

Appendix 3.5: Adaptive Management & CITT

Article IV.G of the Compact establishes a Compact Implementation Technical Team (CITT) for purposes of planning for and implementation of Operational Improvements, Rehabilitation and Betterment, and Adaptive Management with regards to the Flathead Indian Irrigation Project (FIIP). This appendix specifies the structure and duties of the CITT.

1. Basis for Compact Implementation and Adaptive Management

- a.** This appendix identifies actions and tools necessary to carry out provisions of the Compact pertaining to Instream Flows, reservoir pool elevations, and irrigation water management on natural watercourses influenced by, and infrastructure associated with, the Flathead Indian Irrigation Project (FIIP).
- b.** The commitments and responsibilities of the Parties to implement this Appendix continue over the life of the Compact.
- c.** The Parties understand that Compact implementation and Adaptive Management represent a substantial commitment of staff and resources.
- d.** The Parties recognize that their respective roles and the nature of their involvement may change over the life of the Compact. The Parties will reevaluate their respective roles on the Effective Date of the Compact and at yearly intervals thereafter.
- e.** The Parties agree that data and information collected and prepared in the implementation of Adaptive Management is public information. The Parties shall develop a website on which to post data and information at reasonable intervals each year. Records from the Adaptive Management process shall be retained by the Compact Implementation Technical Team (CITT) and will be considered public records as set forth in Article IV.G.4.b.
- f.** Adaptive Management involves the following activities, which include Operational Improvements to be implemented according to the schedule set forth in Appendix 3.4:
 - i.** Establishment of a comprehensive measurement program across the FIIP water supply area, including measurement of delivery and distribution infrastructure;
 - ii.** Development and implementation of a water management coordination process for the CITT;
 - iii.** Development of water management planning tools to support integrated management of Instream Flows, reservoir pool elevations, and irrigation water supplies under wet, normal, and dry water supply conditions;

- iv. Determination of River Diversion Allowances (RDAs) for wet, normal, and dry Natural Flow water-year types;
- v. Determination of Minimum Enforceable Instream Flows (MEFs) and Target Instream Flows (TIFs);
- vi. Prioritization of Operational Improvements and Rehabilitation and Betterment projects;
- vii. Quantification and apportionment of Reallocated Water following completion of Rehabilitation and Betterment actions;
- viii. Reporting of data collected and information generated by the CITT in a publically accessible format; and
- ix. Advising the Project Operator regarding the implementation of Operational Improvements, Rehabilitation and Betterment, and Adaptive Management.

2. Compact Implementation Technical Team

- a. The CITT shall form within six months of the date the ratification of the Compact by the Montana legislature takes effect under State law. Each Party and the Project Operator shall assign a technical team member to the CITT; these representatives must meet the qualifications in 2.b of this Appendix. FIIP irrigators may assign an irrigator representative to the CITT provided that the representative meets the irrigator qualifications in 2.c of this Appendix or the conditions of 2.c.iii of this Appendix apply.
- b. CITT Technical Member Qualifications: CITT technical team members shall, at a minimum, possess a bachelor's degree and three years of related experience in one or more of the following areas: water resources management, hydrology, hydrogeology, geology, environmental sciences, biological sciences, agricultural engineering, or civil engineering with an emphasis on water resources.
- c. CITT Irrigator Team Member Qualifications:
 - i. The CITT irrigator team member shall, at a minimum, own 40 acres served by the FIIP; have ten years of experience in irrigated agriculture; and be in compliance with applicable BIA rules and guidelines for the FIIP.
 - ii. The irrigator member shall be selected by all irrigators served by the FIIP pursuant to a procedure of their choosing.
 - iii. In the event the irrigators served by the FIIP hire a consultant to be their technical representative on the CITT, that consultant shall meet the CITT qualifications listed in 2.b of this Appendix.

- d. Irrigator Representation on the CITT.**
 - i.** In the event FIIP operational control is transferred to irrigators served by the FIIP, the CITT position occupied by the FIIP irrigator representative will become an “at large” position to be selected by the other four CITT members.
 - ii.** In the event that the irrigators served by the FIIP are unable to select a representative, the seat will remain vacant and the CITT will carry out its responsibilities as described herein and in Article IV.G.
- e.** Each Party will select one representative to serve on a three-member review board to be termed the Compact Management Committee (CMC) as set forth in Article IV.G.5. The roles and responsibilities of the CMC are described in Article IV.G.5.
- f.** On formation, the CITT shall establish its own operating rules and shall provide for removal of CITT members for cause. Failure to vote with the majority is not cause for removal. CITT members must agree to diligently implement these Adaptive Management provisions and any other applicable Compact provisions.
- g.** The Parties agree to coordinate with the Project Operator regarding Adaptive Management upon formation of the CITT. The Parties further agree to initiate CITT responsibilities for implementation of Operational Improvements according to the schedule set forth in Appendix 3.4 as settlement appropriations become available.
- h.** The Parties recognize that title to the FIIP remains with the United States, and that any Operational Improvements or Rehabilitation and Betterment Projects that affect FIIP’s real property interests are subject to the approval of the United States, acting through the BIA. It is anticipated that BIA approval shall be obtained through its participation as a member of the CITT; however, situations may occur where explicit BIA approval is necessary. In those situations the CITT shall request such changes in writing to the BIA and shall include a sufficiently detailed description of the contemplated work to allow evaluation. If BIA does not deny the request or grant it with conditions within 30 days of its submittal, it shall be deemed granted. If BIA denies the request or grants it with conditions, the action may be appealed under Title 25, Part 2, Code of Federal Regulations.
- i.** The CITT is responsible for the allocation of water between instream and irrigation uses based on the projected and realized annual water supply. The Parties agree that the CITT may adjust allocations throughout the irrigation season, based on water supply, seasonal climate variability, and irrigation management considerations. At all times, the CITT shall comply with the Compact and appendices setting forth MEFs, TIFs, and RDAs in its allocation of water.

- j. The CITT shall consult with staff within or outside of their respective organizations, including the Montana Bureau of Mines and Geology, to address technical issues that involve questions outside the expertise of the CITT members.
- k. The CITT shall comply with applicable Tribal, Federal, and State law during all aspects of project planning and implementation.

3. Responsibilities of the Compact Implementation Technical Team

- a. **Planning, Design, and Implementation of Adaptive Management Tools Prior to the Effective Date** – Upon formation, the CITT shall engage in planning, design, and implementation of Adaptive Management prior to the effective date as settlement funds are appropriated. The CITT shall design and implement these programs according to the schedule set forth in Appendix 3.4.
 - i. The CITT shall plan for and implement a comprehensive water measurement program.
 - ii. The CITT shall devise a quality assurance protocol for implementation of the measurement program.
 - iii. The CITT shall plan for and complete the development of the hydrologic and data management and reporting protocols described in 3.d.
 - iv. The CITT shall plan for and prioritize implementation of Operational Improvements according to the schedule provided in Appendix 3.4 as settlement funds become available both prior to and following the Effective Date.
 - v. The Tribes in consultation with the CITT shall plan for and prioritize implementation of Rehabilitation and Betterment Projects as settlement funds become available both prior to and following the Effective Date according to the schedule set forth in Appendix 3.6.
 - vi. The CITT shall plan, prioritize, and implement Stock Water mitigation measures according to the schedule provided in Appendix 3.4 as settlement funds become available both prior to and following the Effective Date.
 - vii. The CITT shall plan, prioritize, and implement on-farm efficiency measures according to the schedule provided in Appendix 3.4 as settlement funds become available both prior to and following the Effective Date.
 - viii. The CITT shall plan, prioritize, and implement farm delivery accounting measures according to the schedule provided in Appendix 3.4 as settlement funds become available both prior to and following the Effective Date.

- ix.** The CITT shall enter into agreements with the appropriate State and Federal agencies to accept and expend funds to carry out CITT duties and implement Operational Improvements and Rehabilitation and Betterment Projects.
- b. River Diversion Allowance Evaluation Process:** The CITT shall implement the RDA evaluation process in Article IV.D.1.e.
- c. Shared Shortages Provision:** The CITT shall determine and communicate to the public when Shared Shortages conditions begin and end pursuant to the Shared Shortages provision in Article IV.E.
- d. Water Measurement:**

 - i.** The CITT shall implement the measurement program described above according to the schedule contained in Appendix 3.4 as settlement funds become available.
 - ii.** The CITT shall ensure that water measurement instrumentation, data collection, and data management follow the quality assurance protocol developed according to 3.a.ii. above.
 - iii.** The CITT shall ensure that data management systems are shared among the Parties and the Project Operator.
 - iv.** The CITT shall ensure that water measurement information is made available to the public at regular intervals in a timely manner, and shall cause a website to be developed and maintained for that purpose.
 - v.** The Tribes shall install and maintain water measurement equipment and shall manage data at Instream Flow sites and additional streamflow locations, at reservoirs, at RDA diversion works and FIIP irrigation wasteway locations.
 - vi.** The Project Operator shall be responsible for the installation and maintenance of water measurement equipment and the management of data for lateral canal diversion works and on-farm diversion locations.
 - vii.** The CITT shall produce an annual report of findings for the full water measurement program.
- e. Water Management Planning Tools –** The CITT shall develop or commission development of water management planning tools to support FIIP water management and Adaptive Management according to the implementation schedule provided in Appendix 3.4.

- i. The CITT shall apply hydrologic and meteorological information to refine the classification of wet, normal, and dry Natural Flow water-year types set forth in Appendix 3.7. This process involves the designation of increments of water-year types between wet, normal and dry years and updates of water year-types to a new base period.
 - ii. The CITT shall develop water supply forecast procedures to plan for and allocate seasonal runoff that include long-range and seasonal forecast tools.
 - iii. The CITT shall develop water supply forecast procedures that provide the flexibility to shift MEF and TIF monthly and weekly enforceable flow rates to mimic anticipated runoff patterns.
 - iv. The CITT shall develop operational models or tools that provide for short-term (weekly to daily) instream flow and irrigation water supply adjustments. The Project Operator, in consultation with the CITT, may refine and update operational models or tools.
 - v. The CITT shall develop a water accounting program to track and report water measurement data collected by the Project Operator for lateral canal diversion works and on-farm delivery locations.
- f. Water Management Coordination** – The CITT shall meet regularly to implement the provisions of Adaptive Management; at a minimum at the frequency defined below, and additionally as needed. The CITT may agree to alter the frequency of meetings.
- i. The responsibility to schedule, chair, and record water management coordination meetings will rotate on an annual basis, with the Tribes assigned that responsibility in year one.

Approximate date	Purpose of Meeting
End of January	Review reservoir carryover and initial projection of water supply, tentatively categorize water-year type
End of February	Review reservoir carryover and initial projection of water supply, tentatively categorize water-year type, set March wet and normal year streamflow targets, modify MEF timing (if applicable) to match anticipated snowmelt runoff
End of March	Refine projection of water supply, tentatively categorize water-year type, and set April wet and normal streamflow targets, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Mid-April	Refine projection of water supply, categorize water-year type, update wet and normal streamflow targets for the month, set initial RDAs based on water year type, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Early May	Refine projection of water supply, update water-year type (if applicable), set wet and normal streamflow targets for the month, review initial RDAs based on water year type, taking into account any changes in water year type, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Mid-May	Refine projection of water supply, update water-year type, update wet and normal streamflow targets for the month, update RDAs based on any changes in water year type, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Early June	Refine projection of water supply, update water-year type (if applicable), set wet and normal streamflow targets for month, quantify portion of RDAs used to date, modify MEF timing (if

	applicable) to match anticipated snowmelt runoff
Mid June	Finalize projection of water supply and water-year type, update wet and normal streamflow targets for month, modify RDAs based on any changes in water year type, modify MEF timing (if applicable) to match anticipated snowmelt runoff
Early July	Set wet and normal streamflow targets for the month, evaluate RDAs, quantify portion of RDAs used to date
Mid July	Update wet and normal streamflow targets for the month
Early August	Set wet and normal streamflow targets for the month, evaluate RDAs, quantify portion of RDAs used to date
Early September	Set wet and normal streamflow targets for the month, quantify portion of RDAs used to date
Early October	Discuss annual reporting and water operations for the completed irrigation season, develop long-range forecast based on climatic indicators
Early December	Finalize annual reporting of water measurement, refine long-range forecast based on climatic indicators

g. Within-Year Water Management Planning and Allocation – The CITT shall make decisions based on water measurement, water availability, climatic variability, and irrigation management considerations to allocate water between Instream Flows and irrigation uses. At all times, these decisions shall comply with the provisions of the Compact and the appendices defining the MEFs, TIFs, and RDAs, each of which may be uniquely described by water-year type at a particular location, except that weekly or monthly adjustments to certain MEFs and TIFs may be made as provided in items 3.g.ii and iii, below. These adjustments are made pursuant to, and are not considered amendments of, the Compact.

- i. The CITT shall define TIFs (if applicable) and RDAs for a given year based on a determination of the water-year type following the coordination schedule set forth in Section 3.e, above. The CITT may adjust those levels throughout the planning period and irrigation season based on changing water supply, climate, or irrigation management conditions.
- ii. The CITT may agree to modify MEFs and TIFs (if applicable) by moving the MEF and TIF schedule for a given month either forward in time one month or backward in time one month between March 1 and July 31.
- iii. After the water management planning tools described in Section 3.e.i through 3.e.iv have been constructed and are operational, the CITT may modify the MEFs and TIFs by adjusting to weekly MEFs and TIFs that are distributed so as to mimic Natural Flows. The weekly values must cumulatively equal the monthly MEF and TIF volumes for the month during which this adjustment is made. Such adjustment may only be made between March 1 and July 31.

h. Operational Improvements – The CITT shall plan for and prioritize projects that are described in Appendix 3.4.

- i. The CITT may adjust or reorder the schedule set forth in Appendix 3.4 in response to changes to the expected availability of settlement contributions, experience implementing Operational Improvements, and other factors that justify such adjustment or reordering. The CMC shall review and approve such adjustment or reordering.

- ii. The CITT shall plan for, design, and complete any necessary environmental and engineering review of Operational Improvements.
 - iii. As Operational Improvements are completed, and prior to full enforcement of MEFs and TIFs, the CITT shall transfer water saved through Operational Improvements incrementally to the corresponding MEF and TIF locations.
- i. Rehabilitation and Betterment** – The CITT shall plan for and prioritize FIIP Rehabilitation and Betterment actions set forth in Appendix 3.6.
- i. The CITT shall plan for, design, and complete environmental and engineering review of Rehabilitation and Betterment actions set forth in Appendix 3.6. These actions shall be implemented as settlement funds become available.
 - ii. The Tribes shall have the authority over Rehabilitation and Betterment actions that use funding from the Federal contribution to settlement.
- j. Reallocated Water from Rehabilitation and Betterment**
- i. The CITT shall directly measure water available for reallocation following a Rehabilitation and Betterment action. If direct measurement is not practicable, the CITT shall estimate Reallocated Water. The CITT shall assign Reallocated Water to one or more Instream Flow locations following a Rehabilitation and Betterment action. Reallocated Water may be assigned to an Instream Flow location as a seasonal or monthly volume.
 - ii. Once sufficient water has been reallocated to ensure that MEFs and TIFs are satisfied in every year, all additional Reallocated Water shall be split equally between Instream Flows and the FIIP Water Use Right as set forth in Article IV.C.2. The CITT shall determine when this condition occurs, and to which Instream Flow and RDA Area Reallocated Water will be assigned.
 - a. The CITT shall develop a reallocation report for each Rehabilitation and Betterment project, or group of related projects. Each reallocation report shall be submitted to the Project Operator and the Office of the Engineer.
 - b. The reallocation report shall, at minimum, include:
 - 1. A description of the Rehabilitation and Betterment project(s), or other actions, that form the basis for Reallocated Water;
 - 2. The seasonal volume or flow rate of Reallocated Water;

3. The Instream Flow or RDA Area to which Reallocated Water will be assigned; and
4. Water requirements for resource mitigation, if applicable.

The reallocation report shall be made available on the CITT website.

- iii. Upon completion of each reallocation report, the MEFs and TIFs will be incrementally increased and the RDA evaluation process set forth in Article IV.D.1.d will be applied to ensure that Historic Farm Deliveries are met.
- iv. The CITT shall maintain a complete record of reallocation reports and supporting data.
- v. The CITT shall maintain a tracking database to record changes in Instream Flows and RDAs attributable to Reallocated Water.
- vi. The CITT shall determine whether resource mitigation is required, and the conditions applicable to mitigation, for Water Rights Arising Under State Law and the Tribal Water Right as a result of Rehabilitation and Betterment projects. Resource mitigation requirements will be developed by the CITT according to the following principles:
 - a. In all circumstances, resource mitigation requirements shall be based on water measurement or estimates applied for a particular Rehabilitation and Betterment project.
 - b. Where an amount of water is required for resource mitigation, the water may be supplied from Reallocated Water or from other sources of water if use of those sources is more practicable.
 - c. Where there are costs associated with resource mitigation, those costs shall be provided from funds associated with the Rehabilitation and Betterment project that necessitated the resource mitigation.
 - d. Mitigation of impact to Water Rights Arising Under State Law and the Tribal Water Right may be accomplished using funds allocated for this purpose.