canadian Co-Chair.

Motion: Jeff Woodward motioned to accept Martin Grajczyk as the Canadian Co-Chair to Hydrology Committee. Frank Durbian seconded. **Carried.**

7. Review of 2016 Hydrologic Conditions, Spring 2017 Hydrologic Forecast, and Planned Operations

a. Saskatchewan

Curtis Hallborg reported that fall precipitation in 2015 in the Saskatchewan portion of the Souris Basin was below normal. Particularly, wetlands were dry in the south-west portion of the basin. Winter precipitation in 2015/2016 was well below normal (40-60% of normal) across the basin. Based on the March 1, 2016 forecast, there was no flood operation in 2016. Rafferty and Alameda Reservoirs were at their normal drawdown levels for February 1. Outflows were terminated in January 2016. Hydrologic conditions in Saskatchewan for the remainder of 2016 varied from slightly above normal in April and May to near normal in the summer and to well above normal by the fall as a result of near record rainfall accumulation in October. Overall, for the period April 1 to October 31, precipitation was 150-200% above normal in 2016.

C. Hallborg also reported that Rafferty and Alameda Reservoirs were lowered to their respective normal drawdowns:

- Rafferty was at 549.50 m on February 1, 2016
- Alameda was at 560.99 m on February 1, 2016.

Reservoir outflows were terminated in January 2016 after normal drawdown targets were achieved. All inflows were stored at Rafferty, Alameda, and Boundary Reservoirs during spring runoff. The diversion from Boundary to Rafferty was not operated in 2016. The summer release from Rafferty served as dilutant during the Duck Pond release. Releases from Rafferty were made from July 26 to August 11 because the Duck Pond below Rafferty Dam required repair to damages caused by rodents and erosion. The release was also needed to store water in advance of a planned shutdown at SaskPower's Shand Power Plant. The water released from the Duck Pond

was of poor quality (high pH and ammonia concentrations). There was concern about impact on aquatic life since there was no flow in the Souris River below Rafferty Dam at the time. The water was released at a rate of about 2.1 m^3/s (74 cfs) for 16 days (2,900 dam^3 or 2,230 ac-ft).

On July 10, 2016, the City of Estevan received up to 130 mm (5.1 in.) of rainfall, which occurred over a period of a few hours causing localized flooding. Boundary Reservoir only saw 30 mm while the airport only received 73 mm. Although streets and basements were flooded in Estevan, no significant response was observed in the Souris River itself.

C. Hallborg further stated that on October 19, 2016, winter drawdown at Alameda Reservoir started at a rate of 1.3 m^3/s (46 cfs) to bring the level down to its February 1 Normal Drawdown Level (NDL). Alameda Reservoir was 0.69 m above its Normal Drawdown Level at that time. The target drawdown level was achieved on January 18, 2017, 13 days earlier than required, but the outflows were maintained based on conditions in the basin. No drawdown was required at Rafferty Reservoir since it was 0.43 m (1.4 ft) below its normal drawdown level at freeze-up.

C. Hallborg stated precipitation along the eastern portion of the basin was well above normal during the summer of 2016 (575 mm or 23 in.). During the period, September 23 to November 21, 2016, precipitation was 160-280 % of normal. Fall 2016 moisture conditions were wetter than normal at freeze-up in 2016, particularly on the eastern side. Estevan had the snowiest December in 100 years, in which 52 cm fell in December, shattering the historical record. The National Weather Service (NWS) Airborne Gamma Snow Survey on February 2017 showed 45-130 mm (1.8- 5.2 in.) Snow-Water Equivalent (SWE) in the basin. The snow survey conducted by the Water Security Agency (WSA) from January 18-19 showed SWE ranged from near normal in headwater areas to above normal near Alameda Reservoir.

February 15, 2017, Spring Runoff Forecast - C. Hallborg mentioned that above normal runoff is expected throughout the basin. Flood operations will be based on Sherwood local flows greater than 37, 000 dam^3. No additional drawdown is required at Rafferty. There is an ongoing drawdown operation at Alameda.

Reservoir Operation Plans – Boundary will be filled and then flows will be diverted to Rafferty. No further drawdowns are required at Rafferty. It will be filled then flows will be released at a controlled rate. If surcharged, the plan is to return to FSL by June 1st. Well above normal temperatures in early February has resulted in snowmelt and a runoff response within the Long Creek Basin.

Based on the projected runoff volumes, the apportionment split will be 60/40 according to Annex B of the 1989 International Agreement - to be confirmed after North Dakota's report.

- Boundary Reservoir was at an elevation of 560.18 m on February 15, 2017, which is 1.5 m below its full supply level.

It was suggested to wait to hear from North Dakota before a decision is made on whether flood operations are required this spring.

b. North Dakota

Steve Robinson, USGS, provided a summary of 2016 flow conditions for the US portion of the Souris Basin. According to S. Robinson's report, the total volume of flow past the Long Creek at the Noonan gage through December 31, 2016 calendar year was 5,132 acre-ft (6,330 dam^3). This volume is about 33% greater than the median flow for the last 57 years. Flows for the current year are in the normal to above normal range. The peak discharge for the reporting period January 1 to December 31, 2016 is 384 ft^3/s, which ranks 36 in 57 years of record.

S. Robinson also reported that the total volume of flow past the Souris River near Sherwood gage through December 31, 2016 calendar year was 33,476 acre-ft (41,293dam^3). This year's total flow is 63% greater than the median flow for the last 86 years. Flows for the current year, based on the last 86 years of data are in the normal to above normal range. The peak discharge for the period January 1 to December 31 was about 260 cfs (7.4 m^3/s).

Flow recorded at the Souris River near the Westhope gage, through December 31, 2016 calendar year was 92,235 acre-feet (113,772 dam^3). This calendar year's total flow is about 77% of the median flow for the last 87 years. Flows for the current year, based on the last 87 years of record are in the below normal to much above normal range. The peak discharge for the period January 1 to December 31, 2016 was 396 ft^3/s (11.2 m^3/s), which ranks 64 in 87 years of record. There was no joint sampling between Canada and the United States in 2016. The basin is transitioning from a dry to a wet period with above normal precipitation expected in the spring. There is an elevated risk for minor flooding in the US portion of the basin.

c. Manitoba

Mark Lee provided a summary of hydrologic conditions for the Manitoba portion of the Souris River Basin. M. Lee mentioned similar to other areas in the prairies, El Nino conditions caused well below normal snow cover in winter 2015/2016 resulting in a well below normal spring runoff potential. The spring melt began in early March, earlier than usual. As expected, the melt produced very little runoff in the Manitoba tributaries. The Souris River at Wawanesa peaked at approximately 550 cfs on March 21st. This is well below the median annual peak and is exceeded in approximately 80% of the years on record.

The spring and early summer flows in 2016 in the Souris River basin were below normal with fluctuations between the 25th percentile and the median. Above normal precipitation began in the spring with some areas receiving twice the normal amount of rain in May, which improved the dry conditions. Additional rains resulted in flows that were normal to above normal at Wawanesa from July to freeze-up. The peak of the year at Wawanesa was caused by the summer rain and occurred on July 11th with a peak flow of approximately 990 cfs (28.0 m^3/s).

M. Lee also noted it was anticipated that the US Fish and Wildlife repair to Dam 357 could cause very low flows for a period of time in the fall. US FWS and Manitoba Sustainable Development (MSD) were in regular communication regarding the work and potential impacts in Manitoba. However, the work ended up causing only a temporary drop in flows and no impacts were reported.

M. Lee further explained that fall 2016 soil moisture was normal to well above normal across the Manitoba portion of the basin. The Manitoba portion of the basin has received a mix of below normal, normal, to above normal snow cover in winter 2016/2017. Souris River flows fluctuated throughout the fall and winter as a result of reservoir operation in North Dakota. After repairs to Dam 357 by the US FWS, flows in Manitoba have increased over the winter and are currently well above normal.

Spring 2017 Outlook - On January 30, 2017, the Manitoba Hydrologic Forecasting and Coordination Branch released an updated conditions report. The report describes that generally both snow accumulations and soil moisture within the Souris River Basin are normal to above normal for the time of year. The runoff potential is well above normal for spring 2017. The risk for the main stem of the Souris River in Manitoba and the Manitoba tributaries can be summarized as follows:

- With favorable weather conditions, there is a moderate risk of flooding,
- With normal weather conditions, there is a major risk downstream of Minot along the mainstem, and
- With unfavorable weather conditions, there is a major to severe flood risk downstream of Minot along the mainstem of the Souris River.

The National Weather Service's probabilistic forecast at the North Dakota-Manitoba border (Westhope, ND) shows the probability of spring flooding in 2017 is higher than the historical average. With wet conditions in the fall and abundant snow fall, there are no drought or water supply concerns in the Manitoba portion of the Souris River Basin.

d. US FWS

Frank Durbian presented a summary of refuge operations and flows for 2016. The total provisional inflow measured at Sherwood for the first five months of the year was 13,579 ac-ft (16,750 dam^3). This was 16% of the historic January-May inflow, which was 83,398 ac-ft (102,871 dam^3) for the period 1938 through 2016. Total Upper Souris Refuge pool volume increased an estimated 161 ac-ft (199 dam^3) during the first five months. The total provisional outflow measured at Foxholm on the south end of the Upper Souris Refuge for the first five months of 2016 was 8,481 ac-ft (10,461 dam^3). This outflow was 12% of the historic record for the January-May outflow, which was 71,017 ac-ft (87,599 dam^3) for the period 1938-2016.

Lake Darling elevation increased from 1595.95 ft (486.45 m) on January 1st to 1596.05 ft (486.48 m) on May 31, 2015. Lake Darling was at 1596.97 ft (486.55 m) on January 1st and rose to 1597.02 ft (486.77 m) on May 31, 2016. The lake elevation on June 1st 2016 was 1596.05 ft (486.48 m).

Total yearly provisional flow at Sherwood was 33,476 ac-ft (41,293 dam^3). This was 28% of the historic average annual inflow (based on calendar year), which is 118,260 ac-ft (145,874 dam^3) for the period of record from 1938-2016. Total yearly provisional outflow measured at the Souris River near Foxholm on the south end of the Refuge was 19,255 ac-ft (23,751 dam^3) for the period 1938-2016. This was 16% of the historic average annual outflow, which is 120, 944 ac-ft (149,184 dam^3) for the period of 1938-2016. Total inflow was 14,178 ac-ft (17,489 dam^3)

more than the total measured outflow. On December 31, 2016, Lake Darling was at an elevation of 1596.24 ft (486.53 m).

With regards to the J. Clark Salyer National Wildlife Refuge, the total provisional flow measured from the Souris River to the Refuge from January 1 through May 31 was 28,515 ac-ft (35,173 dam^3). This was 27% of the historic January – May inflow, which was 106,968 ac-ft (131,945 dam^3) for the period of 1938-2016. Pool volume on May 31 was 32,019 ac-ft (39,495 dam^3). This was 4,766 ac-ft (5,879 dam^3) above the January 1st volume. Approximately, 45,494 ac-ft (56,117 dam^3) was passed to Manitoba during the five-month period.

Total outflow measured at Westhope for 2016 was 92,237 ac-ft (113,774 dam^3). Total outflow was 34,022 ac-ft (41,966 dam^3) more than inflow on the Souris River at Bantry. Outflow during the June 1st to October 31st period was 38,255 ac-ft (47,188 dam^3) or 32,186 ac-ft (39,701 dam^3) above the 6,069 ac-ft (7,486 dam^3) required minimum. The flow at the Westhope gage fell below the minimum 20 cfs (0.57 m^3/s) threshold during this time period, likely due to a combination of relatively low calculated flows and wind fetch. Three of those days recorded an average daily flow of 13 cfs (0.3 m^3/s) (October 18, 20, and 23). There was one occurrence of 17 cfs (0.48 m^3/s) (October 11); and one occurrence of an average daily flow of 19 cfs (0.54 m^3/s) (October 22).

Drawdown as a result of the US Fish and Wildlife repair to Dam 357 were completed with minor impacts on flows to Manitoba. Water right obligations to the Eaton Irrigation District were also met in 2016. It was a great year for wetland management. To increase flood storage in Lake Darling, flows will be increased from 50 cfs to 400 cfs by next week. The current elevation of Lake Darling is 1594 ft. There was consensus that there is a flood risk in North Dakota and Manitoba in the spring of 2017. Based on the forecast at Sherwood Crossing, (more than 50,000 dam^3), flows will be split 60/40 between Canada and the United States.

Motion: Jeff Woodward motioned to accept the 60/40 split between Canada and the United States. Gregg Wiche seconded. **Carried.**

As a result of the foregoing, the Board has determined Flood Operation for the Spring of 2017. The US Army Corps of Engineers will be in charge of flood operations in the US.

Motion: Frank Durbian motioned to declare Spring 2017 as a flood year and transferring operational responsibilities to the US Army Corps of Engineers. David O'Connell seconded. **Carried.**

8. Flow Forecasting and Liaison Committee (FFLC)

Curtis Hallborg reported there was not much activity to report in 2016. There was not a lot of runoff; and there are no ongoing activities for the FFLC at the moment. One task that was completed was the Communications Plan that was approved by the Board. There were two forecasts made in 2017, which member agencies discussed- Environment and Climate Change Canada, Manitoba, Water Security Agency, National Weather Service, US FWS, ND SWC, USGS, and US Army Corps of Engineers (not including stakeholders). Stakeholders participation is addressed in the Communication Plan. It was agreed that the Board will develop a Communications Outreach Committee to engage stakeholders in the future (suggested by the IJC to be raised under item 14a in the agenda).

Laura Diamond, National Weather Service, provided an update on the Winter/Spring outlook for the US portion of the Souris River Basin. L. Diamond also reported that the snowfall thus far for 2016-2017 for some selected locations in North Dakota. The weather was warm and dry in November with the exception of snowstorm near the end. December was brutal cold with a snowstorm over the Christmas period. Temperatures returned to near normal in January with slightly below normal snow. February started cold, warmed up later with fairly dry conditions. L. Diamond also provided a graphical presentation of temperature anomalies, the March-May temperature and precipitation outlook, 2017 spring flood outlook, and the modelled snow-water equivalents.

9. Aquatic Ecosystem Health Committee

a. Compliance with Water Quality Objectives for 2016

Kristina Farmer and Heather Husband reported that Total Phosphorus was the lowest in many years. Iron levels are also down; dropped almost by half. E. coli densities at the Sherwood site have been below 400 CFU. Pesticide data were not available at the Westhope site. Mark Gabriel mentioned that the IJC is still waiting for the governments' response regarding the E. coli objective. There was a question about a spill from an old and abandoned mine site in Saskatchewan into the Souris River. John-Mark Davies responded there was no major impact on the Souris River. Wayne Jenkinson asked why Total Phosphorus levels were low at the Westhope site. Heather Husband replied her committee will look into it and report back.

b. Update on Water Quality Conditions with Respect to the IJC Objectives Established for the Souris River at Sherwood and Souris River at Westhope Border Stations

Kristina Farmer and Heather Husband provided a summary of the water quality conditions at the Sherwood and Westhope stations and noted items for further discussion during the June 2017 Board meeting. The following is the summary of water quality conditions in 2016:

- Total Phosphorus concentrations at Sherwood was the lowest in many years, even met WQOs on three occasions. Total Phosphorus concentrations at Westhope were similar to previous years.

- Total Iron concentrations at Sherwood are also the lowest in many years, meeting WQOs two times, and the maximum values were half those of last year. Total Iron concentrations at Westhope have increased quite a bit with numbers now similar to those of Sherwood.

- Sodium concentrations at Sherwood are similar to previous years, but have increased slightly at Westhope.

- Dissolved Oxygen concentrations at both sites were mostly above the WQOs, Westhope has one sample in January below, but overall the concentrations at Westhope were lower than previous years while the ones at Sherwood remained about the same.

- Considering E. coli densities based on the proposed objective, Westhope only had one sample, in late October, above the 400 CFU maximum. The rest of the sample densities were very low (ND to 52). Sherwood had no densities above the 400 CFU maximum, but all 4 samples were in the 100's which would have put the seasonal geomean well above the 129 CFU proposed. Need to determine how to get a 5th sample (because of the schedule, only 4 are taken a year).

- Pesticide data are not yet available for Sherwood, but exceedances for Picloram were observed at Westhope.

- TDS and pH had a few exceedances but were similar to previous years. All other parameters met WQOs.

10. Update from Aquatic Ecosystem Health Committee

a. Report on Activities of the Aquatic Ecosystem Health Committee

The US FWS and ND Department of Health conducted a project last year and collected data on water pollutants including cyanotoxins / cyanobacteria, which might be of interest to the Board. David Glatt mentioned the general public is also interested in blue-green algae and wants to be involved in discussions. The Board agreed to put it on the agenda for discussion at the next meeting in June. David Pattyson asked about North Dakota's experience with aquatic invasive species (AIS). Heather Husband mentioned North Dakota has a robust boat cleaning and inspection program to prevent the accidental transfer of Zebra mussels from one water body to another. Garland Erbele added the program is working well in North Dakota. Nicole Armstrong also mentioned a similar robust cleaning and inspection program in Manitoba.

Action: Secretaries will include the North Dakota Report on the agenda for the June meeting.

b. Reports on any Changes the Current Water Quality Monitoring Program

Monitoring Plan in 2017 will remain the same, hoping to resolve the *E. coli* sample issue. Steve Robinson mentioned there won't be any changes to the US monitoring program. John-Mark Davies stated the Rafferty /Alameda monitoring program that was in place since the late 1980's will continue.

11. Water management Initiatives – Plan of Study

a. Update from IJC

Wayne Jenkinson mentioned the IJC is finalising the wording of the Reference and expects the two federal governments to come to an agreement soon. So far, the feedback from governments has been positive. High level funding to support the Three-year POS is expected soon. Russell Boals stressed the importance of engaging the Board fully in the POS from the very beginning. The IJC has to clearly define the role of the Board in the POS in the implementation of technical recommendations. Lana Pollack stated it is important to have the IJC reference and Board members are expected to work for the common good in the basin instead of acting on behalf their respective agencies.

b. Report from the 1989 Agreement Core Committee

Scott Jutila reported the Core Committee met in April 2016 in Denver, Colorado and went through the Agreement line-by-line. No major changes were made to the language. Some tables needed to be modified/changed. John Fahlman, Saskatchewan Water Security Agency, has created a Word version of the document. The document is close to be finished and is available as a draft.

c. Report from ISRB Souris River Basin Study Committee

Scott Jutila mentioned the Committee has discussed the existing POS and the feedback was sent to the IJC Engineering Advisors. Tim Fay mentioned Wayne Jenkinson and Mark Gabriel participated in the discussions at the meeting in Denver. Gregg Wiche asked whether the 1989 Agreement dovetails with the POS. Some of the work that has been done already will feed into the POS. The Board will re-visit the question again at the June 2017 Board meeting, i.e., Agreement vs the POS.

Action: The Souris River Basin Study Committee will present its draft report on the Agreement at the June 2017 Board meeting.

12. International Watershed Initiatives Projects

a. Water Quality Objectives Review

Mark Gabriel reported the draft report had been completed late last year and was sent to governments. Not on the website yet. Lake of the Woods, Red River, St. Croix, and the Souris River were included in the assessment of their Water Quality Objectives (WQO). The Red River and Souris River have issues with exceedances of their water quality objectives. Relatively less issues with Lake of the Woods and St. Croix River. The Board was encouraged to apply for IWI funds since the foundational work has now been completed. Russell Boals thanked Mark Gabriel for his work. John- Mark Davies, Nicole Armstrong, and Kristina Farmer have provided comments during the review.

b. SPARROW Model Update

Wayne Jenkinson made a detailed presentation on the SPARROW Model. The strategic study was undertaken by the IJC and leveraged the Data Harmonization Initiative. The Model looked at transboundary water quality concerns including eutrophication in lakes. SPARROW relates long-term trends in water quality to large-scale descriptors of human activities, climate, hydrology, geology and physiography. Water quality (nutrients) is a persistent problem in the Red-Assiniboine –Souris basins and Lake Winnipeg. There are unresolved questions as nutrient loads across the borders and total load to Lake Winnipeg. The model looked at possible sources of nutrient loadings in the Red-Assiniboine River basins. W. Jenkinson stated that he plans to finish the modelling by the summer of 2017 (refer to his presentation for details).

c. Other

None were identified.

13. Update on Water Management Projects

a. Update on Water management Projects

Curtis Hallborg mentioned there was nothing to report from Saskatchewan. Bob White mentioned about the biota treatment plant at Max (ND). Bob White added that water use is going up while oil drilling activities are going down due to low oil prices in the international market. It is a wet year in North Dakota. People are installing more tile drainages in the State. Tile drainage is most popular in eastern North Dakota. Mark Lee reported conditions at the Whitewater Lake in Manitoba. The lake is fed by several small streams, which flow into it from the Turtle Mountains. Whitewater Lake has no natural outflow and is therefore a closed drainage basin. The lake is also known for its salt flats that become exposed during dry periods and also has poor water quality. An outlet structure is being considered and is currently going through an environmental assessment approval process in Manitoba.

b. NAWS

Nothing new to report.

c. Other Planned Developments

None were identified.

14. Other Business Topics

a. ISRB's Communications and Outreach

Russell Boals suggested to establish a committee to address issues related to communication and outreach. Examples on the role of the committee are:

1. updating the IJC webpage with information written in plain language on the view and understanding of technical issues,

2. increase awareness in the basin for the general public,

3. Fact sheets – updates those that are old,

4. Improvements to the Annual Report- make it readable by the public,

5. Organizing the Public Meetings with greater watershed groups participation, improve our communication with the public.

Lana Pollack mentioned creating a committee for this purpose might be a good idea and suggested to contact Jeff Kart at the IJC Washington Office.

Action: A working group comprising David Pattyson, Shelly Weppler, Wanda McFadyen, and Debbie McMechan was recommended by the Board to start the work. The group will develop its own strategy; and Co-Chairs will send an email to the IJC about the creation of the Committee.

b. Presentation - USGS Souris River Story Map

Kelsey Kolars and Rochelle Nustad, USGS, made a presentation via WebEx on the Souris River Story Map. The Story Map is an interactive online webpage hosted on IJC's ArcGIS. The work is done in cooperation with the ND State Water Commission and collaboration with the IJC. K. Kolars noted that according to the interactive map, it was determined that flood risk will remain high in the Souris River Basin until the wet climate state ends.

Individual users can view the Story Map and look at the details provided. The main topic in the Story Map is the 2011 Souris River Flood – Will it happen again? And goes on to explain how in 2011 record setting rains led to record flooding throughout the Souris River Basin. Reservoir capacities were exceeded and the City of Minot was overcome by floodwaters. On each page the user can scroll down to view more information in the interactive Story Map. The information includes reservoir levels, flooded areas, tree-ring information to predict future floods, evaporation and streamflow data, past climate data, and prediction of future floods like the one that happened in 2011. The Story Map provides summary of USGS scientific research work to the general public. Debbie McMechan asked if permission is required to use the Story Map. K. Kolars replied the map is available to the public. The Board liked the Story Map and agreed it is a good tool to use. The user can ask questions interactively. Gregg Wiche mentioned users can call the USGS for help or try the IJC link and explore themselves.

c. Assiniboine River Basin Initiative

Wanda McFadyen gave a brief verbal report on the Assiniboine River Basin Initiative (ARBI). W. McFadyen provided a general description of the basin, vision and mission of ARBI. The current board membership includes 51 representatives - 17 from each of the jurisdictions of Manitoba, Saskatchewan and North Dakota. ARBI had a conference in Minot, ND in November 2016. W. McFadyen also noted that ARBI has completed its Framework Plan. The goal of the plan is to develop an Assiniboine River Basin Framework for the Assiniboine River Basin (Qu'Appelle, Souris and Assiniboine sub-basin) through a variety of means like, stakeholder outreach/consultation meetings, review of existing plans with various stakeholders across the basin, issues surveys, and feedback from attendees at the annual conference. The Framework Plan will have goals and measurable objectives that can be reported on as well as updated on a regular basis. The Plan will address topics like, drainage (both urban and rural), flooding, water quality (both instream and groundwater), drought, wetlands and riparian zones, soil conservation, fish, wildlife and outdoor recreation and other topics of interest identified by stakeholders. W. McFadyen also mentioned tile drainage is gaining interest in Saskatchewan. W. McFadyen mentioned that ARBI will develop policies for municipalities, which could be presented via webinars.

The final version of the document will be presented to the ARBI Board for final review and approval at the March 2017 Board meeting.

State of Basin Report - W. McFadyen noted through consultation with basin stakeholders over the course of 2014 workshop, and the 2014, 2015 and 2016 conferences and stakeholder surveys a number of 'State of the Basin' topics were identified. One of the first areas under development is agricultural drainage in the basin.

Manitoba Forage and Grassland Association (MFGA) - W. McFadyen also mentioned the HydroGeoSphere (HGS) project lead by MFGA with funding support from Agriculture and Agri-Food Canada. The project seeks to develop new risk management tools to reduce the impact of extreme flood or drought events in the Souris River Basin by identifying preventative measures, implementing risk prevention activities with the intent of reducing the need for government disaster relief efforts. The HGS modelling is expected to be completed by March 2018. IBM Canada is supporting the work. When completed, HGS would allow access to users via Twitter, and Facebook to its active website including its "Water Watch Page".

ARBI is currently co-located with the Red River Basin Commission (RRBC). W. McFadyen noted the relationship has led to various synergies as well as discussions on activities the ARBI could cooperatively work on across both basins that would benefit larger and wider audiences.

d. Guidance Document for Boards from IJC

Mark Gabriel discussed the three Guidance Documents from the IJC

1. Guidance on Board Consensus for Watershed Boards, Pilot Watershed Boards, and Control Boards.

A guiding principle of the IJC is that the Commission seeks to achieve consensus wherever possible, both in its own deliberations and those of its boards and similar bodies.

IJC directives to boards typically include language stating "The Board shall operate by consensus. In the event of any disagreements among members of the Board which the Board is unable to resolve, the Board shall refer the matter to the Commission for decision".

2. Immunity Guidelines for IJC Board, Council and Task Force Members

The International Joint Commission, Commissioners board members, and staff have immunity from all forms of legal process with respect to official acts performed for the Commission, including immunity from requirements to produce or speak about Commission records or Commission activities.

In Canada, this immunity is provided for in the *International Joint Commission Immunity Order*, (C.R.C., c. 1315) issued under the Foreign and International Organizations Acts (S.C.1991, c. 41) enabling provisions. In the United States, immunity is provided for in the *International Organizations Immunities Act* (22 USC Section 288, et seq.) and Executive Order 9972.

3. International Joint Commission Public Affairs Policy and Procedures

The document outlines the responsibilities of IJC Commission and its staff, boards, councils and task forces. IJC boards, councils and task forces are often the most visible parts of the Commission. The IJC generally include the most knowledgeable and technically qualified people on matters before the Commission. As such, the IJC should work with public affairs advisors in responding to questions from the public and the media. The above was a summary from the three documents that have been shared electronically with Board members in February 2017 for their reference and retention (refer to them for more details).

e. Updates on Activities from Watershed Groups

David Pattyson, Upper Souris Watershed Association, reported about the "Wetland Restoration Program" that was active over the last four years. The Association was able to restore over 185 acres of wetlands. D. Pattyson added his Association is working with the Saskatchewan Water Security Agency on drainage issues. The Upper Souris River Watershed had a large project approved by Saskatchewan under the new "Drainage Regulations". As a result, 30 acres of previously drained wetlands have been restored.

Ryan Ackerman, Souris River Joint Board, briefed the Board on the construction that is underway in the City of Minot for flood protection. The Joint Board is working with the North Dakota State Legislative Assembly regarding flood risk management.

Debbie McMechan, Mouse River Association, also provided an update regarding activities along the border of the two countries in the Turtle Mountains area and the works done by conservation groups.

f. IJC's Climate Change Framework

Bill Werick, IJC, provided an overview of the Guidance Framework prepared by a working group in April 2016. The document was prepared as a guide for IJC control, watershed, and pilot watershed boards to address climate change within their mandates. The document was commissioned for the Climate Adaptation Working Group (CAWG) to consider and discuss the following three proposed elements:

1. A recommended planning guidance model,
2. A shared information pool, and
3. Assistance in establishing adaptive management.

The Board agreed to discuss the Framework during its meeting in June 2017. The document was shared electronically with Board members for their reference and retention in February 2017 (refer to the report for more details).

Action: Secretaries will include the IJC Climate Change Framework on the agenda for discussion at summer Board meeting.

g. Other

No items were identified for discussion.

15. Adjournment

The next Board meeting will be held in Peace Gardens, Manitoba, on June 26 (Public); and June 27 (Board) meeting.

A conference call was requested for March 21, 2017 at 2:00 p.m. CST.

Garland Erbele, US Co-Chair, thanked all attendees for their participation.

The meeting was adjourned at 4:15 p.m. on February 23, 2017 (Regina, SK).

List of Attendees,

International Souris River Board Meeting, Regina, SK

February 23, 2017

Board Members in Attendance

Russell Boals, Canadian Co-chair, Retired, Regina, SK
Garland Erbele, US Co-chair, ND State Water Commission, Bismarck, ND
Nicole Armstrong, Member for Canada, Manitoba Sustainable Development, Winnipeg, MB
John-Mark Davies, Member for Canada, Saskatchewan Water Security Agency, Saskatoon, SK
Frank Durbian, Member for United States, US FWS, Opham, North Dakota
Jeff Woodward, Member for Canada, Environment Canada, Regina, SK
Gregg Wiche, Member for the United States, U.S. Geological Survey, Bismarck, ND
Scott Gangl, Member for the United States, ND Game & Fish Department, Bismarck, ND
Shelly Weppler, Members for United States, Minot, ND
David Pattyson, Member for Canada, Upper Souris Watershed Management, Tribune, SK
Joe Goodwill, Member for Canada, Souris, SK
Lorinda Haman, Member for United States, Towner, ND
David O'Connell, Members for United States, Lansford, ND

On Conference Call

David Glatt, Member for the U.S.A., ND Department of Health, Bismarck, ND
Mark Lee, Member for Canada, Manitoba Sustainable Development, Winnipeg, MB
Debbie McMechan, Member for Canada, Two Borders, MB

Regrets

Col. Samuel L. Calkins, Member for the U.S.A, U.S. Army Corps of Engineers, St. Paul, MN
John Fahlman, Member for Canada, Saskatchewan Water Security Agency, Moose Jaw, SK

IJC Staff

Commissioner Lana Pollack, IJC, Washington, D.C.
Wayne Jenkinson, Engineering Advisor, IJC, Ottawa.
Mark Gabriel, Engineering Advisor, IJC, Washington, D.C.

Support Staff in Attendance

Robert White, U.S. Co-secretary, ND State Water Commission, Bismarck, ND
Scott Jutila, US ACE, St. Paul, MN
Heather Husband, ND Department of Health, Bismarck, ND
Steve Robinson, USGS, Bismarck, ND
Jim Olson – KXMC TV Station, Minot, ND
Laura Diamond, NWS, Chanhassen, MN
Tim Fay, ND State Water Commission, Bismarck, ND
Dan Jonasson, City of Minot, ND
Kristina Farmer, Science &Technology, Environment Canada, Winnipeg, MB (via conference call)
Darrell Hanen, Eaton Irrigation District, Towner, ND
Curtis Hallborg, Water Security Agency, Moose Jaw, SK

Tom Barry, City of Minot, Minot, ND
Judy DesHarnais, US ACE, St. Paul, MN
Mitch Weir, ND SWC, Bismarck, ND
Cody Garbutt, ECCC, Regina, SK
Ken Bottle, US FWS, Lakewood, CO
Heather Husband, ND Dept. of Health, Bismarck, ND
Laura Diamond, NWS NCRFC, Bismarck, ND
Elizabeth Nelson, US ACE, St. Paul, MN
Wanda McFadden, ARBI, Winnipeg, MB
Ryan Ackerman, Souris River Joint Board, Minot, ND
Girma Sahlu, Canadian Co-secretary, ECCC, Regina, SK

International Souris River Board
ACTION ITEMS – progress updated February 23, 2017

PERSONS OR COMMITTEE RESPONSIBLE	TOPIC	MINUTE	ACTION	STATUS As of February 26, 2014
Doug Johnson	Development of an International Souris River Board Procedures Manual	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. At the Feb 23, 2010 meeting, Doug reported this was incomplete.	On Hydrology Committee Work Plan
Bob Harrison Martin Graczyk Ed Eaton	Report on the spring 2009 flood.	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.	Completed
AEHC	Compliance with Water Quality Objectives	September 14, 2011	AEHC to recommend actions to be taken by the Board to address exceedances of water quality objectives	Closed
John Fahlman	Winter release from mid-level outlet for better water quality	June 20, 2012	J. Fahlman to check with his staff if releases could be made from the mid-level out of Rafferty Reservoir to improve water quality downstream and respond to Mike Sauer.	Closed
Flow Forecasting Liaison Committee	New Communication Strategy	June 20, 2012	The Flow Forecasting Liaison Committee will create a formal communication strategy	Completed
AEHC	New E. coli objective	June 20, 2012	AEHC will prepare a short report detailing the justification/reasons for adding E. coli to the ISRB Water Quality Objectives	Closed
AEHC and HC	Varying flow rates for winter releases	June 20, 2012	AEHC and HC will develop a plan for testing various winter release rates to determine the optimum flow rate to maintain DO levels	Closed
ISRB	Engaging the Upper Souris Watershed Association with Board activities	June 20, 2012	As an IWI Board, the ISRB would continue to seek opportunities to engage watershed associations and the public	Closed
AEHC	Terms of Reference	February 20, 2013	AEHC Co-chairs to send their TOR to the Board	Completed
Water Security Agency	90-day volume - Souris River at Sherwood	February 20, 2014	WSA will prepare an estimate of the 90-volume for the Souris River at Sherwood for March 20 meeting	Completed
ISRB	Flood event determination	February 20, 2014	The Board will determine the return period/flood event for Spring 2014	Completed
Co-Secretaries	Membership update	February 20, 2014	Co-Secretaries will send an updated list of all committees to the Board	Completed
ISRB	Communication Protocol	February 20, 2014	Board to review and approve the "Communication Protocol for Fish Kills in the Souris River on March 20, 2014	Completed
Co-Chairs	Mike Laitta's support	February 20, 2014	Co-Chairs will send a joint letter requesting the IJC for Mike Laitta's assistance.	Closed
ISRB	Potential Public Board members	February 20, 2014	Board will prepare a list of potential NGOs to establish a pool to draw public candidates for Board membership	Closed

International Souris River Board
ACTION ITEMS – progress updated February 23, 2017

PERSONS OR COMMITTEE RESPONSIBLE	TOPIC	MINUTE	ACTION	STATUS As of February 26, 2014
ND SWC	Next Face-to-Face Meeting	February 20, 2014	ND SWC will host the June 2014 Public and Board meeting	Completed
IJC	IWI template	June 25, 2014	Mark Colosimo will send the IWI template to H. Husband for submission of the proposed changes to the Water Quality Objectives.	Completed
ISRB Co-Chairs and Co-Secretaries	Public membership on Board	June 25, 2014	Board will prepare a list of potential NGOs to establish a pool to draw public candidates for Board membership	Completed
Dan Selinger	Determination of Natural Flows to May 31, 2014	June 25, 2014	Dan Selinger, WSC, to submit his calculations to the Board for review and approval at the Sept. 25 conference call	Completed
Manitoba Water Conservation & Stewardship	Next face-to-face meeting	June 25, 2014	Manitoba Water Conservation and Stewardship will coordinate and host the next Board meeting.	Completed
Megan Estep	Synopsis of the adequacy of the hydrometric network in the Souris River Basin	February 26, 2015	Megan Estep volunteered to provide a synopsis to the IJC regarding the adequacy of the hydrometric network in the Souris River Basin.	Completed
ISRB Co-Chairs	Request for support letter to the City of Minot NDRC application submission	February 26, 2015	Co-Chairs to review and endorse the support letter on behalf of the Board.	Completed
Saskatchewan Water Security Agency	Host the Summer 2015Public and Board meeting	February 26, 2015	Saskatchewan Water Security Agency will coordinate the Summer 2015 Public and Board meeting in Estevan, SK	Completed
ISRB Co-Secretaries	Doodle poll to set-up a webinar	February 26, 2015	The Co-secretaries will conduct a Doodle Poll to set-up a webinar for Gregg Wiche's presentation on Climate Analysis and Water Balance Report as part of the POS	Completed
ISRB Co-Secretaries	Next face-to-face meeting June 18-19, 2015	February 26, 2015	Co-Secretaries will coordinate with EC and WSA to setup the logistics for the Summer 2015 meeting in Estevan, SK	Completed
ISRB	Submit an IWI Project Proposal	February 24, 2016	Board to prepare and submit an IWI proposal to improve communication and display of the Annual Report and website.	Completed
Joel Galloway	Discrepancies of results of water quality sampling	February 24, 2016	Joel Galloway will investigate the reason for the discrepancies of the results of the joint water quality sampling between Canada and the USGS	Ongoing
Pascal Badiou	DU Nutrient Project	February 24, 2016	Pascal Badiou to present the results of the DU Nutrient Project to the Board	Ongoing
Mark Gabriel	IJC - Review Water Quality Objectives	February 24, 2016	Mark Gabriel will present the results from his review of the Souris River Water Quality Objectives	Completed

International Souris River Board
ACTION ITEMS – progress updated February 23, 2017

PERSONS OR COMMITTEE RESPONSIBLE	TOPIC	MINUTE	ACTION	STATUS As of February 26, 2014
ISRB Secretaries	IJC Climate Change Framework	February 23, 2017	Secretaries to add to the agenda for discussion at the June 2017 Board meeting	Ongoing
ISRB Secretaries	North Dakota Water Quality Project	February 23, 2017	Secretaries to add to the agenda for discussion at the June 2017 Board meeting	Ongoing
Souris River Study Committee	Plan of Study (POS) report	February 23, 2017	The Souris River Basin Study Committee to present its draft report at the June 2017 Board meeting	Ongoing
Public Working Committee	Public meetings	February 23, 2017	David Pattyson, Shelly Weppler, Debbie McMechan, and Wanda McFadyen to work on public outreach. Co-Chairs will send an email to the IJC about the creation of the Committee	Ongoing

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