

# International Souris River Study Board

## Presentation to the ISRB

Virtual Meeting  
June 23, 2021



# Core Responsibilities

## September 2017 Directive:

1. Examine and report to the Commission on matters raised by Governments of Canada and the United States in reference dated July 5, 2017.
2. Evaluate and make recommendations regarding the Operating Plan contained in Annex A of the 1989 Agreement, and additional flood protection measures, and beneficial water supply measures.
3. Carry out the instructions provided by the Commission to guide the Study Board

# Core Responsibilities and Workplan

- Operating Rules Review (OR1) COMPLETE
- Data Collection and Management group tasks DW1-DW4 are mostly complete
  - DW1 – Summarize POS Projects and Report Progress since 2013 COMPLETE
  - DW2 – LiDAR and Bathymetry for Reservoirs COMPLETE
  - DW3 – Review of Hydrometeorological Network Report COMPLETE
  - DW4 – Performance Indicators COMPLETE
- Hydrology and Hydraulics-majority of group tasks are underway
  - HH1 – Regional Hydrology COMPLETE
  - HH2 – Stochastic Modelling COMPLETE, WAITING BOARD SIGN-OFF
  - HH3 – Artificial Drainage Impacts Review COMPLETE
  - HH4 – MESH Modelling REPORT BEING WRITTEN
  - HH5 – ECCC Climate Change Supplies REPORT BEING WRITTEN
  - HH6 – ResSim Modelling COMPLETE
  - HH7 – Reservoir Flow Release Planning (HEC-RAS) COMPLETE
  - HH8 – PRM Model Review COMPLETE
  - HH9 – Model System Integration Concept COMPLETE, REPORT BEING WRITTEN
  - HH10 – Forecasting Assessment COMPLETE
- Plan Formulation tasks (PF1-PF4)
  - PF1 – Workshops and Engagement ONGOING
  - PF2 – Running and Evaluating Alternatives COMPLETE, AWAITING BOARD APPROVAL
  - PF3 – Dam Safety COMPLETE, PENDING BOARD APPROVAL
  - PF4 – Roadmap work for apportionment, water quality and ecosystem health COMPLETE

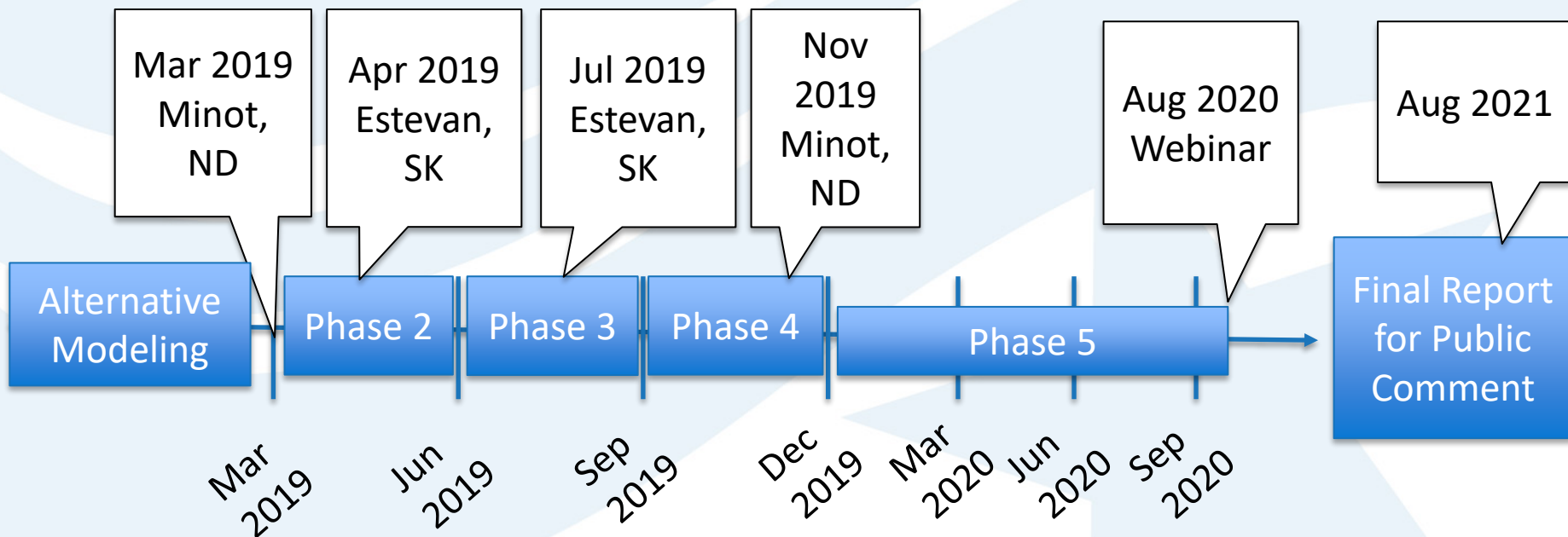
# Status of Indigenous Recommendation

**Goal: Build collaborative long-term IJC-Indigenous Nations relationships in the Souris River Basin.**

- **Indigenous Nations are interested in:**
  - Creating an Indigenous Advisory Group that would represent Indigenous Nations with current/ancestral interests in the Souris River Basin
  - Becoming Members of the International Souris River Board
- **ISRSB Recommendation:**
  - **that the IJC continue to engage with Indigenous Nations to form an Indigenous Advisory Group and establish Indigenous board membership on the ISRB**
  - **An option for the Indigenous Advisory Group to consider:**
    - **Inviting participation of Indigenous Nations with current/ancestral interests in the Souris River Basin**
  - **An option should consider ISRB Board Membership as:**
    - **Canada: 1 First Nations Member and 1 Métis Nation citizen**
    - **United States: 2 Indigenous Nations Tribe Members**



# Public Advisory Group Workshops



# Recommendation on Possible Alternative Operations

**Goal: Consider changes to the 1989 Agreement of the Souris River to improve flood protection and water supply.**

- The 1989 Agreement is a good and balanced agreement which maximizes flood protection and water supply
- The 1989 Agreement can be improved with changes (due to the natural and infrastructure constraints of the Souris River and its basin, improvements are beneficial but marginal; they will achieve greater operational flexibility)
- The Plan Formulation Committee of the ISRSB has selected possible alternative operations to the 1989 Agreement. The ISRSB considers this as the conclusion of the plan formulation work under the study.

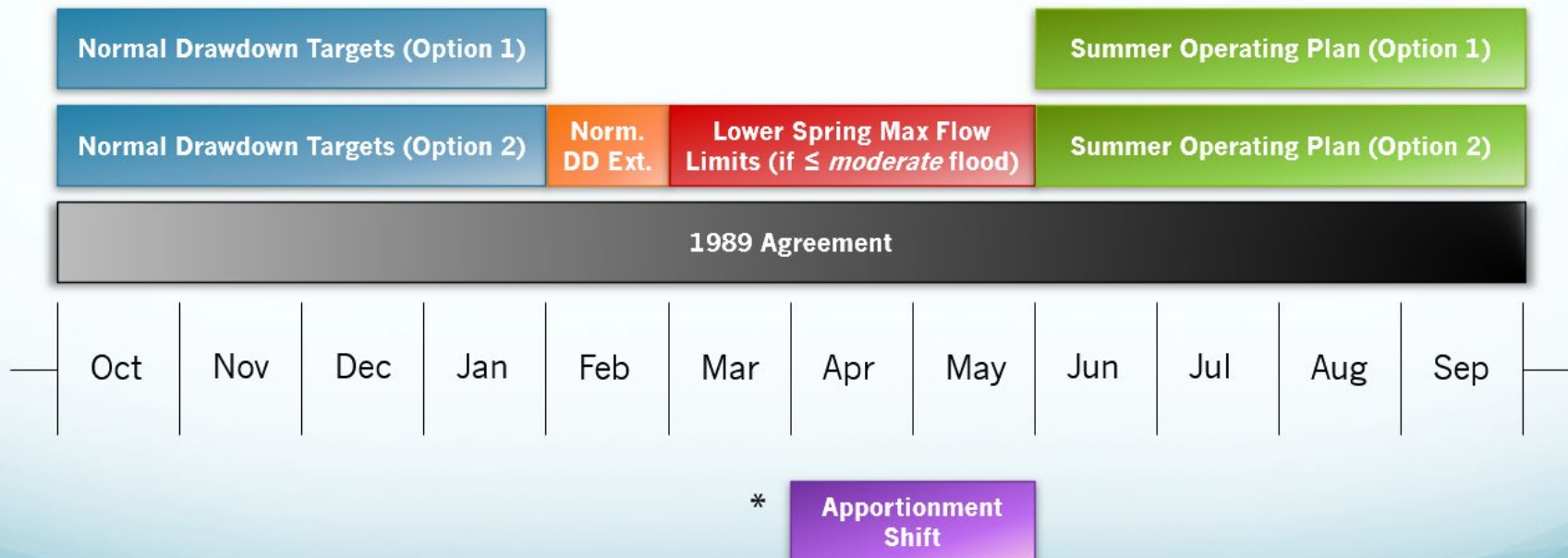


# Potential Changes to the 1989 Agreement

Changes to the 1989 Agreement were analyzed for improved flood protection and water supply.



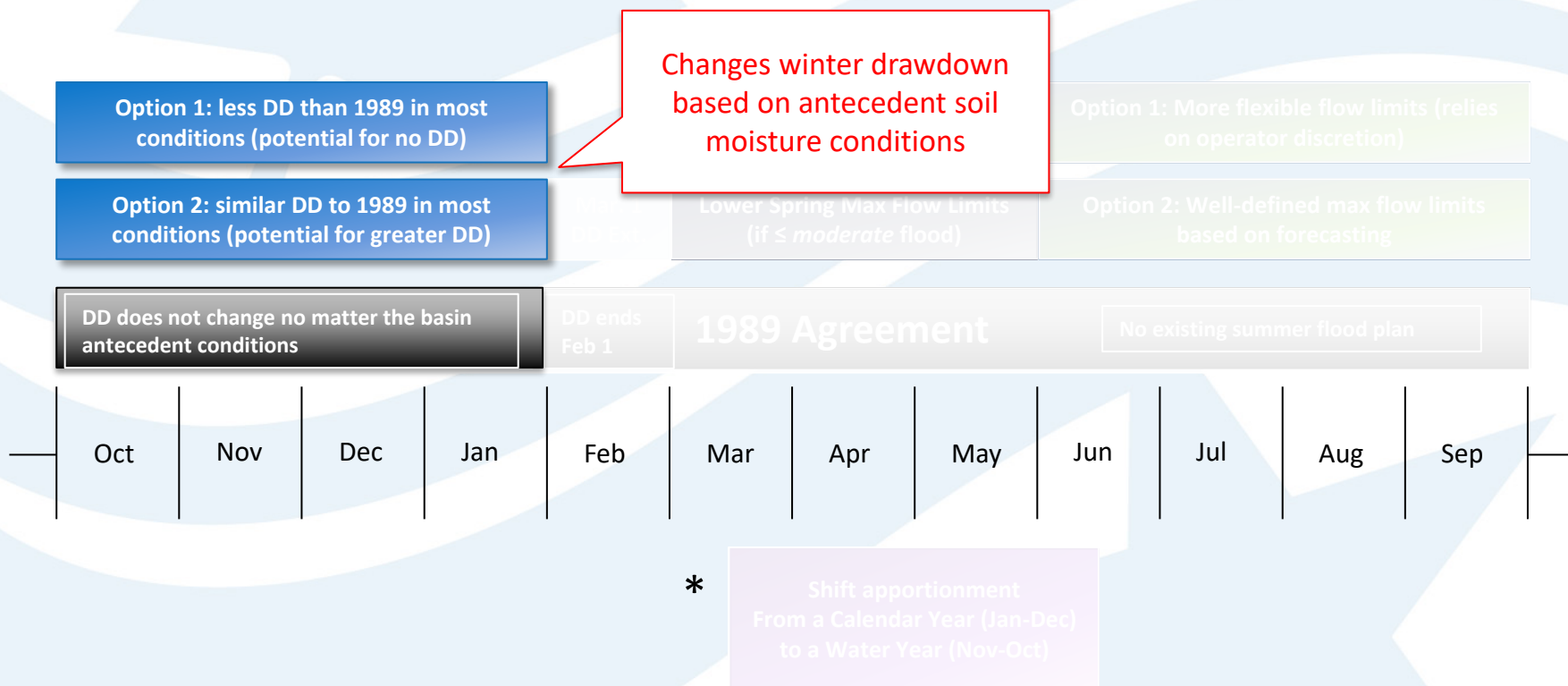
## Phase 5 Operational Changes





# Phase 5 Operational Changes

## Greater Detail



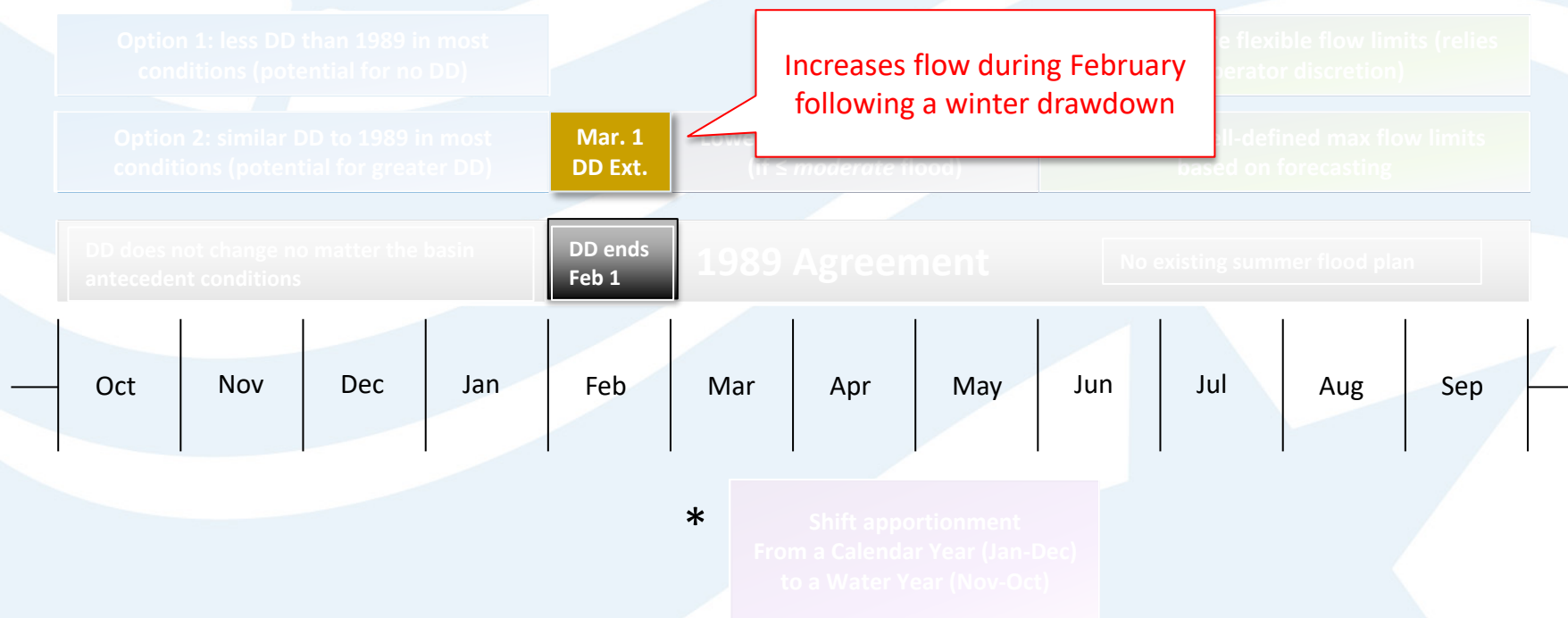
**Winter Drawdown Targets** describe how improvements can be made to adjust operations for dry, normal, or wet years to better manage for existing antecedent basin conditions, and to safeguard water supply needs.





# Phase 5 Operational Changes

## Greater Detail

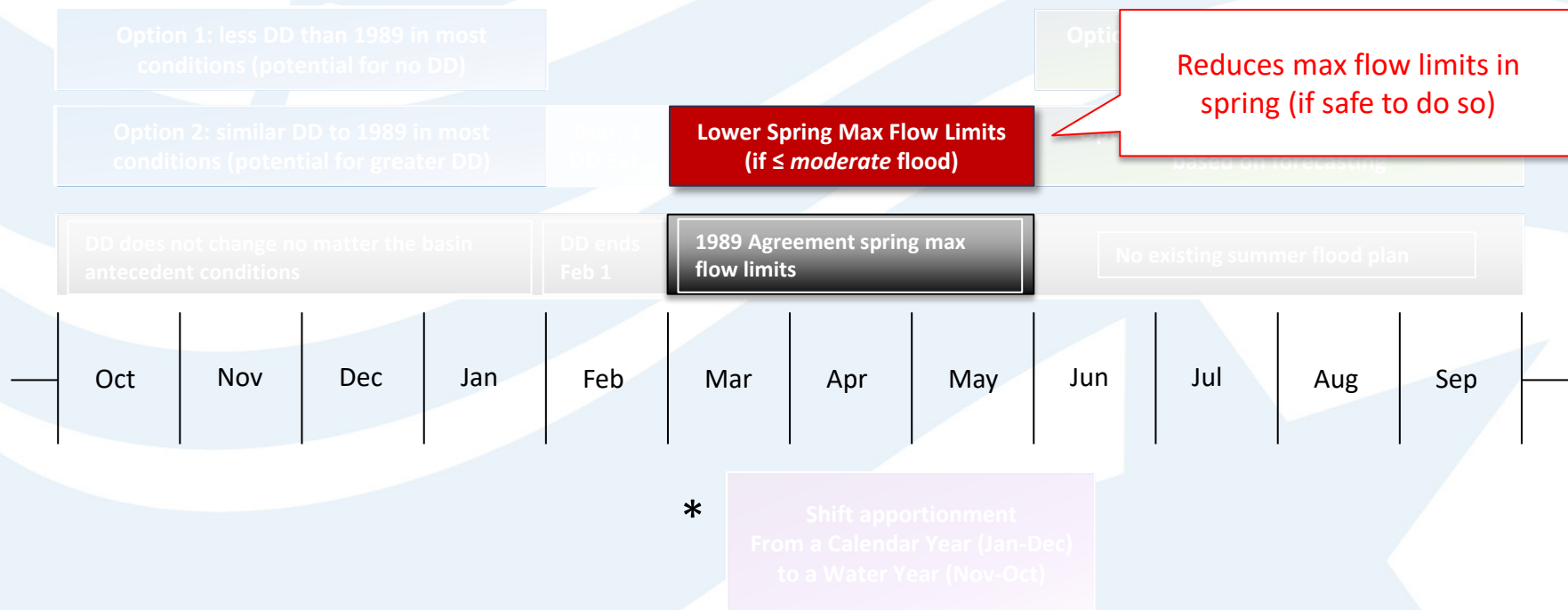


The winter drawdown target date change with an **Extension from February 1 to March 1** describes how improvements can be made to improve water management, benefit environmental and aquatic benefits, and potentially reduced spring ice problems.



# Phase 5 Operational Changes

## Greater Detail



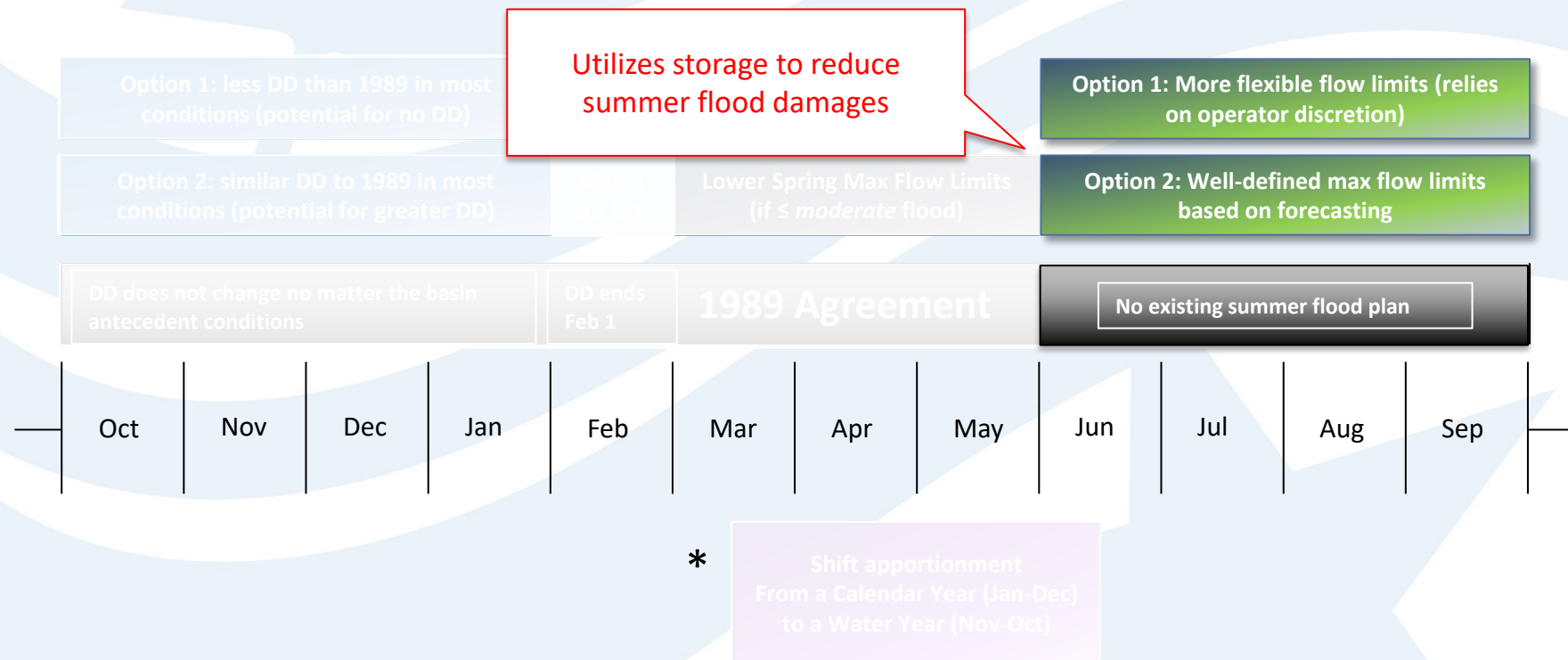
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Flow reduction by **Lowering of Spring Maximum Flows** reduces the risk of downstream agricultural flooding caused by small to moderate floods.



# Phase 5 Operational Changes

## Greater Detail



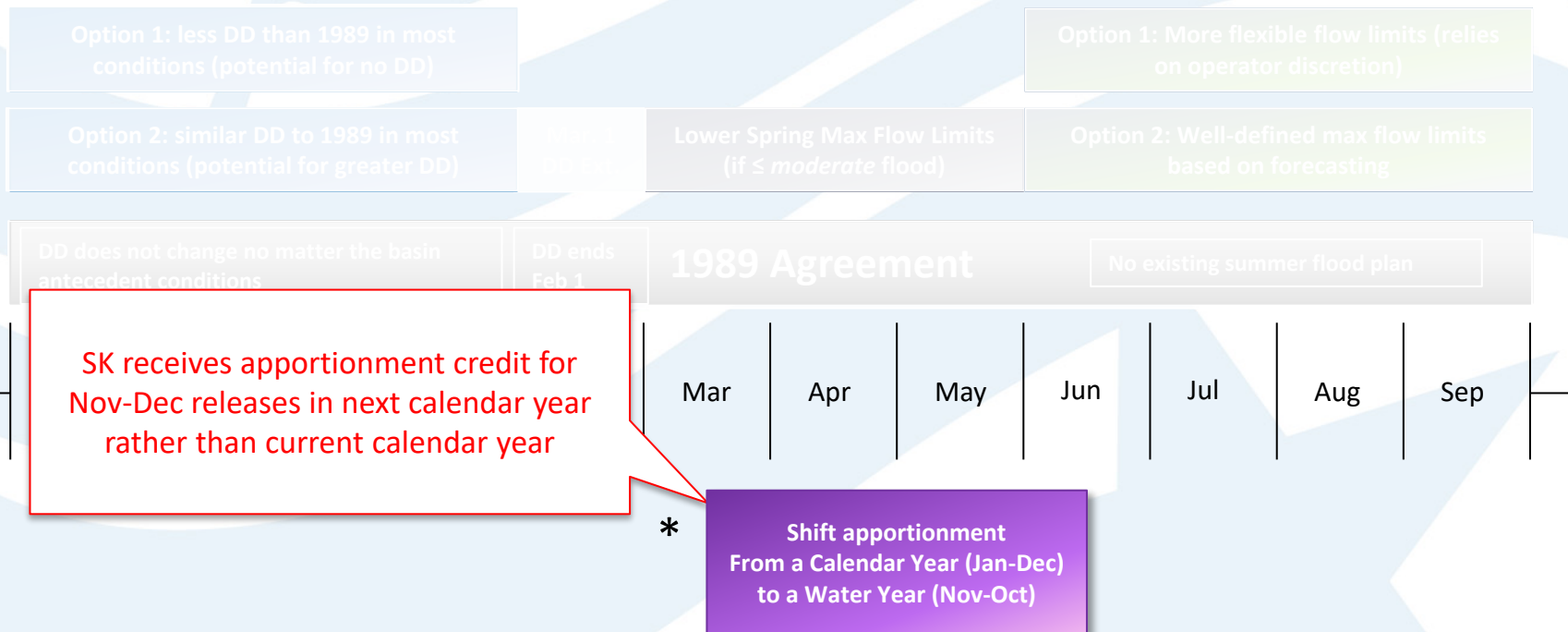
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**A Summer Operating Plan** describes flow operations to provide clear operational guidance for managing summer floods balancing riverine risk and reservoir risk.



# Phase 5 Operational Changes

## Greater Detail



The **Apportionment Shift** changes calculation of apportionment volumes from Jan 1-Dec 31 to Nov 1-Oct 31, which has implications for when Nov – Dec flows are counted towards apportionment.

# Plan Formulation Consensus

**“The International Souris River Study Board accepts the Phase 5 Options as the completion of the Plan Formulation Phase for the basis of the final report preparation.**

**Key Considerations in support of the motion:**

- 1. The 1989 Agreement (with Annex A and B) has performed well for balancing water supply and flood protection for the Souris River Basin.*
- 2. The ISRSB research completed extensive analyses and developed numerous new analytical techniques and tools to better understand the existing Souris River flow operations and possible alternatives for improvement of operations. These analyses and tools have tremendous value and importance in guiding application for any future operational changes, and for better understanding of the value and importance of the existing 1989 Agreement.*
- 3. After modeling over 60 scenarios, this document presents the most promising suite of alternative options. They are the “Phase 5 Options on Flow Operations for the Souris River,” and are largely based on research analyzing Performance Indicators in the Souris River Basin.*
- 4. Before an actual detailed operating plan is developed, these options must be further analyzed beyond Performance Indicators to determine feasibility with appropriate risk and sensitivity analyses. An array of stochastic and climate change data research should also be applied to test the resilience of operational changes and to refine options for a detailed operational plan.*
- 5. The IJC and Governments of Canada and the United States will need to determine an appropriate path forward to implement changes. Key factors will also require resolving issues related to current hydrology and dam safety approaches and addressing any issues prior to changing the 1989 operational plan (these were beyond the scope of the ISRSB).*

# Transition to the Future

- Transition of Tools, Study Results and Recommendations from the Study Board to the River Board.
  - 1989 Agreement – Language Review
  - Numerical Models and Data Products
  - Performance Indicators
  - Study Reports
  - Engagement Activities
  - Operating Plan Formulation
- Task Force or Team to do follow on analyses (optimizing recommendations, impacts of updated hydrology and climate change, etc.) and
- Future: Compose the details of a revised Agreement and Annex's for consideration by the IJC and Governments.



# Next Steps

- **Complete documentation and board approvals**
- **Complete draft final report and submit to PAG, RAAG, IAG, IRG, and ISRB for review in June 2021**
  - **Propose to hold a Special ISRB Meeting to cover ISRSB Recommendations**
- **Transition of Study Tools and Recommendations from the Study Board to the River Board**

# Next Steps – Timeline to Study Completion

- June 24, Thursday: Board meeting to resolve any remaining issues and approve draft of final report for external comment.
- **June 28, Monday: Send working draft of final report for external comment to PAG, RAAG, Indigenous contacts, ISRB and IRG.**
- June 29, Tuesday: Kickoff meeting for external review.
- July 16, Friday: PAG, RAAG, Indigenous contacts, ISRB meeting
- July 21, Wednesday: PAG, RAAG, Indigenous contacts, ISRB meeting
- **July 25, Sunday: Deadline for external comments and IRG review.**
- August 5, Thursday: Present summary of external review, responses and suggested changes to the final report to the ISRSB for discussion.
- August 12, Thursday: Approval of final document for public comment period.
- **August 16, Monday: Full public meeting and beginning of Public comment period.**
- September 5, Sunday: Deadline for public review period.
- September 9, Thursday: Present summary of public comment, responses and suggested changes to the final report to the ISRSB for discussion.
- September 16, Thursday: Final approval of report.
- **September 21, Tuesday: Submission of final report to IJC.**

# Questions



# Core Responsibilities

## July 2017 Reference:

1. The collection and harmonization of data necessary to support hydraulic and hydrologic modelling and associated studies;
2. The development of hydrological watershed runoff and inflow sequences to allow for the simulation of various water supply conditions including historical conditions, extreme conditions, and conditions influenced by the effects of climate change;
3. The development of hydraulic, hydrologic and optimization modelling tools that will allow for the accurate simulation of flows within the Souris River so that operational scenarios may be evaluated;
4. Studies evaluating the physical processes occurring in the Souris Basin which are thought to have contributed to recent flooding events;
5. A detailed review of the Operating Plan contained in Annex A of the 1989 Agreement;

# Core Responsibilities

## July 2017 Reference:

6. Identifying and, as appropriate, making recommendations regarding improvements to the Operating Plan contained in Annex A of the 1989 Agreement to reduce the flooding and water supply risks in the Souris River basin with consideration to low flow, apportionment, water quality and aquatic ecosystem health;
7. The evaluation, on a qualitative and quantitative basis, of the costs and benefits of a range of possible infrastructure and operational plans regarding flooding and water supply in the Souris River basin;
8. The evaluation of additional flood protection measures, beyond what is currently provided under the 1989 Agreement, which may include feasibility evaluations of increasing storage at existing dams, more efficient channel alignment and capacity, and the provision of flood control measures in and around communities within the basin;
9. Assessing possible adaptation strategies to address the potential future variability in water supplies associated with climate change;

# Core Responsibilities

## July 2017 Reference:

10. Facilitating collaboration among various Federal, State, Provincial, local agencies, the public, as well as Native American Tribes, First Nations, and Métis located within the basin to share their views and provide input during the study process; and
11. Considering any other matters that the Commission, in consultation with governments, deems relevant to the purpose of this study.



# Board Priorities and Challenges

- **On June 21, 2020 Study Board sent letter to IJC to be transmitted to governments requesting an extension and additional funding for Study**
  - COVID-19 realities forced agencies involved with Study to divert attention from the Study that resulted in delays
- **On December 21, 2020 IJC received response from governments granting 6-month extension, but governments unable to support request for additional funding**
  - Without additional funding, no additional technical work on alternatives combinations is possible to complete and the study tasks are being brought to an orderly conclusion.