

# Reclamation Manual

## Directives and Standards

<b>Subject:</b>	Basin Studies
<b>Purpose:</b>	To establish the Bureau of Reclamation’s requirements for reviewing, conducting, and approving basin studies under the WaterSMART (Sustain and Manage America's Resources for Tomorrow) Basin Study Program. The benefit of this Directive and Standard (D&S) is the establishment of uniform basin study requirements to promote consistency and efficiency in the Basin Study Program.
<b>Authority:</b>	Reclamation Act of June 17, 1902 (chapter 1093, 32 Stat. 388; 43 U.S.C. 371, et seq.) and acts amendatory thereof and supplementary thereto; Section 9503 of the Secure Water Act, Subtitle F of Title IX of Pub. L. 111-11, Omnibus Public Lands Management Act of 2009 (Act) (42 U.S.C. 10363 et seq.).
<b>Approving Official:</b>	Chief Engineer
<b>Contact:</b>	Water Resources and Planning Office (86-63000)

### 1. Introduction.

- A. The Act authorizes Reclamation to partner with appropriate non-Federal participants to conduct basin studies to analyze the impacts of climate change and develop adaptation strategies to meet future water supply and demand imbalances in river basins in the 17 Western United States. Basin studies are intended to benefit the Nation or public as a whole, particularly the members of the public located in the major Reclamation river basins.
- B. This D&S sets forth the requirements, responsibilities, and review processes for basin studies funded under the Basin Study Program.

### 2. Applicability.

This D&S applies to all employees and activities that are conducted by Reclamation as part of a basin study.

### 3. Requirements and Responsibilities.

- A. **Commissioner.** The Commissioner is responsible for determining the appropriate emphasis of basin studies and the Basin Study Program as a mission goal within Reclamation’s overall strategic plan and taking such measures as may be necessary for overall implementation of the program, including concurrence on the Chief Engineer’s approval of individual basin studies.

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**B. Chief Engineer.** The Chief Engineer is responsible for:

- (1) overseeing the execution of basin studies on a programmatic level;
- (2) overseeing program funding and preparing annual budget documents;
- (3) assigning a Program Coordinator;
- (4) establishing and revising Basin Study Proposal Selection Criteria (see Appendix A) to meet Basin Study Program goals; and
- (5) taking such measures as may be necessary for overall conduct and completion of basin studies, including, providing written approval of study selections and written approval of all Final Basin Study Reports.

**C. Regional Directors and Native American and International Affairs Office (NAIAO) (Directors).** The Directors are responsible for:

- (1) overseeing execution of basin studies within their respective regions or the Insular Areas and ensuring compliance with this D&S and other Reclamation Manual releases;
- (2) appointing a regional or NAIAO coordinator to assist in the overall implementation of the basin study program in their respective regions;
- (3) appointing study managers or teams to work with all basin study stakeholders;
- (4) transmitting Final Basin Study Reports to the Chief Engineer for review and approval; and
- (5) taking measures necessary to conduct and complete studies within their respective regions.

**D. Regional and NAIAO Coordinators (Regional Coordinators).** The Regional Coordinators are responsible for:

- (1) providing overall coordination for all basin studies within their respective regions;
- (2) working with the Program Coordinator to resolve questions as they arise;
- (3) ensuring that studies are carried out in accordance with this D&S and other program requirements; and
- (4) taking such measures as may be necessary to carry out basin studies within their respective regions.

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- E. **Program Coordinator.** The Program Coordinator is responsible for:
- (1) providing leadership and coordination for basin studies on a Reclamation-wide basis;
  - (2) working with the Regional Coordinators to resolve questions as they arise;
  - (3) ensuring that basin studies are carried out in an effective and efficient manner; and
  - (4) taking such measures as may be necessary for overall conduct of the basin studies.
- F. **ARC.** The ARC is responsible for reviewing all accepted basin study proposals submitted by the application deadline and evaluating and ranking them in accordance with the Basin Study Proposal Selection Criteria (see Appendix A).
- G. **Study Managers.** Study managers are responsible for:
- (1) acting as the primary point of contact within their respective region for individual studies;
  - (2) overseeing the coordination, conduct, and review of the basin studies assigned to them;
  - (3) ensuring the studies are conducted efficiently and consistently in accordance with program requirements; and
  - (4) working with the Regional Coordinators to resolve questions as they arise.
4. **Program Budgeting.**
- A. **General Approach.** The Chief Engineer will formulate the budget request for the Basin Study Program. Funding will be held in Program accounts and will be made available to the Regional Coordinators and study managers as necessary.
- B. **Budget Request.** The budget request formulated will include funding associated with the costs for selecting, conducting, and overseeing basin studies.
5. **Basin Study Requirements.**
- A. **Determination of Eligibility.** The Chief Engineer and the appropriate Director(s) will determine if a proposed basin study is eligible for funding under the Basin Study Program, according to the criteria defined below in Paragraphs 6.B. and 6.C.

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- B. **Study Area.** The specific boundaries of the study area will be identified by Reclamation and the eligible applicant through the proposal development and selection process. Basin studies may include the study of impacts outside of a basin's geographic boundaries if they relate to the basin being studied.
- C. **Performance Period.** All basin studies must be completed within 5 years from the date the MOA is signed by the cost-share partners, unless a time extension is approved. A basin study will be considered complete once the Final Basin Study Report is transmitted by the Director to the Chief Engineer, as described in Paragraph 12 of this D&S. A time extension request must be approved by the Chief Engineer before any changes are made to the period of performance, as described in Paragraph 10.D.
- D. **Cost Share.** The costs to conduct a basin study will be shared between Reclamation, the non-Federal study lead, and cost-share partner(s), with a minimum 50 percent cost-share required by the non-Federal study lead and cost-share partners. If all or a portion of the non-Federal cost-share will be provided as in-kind services, valuation of these services must be conducted in accordance with 2 CFR Part 225, Cost Principles for State, Local, and Indian Tribal Governments (Office of Management and Budget (OMB) Circular A-87).
- (1) All of the costs that are identified in the MOA to conduct and oversee the basin study will be considered when determining the Federal and non-Federal cost-share amounts. A non-Federal cost-share of at least 50 percent of the study cost must be documented by the study manager at the completion of the study, unless a deviation or reduction of cost-share is approved by the Chief Engineer.
  - (2) Costs incurred up to 1 year prior to the proposal submittal deadline that contribute directly to the basin study may be included in the non-Federal cost-share.
  - (3) Reclamation, eligible applicants, and cost-share partners will each pay for their own costs incurred during the preparation of the proposal, (described in Paragraph 7.C.), MOA (described in Paragraph 8.A), and POS (described in Paragraph 8.B.).
  - (4) If non-Federal cash contributions are used to support work by Reclamation staff or contractors, Reclamation must enter into a CFA with the non-Federal study lead and/or cost-share partners to transfer funding to Reclamation.
  - (5) Reclamation will not require a cost-share for any basin study lead by one of the four Insular Areas, including: the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.
- E. **Cost-Share Deviation.** In exceptional circumstances, the Chief Engineer may waive or reduce the non-Federal cost-share requirement if an overwhelming Federal interest and a significant financial need are identified.

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- (1) **Cost-Share Deviation Requirements.** Cost-share deviations will adhere to the requirements of the Reclamation Manual D&S, Request for Deviation from a Reclamation Manual Requirement and Approval or Disapproval of the Request ([RCD 03-03](#)) to the extent that those requirements are not in conflict with the requirements of this D&S. The Chief Engineer shall use the following factors when considering whether to reduce or waive the cost-share requirement:
  - (a) **Overwhelming Federal Interest.** The Chief Engineer will make a determination of whether an overwhelming Federal interest exists based on factors such as the programs and policies of the President and the Secretary of the Department.
  - (b) **Financial Hardship.** In determining whether a significant financial need exists the following factors will be considered:
    - (i) the population-weighted median household income within the study area and the state based on the latest available data from the U.S. Census Bureau's American Community Survey;
    - (ii) family poverty level for the state as estimated by guidelines published annually by the Department of Health and Human Services;
    - (iii) the population-weighted average unemployment rate within the study area based on the latest available data from the U.S. Census Bureau's American Community Survey; and
    - (iv) a current financial statement of the applicant and a statement that the applicant does not possess sufficient funds or assets to pay for all or part of the required cost-share.
- (2) **Cost-Share Deviation Approval Process.**
  - (a) The study manager will coordinate with the non-Federal study lead to submit a written justification to the Director for a reduction or waiver of the non-Federal cost-share requirement to conduct basin study activities.
  - (b) The Director will provide a recommendation to the Chief Engineer based on the review of a written justification submitted by the non-Federal study lead.
  - (c) The Chief Engineer will review and approve or disapprove a cost-share deviation based on the requirements described in Paragraph 6.E.
  - (d) The Chief Engineer will provide written notification to the non-Federal study lead communicating the cost-share deviation determination.

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### 6. Basin Study Selection Process.

- A. Solicitation of Potential Basin Study Applicants.** The Chief Engineer will provide the Directors with guidance and templates to be used by the Directors to notify eligible applicants and potential partners within their respective region of the opportunity to submit a Letter of Interest up to three pages in length.
- B. Review of Letters of Interest.**
- (1) The Regional Coordinator will review the Letters of Interest and work with regional and area office staff to determine which letters to recommend for development into full basin study proposals. This determination will be made based on the following screening criteria, including:
    - (a) the extent to which the proposed basin study meets the programmatic requirements described in Paragraph 6;
    - (b) whether the proposed study complements or adversely complicates any ongoing efforts in the study area; and
    - (c) the degree to which the basin study meets the priorities of the regional office.
  - (2) Based on the results of the review, the Director will recommend Letters of Interest to the Chief Engineer for development into full basin study proposals.
  - (3) The Chief Engineer will have an opportunity to review and concur with the Director's recommendation.
  - (4) Upon concurrence by the Chief Engineer, the Director will provide written notification of the outcome of this review to each entity that submitted a Letter of Interest within their respective region.
- C. Preparation of a Basin Study Proposal.** The Director, or their representative, will identify regional staff to work on basin study proposals. For each Letter of Interest identified through the steps described in Paragraph 7.B., the Regional Coordinator, staff and the eligible applicant will work together to jointly prepare the basin study proposal for consideration by the ARC. The proposal must be no longer than 20 pages. Reclamation and the eligible applicant will each pay for their own costs incurred during the proposal preparation.
- D. Establishment of the ARC.** The Chief Engineer, in consultation with the Directors and the Technical Service Center, will select the members of the ARC prior to the submittal of proposals.

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### E. ARC Review.

- (1) The ARC will review and evaluate submitted proposals based upon the established selection criteria (see Appendix A). The Program Coordinator will oversee the review of proposals by the ARC.
- (2) The ARC will:
  - (a) review and evaluate assigned proposals individually;
  - (b) convene to discuss their evaluated applications with other members of the review committee in order to identify any issues or discrepancies;
  - (c) develop a consensus ranking and recommend specific basin studies to be considered further for funding in the current fiscal year;
  - (d) consider whether proposals receive full or partial funding in the current fiscal year; and
  - (e) make any additional recommendations as appropriate within the scope of the ARC review.
- (3) The ARC's recommendation must be based on the merits of the proposals as evaluated against the selection criteria and the amount of funding available.

### F. Approval Process for Selection of Basin Studies.

- (1) **Basin Study Recommendation.** The Chief Engineer will transmit a prioritized list of proposals recommended for funding to the Commissioner based on the ARC's review and recommendation, and available funding.
- (2) **Commissioner Consultation.** The Chief Engineer will consult with the Commissioner regarding the ARC's recommendations and the amount of funding available to determine which projects will be funded, consistent with Basin Study Program goals.
- (3) **Final Selection Lists.** Following consultation with the Commissioner, the Chief Engineer will record the final basin study selection list in writing, including justification of any deviation from final recommendations from the ARC.
- (4) **Notify Applicants of Status.** The Chief Engineer will notify each applicant in writing of the status of its application for funding.
- (5) **Debriefings.** The Chief Engineer will include a statement in each unsuccessful notification letter offering the applicant a debriefing, conducted by the Program

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Coordinator, to discuss the strengths and weaknesses of the applicant's study and proposal.

- (6) **Posting Successful Basin Study Proposals.** Reclamation will post all successful applications on the Basin Study Program Web site following redactions as determined to be necessary.

### 7. Initiating a Basin Study.

A. **Entering Into a MOA.** A MOA shall be used to establish the terms of the relationship between Reclamation, the non-Federal study lead, and cost-share partners to conduct a basin study. Reclamation will enter into a MOA with the non-Federal study lead and cost-share partners within 12 months of the announcement of the selection of the study, unless an extension is approved by the Chief Engineer.

- (1) **Preparing a MOA.** Study managers will prepare the MOA with the non-Federal study lead and cost-share partners and serve as the point of contact for study implementation in accordance with the agreements. Study managers are required to provide quarterly updates to the Program Coordinator on the MOA process every 3 months after the announcement of the selection of the study. The MOA and all attachments (i.e., POS, Technical Sufficiency Review Plan, and Communication and Outreach Plan) must be submitted to the Program Coordinator for review prior to signing the MOA.
- (2) **MOA Content.** The terms and conditions included in the MOA will be consistent with this D&S and include:
  - (a) definitions of the salient terms in the agreement;
  - (b) authorities for Reclamation and non-Federal partners to enter into the agreement;
  - (c) financial obligations, including the source, amount and type of non-Federal cost-share contributions (e.g., cash, in-kind services);
  - (d) parameters for publication of the agreement and the reports that result from the basin study;
  - (e) the term of the agreement;
  - (f) a description of anticipated scope of the study, which includes a description of geographic area, the problems or needs that the study will address, and the objectives of the study;
  - (g) the anticipated schedule and performance period, for each phase of the study;



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- (h) the general responsibilities of Reclamation, the non-Federal study lead, the cost-share partners, and other basin study stakeholders;
  - (i) a POS attached to the MOA, as described in Paragraph 8.B.;
  - (j) a Technical Sufficiency Review Plan attached to the MOA, as described in Paragraph 8.C.; and
  - (k) a Communication and Outreach Plan attached to the MOA, as described in Paragraph 8.D.
- (3) **Additional Information.** For additional information, see the basin study MOA template, which is accessible on Reclamation’s WaterSMART Web site at <https://www.usbr.gov/WaterSMART>.
- (4) **Approval of the MOA.** The appropriate Director will review and sign the MOA, along with representatives of the non-Federal cost and cost-share partners, consistent with the Reclamation Manual [Delegations of Authority](#), Paragraph 6.U.(1)(b).
- B. **POS.** The POS will describe the specific tasks, methods, and responsibilities for conducting a basin study. The POS must be attached to the MOA.
- (1) **Developing the POS.** Reclamation, the non-Federal study lead, and the cost-share partners will jointly develop the POS after the selection of the study. The POS must be agreed to by signatories to the MOA prior to Reclamation beginning substantive work on the study, and it must be updated as conditions warrant.
  - (2) **POS Content.** The POS is more detailed than the MOA and will serve as a project management plan for Reclamation and the cost-share partners. The POS must include the following:
    - (a) study management structure;
    - (b) decision making process;
    - (c) roles and responsibilities;
    - (d) study team coordination;
    - (e) the methodologies that will be used for technical analysis;
    - (f) schedule and cost control;
    - (g) deliverables and project documentation requirements; and

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- (h) description of how the study will be reviewed, including reporting requirements.
  - (3) **Technical Review.** In coordination with the Program Coordinator, the POS will be reviewed by Technical Service Center staff to ensure the technical accuracy and viability of the work outlined in the POS, and will be reviewed by the Program Coordinator as part of the review of the MOA.
  - (4) **Additional Information.** For additional discretionary guidelines on what information can be included in the POS, see the Basin Study Framework, accessible on Reclamation's WaterSMART Web site at <https://www.usbr.gov/WaterSMART/bsp/docs/BasinStudyFramework.pdf>.
- C. **Technical Sufficiency Review Plan.** The Technical Sufficiency Review Plan will outline the approach and method for reviewing the technical information, data, models, analyses, and conclusions of a basin study. The process for conducting a Technical Sufficiency Review is described in Paragraph 11, below. The plan must be attached as part of the POS and must include:
- (1) the timing of the review;
  - (2) what aspects of the basin study will be reviewed (the scope of the review);
  - (3) how the review will be conducted;
  - (4) the anticipated number of reviewers; and
  - (5) a plan for selecting the reviewers.
- D. **Communication and Outreach Plan.** Reclamation and cost-share partners will develop a Communication and Outreach Plan to effectively maintain communication with all interested basin study stakeholders and the public and to provide, seek, and receive information regarding the ongoing basin study. The Communication and Outreach Plan must be attached to the POS, and, at a minimum, identify the steps that will be taken to:
- (1) develop a Website for the basin study that is managed by either Reclamation or the cost-share partners, or use an existing Website to share information about the basin study;
  - (2) distribute contact information for Reclamation staff and cost-share partners conducting the basin study to interested stakeholders;
  - (3) develop and distribute news/press releases as appropriate;

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- (4) establish a mailing list to ensure all interested stakeholders and the public receive updates on the basin study;
- (5) use social media to share information about the study; and
- (6) hold public meetings at strategic points throughout the study.

### 8. Conducting a Basin Study.

Basin studies shall be conducted in a manner consistent with this D&S and the MOA. Each basin study shall include the four elements listed below in Paragraphs 9.A.-D. When available, existing information must be used to satisfy the required elements. Basin Studies do not include National Environmental Policy Act or National Historic Preservation Act analysis because they do not include implementation actions.

- A. Projections of future water supply and demand, considering specific impacts resulting from climate change, including any risk related to the following factors identified in Section 9503(b)(2) of the Act:
  - (1) changes in snowpack;
  - (2) changes in the timing and quantity of runoff;
  - (3) changes in groundwater recharge and discharge; and
  - (4) any increase in:
    - (a) the demand for water as a result of increasing temperatures; or
    - (b) the rate of reservoir evaporation.
- B. Analysis of how existing water and power infrastructure and operations will perform given any current imbalances between water supply and demand and in the face of changing water realities due to climate change (including extreme events such as floods and droughts) and population growth, including an analysis of the extent to which changes in the water supply will impact Reclamation operations and facilities as indicated in Section 9503(b)(3) of the Act, including:
  - (1) ability to deliver water, including the impacts of drought;
  - (2) hydroelectric power generation;
  - (3) recreation;
  - (4) fish and wildlife habitat;

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- (5) applicable species listed as an endangered, threatened, or candidate species and/or designated critical habitat under the Endangered Species Act of 1973 (Pub.L.93-205; 16 U.S.C. 1531 et seq.);
  - (6) water quality issues (including salinity levels);
  - (7) flow and water dependent ecological resiliency; and
  - (8) flood control and/or management, including the impacts of extreme events.
- C. Development of appropriate adaptation and mitigation strategies to meet current and future water demands. Adaptation and mitigation strategies include, but are not limited to, the following:
- (1) modification of any reservoir or operating guideline in existence;
  - (2) development of new water management, operating, or habitat restoration plans;
  - (3) development of water conservation and demand reduction strategies or projects;
  - (4) development of new water infrastructure;
  - (5) development or expansion of water reclamation and reuse projects;
  - (6) development or improvement of hydrologic models and other decision support systems; and
  - (7) development of a monitoring plan to acquire and maintain water resource data to strengthen the understanding of water supply and assist in future assessments and analysis.
- D. A quantitative or qualitative trade-off analysis of the adaptation and mitigation strategies identified. Such analysis will examine all proposed strategies in terms of their ability to meet the study objectives, the extent to which they minimize imbalances between water supply and demand and address the possible impacts of climate change, the level of stakeholder support, the relative cost (when available), the potential environmental impacts, or other attributes common to the strategies.

### 9. Basin Study Oversight.

#### A. Basin Study Performance Reports.

- (1) **Content.** Basin Study Performance Reports must provide information on the accomplishments to date and the progress toward the completion of the study, including information regarding the status of work on the four required elements

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(see Paragraph 9); progress on tasks identified in the POS; and any issues, concerns, or problems regarding the study.

- (2) **Submittal Period.** Basin Study Performance Reports shall be submitted to the Program Coordinator by the Regional Coordinator every 6 months.

**B. Review of Basin Study Performance Reports.** The Regional Coordinators are responsible for reviewing and ensuring that the Basin Study Performance Reports include the status and accomplishments for the conducted basin study. The Regional Coordinators and study managers will also ensure that the Program Coordinator is informed of any significant issues that arise during the study, including non-compliance with the provisions of the MOA; substantive changes to the scope of work, budget, or schedule; questioned or disallowed costs; difficulties in coordinating stakeholder input; or other issues that may impact the success of the activities funded under the MOA.

**C. Basin Study Financial Status Report.**

- (1) **Content.** Financial Status Reports must document all components of the non-Federal cost-share, including non-Federal cash disbursements or outlays (less any rebates or refunds) specifically identifiable to the basin study, payments to sub-recipients and contractors, and the value of allowable in-kind service contributions that are used to finance the non-Federal share of the basin study.
- (2) **Submittal Period.** Financial Status Reports shall be submitted to the Program Coordinator by the Regional Coordinator every 6 months and upon completion of the basin study.

**D. Changes in Scope, Costs, or Time Extension.** Studies are required to be completed by the completion date stated in the MOA. Projects shall not exceed 5 years from the date that the MOA is signed and the Federal costs shall not exceed the Federal cost-share amount that is documented in the MOA, unless a modification is approved by the Chief Engineer. In the event that the cost-share partners are unable to complete the entire project within the timeframe described in the MOA or without exceeding the study costs, the following shall apply:

- (1) **Request to Modify a Basin Study.** If a change in scope, cost, or time extension is requested by the non-Federal study lead, the study manager and the Regional Coordinator will consult with the Program Coordinator, based on information provided by the non-Federal study lead and cost-share partners, to develop a written request signed by the appropriate Director for the Chief Engineer's consideration at least 90 days prior to the completion date listed in the MOA. The request will include the following information:
  - (a) an explanation of the reason(s) for the change of scope, costs, or timeline;

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- (b) a detailed description of the change of scope, if applicable;
  - (c) whether previous time extensions or changes in scope have been executed for the project;
  - (d) the likelihood that another request will be required in the future;
  - (e) whether the request will impact the ability to meet the four required study elements identified in Paragraphs 9.A.-D.;
  - (f) whether the cost-share partners have otherwise complied with the terms of the MOA; and
  - (g) whether the Director recommends approval of the request.
- (2) **Determination.** The Chief Engineer will make the final determination on whether the request will be approved. If approved, the study manager will work with the non-Federal study lead and cost-share partners to modify the MOA based upon the information provided in the written request and any additional information that is developed in coordination with the Regional Coordinator. The Chief Engineer will provide a written response informing the Director of the determination. All determinations whether to proceed with the requested change in scope, cost, or timeline for basin studies will be made on a case-by-case basis.
- (3) **Formal Modification.** The Director will execute the formal modification to the MOA as needed and determined by Program Coordinator.

### 10. Technical Sufficiency Review.

The technical sufficiency review must be completed to ensure that technical information, data, models, analyses, and conclusions resulting from a basin study are technically supported and defensible.

- A. **Technical Sufficiency Review Plan.** The review process will be conducted in accordance with the Technical Sufficiency Review Plan described in Paragraph 8.C. The study manager will coordinate the technical sufficiency review and the regional coordinator will oversee the technical sufficiency review process.
- B. **Reviewers.** The study manager will coordinate with the cost-share partners to select the reviewers. The technical sufficiency review must be conducted by reviewers who were not directly involved with conducting the portion of the basin study they are reviewing. There must be multiple reviewers and the reviewers' scientific and technical background and expertise must be relevant to the content of the basin study under review.

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- C. **Level of Review.** Basin studies are presumed to not be influential or highly influential as defined by the OMB Final Information Quality Bulletin for Peer Review (70 Federal Register 2664-2677) or the Reclamation Manual Policy, Peer Review of Scientific Information and Assessments (CMP TRMR 30), unless otherwise determined to be influential or highly influential by the appropriate Director, in which case the OMB Final Information Quality Bulletin for Peer Review and CMP TRMR-30 will apply.
- D. **Documentation of the Results of the Technical Sufficiency Review.** Study managers will document the results of the Technical Sufficiency Review and will make the results available to all of the cost-share partners. Reviewer comments and/or suggestions must be documented in writing. All reviewer comments must be considered and incorporated where relevant and appropriate. Study managers will prepare a response to all comments and suggestions submitted by reviewers. Technical uncertainties identified by reviewers must be identified and characterized in the Final Basin Study Report.
- E. **Cost.** The cost of conducting the Technical Sufficiency Review must be included in the overall study cost and are subject to the 50 percent cost share requirement.

### 11. Review and Finalization of a Basin Study.

- A. **Content of the Final Basin Study Report.** The study manager and the non-Federal study lead will coordinate to determine the level of detail that is necessary to sufficiently address the four required elements of a basin study listed in Paragraph 9, including the assumptions, models, processes, and data used in the study, and to describe basin study partner involvement, the results, findings, and conclusions of the study. Studies may emphasize certain elements above others, depending on the priorities and needs of Reclamation and the non-Federal study lead, the issues present in the basin, and the availability of existing data, models, and other applicable analyses pertaining to the study area; however, all final reports must include the following:
  - (1) **Hydrologic Projections of Water Supply and Demand.** An analysis of existing and future water supply and demand conditions that includes consideration of key hydrologic factors that influence water supply and demand within the basin, including:
    - (a) an analysis of existing water supplies;
    - (b) projections of future water supplies;
    - (c) an analysis of existing water demands; and
    - (d) projections of future water demands.

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- (2) **An Analysis of How Existing Water and Power Infrastructure and Operations Will Perform in the Face of Changing Water Realities.** An analysis of the capability of existing and proposed infrastructure and operations to meet future demands and water supply challenges, including:
  - (a) characterization of how well existing demands are being satisfied with existing infrastructure and operations; and
  - (b) an analysis of the performance of the water and power infrastructure under future water supply and demand scenarios and comparing those results with the performance of the system under the baseline scenario, described above in Paragraph 12.(2)(a).
- (3) **Development of Adaptation and Mitigation Strategies.** A discussion of the process used to develop adaptation and mitigation strategies to address current and future imbalances between water supply and demands, and descriptions of these strategies, including:
  - (a) a description of the process used to identify the adaptation and mitigation strategies that would be analyzed in the study;
  - (b) identification of each of the adaptation and mitigation strategies considered and a description of each; and
  - (c) the process used to eliminate any strategies from consideration.
- (4) **Analysis of Adaptation and Mitigation Strategies.** An analysis of the adaptation and mitigation strategies considered, including:
  - (a) an analysis of each strategy's ability to meet the study objectives, minimize imbalances between water supply and demand, address the possible impacts of climate change; as well as each strategy's level of stakeholder support, relative cost (when available), and potential environmental impacts;
  - (b) identification of potential institutional, legal and regulatory constraints affecting the strategies considered; and
  - (c) identification of possible next steps or analysis that could build on the results of the basin study.
- (5) **Disclaimer.** A statement describing the limitations of the study.
- (6) **Additional Information.** For more detailed suggestions on what to include in a Final Basin Study Report, see the Basin Study Framework, which is accessible on



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Reclamation's WaterSMART Web site at the following location:

<https://www.usbr.gov/WaterSMART/bsp/docs/BasinStudyFramework.pdf>.

- B. **Policy Review.** The Final Basin Study Report must be submitted to the Program Coordinator for a Policy Review at least 45 days prior to transmission of the Final Basin Study Report to the Chief Engineer.
- C. **Submittal Period.** A Final Basin Study Report must be submitted to the Chief Engineer by the completion date identified in the MOA, unless an extension has been granted by the Chief Engineer and the appropriate Director.
- D. **Approval of the Final Basin Study Report.**
  - (1) The Director(s) is(are) responsible for reviewing the Final Basin Study Report and ensuring the technical sufficiency of the study. The Director(s) will transmit the Final Basin Study Report to the Chief Engineer with a recommendation to approve or disapprove the report.
  - (2) The Chief Engineer is responsible for reviewing and ensuring that the content of the Final Basin Study Report meets the requirements of this D&S and that there is consistency across Reclamation in the form, content, and quality of the reports.
  - (3) The Chief Engineer will then consult with the Commissioner on whether to approve or disapprove the Final Basin Study Report.
  - (4) The Chief Engineer will record in writing the final decision to approve or disapprove the Final Basin Study Report.
- E. **Posting Final Basin Study Reports.** Reclamation will post all Final Basin Study Reports on the Basin Study Program Website at the following location:  
<https://www.usbr.gov/WaterSMART/bsp/index.html>.

## 12. Definitions.

- A. **Application Review Committee (ARC).** Committee established to review and rank all basin study proposals submitted for funding consideration. The ARC is generally comprised of staff members from Reclamation's regional and area offices and Technical Service Center.
- B. **Basin.** The contributing watershed of a major river or tributary within the 17 Western United States or Insular Areas, defined as a topographically distinct body of land, streams, aquifers, and rivers that channel water to a single or primary waterway.
- C. **Basin Study.** A comprehensive study, or update of an existing study, that identifies imbalances between water supply and demand and includes the development of

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mitigation and adaptation strategies in direct response to current or future water supply and demand imbalances resulting from climate change and other stressors. Basin studies are technical assessments and do not provide recommendations or represent a statement of Policy or position of Reclamation, the Department of the Interior, or the funding partners. Basin studies do not propose or address the feasibility of any specific project, program, or plan and do not represent a commitment for provision of Federal funds.

- D. **Basin Study Framework.** A document providing guidance, the programmatic criteria, and the suggested content of a basin study to participants conducting a basin study.
- E. **Basin Study Stakeholders.** All Federal, State, tribal, regional, and local government entities, customers, nongovernmental organizations, and the public who are present and actively involved or interested in a basin study. Basin study stakeholders include, but are not limited to, cost-share partners.
- F. **Contributed Funds Agreement (CFA).** The contractual mechanism needed for Reclamation to receive non-Federal funding from a cost-share partner, pursuant to the authority identified in the Sundry Civil Expenses Appropriations Act for 1922 (43 U.S.C. 395).
- G. **Cost-Share Partner.** A non-Federal entity or entities, approved by the eligible applicant and Reclamation, that will cost-share, either through in-kind services or cash contributions, with Reclamation, the eligible applicant, and other basin study stakeholders to develop and conduct a basin study.
- H. **Eligible Applicant.** A non-Federal entity or entities including any State, Indian tribe, irrigation district, water district, or other organization that is located within the 17 Western United States or Insular Areas with water delivery or management authority that may apply to cost-share with Reclamation, other cost-share partners, and stakeholders to develop and conduct a basin study.
- I. **Major Reclamation River Basins.** A “major river system, including tributaries, that is located in a service area of the Bureau of Reclamation and at which is located a federally authorized project of the Bureau of Reclamation,” as the term is used in Section 9502(12)(A)-(B) of the Act.
- J. **Memorandum of Agreement (MOA).** A document establishing the terms and conditions, roles and responsibilities, and procedures that both Reclamation and the cost-share partners agree to abide by during the conduct and completion of the basin study. MOAs are not financial instruments for the provision or receipt of funds.
- K. **Non-Federal Study Lead.** An eligible applicant that has been selected through the basin study selection process to cost-share with Reclamation, other cost-share partners, and stakeholders to conduct a basin study.

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- L. Plan of Study (POS). A fully developed scope of work describing the specific study tasks and how each task will be carried out, including the responsible party, cost, schedule, and the approach. The POS is more detailed than the basin study proposal and serves as a work plan for the study.
- M. 17 Western States. Includes Arizona, California, Colorado, Idaho, Kansas, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington, and Wyoming.
- N. Insular Area. For the purposes of Basin Studies, “Insular Areas,” refers to the U.S. Virgin Islands, Guam, American Samoa, and the Commonwealth of the Northern Mariana Islands.

### 13. **Review Period.**

The originating office will review this release every 4 years.