



International Souris River Study Board

PAG Mid-Term Report

September 2019

Executive Summary

The Public Advisory Group is comprised of committed individuals who have contributed their local knowledge to benefit the International Souris River Study Board. The PAG committee, Co-chairs and members are a diverse group of stakeholders representing widespread interests in the Souris River basin's geographic regions of Saskatchewan, North Dakota and Manitoba. At the mid-point of the study, they have participated in numerous meetings, webinars and workshops. The stakeholders identified some sensitivities with river flow operations. There is concern if flooding of rural lands or businesses may occur under some flow scenarios that may be used to mitigate urban flooding. There are operational concerns related to water supply especially during water scarce years, the need to mitigate flooding caused by summer rains (i.e. not just snowmelt events), and whether flow releases from reservoirs could be modified to occur during different times of the year (i.e. an interest in more flexibility in operations). There is also a concern of how apportionment may impact flow, especially in dry years. Public and PAG members have cited drainage as a major factor affecting land use, water flow and water quality. There are concerns about wider variability in flow and impacts or unknowns that may occur from climate change. Stakeholders emphasised a need for flexibility and adaptive management approaches for managing water and establishing operational flows (e.g. adapting to wet/dry cycles, flooding or water scarcity, new knowledge/data, climate change impacts, etc.) Timely communications of flow management to all stakeholders was cited as a need (e.g. advance notice of overbank flood risk).

The PAG committee is well-established, with strong commitments of individuals who want to help the IJC's Study Board. There are high expectations of the PAG members. Their inputs to date have been useful to present key concerns and issues for flow management, and to guide the technical and study team in the analysis of flow operations to improve conditions in the basin. Some PAG members believe the flooding issues are sometimes caused by human operations and not solely due to natural conditions. There is genuine interest in improving conditions, and seeking to reduce risks from flooding, water supply management and flow apportionment across borders.

PAG members communicate largely via telephone. Internet communications is essential but can pose problems for rural members where connectivity issues and technical capacity may be problematic.

PAG Co-chairs recommend the IJC establish clear roles, responsibilities, time commitments and terms-of-reference for future PAG Co-chairs and members. Alternate Co-chairs would be beneficial. Resource support (staff, funding) would be helpful if these were possible. Incorporation of contributions from established watershed groups (technical and/or administrative) would also be helpful in the future.

Introduction

The Governments of Canada and the United States, through the International Joint Commission (IJC), have directed the International Souris River Study Board to review the operating plan of the Souris River, as set in the 1989 Agreement. As established by the July 5, 2018 reference letter, one important item requires gathering public input for the study, including input from Native American Tribes, First Nations, and Métis located within the basin. The IJC's Sept. 5, 2017 directive to the International Souris River Study Board provides additional detail on public input, stakeholder engagement and knowledge-sharing (including outreach), and the creation of a Public Advisory Group.

The context of this report:

This report summarizes the key contributions and insights from the Public Advisory Group provided to the International Souris River Study Board as of the mid-point of the study (September 2019).

The Public Advisory Group (PAG)

The Public Advisory Group (PAG) is part of the International Souris River Study Board (ISRSB). It is a bi-national body appointed by the International Joint Commission (IJC) and was designed to be comprised of an equal number of members from Canada and the United States. PAG members represent key interests and geographical regions within the Souris River watershed or basin.

The role of the PAG is to involve the public by bringing information from the International Souris River Study Board to various networks throughout the community, and in turn, presenting views from the community for consideration by the Study Board. The Study Board is reviewing the 1989 Agreement between Canada and the United States, which governs the operating rules for flow management of the Souris River. The PAG members are encouraged to use their collective knowledge and experience to offer diverse perspectives on the direction, results and outcomes of the Study Board activities.

PAG co-chairs are members of the Study Board and provide progress reports at the semi-annual meetings of the IJC.

The Public Advisory Group Membership (as of September 2019)

CANADA

Debbie McMechan, Co-Chair, Pierson, MB

Dan Cugnet, Weyburn, Saskatchewan
Kelly Lafrentz, Estevan, Saskatchewan
David Pattyson, Weyburn, Saskatchewan
Joe Goodwill, Souris, Manitoba
Yasemin Keeler, Deloraine, Manitoba
Wanda McFadyen, Winnipeg, Manitoba

UNITED STATES

Tammy Hanson, Co-chair, Sherwood, ND

Lori Berentson, Bottineau, North Dakota
Leland Goodman, Towner, North Dakota
Janine Kabanuk, Burlington, North Dakota
Lynn Kongsli, Towner, North Dakota
Paul Smetana, Lansford, North Dakota

PAG's Key Study Contributions as of September 2019

The Public Advisory Group is comprised of a group of volunteers with specific interests in safe and secure water management in the Souris River basin. Some of the PAG membership has changed since the group was initially formed, due to personal needs. The PAG members represent input from different geographic locations (See Fig. 1).

The existing PAG members have been actively contributing their perspectives through a variety of formats. PAG members have provided data to an on-line study questionnaire. They have participated in numerous telephone conferences, webinars, in-person workshops and committee meetings. They continue to contribute local watershed knowledge and insights into flow operations of the Souris River. They have participated at Public Advisory Group meetings, joint meetings with the Resource and Agency Advisory Group (RAAG), and at Public Meetings with the International Souris River Board and Commissioners representing the International Joint Commission. The PAG contributions have been diverse, and useful for the Study Board to better understand a variety of specific Souris River flow concerns for stakeholders in targeted reaches within the basin.

To date, the in-person PAG member meetings have occurred strategically in different geographic areas of the Souris River basin to enable the participation of members with travel or schedule limitations.

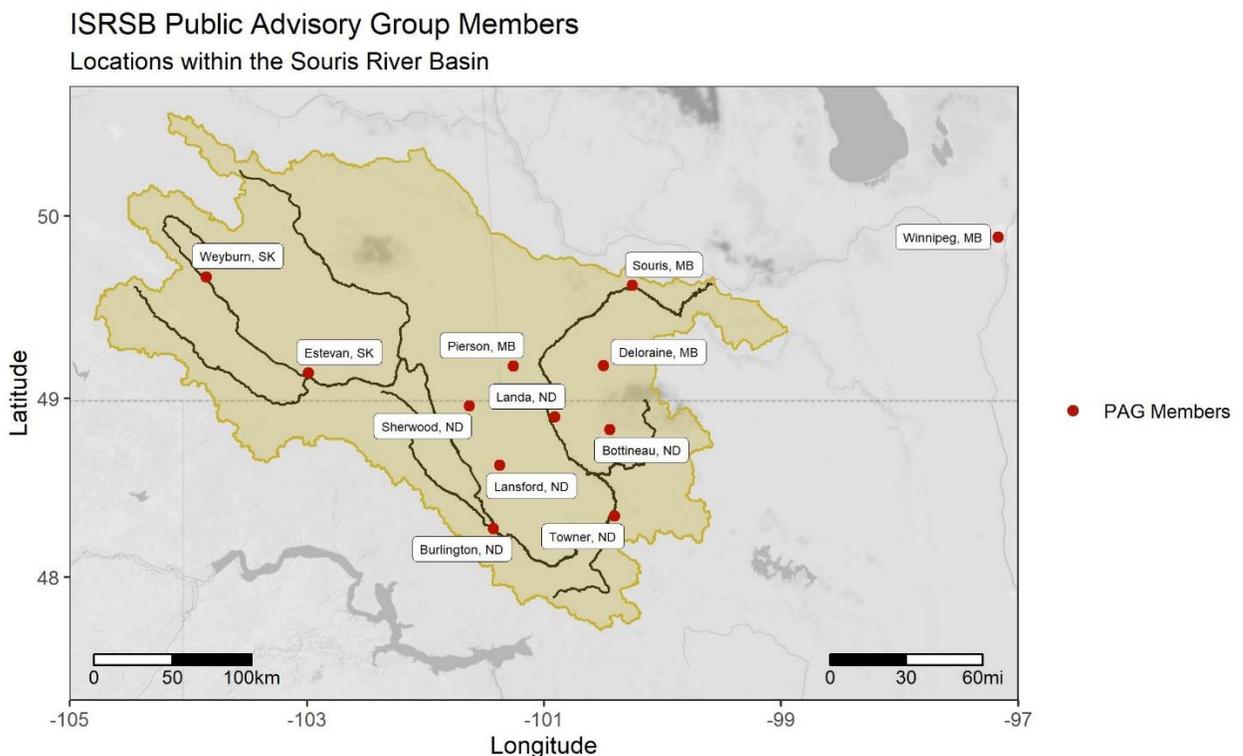


Figure 1 - The Location of PAG Members within the Souris River Watershed (Sept. 30, 2019)

The on-line **Public Questionnaire** provided some key insights and data for the Souris River study and are briefly summarized below. In June 2018, a questionnaire was sent to the PAG and the public. Responses were requested by November 2018. Respondents were asked what they value about the river, if there are certain flow conditions that they deem undesirable and why, and if they would like to see a change in reservoir operations. There were 64 total responses to the PAG questionnaire, most of which were incomplete (i.e. not all questions were answered in this rather large questionnaire). Nevertheless, useful data was collected. Generally, respondents represented most of the reaches near the main stem of the Souris River, as shown on Figure 2.

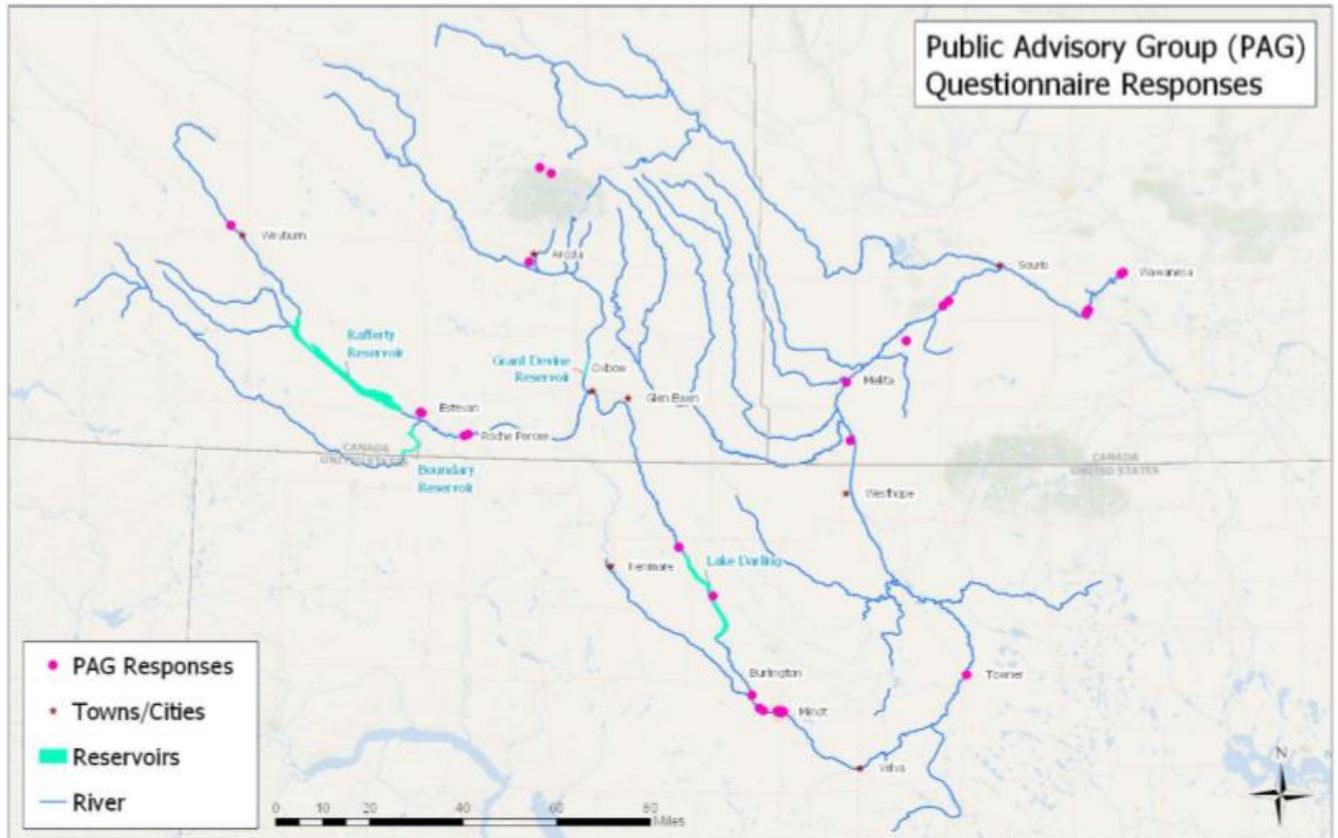


Figure 2 - Location of Respondents who provided input to the Questionnaire

Table 1 below shows generalized responses to the question, “What do you value about the river?” which all 64 respondents answered. Table 2 shows the primary concerns respondents had with the river during one or more seasons, which 26 respondents answered. Table 3 shows responses to the question asking how the reservoirs should be operated differently, which 21 respondents answered.

Table 1 - PAG Questionnaire Response - Question 1

What People Value	Number of Responses	% of Total
Wildlife/Habitat/Fishing	30	47%
Drinking Water (People/Livestock)	16	25%
Recreation	15	23%
Aesthetics/Beauty	15	23%
Irrigation	5	8%
Tourism	1	2%
Local Culture	1	2%
Power Generation	1	2%

Total Responses: 64

Table 2 - PAG questionnaire response - Question 2

Public Concerns	Number of Responses	% of Total
Flooding	15	58%
Stagnant water in summer/fall	8	31%
Lack of recreation/boating access	2	8%
Bank Erosion	2	8%
Recreation safety issues	1	4%

Total Responses: 26

Table 3 - PAG questionnaire response - Question 3

Changes Public Wants to See	Number of Responses	% of Total
Operate only for flood control	5	24%
Keep reservoirs lower in winter	5	24%
Higher flows in summer	2	10%
Less variability in flow	3	14%
Maintain natural flow	2	10%
Current operation is ok	2	10%
Normal Rafferty pool to 550 m	1	5%
Less artificial drainage	1	5%

Total Responses: 21

The questionnaire responses demonstrate that the public values environmental and ecological benefits of the Souris River. The public is also concerned about flooding, water quality, erosion, and recreational uses of the river.

The Public Advisory Group participated in a variety of events listed in Table 4.

Table 4 – List of PAG / Public Events (as of September 2019)

Date	Location	Audience	Purpose
February 20, 2018	Minot, ND	Public	Introduction to the Public on the International Souris River Study and its Board (ISRSB).
June 25, 2018	Estevan, SK	Public, PAG	International Souris River Board (ISRB) bi-annual public meeting. Study team provides background information of the Souris River study for the Public and PAG members. The PAG informs the technical team of some of their concerns with the Souris River flows and impacts in areas near their residences or places of business.
December 18, 2018	Webinar	PAG and RAAG	Preparation discussions with the PAG and RAAG for a January 2019 Workshop to gather detailed input of Souris River flow impacts and scenarios (the Workshop was re-scheduled to March 2019).
January 28, 2019	Webinar	PAG	The study team explains the concepts of Performance Indicators to assess flow impacts. Visual graphics to depict Performance Indicators are discussed. The PAG members suggested how these may be improved to increase understanding by non-technical audiences.
February 19, 2019	Brandon, MB	Public, PAG	International Souris River Study Board public meeting to update the public on the Study's progress. Encouraged public attending to provide input to the Study.
March 4, 2019	Webinar	PAG and RAAG	Review the study team's approach of using Performance Indicators, as a tool to assess different flow scenarios (different alternatives for flow operations), in advance of the March 2019 Workshop. Review the 1989 Agreement which defines how the Souris River flows must be operated for flooding, water supply and apportionment issues.
March 18-19, 2019	Minot, ND	PAG Workshop	PAG provides feedback on the Performance Indicators to confirm if they are the correct categories, and whether they capture key PAG concerns or need to be improved. PAG provides detailed of their key flow concerns and issues. PAG brainstorms and prioritizes operational flow scenarios for study analysis. (PAG was well-represented by North Dakota and Manitoba members but not Saskatchewan.)

April 29, 2019	Estevan, SK	PAG / RAAG Workshop	Saskatchewan PAG and RAAG members (with North Dakota and Manitoba PAG and RAAG member) provide additional input on Performance Indicators. PAG/RAAG participants suggest new ideas for operational flow scenarios and prioritize the preferences for analysis (inc. those ideas from Minot). (This workshop was held to ensure all geographic regions provided detailed input for scenarios and flow analysis.)
June 25, 2019	Bottineau, ND	Public, PAG	Public session in combination with the ISRB annual board meeting. Study Team provided updates of study progress and findings to date. Public attendees provided input on concerns regarding river flows and scenarios for analysis.
July 30-31, 2019	Estevan, SK	PAG Workshop	The Study Team provides the PAG members with some preliminary results of the operational flow alternatives completed to date. This interactive PAG-Study Team workshop helped all participants to better understand flow alternatives, their benefits, impacts and trade-offs in the analysis of different flow scenarios for the study.

The Public Advisory Group has been an effective stakeholder focus group providing useful input and data for the IJC’s International Souris River Study Board research. Their participation in the questionnaire, meetings, webinars, and workshops have led to the meaningful discussions on PAG member concerns for flow management. The PAG has occasionally worked jointly with the Resource Agency and Advisory Group (RAAG members are generally technical experts with an expertise on how flows may pose risks or benefits to people, communities, economic activities or the environment). Both PAG and RAAG insights have helped the study team improve the development of key Performance Indicators for flow analysis. Both PAG and RAAG have helped the study team consider the suggested prioritized alternatives to be investigated in their flow analysis (prioritizations were grouped in top, middle and bottom rankings).

The Minot Workshop (March 18-19,2019)

The PAG members expressed concerns that flow analysis of different operational alternatives should lead to reduced flooding of lands or businesses (particularly in rural areas). They stated that significant flood mitigation activities have been undertaken to reduce urban and community flooding, particularly in Minot. They expressed concern about finding ways to reduce rural flood risk as well. Agriculture is one sector in the basin that has had significant flood impacts to its operations. Some flood events have even caused impacts to ecological systems within the main stem riparian zone, with negative impacts to ecology as well as to the agricultural sector. First Nations and US Tribes expressed concern that flooding poses risk to Indigenous communities, plants and cultural or ancestral sites. PAG members expressed an interest in flow operations that might mimic a natural hydrological system (i.e. when system flows can be managed, they should try to mimic natural seasonal cycles, and consider needs for in-stream and riparian ecosystems). PAG members identified an interest in recreational uses of the river and the reservoirs (this was especially so stated in the questionnaire responses). The PAG is also concerned

about water supply – how river operations affect water availability for water users during non-flood periods of time. They desire flood mitigation that may be caused from high runoff events or high reservoir releases throughout different times of the year, not just spring runoff flood events. The PAG is concerned about flood protection during high summer rain runoff events like that experienced in 2011 and in selected basin locations in 2014. The PAG is also concerned about the apportionment rules at Saskatchewan and Manitoba borders (e.g. how might apportionment impact flow, water availability and water quality, particularly in dry years or water-scarce years?) PAG expressed concerns about existing drainage practices within the Souris River watershed. Drainage practices and concerns arise at most public meetings, and it is considered by many public and PAG members to be a significant factor. They express concern about how drainage poses risks and impacts to land use, river flows and water quality. The PAG is also concerned about future climate change and how this may impact river flow variability and land use.

The PAG brainstormed a list of alternatives to be investigated. PAG priority suggestions are listed in Table 5 below.

Stakeholders understand that some alternatives may be out-of-scope to the study (e.g. physical or landscape changes with increased water storage). However, the ideas suggested were developed as possible interests for future considerations.

The critical role of Communications was also emphasised.

The PAG representatives emphasized that communications are a key requirement for keeping all of the public informed of the river flow, flood risk, etc. For example, when river flows change, when water is released from upstream reservoirs, or when high water conditions are expected within any river reach, all rural and urban stakeholders need to be made aware of the river flow conditions and possible risks and impacts. This is of particular concern to the rural public when streambank overflow may occur in rural areas, whether caused by natural flow conditions, reservoir releases, or flows for urban flood protection measures.

Table 5 – PAG’s Suggested Alternatives from the Minot March 2019 Workshop-

TOP-RANKED ALTERNATIVES TO INVESTIGATE

- Higher winter flows
 - to sustain river systems and allow for more spring flood storage
- Increased landscape storage
 - largely to reduce flood risk downstream
- Investigate changes to drawdown and timing
 - to explore different flow operations to reduce spring or summer flood risk, and to consider improving ecological flows in dry periods

MIDDLE-RANKED ALTERNATIVES TO INVESTIGATE

- Higher minimum river flows
 - for water quality and environmental improvements
 - to consider the impact of the tributaries on reservoir operations; the tributaries may also link with off-stream storage.
- Include rainfall forecasts and antecedent conditions in flood operations
 - to allow flexibility in operational decisions based on how wet or dry the basin conditions may be
- Additional storage on river
 - to reduce flood risk (this may include additional reservoir storage)

BOTTOM-RANKED ALTERNATIVES TO INVESTIGATE

- During summer rainfall events, reduce duration of high flows in agricultural areas
 - to reduce risk of flooding agricultural and riparian zones, especially during critical agricultural seasons (e.g. harvest or cattle grazing periods)
- Raise Rafferty and Grant Devine
 - to reduce flood risk with increased storage and achieve a slower, smaller constant release
- Increase capacity of dams
 - to reduce flood risk with more water storage capacity
 - Dredging of reservoirs and channels may also reduce flooding of riparian and agricultural lands
- Increased storage on Des Lacs River
 - to reduce downstream flood risk

Figure 2 shows the PAG members in dialogue with the study team in Minot.



Figure 3 - Public Advisory Group, Minot ND

Figure 4 (from the Study Team) shows the reaches where operational flow scenarios will be analyzed.

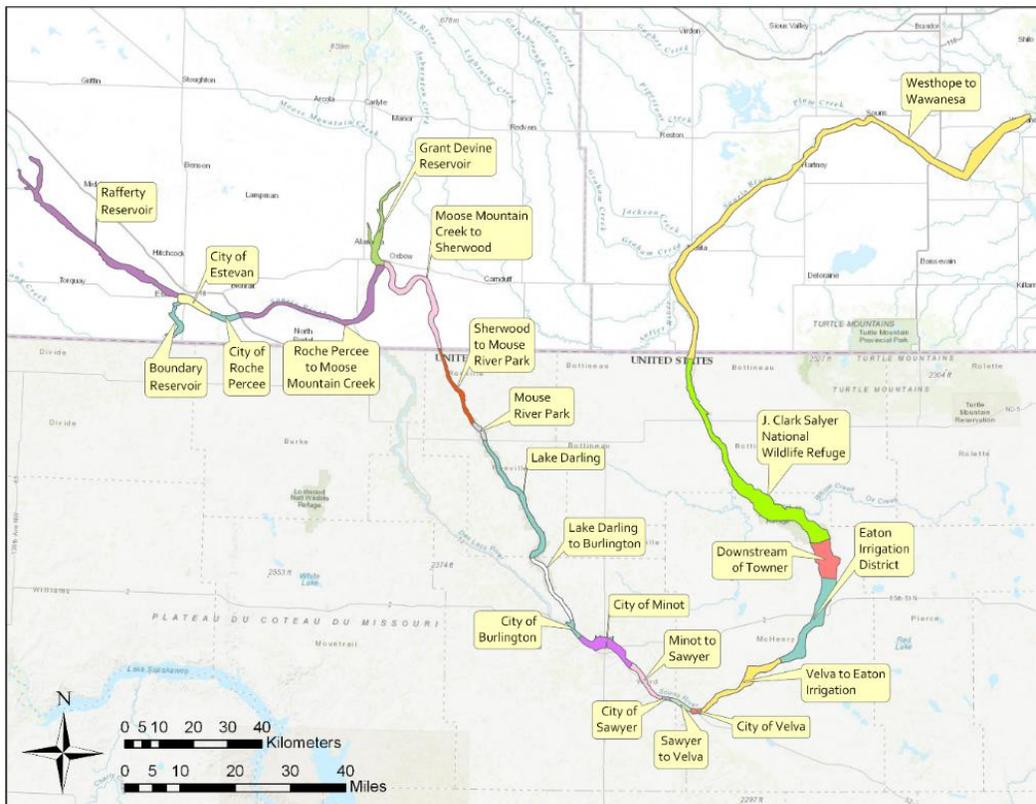


Figure 4 – Reaches for analysis and comparison of impacts of operational flow scenarios (provided by the Study Team)

A brief synthesis of written submissions from Minot Workshop

In addition to the workshop dialogue, some PAG participants left written submissions (current and historic) from the broader public for the Study Board to consider. The submissions represent numerous rural residents, farms and ranchers, individuals and groups who express concerns about how flooding has had significant impacts in rural North Dakota. Some of the concerns relate to natural flood events as well as how flows of the Souris River may impact their agricultural land, riparian zones and even access to their homes. There are concerns about the timing of flows. Some fear that the releases from dams are keeping water levels higher in the riparian flood zone for longer periods of time (even until fall), particularly during exceptionally wet years and flood events. Ideas are presented for potential changes to reservoir or flow operations are included. Some critical rural flood risk locations are the rural lands near Towner ND and ranchers near J. Clark Salyer Wildlife Refuge. The submissions describe current and historic impacts with specific case studies and periods of time. Some ideas are suggested for changes in flow operations, with a goal of keeping the river flows within natural channel capacity and trying to reduce the risk of overland flooding caused by high Souris River flows. Concerns are expressed about flood protection being prioritized for Minot; rural flooding occurs is also significantly affecting rural people and businesses. Some references are provided estimating the costs of rural flooding impacts.

Summary statements by PAG members (from the Minot Workshop)

The PAG participants were very creative developing flow scenario ideas and sought to enable greater flexibility in flow management and releases. Flexibility is a key concept in their discussions and may need to be not only operational, but also institutional. While the PAG members expressed specific interests in specific locations, there is also a recognition of “basin-wide” interests and representation.

The following remarks/perceptions were provided by Public Advisory Group representatives, as they reflected on the in-person workshop discussions:

- Increased wetland and landscape storage are important; wetlands have other benefits as well.
- We need to operate not only for the high point [excess water conditions], but also for the low point (drought conditions). 2011 was an anomaly; we couldn't have prepared because no one saw it coming.
- The process [of stakeholder discussions] has been enlightening. We need to remember and be respectful of the issues that are affecting people in different areas.
- Alternatives [for flow scenarios] have turned out well; we hope the experts agree with them. What happens now? [i.e. next steps and follow-up]
- You don't really understand how the flood affects someone until you have experienced the flood yourself. We would be in favour of the winter releases if that is best way to get the water through the system.
- We are interested in generating overall protection for all. One of the aspects is snowfall in Canada and throughout the watershed [i.e. existing conditions]. There needs to be a better management plan for changing [or adjusting] operating plans according to forecasts and what is expected. Lake Darling is solely for providing flood protection for J Clark Salyer Wildlife Refuge. Winter releases are good because if it goes over the bank it doesn't affect crop and hay land. When you fill areas with water in the winter, they pick up cattails etc. so we need to be prepared to clean this up and mitigate for this.
- This has been a rich conversation [PAG discussion]. We all know that water is sacred. When science works best in my experience is when I use my Indigenous Knowledge alongside my western scientific knowledge. It is important to consider the voices that we have in the basin and take not only Indigenous[input] but all

the people who live and work within the basin [Ranchers and Farmers]. Need to appreciate the things we have in common, and not [focus on] the ways that we are different.

- [We are interested in the idea] of increase landscape storage. This would be beneficial for both flood and drought years. There is a need to also consider urban landscapes and how they are affecting runoff. Summer rainfall is difficult to predict, as one area of the Basin can be flooding, and another can be in drought. [There is interest in seeing a scenario of] unregulated [flows in the model] runs for the event of 2011.
- This [PAG discussion] has been a good exercise. [I am pleased with] the alternatives list that we have developed and interested in what the technical team does with these alternatives. I would like to remind everyone that water doesn't respect boundaries - this study is about the entire basin.
- One more thing that we need to look for is cultural sites and traditional plants. The US Tribes have historical preservation officers that would potentially be able to help [the study]. We also need to not under-estimate the participants and utilize more technology to better capture everyone's comments. (e.g. locations and comments from people could be identified on maps).

The Estevan Workshop (April 29, 2019)

Additional ideas were developed at the Estevan, SK joint PAG-RAAG workshop on April 29, 2019.

Stakeholders suggested some additional alternatives as listed below:

- Need to look at the operational issues at J. Clark Salyer
 - Fish kills
 - Off-site watering
- Apportionment between North Dakota and Manitoba
 - Concern about low or no flow
- Increase reservoir capacity
 - to improve water supply and flood control concerns in Saskatchewan
- Addition of a North Dakota reservoir
- Increase landscape storage
- Take flow from tributaries into consideration for reservoir operations
 - While currently considered, there is a perception that improvements are needed to account for tributary impacts

The full list of suggested flow scenario alternatives from Minot was reviewed with these new ideas from the Estevan workshop; Some differences occurred in the ranking for top, middle, and bottom prioritized flow scenarios/alternatives.

The Bottineau/Metigoshe ISBR Public Meeting (June 25, 2019)

At the Metigoshe ND public meeting on June 25, 2019, the public dialogue contributed interest in the following items:

- *There is a need to concentrate on ecosystem health.* Technical members agreed and noted that this basin is challenged during times of water scarcity, when water supply and river flow is very low (a natural condition of the basin).
- *A Manitoba member questioned the status of the model development and asked the study team to consider the 2014 flood further west.* The models have been established; different flow scenarios will be run, and this could be a possible consideration.
- *A request was made to see the 2013 event modeled.*
- *A request was made to see scenarios with the 2011 and 2014 flood events, in other areas in the basin.*
- *An attendee asked if dams or structural improvements were going to be considered by the study.*
- *An attendee asked if we are looking at increasing the target flows.*
- *A participant asked that more consideration be given to the downstream impacts caused by flow releases and asked that water not be released when there is major snowpack downstream.* Technical members offered that forecasts consider these conditions, but unfortunately, forecasts are not perfect.
- *Questions on water quality (monitored at SK-ND border were offered, with a comment that the same parameters should be tested at the ND-MB border – otherwise too much water quality data is missed.*
- *Someone asked on how Grant Devine reservoir is used.* It is used for balancing apportionment.
- *Questions were asked on water management – better descriptions on how water is being used is needed. Why can't water be released throughout the year?* Comments were made emphasising that everyone needs to understand the principles of why these dams were initially built – the rationale was that the US needed flood protection and Canada needed water supply – that is how the operational rules are established.
- *Why can't we use runoff to increase agricultural yields?*
- *A comment was made on the merits of sub-irrigation as a means of water storage (and agricultural benefit), and the merit of drainage tiles to reduce salinity.*
- *An individual noted off-stream river storage (e.g. ponds) should be considered in water management.*

The Estevan Preliminary Results of Flow Scenarios - Interactive Workshop (July 30-31, 2019)

Initial preliminary scenario results were discussed with the PAG members. The technical team developed an interactive workshop to show how flow scenarios impacted performance indicators. Some of these scenarios were selected from earlier PAG suggestions. The workshop offered graphics and encouraged the PAG members to consider for themselves what some of the results might be on various impacts, and whether they would result in benefits or negative impacts. The workshop was useful to think through the scenarios. The PAG members were engaged with this interactive nature, and inciteful at interpreting the results, prior to receiving the actual model simulation results. The interaction between the PAG Members and the Study Team and technical staff provided insights to all participants. The Study Team learned a great deal from the discussions, and at times, determined important study modifications or evaluations from the collaborative discussions.

Insights of the PAG Co-Chair Roles in the International Souris River Study Board

Mid-study Perspectives of the PAG Co-chairs

At this mid-point juncture, the PAG has resolved to produce a mid study report to the Study Board, as a second instalment to the initial PAG report entitled "Perceptions in the Souris River Basin" (April 2018)

The next section of this report provides some of the insights from the PAG co-chairs and represents PAG members. The PAG stresses that IJC did a very good job of selecting a good cross section of people in the PAG membership. This diverse group has been able to represent different locations and widespread stakeholder interests within the Souris River basin in both countries.

Public representation and contribution to the study has been both an equally challenging and rewarding experience for PAG members and Co-chairs.

Some aspects of the data gathering exercise were challenging. There were reasonable limitations of budget and staff/human resources. At times, individuals experienced concerns about a lack of experience in collecting data or public input from peers, which made for some growing pains during the effort to collect input and data from stakeholders. The on-line questionnaire registration may have affected the response rate if some were bothered by having to complete a registration. Some concerns were expressed that the questionnaire was not easily found or available to the public. It is highly likely that some interested public did not know the questionnaire existed. Ideally, hard copies could perhaps have been more widely disseminated (e.g. especially at public meetings, watershed group meetings, etc.) Some hard copies were made available at counties and municipal offices, but there was not much uptake.

Study Managers responded to the human resource issues by providing staff to work with and help the PAG data collection exercise (sometimes despite difficulties with PAG participation). The PAG has been very fortunate to have had excellent resources through the study managers who were able to provide some PAG resource help needed at critical times.

The volunteer nature of the Public Advisory Group adds to the increased need for staff support. PAG co-chairs, as volunteers, have a large range of tasks expected from them. This includes the creation and administration of email lists for various associations, local governments, etc., report writing or even simply setting up conference calls on behalf of co-chairs. This is not easily accomplished by volunteer positions who may have to complete this work from home, with little to no technical nor administrative support.

The preferred communications medium in rural communities and the Souris River basin is the telephone, not the Internet. Challenges sometimes exist with lack of email or limited internet capability particularly with rural or remote PAG membership. One simply cannot rely solely on email or Internet communications – telephone calls and conversations are essential with PAG members, so they should be the main form of communications with other forms of communications being secondary. It is also challenging and at times problematic when meetings are called via "Outlook invitations" when people may not have these Software resources, or when large files are shared with PowerPoint presentations or data. Rural Internet limitations exist for many people in rural areas. Personal communications, phones and local posters and news are still very important ways to exchange information. Despite these issues,

it is recognized that Email communications have been the key means for exchanging information to PAG Co-chairs, who often in turn communicate with their members often by direct phone calls.

Should the IJC utilize PAG committees in the future on other projects, it would be useful to consider staff appointments and resources to help PAG co-chairs at the inception of these positions. It would be helpful to develop more specific, clear terms of reference for PAG Co-chairs, identifying what would be expected and what some of the time commitments might be expected of the PAG Co-chairs. Ideally, a “guide” for PAG Co-chairs and for PAG members (roles, responsibilities, expectations for duties and time commitments, etc.) would be useful for future PAG committees.

There has been a natural evolution of duties and expectations of PAG Co-chairs. Resource help might include staff and/or financial help as the commitments have been significant. Should financial support be possible, this would enable capacity-building. Co-chairs had to decline some outreach efforts due to lack of time or financial resources. The notion that the PAG would conduct outreach or bring information to community networks is likely not realistic. PAG members do provide informal knowledge exchange to local networks but cannot perform wider outreach throughout the basin. This would require greater time commitments and an outreach budget, both of which do not exist. The evolution and emphasis of the PAG is more of a “stakeholder focus group” providing input to the Study Board.

There was some disappointment with decisions made during the data collection exercise, as more efforts were needed to obtain local experienced individuals in the basin. This could include greater contributions from existing watershed groups or other local experts who could have been included in the study and their information incorporated with good results.

One concern relates to an IJC communications decision not to rent space in local newspapers advertising the study and questionnaire on data collection. This decision was made in opposition to PAG advice. Demographically, in some areas of the basin, the population is an aging population. Coupled with Internet connection/capability issues (in both countries), business software limitations, and personal computer knowledge limitations of individuals, the IJC should recognize that many of the rural public do not routinely use the Internet. Collecting data via an Internet questionnaire is useful but will therefore limit the contributions of many people who will have significant local knowledge of the issues in the basin. If they are not able to utilize the Internet forms, the data will not be submitted.

While electronic advertising is less costly, a critical and pivotal need for this study was to gather stakeholder data. To gather robust data, advertising in local press would have been worth the investment and developing simpler forms to contribute the data (both on-line and mail-in) would likely have gathered even broader stakeholder input by folks with a concern for basin flows and water management.

Despite these challenges, the study communications and IJC communications were efficient and organized. The IJC was capable and effective with a variety of formats, including the Internet webpages, social media and other electronic outlets to spread the word of the study.

Much of the public outreach and engagement for public meetings was completed in a variety of advertising formats. These included local radio, newspapers, Facebook posting, invitations to public meetings identifying dates and locations. The use of on-line suggestions/forms to identify concerns, gather input and develop flow scenarios or alternatives was broad. These different types of input were

available at meetings and on-line, and through the IJC's webpages including IJC Facebook pages and links.

There were some difficulties with the high expectations of the level of the PAG involvement from the Study Board that caused issues. There may not be a remedy for this issue as the Study Board requires the participation of the two (2) voting members as PAG co-chairs. There are challenges, however, with the advanced technical nature of the information which is difficult to understand by non-technical volunteers. The Study Managers and experts helped as much as possible to educate PAG co-chairs on technical matters. The Co-chairs found much of the technical information challenging to interpret and they express concern about up-coming tasks of rendering votes on operational options to be presented in future reports. It is reassuring that the experts are willing to answer questions and provide explanations.

Study Managers, the Board and IJC's responses have been asked to consider a recent request for PAG Co-chair Alternates as a way of alleviating the pressure on one PAG Co-chair to attend or participate in the numerous meetings and conference calls. The appointment of Alternates would reduce the burden on Co-chairs and with security-clearance pending, would give Co-chairs an opportunity to discuss the material with a co-lead. The inclusion of Alternate Co-chairs would be very helpful.

This study has had the benefit of very committed professionals who have provided been obliging and open minded with PAG requests. The recent Estevan workshops [these involved PAG review of initial flow scenario results and reservoir simulations using performance indicators; the scenarios were informed by stakeholder input and data along with anecdotal information collection) was a great example of the willingness of study professionals to work with PAG's ideas and contributions. PAG Co-chairs expressed an interest in using the reservoir simulations to develop an interactive exercise aimed at engaging PAG members to use their knowledge of the basin to anticipate the effects and impacts of different flow scenarios or operating situations. The study's technical leads were effective in demonstrating flow scenarios and encouraging PAG members to interpret and consider how the different flow operations would affect or impact downstream areas. This inter-active approach at the July 2019 Workshop worked well. The success of this type of knowledge exchange (i.e. the interactive format) is credited to the Study Board professionals who adapted a relatively loose concept to a workable model that engaged good PAG dialogue and discussion.

PAG Co-chairs noted that they could not personally represent the wider cross-section of the public. They were more in tune with the public issues and concerns from their specific geographic area. Recognizing this limitation is important, and it is understood the wider PAG committee should be playing this more comprehensive role. Co-chairs also noted that they experience problems or challenges when they are asked to represent the study board or its findings to the public; this is largely because the Co-chairs simply do not have enough resources or technical understanding to adequately represent the study to the public. Options to correct this may require joint participation by technical team members working together with PAG co-chairs to disseminate findings in selected public meetings. It is recognized that this option is unrealistic for all possible public events. Another possibility would be to engage additional watershed groups who may have more internal technical resources available, and/or technical knowledge. Such watershed groups may even offer some of their own resources to the study, and perhaps could be leveraged with some type of financial or shared contribution.

Another challenge is managing expectations. Many contributions and different concerns have been expressed by stakeholders. PAG Co-chairs and members are not able to do anything to make changes. While people likely understand the role is to provide input, the PAG members are sometimes frustrated by a motivation to “solve the problems” which are beyond the capacity of the PAG committee. Nevertheless, PAG members have been very open with their contributions and concerns, airing issues and bringing concerns to discussions. Some discussions have been very personal with local impacts; “basin-wide” impacts may be different in different locations. There has been a very positive attitude and atmosphere of trust, respect and care for PAG members. Some fears do exist of rural issues being “forgotten” or considered of “lesser priority” when compared to urban issues where larger populations exist.

PAG’s Mid-study Summary Comments

The PAG committee, Co-chairs and members are a diverse group of stakeholders representing widespread interests in the basin’s geographic regions of Saskatchewan, North Dakota and Manitoba. The committee is well-established, with commitments of individuals who want to help the IJC’s Study Board. The inputs to date have been useful at presenting key concerns and issues for flow management, and to guide the technical and study team in the analysis of flow operations to improve conditions in the basin. There are high expectations of the PAG members.

Some PAG members believe the flooding issues are sometimes due to human operations and not solely due to natural conditions. Drainage issues and tributary inputs are cited as concerns for river flow (i.e. as inputs into the Souris River as well as impacting flow operations and water quality).

There is genuine interest in improving conditions, and seeking to reduce risks from flooding, water supply management and flow apportionment across borders. PAG members communicate largely via telephone. Internet communications is essential but can pose problems for rural members where connectivity issues and technical capacity may be problematic. PAG Co-chairs recommend the IJC establish clear roles, responsibilities, time commitments and terms-of-reference for future PAG Co-chairs and members. Alternate Co-chairs would be beneficial. Resource support (staff, funding) would be helpful if these were possible. Incorporation of contributions from established watershed groups (technical and/or administrative) would be helpful.

REFERENCES

Websites:

PAG membership: <https://www.ijc.org/en/srsb/who/members/pag>

International Souris River Study Board: <https://www.ijc.org/en/srsb>