Science and Adaptive Management Committee Meeting

August 21, 2023

Meeting Materials:

Agenda

Minutes

Climate Futures Planning Workshop Schematic [read-ahead]

List of Current Topics Needing SAMC Leads [read-ahead]

Schematic of Relationships Among Topics [read-ahead]

Final Restoration Compendium Ad Hoc Charge [read-ahead]

Final SER Recovery Wheel Ad Hoc Charge [read-ahead]

Member Call for Restoration Compendium & SER Recovery Wheel Ad Hoc Groups [read-ahead]

Funding Opportunities Matrix [read-ahead, spreadsheet]

Funding Opportunities Graphic [read-ahead]

SAMC Memo to EC – Recs for Mgmt of Vegetated Islands Bars [read-ahead]

List of Program Portal Data Sets 2023 [read-ahead]

Information & Data Quality Ad Hoc Group Charge [read-ahead]

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting

August 21, 2023

See the following meeting material on the page below:

Agenda

Middle Rio Grande Endangered Species Collaborative Program

Est. 2000

Science and Adaptive Management Committee (SAMC)
Meeting Agenda

August 21, 2023; 12:00 – 4:00 PM

Location: *Zoom*
https://west-inc.zoom.us/j/89835931 20?pwd=bU54V3NGeG93bXVlSlJFcEIzcE9wZz09
Call-In: +1-669-900-6833
Meeting ID: 898-359-3120; Passcode: 1251

Meeting Objectives:

- *Hear updates from the June Executive Committee (EC) meeting*
- *Hear update on December 2023 MRGESCP Science Symposium*
- *Hear update on October 2023 Climate Futures Planning Workshop*
- *Discuss proposed changes to the SAMC meeting format and member leadership*
- *Discuss Restoration Compendium and Society for Ecological Restoration (SER) Recovery Wheel Ad Hocs*
- *Discuss coordination with Fiscal Planning Committee (FPC)*
- *Hear update on action items from memo on management of vegetated islands and bank-attached bars*
- *Hear update on Program Portal data sets*

12:00 – 12:10	**Welcome, Guest Introductions, Agenda Review** ✓ **Decision**: Approval of August 21, 2023 agenda	*Catherine Murphy, Program Support Team (PST)*
12:10 – 12:15	**May Meeting Minutes and Action Item Review** ✓ **Decision**: Approval of May 30, 2023 SAMC meeting minutes Read-Ahead: ☐ Draft May 30, 2023 SAMC Meeting Minutes	*Catherine Murphy, PST*

12:15 – 12:30	**Updates from Jun 2023 EC Meeting and August FPC Meeting**
	• June EC
	  ○ Multi-year Plan Revisions
	  ▪ EC guidance on environmental justice, cultural and socio-economic impacts
	  ▪ SAMC suggestions from first review have been incorporated
	  ▪ PST will format the next review as a table
	  ○ Proposed paper on MRGESCP's transition to adaptive management
	
	➢ **Action Item**: PST reformat and resubmit Multi-Year Plan to SAMC for final review
		Debbie Lee, PST

12:30 – 12:35	**Update on December 2023 MRGESCP Science Symposium** • Date, location, registration and call for abstracts	*Debbie Lee, PST*

- Encouraging student engagement

12:35 – 12:50	**Updates on October 2023 Climate Futures Planning Workshop** • Date, location and overview of event • Small planning group update and South Central Climate Adaptation Science Center (SC-CASC) coordination • September field trip to Whitfield Wildlife Conservation Area ✓ **Decision**: Would any SAMC members like to help facilitate the workshop? ➢ **Action Item**: PST will coordinate with interested members Read-Ahead: ☐ Climate Futures Planning Workshop Schematic	*Catherine Murphy, PST*
12:50 – 1:30	**New SAMC Meeting Format and Member Leadership** • Proposed changes to meeting format • Roles, responsibilities and modes of engagement under proposed format • SAMC leads for current topics and SAMC-suggested topics ✓ **Decision**: Does the SAMC approve the proposed changes to the meeting format? ➢ **Action Item**: If approved, PST will implement this change ✓ **Decision**: On which topics will individual SAMC members take the lead? ➢ **Action Item**: PST will coordinate, support and track member topics of choice Read-Aheads: ☐ List of Current Topics Needing SAMC Leads ☐ Schematic of Relationships Among Topics	*Group discussion*

1:30 – 2:00	**Restoration Compendium and SER Recovery Wheel Ad Hoc Groups**
	• Relationships and future direction of these ad hocs
	• Restoration Compendium Ad Hoc Group
	  ○ Final group charge and member call
	  ○ Draft compendium ready for ad hoc group review
	• SER Recovery Wheel Ad Hoc Group
	  ○ Final group charge and member call
	  ○ External SER expertise
	• Peer review of content and user experience
	
	✓ **Decision**: Does the SAMC recommend any individuals for participation on the SER Recovery Wheel or Restoration Compendium Ad Hocs?
	➢ **Action Item**: PST will contact recommended individuals
	
	Read-Aheads:
		Meaghan Conway and Ondrea Hummel, SAMC

- ☐ Final Restoration Compendium Ad Hoc Charge
- ☐ Final SER Recovery Wheel Ad Hoc Charge
- ☐ Member Call for Restoration Compendium & SER Recovery Wheel Ad Hoc Groups

2:00 – 2:10 **BREAK**

2:10 – 2:50 **Coordination with Fiscal Planning Committee** — *Aubrey Harris, SAMC, and Catherine Murphy, PST*

- Need for coordination; SAMC/FPC liaisons; memos to EC
- MRGESCP Funding Opportunities Matrix
- Discuss a Request For Proposals (RFP)-based framework
- Long-Term Plan (LTP) project evaluation

✓ **Decision**: Does the SAMC approve the proposed mode of coordination with the FPC?

➢ **Action Item**: If approved, SAMC/FPC liaisons will attend meetings and report on committee initiatives

✓ **Decision**: What next steps does the SAMC recommend regarding project evaluation for the MRGESCP?

➢ **Action Item**: PST will work with Aubrey Harris to incorporate SAMC feedback regarding project evaluation

Read-Aheads:

- ☐ Funding Opportunities Matrix
- ☐ Funding Opportunities Graphic

2:50 – 3:15 **Management of Vegetated Islands and Bank-Attached Bars** — *Dave Moore, SAMC, and Zoë Rossman, PST*

- First recommendation from memo: glossary of relevant technical terms
  - Dave Moore and Ari Posner taking first review
- Next recommendation: identify relevant data sets and data gaps

✓ **Decision**: Does the SAMC suggest an approach for identifying data sets and data gaps relevant to vegetated islands/bars?

➢ **Action Item**: PST will follow-up on SAMC suggestions

Read-Ahead:

- ☐ SAMC Memo to EC – Recs for Mgmt of Vegetated Islands Bars (*for reference only*)

3:15 – 3:40 **Program Portal Data Updates** — *Angela Medina-Garcia and Catherine Murphy, PST*

- Review list of data sets being updated
- Discuss protocols for updating Portal data sets and utilizing Information & Data Quality Ad Hoc Group

✓ **Decision**: Does the SAMC recommend asking the Information & Data Quality Ad Hoc to provide guidance on data formatting for posting on the Program Portal?

➢ **Action Item**: If recommended, PST will follow up with Information & Data Quality Ad Hoc

Read-Aheads:

- ☐ List of Program Portal Data Sets 2023
- ☐ Information & Data Quality Ad Hoc Group Charge (*for reference only*)

3:40 – 4:00 **Action Items, Next Steps, and Announcements** *PST*

- **Upcoming events:**
  - Habitat Restoration Coordination field trip: Aug. 22, 9 am – noon (Candelaria Nature Preserve and Aldo Leopold Burn Site)
  - Wagner seminar: *Soil fungal community functional shifts following anthropogenic disturbances could negatively impact cottonwoods*; Aug. 24, 10-11 am (Zoom)
  - Paklaian seminar: *Post-Fire Flooding and Recovery in the Upper Arkansas River Basin*; Aug. 29, 10-11 am (Zoom)
  - Whitfield field trip: September TBD
  - EC Meeting: Sept. 28, 1-4 pm (USFWS Office)
  - Climate Futures Planning Workshop: October 24-25, 2023; Pueblo of Santa Ana – Tamaya Wellness Center; *registration closes Aug. 31*
- **Next SAMC Meeting**: November 2023

4:00 **Adjourn**

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting

August 21, 2023

See the following meeting material on the page below:

Minutes

Middle Rio Grande Endangered Species Collaborative Program

Est. 2000

Science and Adaptive Management Committee (SAMC)
Meeting Minutes

August 21, 2023; 12:00 PM – 4:00 PM
Location: Zoom Meeting
https://west-inc.zoom.us/j/8983593120?pwd=bU54V3NGeG93bXVlSlJFcEIzcE9wZz09
Call-In: +1-669-900-6833
Meeting ID: 898-359-3120; Passcode: 1251

Decisions:

- ✓ Approval of the August 21, 2023 SAMC meeting agenda
- ✓ Approval of the May 30, 2023 SAMC meeting minutes

Action Items:

WHO	ACTION ITEM	BY WHEN
Program Support Team (PST)	Send out call for abstracts for the Science Symposium	8/25/2023
SAMC	Contact PST if you would like to be involved with the Science Symposium small planning group	8/25/2023
SAMC	Contact PST if you know of any major events that might conflict with the September field trip to Whitfield Wildlife Conservation Area (Whitfield; most likely week of September 18)	8/25/2023
PST	Incorporate SAMC suggestions into Climate Futures Planning Workshop materials regarding streamflow projections	8/29/2023
PST and Aubrey Harris	Follow up with potential speakers regarding a seminar on the Sustainable Rivers Program and environmental flows	8/31/2023
SAMC	Register for the October 24-25 Climate Futures Planning Workshop if you are planning to attend	8/31/2023
SAMC	Contact PST if you would like to help facilitate the Climate Futures Planning workshop	8/31/2023
SAMC	Contact PST with names of individuals who might be a good fit for the Restoration Compendium or Society for Ecological Restoration (SER) Recovery Wheel Ad Hoc Groups	8/31/2023
PST	Post call for membership on Restoration Compendium or SER Recovery Wheel Ad Hoc Groups	8/31/2023
PST and Ara Winter	Update Matt Wunder on the Information and Data Quality Ad Hoc Group tasks and SAMC request	8/31/2023
PST	Schedule the field trip to Whitfield for September	8/31/2023

PST	Finish revising and reformatting the Multi-Year Plan and post on the Client Cloud for final SAMC review	9/5/2023
SAMC	Review the revised and reformatted Multi-Year Plan via the Client Cloud	9/14/2023
SAMC	Provide PST with contacts and/or resources and data sets relevant to mapping or assessment of vegetated islands and bank-attached bars	9/14/2023
PST	Schedule interim coordination meetings with/for SAMC leads on specific topics	9/20/2023
SAMC	Meet with PST and SAMC co-leads to coordinate and prepare materials for November SAMC meeting	September/October

Next Meeting: November 30, 2023; 10:00 AM – 12:00 PM

Meeting Minutes

Welcome, Guest Introductions, Agenda Review

The August 21, 2023 SAMC Meeting Agenda was approved by attending SAMC members.

- ✓ **Decision**: Approval of the August 21, 2023 SAMC meeting agenda

May Meeting Minutes and Action Item Review

The draft May 30, 2023 SAMC Meeting Minutes were approved by attending SAMC members.

- ✓ **Decision**: Approval of the May 30, 2023 SAMC meeting minutes

Updates from June 2023 Executive Committee (EC) Meeting and August Fiscal Planning Committee (FPC) Meeting

At the EC meeting on June 29, 2023, the EC was presented with revisions to the Multi-Year Plan. The EC discussed adding guidance on environmental justice, cultural, and socioeconomic impacts. The EC decided to include these elements in the plan. Ryan Gronewold noted that U.S. Army Corps of Engineers has an environmental justice coordinator that can help support this effort. The suggestions from the SAMC's first review have been incorporated into the Multi-Year Plan. The next review will be formatted as a table.

The EC reviewed an outline for a proposed paper on the MRGESCP's transition to adaptive management. The goal is to submit the paper for publication next year.

- ➢ **Action Item**: PST finish revising and reformatting the Multi-Year Plan and post on the Client Cloud for final SAMC review
- ➢ **Action Item**: SAMC review the revised and reformatted Multi-Year Plan via the Client Cloud

Update on December 2023 MRGESCP Science Symposium

The Science Symposium Planning Small Group decided on two top locations for the 2023 Science Symposium: Old Town Farm and Southwestern Indian Polytechnic Institute (SIPI). The theme of the symposium is still being determined but will likely be centered around scaling endangered species management to the ecosystem level.

The Science Symposium Planning Small Group would like to highly encourage student engagement.

- ➢ **Action Item**: PST will send out call for abstracts for the Science Symposium
- ➢ **Action Item**: SAMC contact PST if you would like to be involved with the Science Symposium small planning group

Updates on October 2023 Climate Futures Planning Workshop

The Climate Futures Planning Workshop will be held at the Pueblo of Santa Ana Tamaya Wellness Center on October 24-25, 2023. The PST reviewed the workshop schematic. A SAMC member asked how water management would be taking into consideration in workshop discussions. One of the materials that will

be provided is a graph of predicted natural flow. There was interest from SAMC members in providing a graph of managed flow instead as species do not experience non-managed flow.

Ondrea Hummel and Aubrey Harris offered to help facilitate the workshop.

The PST met with Valencia Soil & Water Conservation District (VSWCD), which manages Whitfield, as well as other conservation areas. Whitfield, along with surrounding areas, will be a focus of activities at the workshop. VSWCD will host a field trip to Whitfield ahead of the workshop, likely during the week of September 18th or 25th, 2023.

- **Action Item**: SAMC contact PST if you know of any major events that might conflict with the September field trip to Whitfield (most likely week of September 18)
- **Action Item**: PST incorporate SAMC suggestions into Climate Futures Planning Workshop materials regarding streamflow projections
- **Action Item**: SAMC register for the October 24-25 Climate Futures Planning Workshop if you are planning to attend
- **Action Item**: SAMC contact PST if you would like to help facilitate the Climate Futures Planning workshop
- **Action Item**: PST schedule the field trip to Whitfield for September

New SAMC Meeting Format and Member Leadership

The SAMC discussed the drawbacks of long meetings and agreed to shorter meetings. SAMC members will meet with the PST in between SAMC meetings to get work done and generate memos, etc.

SAMC members reviewed a list of topics in need of a SAMC lead and a schematic of relationships among topics. SAMC members volunteered to take lead on these topics.

- Mick Porter, Aubrey Harris, and Ara Winter are the SAMC leads on Rio Grande silvery minnow (RGSM) hypothesis development and model disambiguation.
- Ara Winter is the SAMC lead on information and data quality guidance for the MRGESCP.
- No SAMC lead was identified for adaptive management for river drying or development/refinement of conceptual models.

The following SAMC members were previously established as topic leads:

- Megan Friggens is the SAMC lead for climate futures planning.
- Ondrea Hummel is the SAMC lead for the SER recovery wheel.
- Meghan Conway is the SAMC lead for the restoration compendium.
- Ari Posner and Dave Moore are SAMC leads for vegetated islands and bars deliverables.
- Aubrey Harris is the SAMC lead for SAMC/FPC coordination and project evaluation.

- **Action Item**: PST schedule interim coordination meetings with/for SAMC leads on specific topics
- **Action Item**: SAMC meet with PST and SAMC co-leads to coordinate and prepare materials for November SAMC meeting

Restoration Compendium and SER Recovery Wheel Ad Hoc Groups

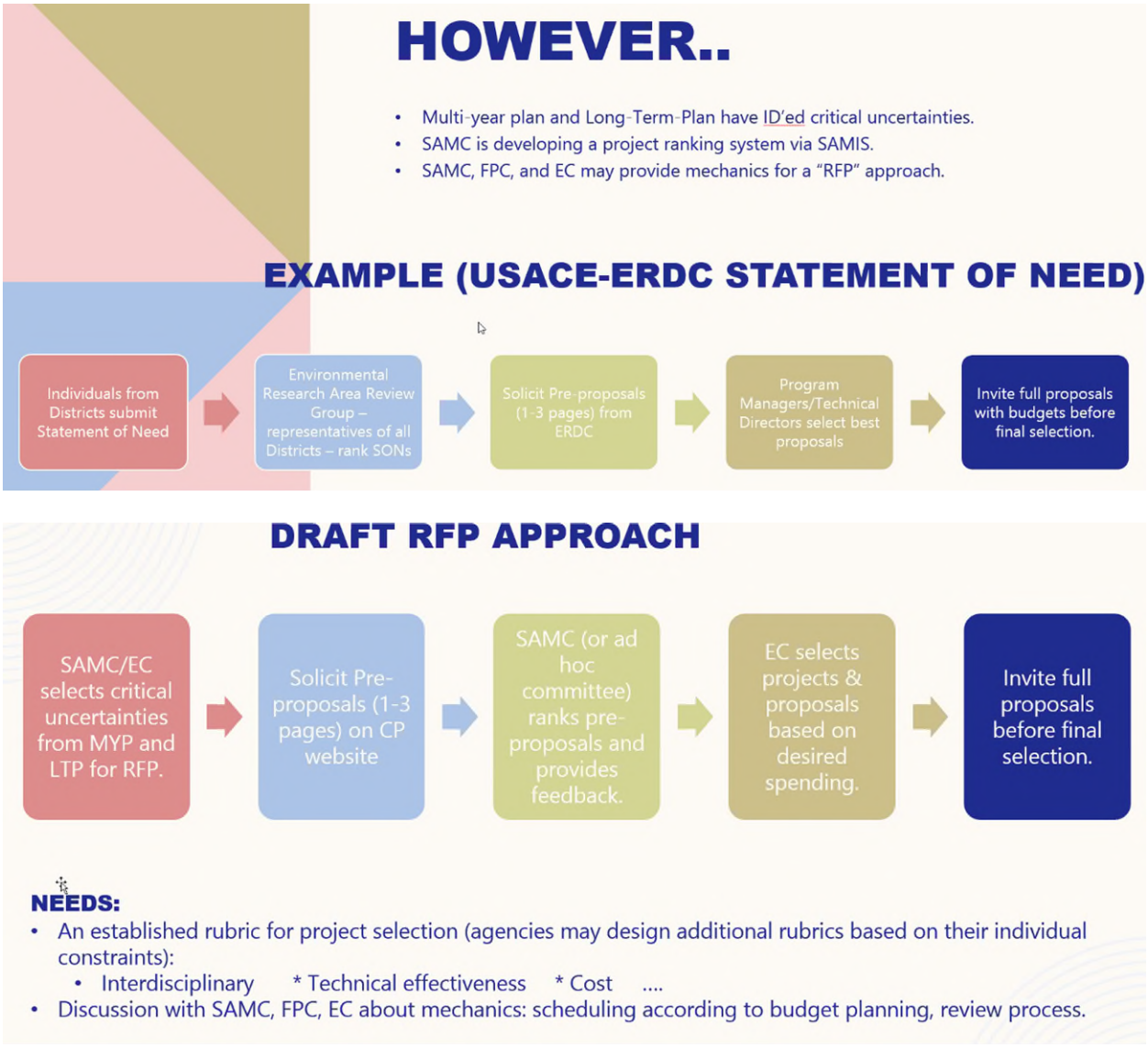
Meghan C. reviewed the restoration compendium and ad hoc group charge (see read-ahead). Aubrey H. reviewed the SER Recovery Wheel Ad Hoc Group charge (see read-ahead).

The SAMC discussed the member call for the Restoration Compendium & SER Recovery Wheel Ad Hoc Groups (see read-ahead). Ondrea H. recommended Gina Dello Russo as a member of the SER Rcovery Wheel Ad Hoc Group if she is available.

- **Action Item**: SAMC contact PST with names of individuals who might be a good fit for the Restoration Compendium or SER Recovery Wheel Ad Hoc Groups
- **Action Item**: PST post call for membership on Restoration Compendium or SER Recovery Wheel Ad Hoc Groups

Coordination with Fiscal Planning Committee

The SAMC discussed coordination between the FPC and SAMC, including project selection and funding matching using the Funding Opportunities Matrix and Graphic. The group reviewed a proposed "RFP" approach for coordination between the groups (see figures below). The approach includes the FPC, EC, and SAMC and offers a more targeted process for selecting projects and proposals. The SAMC approved the proposed mode of communication with the FPC.



The SAMC also discussed the Long-Term Plan project evaluation process, which would be incorporated into the RFP approach to help the SAMC/EC select critical uncertainties. The SAMC was in favor of using this process as well.

Management of Vegetated Islands and Bank-Attached Bars

The SAMC reviewed a memo to the EC with recommendations for management of vegetated islands and bank-attached bars, which came out of the Management of Vegetated Islands and Bank-Attached Bars Workshop in 2022.

The first recommendation is to develop a glossary of relevant technical terms. Dave M. and Ari P. are taking the first review of the glossary. The second recommendation is to identify relevant data sets and data gaps. SAMC members were asked to send resources to the PST via email. Aubrey H. is working on a project on riverine island formation that would be relevant. There is interest in a seminar on the topic.

- **Action Item**: PST and Aubrey Harris follow up with potential speakers regarding a seminar on the Sustainable Rivers Program and environmental flows
- **Action Item**: SAMC provide PST with contacts and/or resources and data sets relevant to mapping or assessment of vegetated islands and bank-attached bars

Program Portal Data Updates

The SAMC reviewed a list of data sets being updated on the Program Portal. The group discussed protocols for updating these data sets. There is a need for guidance on formatting the data sets for uploading them to the Program Portal mapper. The group agreed to ask the Information and Data Quality Standards Ad Hoc Group to provide that guidance.

- **Action Item**: PST and Ara Winter update Matt Wunder on the Information and Data Quality Ad Hoc Group tasks and SAMC request

Action Items, Next Steps, and Announcements

- Upcoming events:
  - Habitat Restoration Coordination field trip: Aug. 22, 9 am – noon (Candelaria Nature Preserve and Aldo Leopold Burn Site)
  - Wagner seminar: Soil fungal community functional shifts following anthropogenic disturbances could negatively impact cottonwoods; Aug. 24, 10-11 am (Zoom)
  - Paklaian seminar: Post-Fire Flooding and Recovery in the Upper Arkansas River Basin; Aug. 29, 10-11 am (Zoom)
  - Whitfield field trip: September TBD
  - EC Meeting: Sept. 28, 1-4 pm (USFWS Office)
  - Climate Futures Planning Workshop: October 24-25, 2023; Pueblo of Santa Ana – Tamaya Wellness Center; registration closes Aug. 31

Meeting Participants

SAMC Member	Role
Alison Hutson	Aquatic Ecology Expert
Ara Winter	Statistics/Modeling Expert
Aubrey Harris	Hydrology Expert
Meaghan Conway	Ecosystem Function Expert
Megan Friggens	Climate Science Expert
Michael (Mick) Porter	Aquatic Ecology Expert
Ondrea Hummel	Watershed Resource Planning/Regulatory Expert
Ryan Gronewold	EC *ex-officio*/Hydrology Expert

Program Support Team	Role
Catherine Murphy	SAMC Facilitator
Angela Medina	Support
Debbie Lee	Support
Zoë Rossman	Support

Guests	Organization
Hira Walker	U.S. Army Corps of Engineers

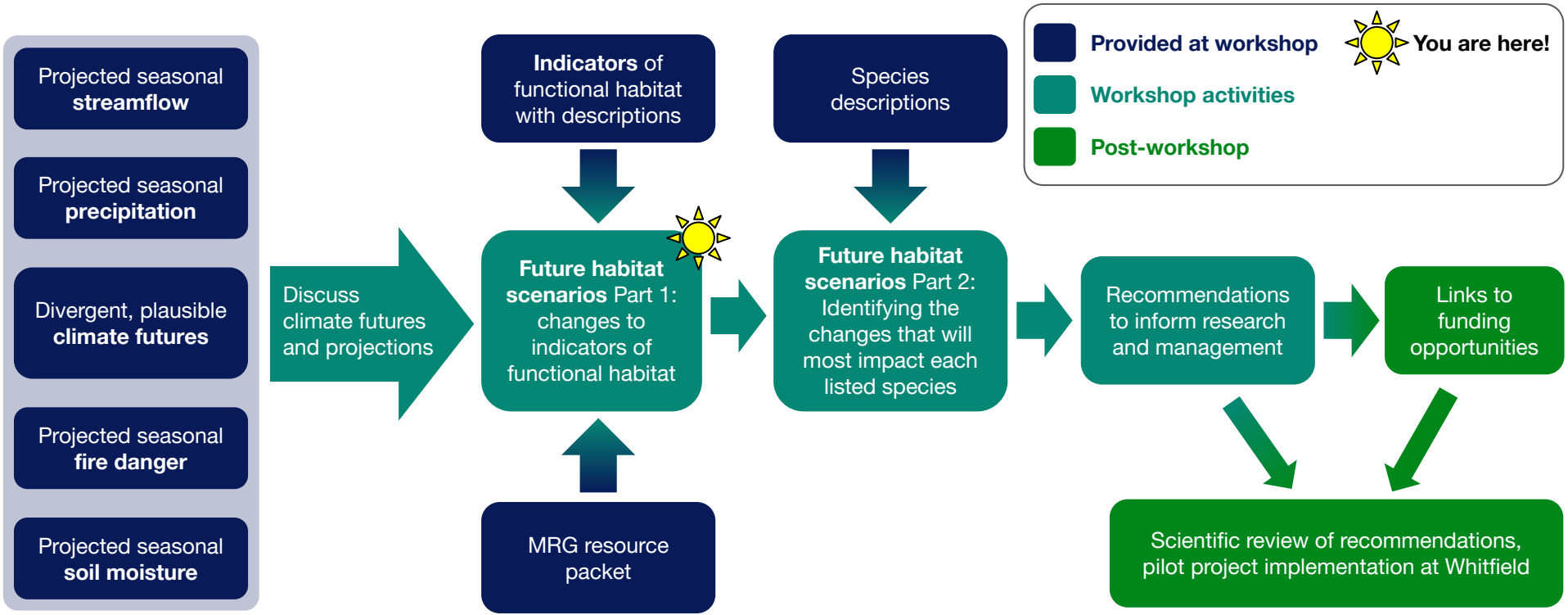
Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting

August 21, 2023

See the following meeting material on the page below:

Climate Futures Planning Workshop Schematic [read-ahead]


Projected seasonal **streamflow**
Projected seasonal **precipitation**
Divergent, plausible **climate futures**
Projected seasonal **fire danger**
Projected seasonal **soil moisture**
Discuss climate futures and projections
Indicators of functional habitat with descriptions
MRG resource packet
Future habitat scenarios Part 1: changes to indicators of functional habitat
Species descriptions
Future habitat scenarios Part 2: Identifying the changes that will most impact each listed species
Recommendations to inform research and management
Links to funding opportunities
Scientific review of recommendations, pilot project implementation at Whitfield
Provided at workshop
You are here!
Workshop activities
Post-workshop

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

List of Current Topics Needing SAMC Leads [read-ahead]

SAMC leadership of science efforts to inform adaptive management for the MRGESCP

Topics with lead(s)

- ☑ Climate futures planning — Megan Friggens
- ☑ Restoration monitoring guidance — Ondrea Hummel, Meaghan Conway
- ☑ Vegetated islands and bars deliverables — Dave Moore, Ari Posner
- ☑ SAMC/FPC coordination and project evaluation — Aubrey Harris

Topics in need of lead(s)

- ☐ Adaptive management for river drying
- ☐ RGSM hypothesis development and model disambiguation
- ☐ Development/refinement of conceptual models
- ☐ Information & data quality guidance for the MRGESCP

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

Schematic of Relationships Among Topics [read-ahead]

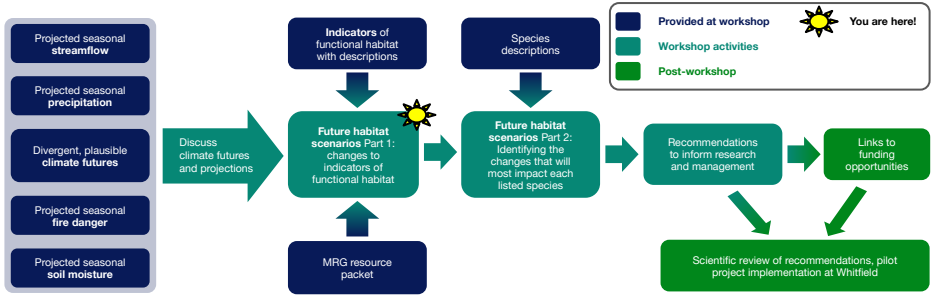
Drying*
- Questionnaire
- Summary report
- Decision tool

RGSM*
- Hypothesis development
- Model tool

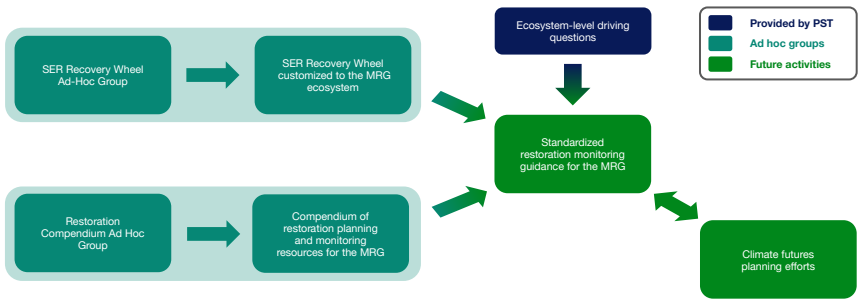
Conceptual models
- Single species
- Vegetated islands & bars
- Ecosystem

Vegetated islands and bars deliverables
(glossary, etc…)

Climate futures planning



Restoration monitoring guidance*



Information and data quality*
- Data quality template
- Data format guidance

Portal
- Datasets/map

FPC Coordination
- Funding opportunities

SAMIS
- Projects/ linkages
- Findings

* denotes ad hoc group(s)

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

Final Restoration Compendium Ad Hoc Charge [read-ahead]

Middle Rio Grande Endangered Species Collaborative Program (MRGESCP)
Science & Technical (S&T) Ad Hoc Group Charge
Restoration Resources Compendium Ad Hoc

Parent Committee
Science and Adaptive Management Committee

Ad Hoc Group Charge
Create a compendium of habitat/ecosystem restoration projects and resources within the Middle Rio Grande (MRG) Basin. The compendium should include project metadata (e.g., project location, lead agency, date range), as well as objectives, target species, monitoring plans, adaptive management plans, and reports associated with each project, when available. In addition, the compendium should also contain a list of resources that can inform restoration planning, adaptive management, and monitoring in the MRG.

Membership

A. Criteria for membership

- Experience with planning, designing, implementing, monitoring and/or adaptively managing restoration projects in the MRG.
- Knowledge about habitat restoration goals, monitoring protocols and metrics, and maintenance and adaptive management needs in the MRG.

B. Members (Nominees)

_____(Lead),
_____(Member),
_____(Member),
_____(Member),
_____(Member),
…

Iterative Task Development

Background

In February 2023, the SAMC requested a compilation of information about restoration efforts in the MRG to help inform future and ongoing restoration projects within the basin. The purpose of this "compendium" is to provide restoration practitioners with a set of resources to aid in the design and monitoring of restoration projects in the MRG, as well as details about current and past MRG restoration projects. This compendium, combined with 1) the development of a tool to track restoration success at the ecosystem level (the Society for Ecological Restoration recovery wheel), and 2) clear ecosystem-level driving questions, will guide the formation of a standardized monitoring approach for the MRG (Figure 1).

The Program Support Team (PST) began drafting the compendium in March 2023, and included current and past restoration projects in the MRG, as well as a list of resources relevant to restoration planning and monitoring in the MRG. Using the list of projects, the PST identified common restoration goals (i.e., habitat restoration, fire fuel reduction, management of hydrology/geomorphology) and restoration targets (e.g., listed species, native

and non-native vegetation) for the MRG. Restoration targets were cross-referenced with projects and resources so that restoration practitioners can easily locate guidance and resources that relate to their desired target.

The primary objectives of this ad hoc group are to refine and further develop the draft compendium and to ensure that it is useful and relevant for restoration practitioners in the MRG. The final deliverable, the revised compendium, will support restoration throughout the MRG, and will also be used to inform the creation of standardized monitoring guidance for the MRG.

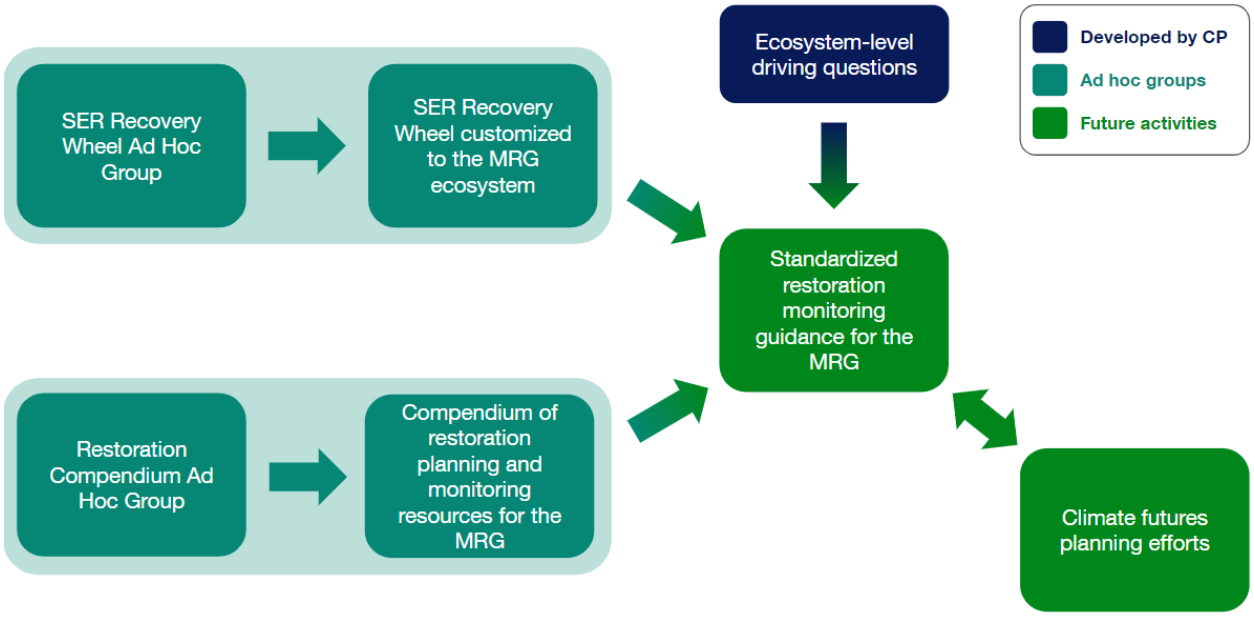


Figure 1. ***Outcomes of this ad hoc group will be combined with a Recovery Wheel customized to the MRG and ecosystem-level driving questions to inform the creation of standardized restoration monitoring guidance and other efforts within the MRG.***

The SAMC requests that you review the draft tasks, deliverables and schedule below and provide feedback and questions to begin the iterative process of task development.

Tasks and Deliverables

Step	Objective	Task	Deliverable
PST presentation to ad hoc group – Overview of draft compendium			
1.	**Become familiar with the draft compendium, the process documentation, and the decision tree**	• Review the draft compendium created by the PST, as well as the documentation about its development. • Review the associated decision tree and determine if the structure of the compendium is appropriate for use by restoration practitioners.	Provide suggestions for improving the structure of the compendium, if needed.
2.	**Edit project list**	• Edit the list of past and current restoration projects in the MRG. • Add additional projects, any follow-up monitoring or reports, and identify the goals and targets for each project.	A revised list of completed and active restoration projects in the MRG.
3.	**Review list of goals and targets**	• Review and refine the list of restoration goals and targets identified from the project list.	A revised list of goals and targets for restoration practices in the MRG.
4.	**Edit resources list**	• Using the list of targets from Step 3, identify additional resources for restoration planning and monitoring and relate to one or more restoration targets within the MRG.	A revised list of restoration resources customized to the MRG.
Check-in with SAMC – Summarize progress, issues and findings			
5.	**Recommend next steps**	• Using the lessons learned from Steps 2-4, provide recommendations for using the compendium to inform the creation of standardized monitoring guidance for the MRG.	A brief outline containing lessons learned and any recommendations for future use of the compendium.

Timeline and Reporting Scheduling

Task	Subtask	Deliverable	To Be Completed By
Step 1	Review compendium	Suggestions for improving the structure of the compendium, if necessary.	Time to complete: 1 meeting + 1 week
Step 2	Complete project list	A complete list of completed and active restoration projects in the MRG.	Time to complete: ~4 weeks
Step 3	Review list of goals and targets	A complete list of goals and targets for common restoration practices in the MRG.	Time to complete: 1 meeting + 1 week
Step 4	Complete resource list	A list of restoration resources customized to the MRG.	Time to complete: ~4 weeks
Step 5	Recommendations and lessons learned; presentation to SAMC	An outline documenting the process used to complete the compendium, lessons learned, and any recommendations for future groups.	Time to complete: ~2 weeks
		Collaborative Program seminar	TBD

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

Final SER Recovery Wheel Ad Hoc Charge [read-ahead]

Middle Rio Grande Endangered Species Collaborative Program (MRGESCP)
Science & Technical (S&T) Ad Hoc Group Charge
Society for Ecological Restoration Recovery Wheel Ad Hoc

Parent Committee
Science and Adaptive Management Committee

Ad Hoc Group Charge
Develop an ecosystem-level restoration assessment tool based on the Society for Ecological Restoration's (SER) Ecological Recovery Wheel, which visually represents recovery of a target ecosystem compared to a selected reference ecosystem using a 5-star rating scale across a set of attributes. The Recovery Wheel should be customized to the Middle Rio Grande (MRG) river-floodplain ecosystem. The process used to develop this tool should be fully documented to facilitate use and future updates to the wheel.

Membership

A. Criteria for membership

- Knowledge of the structure, function, and spatio-temporal dynamics of the Middle Rio Grande river-floodplain ecosystem;
- Understanding of planning, design, implementation, monitoring, and maintenance practices for ecological restoration in the MRG.

B. Members (Nominees)

_____(Lead),
_____(Member),
_____(Member),
_____(Member),
_____(Member),
…

Iterative Task Development

Background

In February 2023 the SAMC identified the Society for Ecological Restoration's (SER) Ecological Recovery Wheel (Figure 1) as an appropriate and useful tool to assess the success of restoration efforts at the *ecosystem level* in the MRG. The development of this tool, combined with additional restoration monitoring resources and ecosystem-level driving questions, will support an end goal of developing standardized monitoring guidance for the MRG (Figure 2). The Recovery Wheel is part of a set of ecological restoration standards launched in 2016 by SER (McDonald et al. 2016). These standards have been vetted by the international restoration community and applied to a wide variety of restoration work since their inception. While restoration efforts in the MRG are often implemented at the species-specific habitat level, use of the Recovery Wheel tool can place habitat-level projects within the context of ecosystem-scale recovery. This context will help to identify additional benefits that potentially result from restoration projects. The Recovery Wheel is a customizable tool, in which sub-attributes can be modified to suit the MRG ecosystem, and ratings (1-5 stars) represent a scale of progress towards full recovery for each sub-attribute. Over the life of a project, the Recovery Wheel serves as a valuable visual aid for demonstrating progress toward the restoration goals (along individual sub-attributes), as well as helping practitioners determine whether (and when) intervention/maintenance is warranted.

The primary objective of this ad hoc group is to customize the SER Recovery Wheel tool to the MRG ecosystem by: 1) selecting an appropriate reference ecosystem; 2) reviewing attributes (see Table 1) and identifying desired sub-attributes for the MRG; and 3) assigning appropriate levels (see Table 2) to each sub-attribute. Sub-attributes within each attribute should reflect aspects of the MRG ecosystem that are relevant to management of listed species and associated ecological structure and function. Selection of metrics used to quantify sub-attributes should take into account not only the responsiveness of the variable to both management actions and climate change, but also the cost, effort, and feasibility of collecting the data.

The final deliverable (i.e., customized wheel) of this ad hoc group can be subsequently modified through adaptive management and informed by climate futures planning.

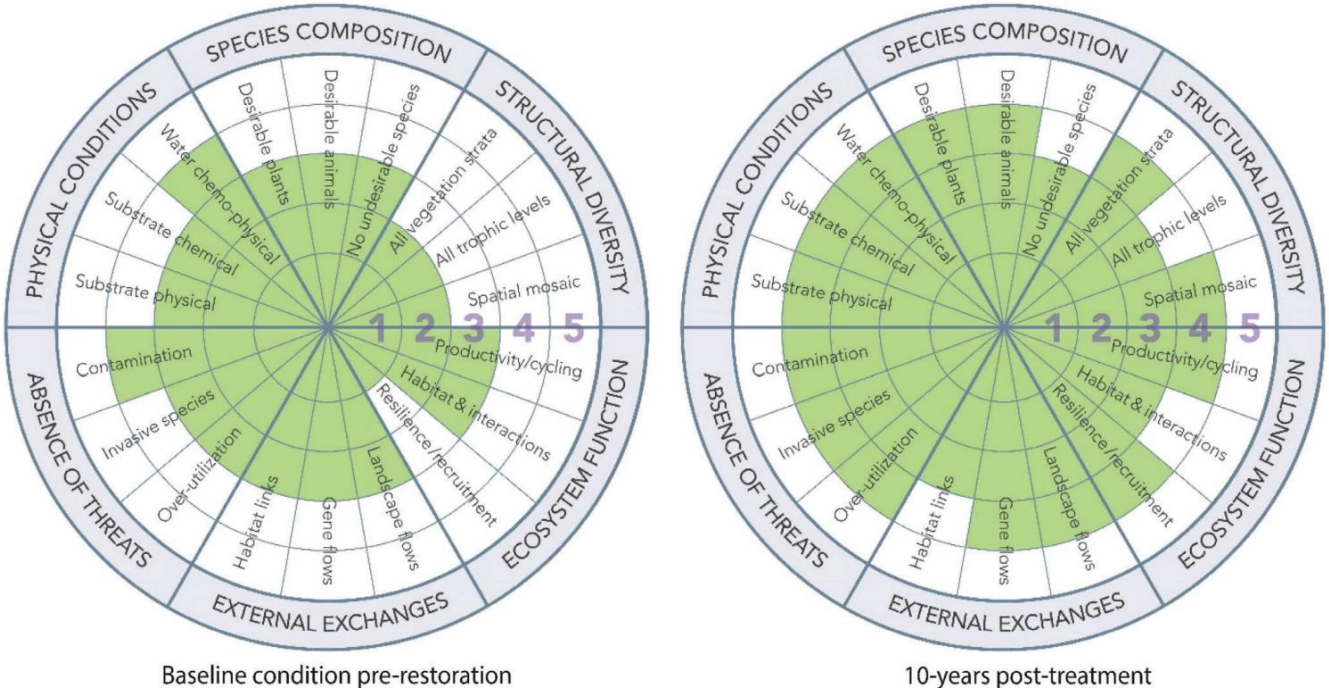


Figure 1. *"The ecological recovery wheel is a tool for conveying progress of recovery of ecosystem attributes compared to those of a reference model. In this example, the first wheel represents the condition of each attribute assessed during the baseline inventory stage of the project. The second wheel depicts a 10-year-old restoration project, where over half its attributes have attained a four-star condition. Practitioners familiar with the project goals, objectives, site-specific indicators, and recovery levels achieved to date can shade the segments for each sub-attribute after formal or informal evaluation. Sub-attribute labels can be added or modified to best represent a particular project. For symmetry of design, three sub-attributes are used in this example, but there may be more, or fewer, needed depending on the project."* (Gann et al. 2019)

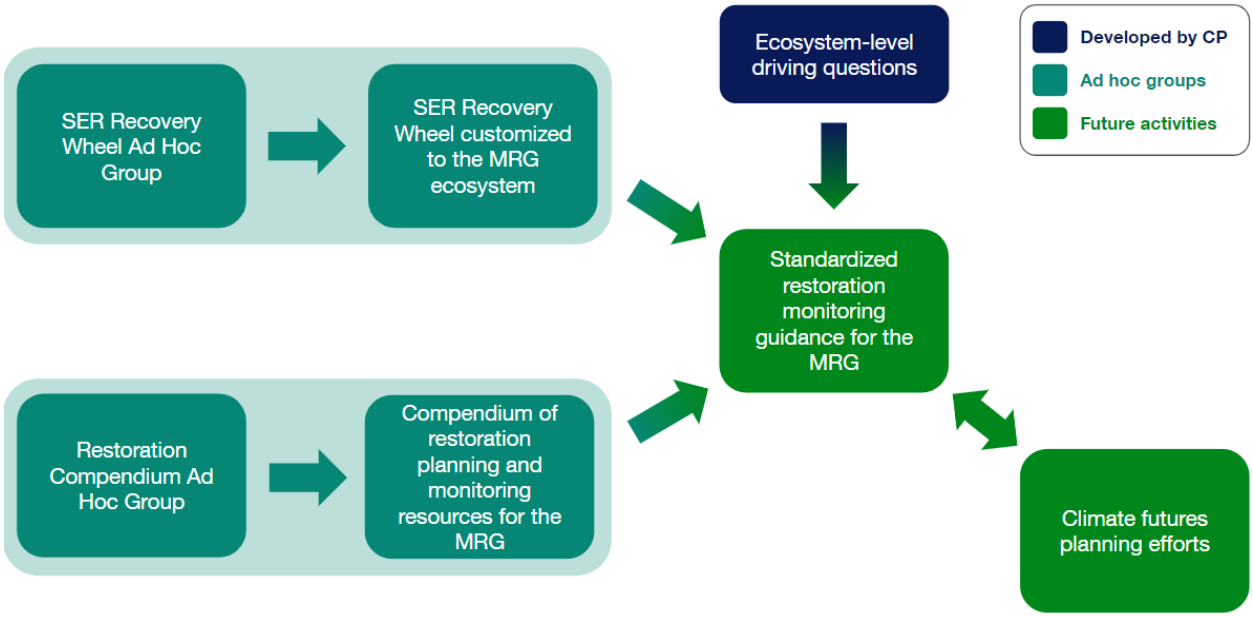


Figure 2. ***Outcomes of this ad hoc group will be combined with restoration monitoring resources and ecosystem-level driving questions to inform the creation of standardized restoration monitoring guidance and other efforts within the MRG.***

Table 1. *"Description of the key ecosystem attributes used to characterize the reference ecosystem, as well as to evaluate baseline condition, set project goals, and monitor degree of recovery at a restoration site."* (Gann et al. 2019)

Attribute	*Description*
Absence of threats	Direct threats to the ecosystem such as overutilization, contamination, or invasive species are absent
Physical conditions	Environmental conditions (including the physical and chemical conditions of soil and water, and topography) required to sustain the target ecosystem are present
Species composition	Native species characteristic of the appropriate reference ecosystem are present, whereas undesirable species are absent
Structural diversity	Appropriate diversity of key structural components, including demographic stages, trophic levels, vegetation strata and spatial habitat diversity are present
Ecosystem function	Appropriate levels of growth and productivity, nutrient cycling, decomposition, species interactions, and rates of disturbance
External exchanges	The ecosystem is appropriately integrated into its larger landscape or aquatic context through abiotic and biotic flows and exchanges

Table 2. *"Sample one- to five-star recovery scale interpreted in the context of the six key ecosystem attributes used to measure progress along a trajectory of recovery. This five-star scale represents a gradient from very low to very high similarity to the reference model. As a generic framework, users must develop indicators and monitoring metrics specific to the ecosystem and sub-attributes they identify."* (Gann et al. 2019)

Attribute	★	★★	★★★	★★★★	★★★★★
Absence of threats	Further deterioration discontinued, and site has tenure and management secured	Threats from adjacent areas beginning to be managed or mitigated	All adjacent threats managed or mitigated to a low extent	All adjacent threats managed or mitigated to an intermediate extent	All threats managed or mitigated to high extent
Physical conditions	Gross physical and chemical problems remediated (e.g. excess nitrogen, altered pH, high salinity, contamination or other damage to soil or water)	Substrate chemical and physical properties on track to stabilize within range of reference ecosystem	Substrate stabilized within range of reference ecosystem and supporting growth of characteristic native biota	Substrate securely maintaining conditions suitable for ongoing growth and recruitment of characteristic native biota	Substrate exhibiting physical and chemical characteristics highly similar to that of the reference ecosystem with evidence they can indefinitely sustain species and processes
Species composition	Some colonizing native species present (e.g. ~2% of species in the reference ecosystem). Moderate onsite threat from nonnative invasive or undesirable species. Regeneration niches available	A small subset of characteristic native species establishing (e.g. ~10% of reference). Low to moderate onsite threat from nonnative invasive or undesirable species	A subset of key native species (e.g. ~25% of reference) establishing over substantial proportions of the site. Very low onsite threat from nonnative invasive or undesirable species	Substantial diversity of characteristic native biota (e.g. ~60% of reference) present across the site and representing a wide diversity of species groups. Very low onsite threat from nonnative invasive or undesirable species	High diversity of characteristic native species present (e.g. >80% of reference), with high similarity to the reference ecosystem; improved potential for colonization of more native species over time. No known onsite threat from undesirable species
Structural diversity	One or fewer biological strata present and no spatial patterning or community trophic complexity relative to reference ecosystem	More strata present but low spatial patterning and trophic complexity, relative to reference ecosystem	Most strata present and some spatial patterning and trophic complexity relative to reference site	All strata present. Spatial patterning evident and substantial trophic complexity developing relative to the reference ecosystem	All strata present and spatial patterning and trophic complexity high. Further complexity and spatial patterning able to self-organize to highly resemble reference ecosystem
Ecosystem function	Substrates and hydrology are at a foundational stage only, capable of future development of functions similar to the reference	Substrates and hydrology show increased potential for a wider range of functions including nutrient cycling, and provision of habitats and resources for other species	Evidence of functions commencing (e.g. nutrient cycling, water filtration, and provision of habitat and resources for a range of species)	Substantial evidence of key functions and processes commencing including reproduction, dispersal, and recruitment of native species	Considerable evidence of functions and processes on a secure trajectory toward that of the reference and evidence of ecosystem resilience, tested by reinstatement of appropriate disturbance regimes
External exchanges	Potential for exchanges (e.g. of species, genes, water, fire) with surrounding landscape or aquatic environment identified	Connectivity for enhanced positive (and minimized negative) exchanges arranged through cooperation with stakeholders. Linkages being reinstated	Positive exchanges between site and external environment becoming evident (e.g. more species, gene flows, etc.)	High level of positive exchanges with other native ecosystems established; control of undesirable species and disturbances	Evidence that external exchanges are highly similar to reference, and long-term integrated management arrangements with broader landscape in place and operative

The SAMC requests that you review the draft tasks, deliverables and schedule below and provide feedback and questions to begin the iterative process of task development.**Tasks and Deliverables**

Step	Objective	Task	Deliverable
1.	**Become familiar with SER 5-Star Recovery Wheel tool**	Review literature on SER Recovery Wheel (Figure 1) • Primary Attributes • Sub-attributes • 5-star Recovery Levels • Customization process	N/A
2.	**Designate a reference ecosystem**	Determine an appropriate reference state for comparison based on desired restoration goals for the MRG, including the scale at which this should take place.	A description of the designated reference ecosystem with a justification of choices based either on scientific literature or expert opinion when appropriate. Please cite sources.
3.	**Customize sub-attributes for the MRG**	Define relevant sub-attributes for the MRG ecosystem. See Table 1 and Figure 3 for descriptions and examples.	A recovery wheel customized to the structure and function of the MRG ecosystem. Please cite sources, where appropriate, and provide rationale.
Interim Peer Review 1: attributes and sub-attributes			
4.	**Customize the sub-attribute recovery levels for the MRG**	Using the customized wheel from Task 3, determine the appropriate recovery levels for each sub-attribute. Consider the question of when/if to maintain or intervene at a restoration site. See Table 2 for an example of how to define levels.	A recovery wheel for the MRG, including sub-attribute levels that inform decisions about site condition and maintenance/ intervention. Please cite sources, where appropriate, and provide rationale.
Interim Peer Review 2: levels and thresholds			
Check-in with SAMC – Summarize progress, issues and findings			
5.	**Recommend next steps**	Using the lessons learned from Steps 2-4, provide recommendations regarding application of the Recovery Wheel to different habitat types within the MRG ecosystem.	An outline documenting the process used to develop a Recovery Wheel customized to the MRG and identifying any lessons learned during the task with recommendations for application and improvement of this tool.

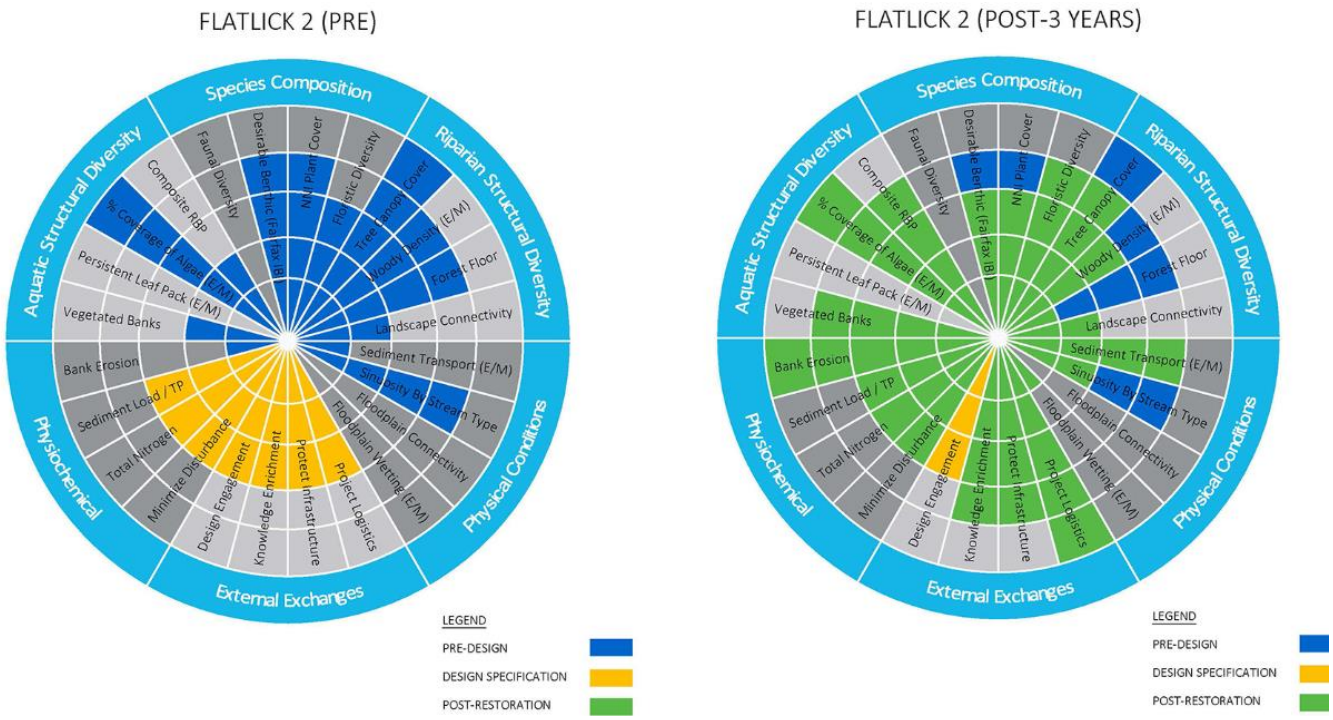
Timeline and Reporting Scheduling

Task	Subtask	Deliverable	To Be Completed By
Step 1	Familiarize with tool	N/A	TBD
Step 2	Design reference ecosystem	A summary of the reference ecosystem constructed with a justification of choices based either on scientific literature or expert opinion when appropriate. Please cite sources.	Time to complete: ~4 weeks
Step 3	Select sub-attributes; Peer Review 1	A recovery wheel customized to the structure and function of the MRG. Please cite sources, where appropriate, and provide rationale.	Time to complete: ~4 weeks (additional 2 weeks for Peer Review)
Step 4	Define sub-attribute recovery levels; Peer Review 2; Check-in with SAMC	A recovery wheel for the MRG, including sub-attribute levels that inform decisions about site condition and maintenance/intervention. Please cite sources, where appropriate, and provide rationale.	Time to complete: ~4 weeks (additional 2 weeks for Peer Review)
Step 5	Recommendations and lessons learned; Presentation to SAMC	An outline documenting the process used to develop a Recovery Wheel customized to the MRG and identifying any lessons learned during the task with recommendations for application and improvement of this tool.	Time to complete: ~2 weeks
		Collaborative Program seminar	TBD

Footnotes

1. "*While every restoration practitioner strives to place his/her site on a secure trajectory to full ecosystem recovery relative to an appropriate reference system, full recovery can often be slow or unrealistic in the short-term. In these cases, and for all restoration projects, practitioners are encouraged to aim and monitor for continuous improvement toward ecosystem recovery… The 5-Star Recovery System tool utilizes a 5-star scale that represents a cumulative gradient from very low to very high similarity to a reference ecosystem. A restoration site can be assigned to one of the five recovery levels (1 to 5 stars) in an overall assessment; or, different ecosystem attributes can be individually assigned recovery levels based on available monitoring data, which provides a more detailed overview of recovery progress, and accounts for the fact that different attributes may have varying rates of recovery. The Recovery Wheel (Figure 1) provides a visual way in which to communicate ecological recovery progress using the 5-star system, and can be shaded in as various sub-attributes of the site achieve greater recovery over time*." (https://www.ser.org/page/SERNews3113)
2. The SER Recovery Wheel was modified and applied to Flatlick Stream (Department of Public Works and Environmental Services, Fairfax County, Virginia), where they created pre-restoration and post-restoration Recovery Wheels for a stream ecosystem (Figure 3). The attributes, sub-attributes, and

levels may be applicable to some MRG ecosystems. More information can be found at the following links:
https://d18lev1ok5leia.cloudfront.net/chesapeakebay/documents/fairfax_county_restoration_recovery_wheel.pdf



https://www.fairfaxcounty.gov/publicworks/stormwater/plans-projects/fairfax-recovery-wheel

Figure 2. *"Recovery Wheels for the Flatlick II stream restoration, with both a pre-restoration condition and the condition as assessed 3-years post restoration."* https://www.fairfaxcounty.gov/publicworks/stormwater/plans-projects/fairfax-recovery-wheel

References

"Fairfax Recovery Wheel." Fairfax County, https://www.fairfaxcounty.gov/publicworks/stormwater/plans-projects/fairfax-recovery-wheel. Accessed 14 March 2023.

Gann, G.D., T. McDonald, B. Walder, J. Aronson, C.R. Nelson, J. Jonson, J.G. Hallett, C. Eisenberg, M.R. Guariguata, J. Liu, F. Hua, C. Echeverría, E. Gonzales, N. Shaw, K. Decleer and K.W. Dixon. 2019. International principles and standards for the practice of ecological restoration. Second edition. Restoration Ecology, 27: S1-S46. https://doi.org/10.1111/rec.13035

McDonald, T., G.D. Gann, J. Jonson, and K.W. Dixon. 2016. International standards for the practice of ecological restoration – including principles and key concepts. First Edition. Society for Ecological Restoration, Washington, D.C.

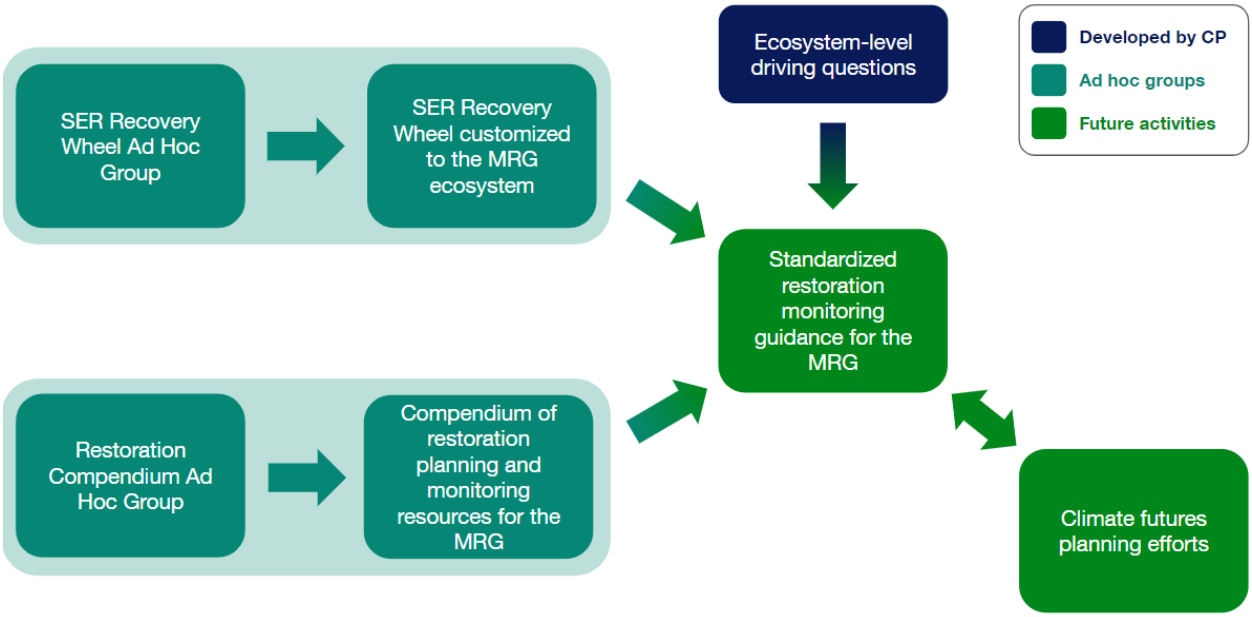
McDonald, T., J. Jonson and K.W. Dixon. 2016. National standards for the practice of ecological restoration in Australia. Restoration Ecology, 24: S4-S32. https://doi.org/10.1111/rec.12359

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

Member Call for Restoration Compendium & SER Recovery Wheel Ad Hoc Groups [read-ahead]



Call for Ad Hoc Group Members

The **SER Recovery Wheel Ad Hoc Group** and the **Restoration Compendium Ad Hoc Group** will run concurrently. Although these groups have distinct charges and goals, they will inform each other. The Restoration Compendium will compile and organize existing restoration and monitoring resources at the project level, while the SER Recovery Wheel will establish ecosystem-level attributes to target for restoration. Together, these two groups will help inform standardized restoration monitoring guidance for the Middle Rio Grande (MRG) Basin. Please review the information for each group below to help you decide which group most aligns with your expertise.

Restoration Compendium Ad Hoc Group Charge:
Create a compendium of habitat/ecosystem restoration projects and resources within the MRG Basin. The compendium should include project metadata (e.g., project location, lead agency, date range), as well as objectives, target species, monitoring plans, adaptive management plans, and reports associated with each project, when available. In addition, the compendium should also contain a list of resources that can inform restoration planning, adaptive management, and monitoring in the MRG.

Please consider joining the Restoration Compendium Ad Hoc Group if:

- You have experience planning, designing, implementing, monitoring and/or adaptively managing restoration projects in the MRG.
- You have developed restoration goals, monitoring protocols and metrics, and assessed maintenance needs in the MRG.

- You have managed current and past restoration projects in the MRG.

SER Recovery Wheel Ad Hoc Group Charge:
Develop an ecosystem-level restoration assessment tool based on the Society for Ecological Restoration's (SER) Ecological Recovery Wheel, which visually represents recovery of a target ecosystem compared to a selected reference ecosystem using a 5-star rating scale across a set of attributes. The Recovery Wheel should be customized to the MRG river-floodplain ecosystem. The process used to develop this tool should be fully documented to facilitate use and future updates to the SER Ecological Recovery Wheel.

Please consider joining the SER Recovery Wheel Ad Hoc Group if:

- You possess knowledge of the structure, function, and spatio-temporal dynamics of the Middle Rio Grande river-floodplain ecosystem.
- You are familiar with the planning, design, implementation, monitoring, and maintenance practices for ecological restoration in the MRG.
- You work on ecosystem-level restoration projects or address ecosystem-level questions within the MRG.

Please contact cmurphy@west-inc.com or zrossman@west-inc.com to volunteer for either group, or if you have any questions regarding which group to volunteer for. If your experience aligns with both groups and you have no preference, please let us know and we will place you in the group that would most benefit from your expertise. When you contact us to volunteer, please note if you'd like to volunteer as a group member, as a reviewer, or both.

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

Funding Opportunities Matrix [read-ahead, spreadsheet]

INSTRUCTIONS
All columns are filterable. Click the down arrow on each column for filter options. Sort A to Z to put list items in alphabetical order. Use the search bar to filter the list by response (ex. search State in the Eligible Recipients column)

KEY				
Symbols:	**Application Period:**	**Funding Emphasis:**	**Eligible Recipients:**	**Funding Amount:**
★ = Highly collaborative	■ = Application period	Collaborative★, Climate Resilience/Adaptation, Disaster Recovery, Drought Resilience, Flood/Storm Risk Reduction, Habitat/Ecosystem Restoration, Innovation, Soil Health, Water Conservation, Water Quality/Efficiency, Wildfire Risk Reduction, Pollution Remediation	Academic Institution, Business (for profit), Individual, Local Government, Non-profit, State, Territory, Tribal Government	$ = $40,000-$99,999
⊕ = Cost share	☒ = Application is due			$$ = $100,000-$499,999
*** = Info missing	Q# = Quarter#			$$$ = $500,000-$1,999,999
				$$$$ = $2,000,000+

FUNDING OPPORTUNITIES MATRIX
Updated July 2023

FUNDING OPPORTUNITY	FUNDING AGENCY	DESCRIPTION	ACRONYM	FUNDING EMPHASIS	ELIGIBLE RECIPIENTS	PERFORMANCE PERIOD	COST SHARE ⊕	FUNDING AMOUNT	APPLICATION PERIOD												
									Q1			Q2			Q3			Q4				
									JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	
Tribal Climate Resilience Grants – Annual Awards Program	Bureau of Indian Affairs, U.S. Department of Interior	The Tribal Climate Resilience Grants Program supports: 1) tribal climate resilience planning and strategy implementation as tribes incorporate science, including Indigenous and Traditional Ecological Knowledge (ITEK), Indigenous languages, and technical information, and 2) ocean and coastal management planning.	TCRG	Climate Resilience/Adaptation	Tribal Government	***	None required.	$-$$$$							☒						
Community Wildfire Defense Grant⊕	Energy, Minerals and Natural Resources Department	The purpose of the Community Wildfire Defense Grant is to assist at-risk local communities and Indian Tribes with planning for and mitigating against the risk created by wildfire. There are two primary project types for which the grantprovides funding: The development and revising of Community Wildfire Protection Plans (CWPP), and the implementation of projects described in a CWPP that is less than ten years old. The Act prioritizes at-risk communities that are in an area identified as having high or very high wildfire hazard potential, are low-income, and/or have been impacted by a severe disaster.	CWDG⊕	Wildfire Risk Reduction	Local Government, Non-profit, State, Tribal Government	Up to 5 years	90 percent federal cost share to develop a Community Wildfire Protection Plan, 75 percent federal cost share for proposals to implement projects.	$$-$$$$									■	■	☒		
Invasive Plant Program Grant⊕	Energy, Minerals and Natural Resources Department	The State of New Mexico, Energy, Minerals and Natural Resources Department (EMNRD), Forestry Division (Forestry Division) accepts grant applications for invasive plant management projects year-round. The U.S. Department of Agriculture, Forest Service (Forest Service) regularly provides funds specifically to address areas where invasive plants threaten forested acres. Projects must emphasize prevention and treatment of invasive plants and address any or all of the following: awareness and education; prevention and early detection; inventory and mapping; planning and coordination; integrated weed management; or monitoring and evaluation. The Forestry Division shall give the highest priority to projects that apply integrated management practices and demonstrate partnerships and monitoring results and for projects that address priority species on the New Mexico Noxious Weed List: https://www.emnrd.nm.gov/sfd/wp-content/uploads/sites/4/Weed-List-memo-and-weedlist-2020.pdf.	IPPG⊕	Habitat/Ecosystem Restoration	Local Government, State, Tribal Government	Up to 2 years	50 percent federal cost share.	$	■	■	■	■	■	■	■	■	■	■	■	■	■
Land and Water Conservation Fund – State and Local Assistance Program⊕	Energy, Minerals and Natural Resources Department	The LWCF is funded by revenues from offshore oil and gas leases and uses funding to conserve resources, like parks, wildlife refuges, forests, open spaces, trails and wildlife habitat. The Stateside LWCF program, a component of the overall LWCF program (which also funds federal land conservation projects and other state and local grants), is comprised of two programs: state formula grants and the Outdoor Recreation Legacy Partnership (ORLP) program (nationally competitive). ORLP targets economically disadvantaged urban communities with little access to publicly available, close-by, outdoor recreation.	LWCF⊕	Habitat/Ecosystem Restoration	Local Government, State, Territory	Up to 3 years	50 percent federal cost share.	$-$$										■	■	☒		
Emergency Conservation Program⊕	Farm Service Agency, U.S. Department of Agriculture	The Emergency Conservation Program (ECP) helps farmers and ranchers repair damage to farmlands caused by natural disasters and help implement methods for water conservation during severe drought. The ECP does this by giving ranchers and farmers funding and assistance to repair the damaged farmland or to install methods for water conservation.	ECP⊕	Disaster Recovery, Water Quality/Efficiency	Individual	***	Up to 75 percent federal cost share. Up to 90 percent federal cost share for limited resource areas.	$$	■	■	■	■	■	■	■	■	■	■	■	■	■
Emergency Forest Restoration Program⊕	Farm Service Agency, U.S. Department of Agriculture	The Emergency Forest Restoration Program (EFRP) helps the owners of non-industrial private forests restore forests damaged by natural disasters. The EFRP does this by authorizing payments to owners of private forests to restore disaster-damaged forests.	EFRP⊕	Disaster Recovery, Habitat/Ecosystem Restoration	Individual	***	Up to 75 percent federal cost share. Up to 90 percent federal cost share for limited resource areas.	$-$$$	■	■	■	■	■	■	■	■	■	■	■	■	■
Building Resilient Infrastructure and Communities Program⊕	Federal Emergency Management Agency, U.S. Department of Homeland Security	The Building Resilient Infrastructure and Communities (BRIC) Program aims to shift funding away from reactive post-disaster recovery to pro-active investment in community resilience and pre-disaster mitigation activities. Eligible grantees may submit applications on behalf of sub-applicants, including local governments, homeowners, business operators, and non-profit organizations.	BRIC⊕	Climate Resilience/Adaptation, Habitat/Ecosystem Restoration, Innovation	Local Government, State, Territory, Tribal Government	3 years	75 percent federal cost share generally. 90 percent federal cost share for disadvantaged rural communities.	$$$$	☒								■	■	■	■	

BRIC Sub-Program: Direct Technical Assistance	Federal Emergency Management Agency, U.S. Department of Homeland Security	The Building Resilient Infrastructure and Communities (BRIC) Sub-Program: Direct Technical Assistance (DTA) provides support and/or connects communities to experienced mentors for project or application-specific needs and community-wide resilience needs for up to 36 months.	BRIC-DTA	Climate Resilience/Adaptation, Disaster Recovery	Local Government, Tribal Government	***	None required.	***	☒									■	■	■	■
Flood Mitigation Assistance Grant⊕	Federal Emergency Management Agency, U.S. Department of Homeland Security	The Flood Mitigation Assistance (FMA) grant is a competitive grant program providing funding to states, local communities, federally recognized tribes, and territories for projects to reduce or eliminate risk of repetitive flood damage to buildings insured by the National Flood Insurance Program (NFIP).	FMA⊕	Flood/Storm Risk Reduction, Water Quality/Efficiency	Business (for profit), Individual, Local Government, Non-profit, State, Territory, Tribal Government	***	75 percent federal cost share.	***	☒									■	■	■	■
Hazard Mitigation Grant Program⊕	Federal Emergency Management Agency, U.S. Department of Homeland Security	The Hazard Mitigation Grant Program provides post-disaster funding to state, local, tribal, and territorial governments to reduce and mitigate future disaster losses. Grant funding is available after a presidentially declared disaster and can fund a wide variety of projects for any type of natural hazard and for any eligible activity that reduces risk and builds resilience.	HMGP⊕	Disaster Recovery, Drought Resilience, Flood/Storm Risk Reduction, Wildfire Risk Reduction	Business (for profit), Individual, Local Government, Non-profit, State, Territory, Tribal Government	****	75 percent federal cost share.	$$$$	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Safeguarding Tomorrow Revolving Loan Fund Program⊕	Federal Emergency Management Agency, U.S. Department of Homeland Security	The Safeguarding Tomorrow Revolving Loan Fund (RLF) Program allows FEMA to fund capitalization grants to establish revolving loan funds for direct hazard mitigation assistance to local governments to reduce risk from natural hazards.	STRLF⊕	Disaster Recovery, Water Quality/Efficiency	Local Government, State, Territory, Tribal Government	5 years	90 percent federal cost share.	$$$$		■	■	☒										
National Culvert Removal, Replacement & Restoration Grants⊕	Federal Highway Administration, U.S. Department of Transportation	The National Culvert Removal, Replacement & Restoration Grants is an annual competitive grant program that awards funding for projects to replace, remove, and repair culverts or weirs in a way that meaningfully improves or restores fish passage for anadromous fish (fish born in freshwater who spend most of their lives in saltwater and return to freshwater to spawn, such as salmon) and increases culvert and weir resilience to increased flooding events due to the impacts of climate change on weather and precipitation.	NCRRR⊕	Habitat/Ecosystem Restoration	Local Government, State, Tribal Government	Up to 5 years	100 percent federal cost share for Tribal Governments. Up to 80 percent federal cost share for states or municipalities.	$-$$$$	■	☒									■	■	■
Wildlife Crossings Pilot Program⊕	Federal Highway Administration, U.S. Department of Transportation	The Wildlife Crossings Pilot Program, newly established under the 2021 Bipartisan Infrastructure Law, supports projects that reduce the number of wildlife-vehicle collisions and improve habitat connectivity for terrestrial and aquatic species. At least 60 percent of grant funds are to be awarded for projects located in rural areas.	WCPP⊕	Habitat/Ecosystem Restoration	Local Government, State	***	80 percent federal cost share.	***				■	■	■	■	☒						
Community Forestry Program⊕	Forest Service, U.S. Department of Agriculture	The United States Department of Agriculture Forest Service Urban & Community Forestry Program is the only dedicated urban forest program in the federal government. It is a technical, financial, and educational assistance program, delivering both nature-based solutions for climate and environmental justice and green jobs.	CFG⊕	Climate Resilience/Adaptation, Drought Resilience, Habitat/Ecosystem Restoration	Local Government, Non-profit, Territory, Tribal Government	Up to 5 years	50 percent federal cost share.	$$$	☒													
State Fire Assistance Program⊕	Forest Service, U.S. Department of Agriculture	Through the State Fire Assistance program, the Forest Service supports and assists State Foresters and local communities in building capacity for wildfire prevention, mitigation, control, and suppression on non-Federal lands. The program helps state agencies create more fire-adapted communities by implementing pre-fire prevention and mitigation programs and emphasizing pre-fire planning and risk reduction in the Wildland Urban Interface.	SFA⊕	Wildfire Risk Reduction	Local Government, Tribal Government	***	50 percent federal cost share.	***	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Urban and Community Forestry Program⊕	Forest Service, U.S. Department of Agriculture	The United States Department of Agriculture Forest Service Urban & Community Forestry Program is the only dedicated urban forest program in the federal government. It is a technical, financial, and educational assistance program, delivering both nature-based solutions for climate and environmental justice and green jobs.	UCFP⊕	Climate Resilience/Adaptation, Drought Resilience, Habitat/Ecosystem Restoration	Local Government, Non-profit, Territory, Tribal Government	***	80 percent federal cost share.	***	☒													
Groundwork USA Technical Assistance	Groundwork USA	Groundwork USA is a partnership between the Environmental Protection Agency and the National Parks Service; their technical assistance program is designed to help clients pursuing brownfield redevelopment. It provides inclusive community engagement strategies, advises on site restoration approaches, assists in local partnership building, and coaches leaders to enact meaningful change in their communities.	GTA	Climate Resilience/Adaptation, Habitat/Ecosystem Restoration, Water Quality/Efficiency	Academic Institution, Individual, Local Government, Non-profit, State, Territory, Tribal Government	***	None required.	$$	■	■	■	■	■	■	■	■	■	■	■	■	■	■
NFWF America the Beautiful Challenge★⊕	National Fish and Wildlife Federation	The America the Beautiful Challenge is a public-private grant program for locally led ecosystem restoration projects that invest in watershed restoration, resilience, equitable access, workforce development, corridors and connectivity, and collaborative conservation consistent with the America the Beautiful Initiative.	NFWF★⊕	Collaborative★, Climate Resilience/Adaptation, Habitat/Ecosystem Restoration	Academic Institution, Local Government, Non-profit, State, Territory, Tribal Government	2 years	90 percent federal cost share for States. 97 percent federal cost share for Territories and Tribal Governments. Cost share is waived for Indian tribes fully covered by partnerships with Native Americans in Philanthropy and waived for territories per DOI legal interpretation.	$$-$$$$			■	☒	■	■	☒						
Conservation Innovation Grants⊕	Natural Resources Conservation Service, U.S. Department of Agriculture	Conservation Innovation Grants (CIG) is a competitive program that supports the development of new tools, approaches, practices, and technologies to further natural resource conservation on private lands. The goals of the program are set yearly, but generally, CIG partners work to address our nation's water quality, air quality, soil health, and wildlife habitat challenges, all while improving agricultural operations through creative problem solving and innovation.	CIG⊕	Innovation	Academic Institution, Business (for profit), Individual, Local Government, Non-profit, State, Territory, Tribal Government	Up to 3 years	50 percent federal cost share.	$		■	■	■	☒								

Environmental Quality Incentives Program	Natural Resources Conservation Service, U.S. Department of Agriculture	The Environmental Quality Incentives Program (EQIP) provides financial and technical assistance to agricultural producers and non-industrial forest managers to address natural resource concerns and deliver environmental benefits such as improved water and air quality, conserved ground and surface water, increased soil health and reduced soil erosion and sedimentation, improved or created wildlife habitat, and mitigation against drought and increasing	EQIP	Climate Resilience/Adaptation, Habitat/Ecosystem Restoration, Soil Health, Water Quality/Efficiency	Business (for profit), Individual, Non-profit, Tribal Government	***	***	***														
Emergency Watershed Protection Program⊕	Natural Resources Conservation Service, U.S. Department of Agriculture	The Emergency Watershed Protection Program provides funding for design and construction measures to help repair damages from a recent disaster to safeguard life, property, and communities caused by floods, fires, windstorms and other natural disasters that impair a watershed.	EWP⊕	Disaster Recovery, Flood/Storm Risk Reduction	Local Government, State, Tribal Government	***	75 percent NRCS cost share. Up to 90 percent NRCS cost share for limited resource areas.	***	■	■	☒										
Regional Conservation Partnership Program – Classic and Alternative Funding Arrangement⊕	Natural Resources Conservation Service, U.S. Department of Agriculture	The Regional Conservation Partnership Program (RCPP) promotes coordination of Natural Resources Conservation Service (NRCS) conservation activities with partners that collaboratively address on-farm, watershed, and regional natural resource concerns. Through RCPP, NRCS seeks to co-invest with partners to implement projects that demonstrate innovative solutions to conservation challenges and provide measurable improvements and outcomes tied to the resource concerns they seek to address such as water and wildlife. RCPP is implemented in two forms: RCPP Classic which is co-lead with NRCS and partners and RCPP Alternative Funding Arrangements (AFA) which are partner-led for innovative projects not possible under RCPP Classic.	RCPP⊕	Habitat/Ecosystem Restoration, Innovation, Water Conservation	Academic Institution, Business (for profit), Local Government, Non-profit, State, Territory, Tribal Government	Up to 5 years	Cost share varies by entity applying and through negotiation between the applicant and USDA. RCPP Classic requires a 50 percent match and in-kind contributions are accepted.	$$-$$$$								■	■	☒			
Watershed and Flood Prevention Operations Program⊕	Natural Resources Conservation Service, U.S. Department of Agriculture	The Watershed and Flood Prevention Operations program provides planning, design and construction of measures that address resource concerns in a watershed through technical and financial assistance.	WFPO⊕	Flood/Storm Risk Reduction, Water Quality/Efficiency	Local Government, Tribal Government	***	50 percent federal cost share.	***	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Wetland Reserve Easements⊕	Natural Resources Conservation Service, U.S. Department of Agriculture	A subset of the Agricultural Easement Program, the Wetland Reserve Easement Program (WRE) provides financial and technical assistance to help conserve wetlands and their related benefits. WRE helps restore, protect and enhance enrolled wetlands directly to private landowners and Indian tribes through the purchase of a wetland reserve easement.	WRE⊕	Habitat/Ecosystem Restoration	Individual, Local Government, Non-profit, State, Territory, Tribal Government	***	Partner contributions must equal at least 10 percent of the total estimated costs for easement acquisition related costs and restoration implementation costs. Proposals that provide partner contributions greater than 10 percent will be given higher consideration in the selection process.	***	■	■	■	■	■	■	■	■	■	■	■	■	■	■
River Stewardship Program★	New Mexico Environment Department	The goal of the River Stewardship Program is to fund projects that enhance the health of rivers by addressing the root causes of poor water quality and stream habitat. Each year the New Mexico Legislature appropriates capital outlay funds for the River Stewardship Program to design and construct projects that improve surface water quality or river habitat statewide and to provide state matching funds required by the terms of any federal grant under the Clean Water Act. Annual funding has ranged from $500,000 to $2,300,000.	RSP★	Collaborative★, Flood/Storm Risk Reduction, Habitat/Ecosystem Restoration, Water Quality/Efficiency, Wildfire Risk Reduction	Business (for profit), Local Government, Non-profit, State, Tribal Government	3 years	None required.	$$$-$$$$						■	☒							
Recycling and Illegal Dumping Fund	New Mexico Environment Department	The Recycling and Illegal Dumping (RAID) grant provides funding for the prevention and abatement of illegal dumpsites and promoting environmentally sound methods for reuse and recycling.	RIDF	Pollution Remediation	Local Government, Tribal Government	1 year	None required.	$-$$$		■	☒										
Solid Waste Facility Grant Fund	New Mexico Environment Department	This fund assists New Mexico solid waste facilities implement projects that help protect the health of the residents and the environment. Funding for the Solid Waste Facility Grant is made available by revenues from civil penalties associated with Solid Waste Bureau enforcement actions. The grant program is authorized by the New Mexico Solid Waste Act, Section 74-9-40.C NMSA 1978, and Solid Waste Rules, 20.9.25 NMAC. The purpose of this grant is to enable the development, engineering, construction and operation of solid waste facilities and systems throughout the state.	SWFGF	Pollution Remediation	Local Government	1 year	None required.	$-$$			■	☒										
Public Project Revolving Fund	New Mexico Finance Authority	The PPRF is used to finance public projects such as infrastructure improvements, road projects, water system upgrades, fire and law enforcement equipment, public buildings, and more. Both market-rate loans and loans to disadvantaged communities at subsidized rates are made from PPRF funds.	PPRF	Water Quality/Efficiency	Academic Institution, Local Government, Tribal Government	30 years	None required.	$$-$$$	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Water Trust Board Water Project Fund⊕	New Mexico Finance Authority	The Water Project Fund receives monies to fund a variety of water projects recommended by the Water Trust Board and authorized by the Legislature. Water Trust Board awards are a combination of grants and loans, based upon the financial capacity of the applicants. Under the Act, there are five project types eligible for consideration of financial assistance: 1. Water conservation or recycling, treatment or water reuse projects; 2. Flood prevention projects; 3. Endangered Species Act (ESA) collaborative projects; 4. Water storage, conveyance or delivery projects; and 5. Watershed restoration and management projects.	WTB⊕	Water Conservation, Water Quality/Efficiency, Flood/Storm Risk Reduction, Habitat/Ecosystem Restoration	Local Government, State, Tribal Government	1-2 years	50 percent local or federal cost share.	$$$$								☒	☒				
Aquatic Ecosystem Restoration (Section 206)⊕	U.S. Army Corps of Engineers	Under Section 206, the U.S. Army Corps of Engineers (USACE) has the authority to carry out aquatic ecosystem restoration and protection projects.	AER⊕	Habitat/Ecosystem Restoration	Local Government, Non-profit, State, Territory, Tribal Government	***	100 percent federal cost share up to $100,000 for feasability study. 50% federal cost share over $100,000 for feasability study. 65 percent federal cost share for design and construction. 0% federal cost share for operation and maintenance.	$$$$													

Environmental Infrastructure Program⊕	U.S. Army Corps of Engineers	Through the Environmental Infrastructure Program (EI), also known as Section 219, the U.S. Army Corps of Engineers (USACE) provides assistance to non-federal entities for planning, design, and construction of water-related environmental infrastructure in specified municipalities, counties, and states. The program has been directed by recent legislation to focus on prioritizing assistance to underserved, economically distressed, and economically disadvantaged minority communities.	EI⊕	Habitat/Ecosystem Restoration, Water Quality/Efficiency	Local Government, Non-profit, State, Territory, Tribal Government	***	75 percent federal cost share.	***	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Flood Plain Management Services Program⊕	U.S. Army Corps of Engineers	Through the Flood Plain Management Services Program (FPMS), the U.S. Army Corps of Engineers (USACE) advises, educates, informs, and provides technical support in response to state, regional, or local governments, other non-federal public agencies, and tribes to address changes in floodplain and off-floodplain use, as well as flood risk and flood hazards.	FPMS⊕	Flood/Storm Risk Reduction	Local Government, State, Territory, Tribal Government	***	100 percent federal cost share for non-federal.	***	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Planning Assistance to States and Tribes Program⊕	U.S. Army Corps of Engineers	In the Planning Assistance to States and Tribes Program (PAS), the U.S. Army Corps of Engineers (USACE) can provide two types of assistance for water and related resources planning efforts: 1) comprehensive water resources planning and 2) technical assistance.	PAS⊕	Climate Resilience/Adaptation, Disaster Recovery, Flood/Storm Risk Reduction, Habitat/Ecosystem Restoration, Water Quality/Efficiency	State, Territory, Tribal Government	Fiscal year	50 percent federal cost share.	$$$$	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Project Modifications for Improvement of the Environment (Section 1135)⊕	U.S. Army Corps of Engineers	Under Section 1135, a Continuing Authorities Program, the U.S. Army Corps of Engineers (USACE) has the authority to modify existing USACE water resources projects to restore the environment and construct new projects to restore areas degraded by USACE water resources projects.	PMIE⊕	Habitat/Ecosystem Restoration	Local Government, Non-profit, State, Territory, Tribal Government	***	100 percent federal cost share up to $100,000 for feasability study. 50% federal cost share over $100,000 for feasability study. 75 percent federal cost share for design and construction. 0% federal cost share for operation and maintenance.	$$$$															
Permanent Measures to Reduce Emergency Flood Fighting Needs for Communities Subject to Repetitive Flooding (Section 119)⊕	U.S. Army Corps of Engineers	Section 119, a program associated with the P.L. 84-99 Levee Rehabilitation & Inspection Program, is being developed under a new authority, given to the U.S. Army Corps of Engineers (USACE) by legislation in 2020, to study, design, and construct water resources projects for communities that have experienced repetitive flooding events and have received emergency flood fighting assistance under the P.L. 84-99 Levee Rehabilitation & Inspection Program.	PMREF⊕	Flood/Storm Risk Reduction	Local Government, Non-profit, State, Territory, Tribal Government	Up to 3 years	50 percent federal cost share.	$$$$	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Pilot Programs for Rural and Economically Disadvantaged Communities (Sections 118(b) and 118(c))	U.S. Army Corps of Engineers	These are two new pilot programs that the U.S. Army Corps of Engineers (USACE) was directed to establish under legislation in 2020. The programs are directed to evaluate opportunities to reduce flood, hurricane, and storm risks for economically disadvantaged and rural communities. Details for these programs may change as detailed program guidance has not yet been published as of November 2022.	REDC	Flood/Storm Risk Reduction	Local Government, Non-profit, State, Territory, Tribal Government	***	***	***																
Small Flood Risk Management Projects (Section 205)⊕	U.S. Army Corps of Engineers	Under Section 205, the U.S. Army Corps of Engineers (USACE) has the authority to plan and construct local small flood risk management projects.	SFRM⊕	Flood/Storm Risk Reduction	Local Government, Non-profit, State, Territory, Tribal Government	***	100 percent federal cost share up to $100,000 for feasability study. 50% federal cost share over $100,000 for feasability study. 65 percent federal cost share for design and construction. 0% federal cost share for operation and maintenance.	$$$$															
Sustainable Rivers Program	U.S. Army Corps of Engineers	The fundamental goal of the Sustainable Rivers Program (SRP) is to identify, refine, and implement environmental strategies at Corps water infrastructure. SRP works with water managers, reservoir operators, scientists, and other stakeholders to increase the environmental benefits provided by already built infrastructure. SRP efforts complement other reservoir-centric water resource projects by demonstrating that a strategic and science-based approach can be used at USACE projects to maintain or enhance benefits provided to the nation.	SRP	Water Quality/Efficiency	***	Multi-year	***	$-$$															
Large-Scale Water Recycling Program⊕	U.S. Bureau of Reclamation	Section 40905 of the Bipartisan Infrastructure Law (BIL), P.L. 117-58 provides authority for Reclamation's Large-Scale Water Recycling Program. The program will provide $450 million over the next five years to projects in Reclamation states that have a total project cost greater than or equal to $500,000,000, at 25% Federal cost share, with no per-project maximum. Large-scale recycled water projects will play an important role in helping communities develop local, drought-resistant sources of water supply by turning currently unusable water sources into a new source of water supply that is less vulnerable to drought and climate change.	LSWRP⊕	Climate Resilence/Adaptation, Drought Resilience, Water Conservation, Water Quality/Efficiency	Local Government, State, Tribal Government	***	25 percent federal cost share.	$$$$	■	☒													■

Small Storage Program⊕	U.S. Bureau of Reclamation	The Bureau of Reclamation's Small Storage Program was authorized by sections 40901(1) and 40903 of the Bipartisan Infrastructure Law (BIL) to promote Federal assistance to enhance water storage opportunities for future generations in support of the Department of the Interior's priorities. In accordance with the BIL, as amended by P.L. 117-328, projects must have a water storage capacity of not less than 200 acre-feet and not more than 30,000 acre-feet. On April 6, 2023, the Bureau of Reclamation announced awards totaling $20 million for four small surface water and groundwater storage projects in California and Nevada. Reclamation anticipates releasing the next funding opportunity in late Summer or early Fall of 2023. Through this funding opportunity, Reclamation will continue to provide financial assistance for projects that, when implemented, will increase water supply reliability, improve operational flexibility, and enhance climate resiliency of water and related infrastructure throughout the 17 western states, Alaska, and Hawaii.	SSP⊕	Water Quality/Efficiency	Academic Institution, Local Government, Non-profit, State, Tribal Government	3 years	Up to 25 percent federal cost share.	$$$$							■	■	☒	■	☒
WaterSMART Grant - Aquatic Ecosystem Restoration Projects★⊕	U.S. Bureau of Reclamation	The Aquatic Ecosystem Restoration Projects (AERP) is a new, competitive grant program that will provide funding for the study, design, and construction of aquatic ecosystem restoration and protection projects in Reclamation states (the 17 states west of the Mississippi River). Projects that are collaboratively developed, have widespread regional benefits, and result in the improvement of the health of fisheries, wildlife, and aquatic habitat through restoration and improved fish passage will be prioritized.	WS-AERP★⊕	Collaborative★, Habitat/Ecosystem Restoration,	Local Government, Non-profit, State, Tribal Government	***	65 percent federal cost share.	$$$-$$$$				■	■	■	☒							
WaterSMART Grant - Applied Science Grants⊕	U.S. Bureau of Reclamation	Projects to develop hydrologic information and water management tools and to improve modeling and forecasting capabilities.	WS-AS⊕	Drought Resilience, Climate Resilience/Adaptation	Academic Institution, Non-profit, State, Tribal Government,	2 years	50 percent federal cost share.	$$		■	■	☒									
WaterSMART Grant - Cooperative Watershed Management Program★⊕	U.S. Bureau of Reclamation	The Cooperative Watershed Management Program provides funding to watershed groups to encourage diverse stakeholders to form local solutions to address their water management needs through two phases: 1) Watershed Group Development and Watershed Restoration Planning and 2) Implementation of Watershed Management Projects.	WS-CWM★⊕	Collaborative★, Drought Resilience, Flood/Storm Risk Reduction, Habitat/Ecosystem Restoration, Water Quality/Efficiency	Local Government, Non-Profit, State, Territory, Tribal Government	2 years	Varies	$$	☒											■	■
WaterSMART Grant - Drought Contingency Planning⊕	U.S. Bureau of Reclamation	Funding for development, or update, of comprehensive drought plans.	WS-DCP⊕	Drought Resilience	Local Government, Non-Profit, State, Tribal Government	***	Up to 50 percent federal cost share.	$$		■	■	☒									
WaterSMART Grant - Drought Emergency Response Actions	U.S. Bureau of Reclamation	Emergency response actions undertaken by Reclamation to minimize losses and damages resulting from drought.	WS-DERA	Drought Resilience, Disaster Recovery	State, Tribal Government	***	None required.	***	■	■	■	■	■	■	■	■	■	■	■	■
WaterSMART Grant - Drought Resiliency Projects⊕	U.S. Bureau of Reclamation	Funding for on-the-ground projects and modeling tools that will increase water reliability and improve water management.	WS-DRP⊕	Drought Resilience, Water Quality/Efficiency	Non-profit, State, Tribal Government,	2-3 years	Up to 50 percent federal cost share.	$$$-$$$$			■	■	■	☒							
WaterSMART Grant - Environmental Water Resources Projects⊕	U.S. Bureau of Reclamation	Environmental Water Resources Projects, including water conservation and efficiency projects that result in quantifiable and sustained water savings and benefit ecological values; water management or infrastructure improvements to mitigate drought-related impacts to ecological values; and watershed management or restoration projects benefitting ecological values that have a nexus to water resources or water resources management.	WS-EWRP⊕	Drought Resilience, Water Conservation, Water Quality/Efficiency, Habitat/Ecosystem Restoration	Local Government, Non-profit, State, Tribal Government	Up to 3 years	50-75 percent federal cost share.	$$$$	■	■	■	☒									
WaterSMART Grant - Small-Scale Water Efficiency Projects⊕	U.S. Bureau of Reclamation	Small water efficiency improvements that have been identified through previous planning efforts.	WS-SSWEP⊕	Drought Resilience, Water Quality/Efficiency	Non-profit, State, Tribal Government,	2+ years	Up to 50 percent federal cost share.	$$		■	■	☒									
WaterSMART Grant - Title XVI Authorized Projects⊕	U.S. Bureau of Reclamation	Funding for planning, design, and construction of specific congressionally authorized water recycling and reuse projects.	WS-Title XVI⊕	Drought Resilience, Water Conservation, Water Quality/Efficiency	***	***	Up to 25 percent federal cost share.	$$$-$$$$													
WaterSMART Grant - Water and Energy Efficiency⊕	U.S. Bureau of Reclamation	On-the-ground water management improvement projects, including projects that conserve water and address water supply reliability.	WS-WEE⊕	Drought Resilience, Water Conservation, Water Quality/Efficiency	Non-profit, State, Tribal Government	2-3 years	Up to 50 percent federal cost share.	$$$-$$$$				■	■	☒							
WaterSMART Grant - Title XVI WIIN Act Water Reclamation and Reuse Projects⊕	U.S. Bureau of Reclamation	Funding for planning, design, and construction of WIIN Act water recycling and reuse projects.	WS-WIIN⊕	Drought Resilience, Water Conservation, Water Quality/Efficiency	***	***	Up to 25 percent federal cost share.	$$$-$$$$													
WaterSMART Grant - Water Marketing Strategy Grants⊕	U.S. Bureau of Reclamation	Planning activities to develop water marketing strategies that establish or expand water markets or water marketing activities between willing participants.	WS-WMS⊕	Drought Resilience, Water Quality/Efficiency	Non-profit, State, Tribal Government,	2-3 years	Up to 50 percent federal cost share.	$$				■	■	☒							
Emergency Community Water Assistance Grants	U.S. Department of Agriculture	The USDA Emergency Community Water Assistance Grants program supports eligible communities prepare, or recover from, an emergency that threatens the availability of safe, reliable drinking water. Eligible applicants must show a decline in quantity or quality of water that occurred within two years of the date of the application or that a significant decline in quality or quantity of water is imminent.	ECWA	Disaster Recovery, Water Quality/Efficiency	Academic Insititution, Local Government, Non-profit, State, Tribal Government	***	None required.	$$-$$$	■	■	■	■	■	■	■	■	■	■	■	■
Healthy Soil Program Grant	U.S. Department of Agriculture	Grants to improve soil health are the centerpiece of NMDA's Healthy Soil Program. Every year, NMDA awards grants to implement on-the-ground projects that involve one or more of the five soil health principles, stated as follows in the legislative Act that created the program: keeping soil covered minimizing soil disturbance on cropland and minimizing external inputs maximizing biodiversity maintaining a living root integrating animals into land management, including grazing animals, birds, beneficial insects or keystone species, such as earthworms	HSPG	Soil Health	Business (for profit), Individual, Local Government, Non-profit, State, Tribal Government	Up to 10 months	***	$$				■	☒								

Water & Waste Disposal Predevelopment Planning Grants⊕	U.S. Department of Agriculture	The USDA Water & Wastewater Disposal Predevelopment Planning Grants program helps eligible low-income communities plan and develop applications for proposed USDA Rural Development water or waste disposal projects. The maximum grant amount is $30,000 or 75% of the predevelopment planning costs. Partnerships with other federal, state and local entities are encouraged, and grants are awarded only when the applicant cannot afford to borrow the needed funds.	WWDPP⊕	Water Quality/Efficiency	Local Government, State, Tribal Government	***	Up tpo 75 percent federal cost share.	$	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Office of Local Defense Community Cooperation Military Installation Resilience Program⊕	U.S. Department of Defense	***	OLDCC⊕	***	Local Government, State, Tribal Government	***	90 percent federal cost share.	***															
Readiness and Environmental Protection Integration Challenge⊕	U.S. Department of Defense	The Readiness and Environmental Protection Integration (REPI) Program allows military services and partners to develop off-base natural infrastructure solutions to protect critical infrastructure, military personnel, and testing or training operations from climate change impacts.	REPI⊕	Climate Resilience/Adaptation, Habitat/Ecosystem Restoration	Local Government, Non-profit, State, Tribal Government	Up to 3 years	50 percent federal cost share.	$$-$$$$			■	■	■	■	■	■	☒				
Community Development Block Grant Program	U.S. Department of Housing and Urban Development	The Community Development Block Grant Program (CDBG) provides grants on a formula basis to states, cities, and counties to develop improved urban communities by providing decent housing and a suitable living environment and by expanding economic opportunities for low- and moderate-income persons.	CDBG	Climate Resilience/Adaptation	Local Government, State	Annual	None required.	***	■	■	■	■	■	■	■	■	■	■	■	■	■
Community Development Block Grant – Disaster Recovery Program	U.S. Department of Housing and Urban Development	After the President declares a major disaster, Congress may appropriate funds to HUD when there are significant unmet needs for long-term recovery. Community Development Block Grant Disaster Recovery (CDBG-DR) assistance provides flexible grants to help cities, counties, and states recover, especially low-income areas.	CDBG-DR	Disaster Recovery	Business (for profit), Individual, Local Government, Non-profit, State	Annual	None required.	***	■	■	■	■	■	■	■	■	■	■	■	■	■
Community Development Block Grant – Mitigation Program	U.S. Department of Housing and Urban Development	The Community Development Block Grant – Mitigation Program (CDBG-MIT) funds eligible grantees impacted by recent disasters to carry out strategic and high-impact activities to mitigate future disaster risks and losses.	CDBG-MIT	Disaster Recovery	Local Government, State, Territory, Tribal Government	Annual	None required.	***	■	■	■	■	■	■	■	■	■	■	■	■	■
Clean Water Act Nonpoint Source Grant (Section 319(h) Grants)⊕	U.S. Environmental Protection Agency	The EPA's Section 319(h) Grant Program is a program intended to help control nonpoint source pollution, which is pollution from runoff after a rain or snowfall, like fertilizer, pet waste, or toxic chemicals. The EPA provides funding to state governments, who each run state-level competitive grant programs.	319⊕	Habitat/Ecosystem Restoration, Water Quality/Efficiency, Pollution Remediation	Academic Institution, Business (for profit), Individual, Local Government, Non-profit, State, Territory, Tribal Government	***	60 percent federal cost share.	***														
Five Star and Urban Waters Restoration Grant Program★⊕	U.S. Environmental Protection Agency	The Five Star and Urban Waters Restoration Program brings together students, conservation corps, other youth groups, citizen groups, corporations, landowners and government agencies to provide environmental education and training through projects that restore wetlands and streams. The program provides challenge grants, technical support and opportunities for information exchange to enable community-based restoration projects. Funding levels are modest, from $10,000 to $40,000, with $20,000 as the average amount awarded per project. However, when combined with the contributions of partners, projects that make a meaningful contribution to communities become possible. At the completion of Five Star projects, each partnership will have experience and a demonstrated record of accomplishment, and will be well-positioned to take on other projects. Aggregating over time and space, these grassroots efforts will make a significant contribution to our environmental landscape and to the understanding of the importance of healthy wetlands and streams in our communities.	5S★⊕	Collaborative★, Habitat/Ecosystem Restoration	Academic Institution, Local Government, Non-profit, State, Tribal Government	Up to 18 months	50 percent federal cost share.	$	☒											■
Brownfields Assessment Grants⊕	U.S. Environmental Protection Agency	The Brownfields Program is designed to empower states, tribes, communities, and other stakeholders to work together to prevent, assess, safely clean up, and sustainably reuse brownfield properties, like preserving them as greenspace. The Assessment Grants program is a competitive program that provides funding for a grant recipient to inventory, characterize, assess, conduct a range of planning activities, develop site-specific cleanup plans, and conduct community engagement related to brownfield sites.	BAG⊕	Habitat/Ecosystem Restoration, Pollution Remediation	State, Tribal Government	4-5 years	Varies	$$$-$$$$										■	■	☒	
Brownfields Cleanup Grants⊕	U.S. Environmental Protection Agency	The Brownfields Program is designed to empower states, tribes, communities, and other stakeholders to work together to prevent, assess, safely clean up, and sustainably reuse brownfield properties, like preserving them as greenspace. Brownfields Cleanup Grants provide funding for up to four years for cleanup activities at brownfield sites.	BCG⊕	Habitat/Ecosystem Restoration, Pollution Remediation	Local Government, Non-profit, State, Territory, Tribal Government	Up to 4 years	80 percent federal cost share	$$$-$$$$													
Brownfields Multipurpose Grants⊕	U.S. Environmental Protection Agency	The Brownfields Program is designed to empower states, tribes, communities, and other stakeholders to work together to prevent, assess, safely clean up, and sustainably reuse brownfield properties, like preserving them as greenspace. A Multipurpose Grant is for communities that have identified an area (like a neighborhood) with one or more brownfield sites.	BMG⊕	Habitat/Ecosystem Restoration, Pollution Remediation	Local Government, Non-profit, State, Territory, Tribal Government	Up to 5 years	$40,000 non-federal cost share waived for FY23	$$$											■	■	☒	

Brownfields Revolving Loan Fund Grants	U.S. Environmental Protection Agency	The Brownfields Program is designed to empower states, tribes, communities, and other stakeholders to work together to prevent, assess, safely clean up, and sustainably reuse brownfield properties, like preserving them as greenspace. Revolving Loan Fund Grants provide funding for a grant recipient to capitalize a revolving loan fund and to provide loans and subgrants to carry out cleanup activities at brownfield sites.	BRLF	Habitat/Ecosystem Restoration, Pollution Remediation	Local Government, Non-profit, State, Territory, Tribal Government	Up to 5 years	20 percent non-federal cost share waived for FY23	$$$										■	■	☒	
Clean Water State Revolving Fund⊕	U.S. Environmental Protection Agency	The Clean Water State Revolving Fund program is the largest source of federal funding for clean water infrastructure projects, including green infrastructure. This federal-state partnership provides grants to states and states use this funding to make low-interest loans to communities for wastewater and stormwater infrastructure projects.	CWSRF⊕	Habitat/Ecosystem Restoration, Innovation, Soil Health, Water Quality/Efficiency	Local Government, State, Tribal Government	***	20 percent state cost share match to federal.	***	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Drinking Water System Infrastructure Resiliency and Sustainability Grant⊕	U.S. Environmental Protection Agency	The Bipartisan Infrastructure Law established the Clean Water Infrastructure Resiliency and Sustainability Program to help increase the adaptability of drinking water and wastewater systems to changing conditions including drought, flooding, and sea level rise, as well as cybersecurity vulnerabilities. This program has been authorized but no funding has been appropriated yet.	DWSIRS⊕	Climate Resilience/Adaptation, Water Quality/Efficiency	Local Government, State, Tribal Government	***	75 percent federal cost share generally. 90 percent federal cost share for disadvantaged rural communities.	***	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Drinking Water State Revolving Fund⊕	U.S. Environmental Protection Agency	EPA's Drinking Water State Revolving Fund (DWSRF) program is a federal-state partnership that provides communities a permanent, independent source of low-cost financing for drinking water systems and state safe water programs. Green infrastructure projects that improve source water quality and/or quantity may be eligible for funding.	DWSRF⊕	Drought Resilience, Water Quality/Efficiency	Local Government, State, Tribal Government	***	80 percent federal cost share.	***	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Environmental Justice Collaborative Problem-Solving Cooperative Agreement Program★	U.S. Environmental Protection Agency	The Environmental Justice Collaborative Problem-Solving (EJCPS) Cooperative Agreement Program provides financial assistance to eligible organizations working to address local environmental or public health issues in their communities. The program assists recipients in building collaborative partnerships with other stakeholders (e.g., local businesses and industry, local government, medical service providers, academia, etc.) to develop solutions to environmental or public health issue(s) at the community level.	EJCPS★	Collaborative★, Climate Resilience/Adaptation, Disaster Recovery, Water Quality/Efficiency, Pollution Remediation	Non-profit	3 years	None required.	$-$$	■	■	■	☒												
Environmental Justice Government-to-Government Program★	U.S. Environmental Protection Agency	The Environmental Justice Government-to-Government (EJG2G) program provides funding at the state, local, territorial, and tribal level to support government activities that lead to measurable environmental or public health impacts in communities disproportionately burdened by environmental harms.	EJG2G★	Collaborative★, Climate Resilience/Adaptation, Disaster Recovery, Flood/Storm Risk Reduction, Water Quality/Efficiency, Wildfire Risk Reduction, Pollution Remediation	Local government, Non-profit, State Territory, Tribal Government	3 years	None required.	$$$	■	■	■	☒												
Environmental Justice Small Grants Program★	U.S. Environmental Protection Agency	The EPA's Environmental Justice Small Grants Program supports communities working on solutions to local environmental and public health issues, including through funding green infrastructure projects and projects that address local water pollution. Since its inception in 1994, this program has awarded over $37 million in funding to community-based organizations, Tribal governments, and communities facing environmental justice issues.	EJSG★	Collaborative★, Climate Resilience/Adaptation, Habitat/Ecosystem Restoration, Water Quality/Efficiency, Pollution Remediation	Academic Institution, Non-profit, Tribal Government	1 year	None required.	$$			■	■	☒											
Environmental Justice Thriving Communities Grantmaking Program	U.S. Environmental Protection Agency	EPA announced the availability of $550 million from the Inflation Reduction Act to expedite investments through EPA's new Environmental Justice Thriving Communities Grantmaking (EJ TCGM) program. This new, innovative program will fund up to 11 entities to serve as grantmakers to community-based projects that reduce pollution. Selected grantmakers will develop an efficient, simplified process so that organizations that historically have faced barriers to receiving funding can more seamlessly apply for grants that address environmental harms and risks.	EJTCGM	Pollution Remediation	Academic Institution, Non-profit, Tribal Government	***	***	$$$$		■	■	■	☒										
Pollution Prevention Grant: Environmental Justice in Communities	U.S. Environmental Protection Agency	The purpose of the Pollution Prevention Grant: Environmental Justice in Communities is to provide technical assistance to businesses (e.g., information, training, expert advice) on source reduction, also known as pollution prevention (P2). Grantees must demonstrate that the project will improve human health and the environment in disadvantaged communities by implementing P2 approaches.	P2-EJC	Pollution Remediation	Academic Institutions, State, Territory, Tribal Government	2 years	None required.	$$-$$$				■	■	☒									
Pollution Prevention Grant: Environmental Justice Through Safer and More Sustainable Products	U.S. Environmental Protection Agency	The purpose of the Pollution Prevention Grant: Environmental Justice Through Safer/Sustainable Products is to provide P2 technical assistance to businesses (e.g., information, training, expert advice) in order to improve human health and the environment in disadvantaged communities by increasing the supply, demand and use of safer and more sustainable products, such as those that are certified by EPA's Safer Choice program, or those that conform to EPA's Recommendations for Specifications, Standards and Ecolabels for Federal Purchasing.	P2-EJSSP	Pollution Remediation	Academic Institutions, State, Territory, Tribal Government	2 years	None required.	$$-$$$				■	■	☒									
Superfund Redevelopment Program	U.S. Environmental Protection Agency	The Superfund Redevelopment Program is designed to provide technical assistance to communities interested in restoring and reusing formerly contaminated land.	SURP	Habitat/Ecosystem Restoration, Innovation	Academic Institution, Business (for profit), Individual, Local Government, Non-profit, State, Territory, Tribal Government	***	None required.	***	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Training and Technical Assistance for Rural, Small, and Tribal Wastewater Systems	U.S. Environmental Protection Agency	The Training and Technical Assistance program aims to provide training and tools to improve small wastewater system operations and management practices.	TTA	Water Quality/Efficiency	Academic Institution, Local Government, Non-profit	Up to 3 years	None required.	$$$$						■	■	☒						

Water Infrastructure Finance and Innovation Act	U.S. Environmental Protection Agency	The Water Infrastructure Finance and Innovation Act (WIFIA) is designed to fast-track water, wastewater, and stormwater infrastructure funding by providing long-term, low-cost, supplemental credit assistance in the form of direct loans or loan guarantees.	WIFIA	Water Quality/Efficiency	Business (for profit), Local Government, State, Tribal Government	***	None required.	$$$$	■	■	■	■	■	■	■	■	■	■	■	■	■	■
Wetland Program Development Grants⊕	U.S. Environmental Protection Agency	The Wetland Program Development Grants program assists state, tribal, and local governments and interstate/intertribal entities in developing or updating state/territory/tribal/local wetland programs. The primary focus of these grants is to develop or update state, territorial, and tribal wetland programs. A secondary focus is to develop or update local (e.g. county or municipal) programs.	WPD⊕	Flood/Storm Risk Reduction, Habitat/Ecosystem Restoration, Water Quality/Efficiency	Academic Institution, Local Government, Non-profit, State, Tribal Government	1-4 years	75 federal cost share.	$-$$		■	☒											
North American Wetlands Conservation Act Small Grants Program⊕	U.S. Fish and Wildlife Service	The United States Fish and Wildlife Service's North American Wetlands Conservation Act Small Grants Program is a competitive grant program that supports public-private partnerships to advance projects that further the goals of NAWCA. Projects must advance long-term protection, restoration, and/or enhancement of wetlands and associated uplands habitat for the benefit of all wetland-associated migratory birds. Grant requests may not exceed $100,000.	NAWCA⊕	Habitat/Ecosystem Restoration	Business (for profit), Individual, Non-profit	2 years	50 percent federal cost share.	$$										☒		
State Wildlife Grants⊕	U.S. Fish and Wildlife Service	The US Fish and Wildlife Service's State Wildlife Grant Program funds states and territories to help develop and implement programs that benefit wildlife and wildlife habitat through two programs: 1) a competitive national grants program and 2) a formula, or mandatory, grant program.	SWG⊕	Habitat/Ecosystem Restoration, Innovation	State, Territory	***	75 percent federal cost share.	$-$$$	■	☒								■	■	■
Wallace Genetic Foundation	Wallace Genetic Foundation	The Wallace Genetic Foundation focuses its grantmaking on the long-term conservation of the soil and of the environment. Topics of interest include sustainable agriculture, protection of farmland near cities, plant genetic research, biodiversity protection, and environmental education and media. The Foundation is particularly interested in far-sighted groups and individuals with innovative ideas, and seeks to fund organizations whose work promises to provide long-term national or global benefit.	WGF	Climate Resilience/Adaptation, Drought Resilience, Innovation, Soil Health, Water Conservation, Water Quality/Efficiency	Non-profit	***	***	***													

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

Funding Opportunities Graphic [read-ahead]

FUNDING OPPORTUNITIES GRAPHIC

KEY	Funding Emphasis	Eligible Recipients	★	Highly collaborative	⊕	Cost Share

	Academic Institution	Business (for profit)	Individual	Local Government	Non-profit	State	Territory	Tribal Government
Climate Resilience /Adaptation	EJSG★, GTA, NFWF★⊕, WS-AS⊕	EQIP	EQIP, GTA	BRIC⊕, BRIC-DTA, CDBG, CFG⊕, DWSIRS⊕, EJG2G★, GTA, NFWF★⊕, REPI⊕, UCFP⊕, LSWRP⊕	CFG⊕, EJCPS★, EJG2G★, EJSG★, EQIP, GTA, NFWF★⊕, REPI⊕, UCFP⊕, WS-AS⊕, WGF	BRIC⊕, CDBG, DWSIRS⊕, GTA, NFWF★⊕, PAS⊕, REPI⊕, WS-AS⊕, LSWRP⊕	BRIC⊕, CFG⊕, EJG2G★, GTA, NFWF★⊕, PAS⊕, UCFP⊕	BRIC⊕, BRIC-DTA, CFG⊕, DWSIRS⊕, EJG2G★, EJSG★, EQIP, GTA, NFWF★⊕, PAS⊕, REPI⊕, TCRG, UCFP⊕, WS-AS⊕, LSWRP⊕
Disaster Recovery	ECWA	CDBG-DR, HMGP⊕	CDBG-DR, ECP⊕, EFRP⊕, HMGP⊕	BRIC-DTA, CDBG-DR, CDBG-MIT, EJG2G★, EWP⊕, HMGP⊕, STRLF⊕, ECWA	CDBG-DR, EJCPS★, EJG2G★, HMGP⊕, ECWA	CDBG-DR, CDBG-MIT, EJG2G★, EWP⊕, HMGP⊕, PAS⊕, STRLF⊕, WS-DERA, ECWA	CDBG-MIT, EJG2G★, HMGP⊕, PAS⊕, STRLF⊕	BRIC-DTA, CDBG-MIT, EJG2G★, EWP⊕, HMGP⊕, PAS⊕, STRLF⊕, WS-DERA, ECWA
Drought Resilience	WS-AS⊕	HMGP⊕	HMGP⊕	CFG⊕, DWSRF⊕, HMGP⊕, UCFP⊕, WS-CWM★⊕, WS-DCP⊕, WS-EWRP⊕, LSWRP⊕	CFG⊕, HMGP⊕, UCFP⊕, WS-AS⊕, WS-CWM★⊕, WS-DCP⊕, WS-DRP⊕, WS-EWRP⊕, WS-SSWEP⊕, WS-WEE⊕, WS-WMS⊕, WGF	DWSRF⊕, HMGP⊕, WS-AS⊕, WS-CWM★⊕, WS-DCP⊕, WS-DERA, WS-DRP⊕, WS-EWRP⊕, WS-SSWEP⊕, WS-WEE⊕, WS-WMS⊕, LSWRP⊕	CFG⊕, HMGP⊕, UCFP⊕, WS-CWM★⊕	CFG⊕, DWSRF⊕, HMGP⊕, UCFP⊕, WS-AS⊕, WS-CWM★⊕, WS-DCP⊕, WS-DERA, WS-DRP⊕, WS-EWRP⊕, WS-SSWEP⊕, WS-WEE⊕, WS-WMS⊕, LSWRP⊕
Flood/Storm Risk Reduction	WPD⊕	FMA⊕, HMGP⊕, RSP★	FMA⊕, HMGP⊕	EJG2G★, EWP⊕, FMA⊕, FPMS⊕, HMGP⊕, SFRM⊕, WFPO⊕, WPD⊕, WS-CWM★⊕, REDC, PMREF⊕, WTB⊕, RSP★	EJG2G★, FMA⊕, HMGP⊕, SFRM⊕, WPD⊕, WS-CWM★⊕, REDC, PMREF⊕, RSP★	EJG2G★, EWP⊕, FMA⊕, FPMS⊕, HMGP⊕, PAS⊕, SFRM⊕, WPD⊕, WS-CWM★⊕, REDC, PMREF⊕, WTB⊕, RSP★	EJG2G★, FMA⊕, FPMS⊕, HMGP⊕, PAS⊕, SFRM⊕, WS-CWM★⊕, REDC, PMREF⊕	EJG2G★, EWP⊕, FMA⊕, FPMS⊕, HMGP⊕, PAS⊕, SFRM⊕, WFPO⊕, WPD⊕, WS-CWM★⊕, REDC, PMREF⊕, WTB⊕, RSP★
Pollution Remediation	319⊕, EJSG★, EJTCGM, P2-EJC, P2-EJSSP	319⊕	319⊕	319⊕, EJG2G★, BCG⊕, BMG⊕, BRLF, RIDF, SWFGF	319⊕, EJSG★, EJTCGM, EJCPS★, EJG2G★, BCG⊕, BMG⊕, BRLF	319⊕, P2-EJC, P2-EJSSP, EJG2G★, BAG⊕, BCG⊕, BMG⊕, BRLF	319⊕, EJG2G★, BCG⊕, BMG⊕, BRLF, P2-EJC, P2-EJSSP	319⊕, EJSG★, EJTCGM, P2-EJC, P2-EJSSP, EJG2G★, BAG⊕, BCG⊕, BMG⊕, BRLF, RIDF
Habitat/Ecosystem Restoration	319⊕, 5S★⊕, EJSG★, GTA, NFWF★⊕, RCPP⊕, SURP, WPD⊕	319⊕, EQIP, NAWCA⊕, RCPP⊕, SURP, RSP★	319⊕, EFRP⊕, EQIP, GTA, NAWCA⊕, SURP, WRE⊕	319⊕, 5S★⊕, AER⊕, BCG⊕, BMG⊕, BRIC⊕, BRLF, CFG⊕, CWSRF⊕, EI⊕, GTA, IPPG⊕, LWCF⊕, NCRRR⊕, NFWF★⊕, PMIE⊕, RCPP⊕, REPI⊕, SURP, UCFP⊕, WCPP⊕, WPD⊕, WRE⊕, WS-AERP★⊕, WS-CWM★⊕, WS-EWRP⊕, WTB⊕, RSP★	319⊕, 5S★⊕, AER⊕, BCG⊕, BMG⊕, BRLF, CFG⊕, EI⊕, EJSG★, EQIP, GTA, NAWCA⊕, NFWF★⊕, PMIE⊕, RCPP⊕, REPI⊕, SURP, UCFP⊕, WPD⊕, WRE⊕, WS-AERP★⊕, WS-CWM★⊕, WS-EWRP⊕, RSP★	319⊕, 5S★⊕, AER⊕, BAG⊕, BCG⊕, BMG⊕, BRIC⊕, BRLF, CWSRF⊕, EI⊕, GTA, IPPG⊕, LWCF⊕, NCRRR⊕, NFWF★⊕, PAS⊕, PMIE⊕, RCPP⊕, REPI⊕, SURP, SWG⊕, WCPP⊕, WPD⊕, WRE⊕, WS-AERP★⊕, WS-CWM★⊕, WS-EWRP⊕, WTB⊕, RSP★	319⊕, AER⊕, BCG⊕, BMG⊕, BRIC⊕, BRLF, CFG⊕, EI⊕, GTA, LWCF⊕, NFWF★⊕; PAS⊕, PMIE⊕, RCPP⊕, SURP, SWG⊕, UCFP⊕, WRE⊕, WS-CWM★⊕	319⊕, 5S★⊕, AER⊕, BAG⊕, BCG⊕, BMG⊕, BRIC⊕, BRLF, CFG⊕, CWSRF⊕, EI⊕, EJSG★, EQIP, GTA, IPPG⊕, NCRRR⊕, NFWF★⊕, PAS⊕, PMIE⊕, RCPP⊕, REPI⊕, SURP; UCFP⊕, WPD⊕, WRE⊕, WS-AERP★⊕, WS-CWM★⊕, WS-EWRP⊕, WTB⊕, RSP★
Innovation	CIG⊕, RCPP⊕, SURP	CIG⊕, RCPP⊕, SURP	CIG⊕, SURP	BRIC⊕, CIG⊕, CWSRF⊕, RCPP⊕, SURP	CIG⊕, RCPP⊕, SURP, WGF	BRIC⊕, CIG⊕, CWSRF⊕, RCPP⊕, SURP, SWG⊕	BRIC⊕, CIG⊕, RCPP⊕, SURP, SWG⊕	BRIC⊕, CIG⊕, CWSRF⊕, RCPP⊕, SURP
Soil Health		EQIP, HSPG	EQIP, HSPG	CWSRF⊕, HSPG	EQIP, WGF, HSPG	CWSRF⊕, HSPG		CWSRF⊕, EQIP, HSPG
Water Conservation	RCPP⊕	RCPP⊕		RCPP⊕, WS-EWRP⊕, WTB⊕, LSWRP⊕	RCPP⊕, WS-EWRP⊕, WS-WEE⊕, WGF	RCPP⊕, WS-EWRP⊕, WS-WEE⊕, WTB⊕, LSWRP⊕	RCPP⊕	RCPP⊕, WS-EWRP⊕, WS-WEE⊕, WTB⊕, LSWRP⊕
Water Quality/Efficiency	319⊕, EJSG★, GTA, TTA, WPD⊕, PPRF, SSP⊕, ECWA	319⊕, EQIP, FMA⊕, WIFIA, RSP★	319⊕, ECP⊕, EQIP, FMA⊕, GTA	319⊕, CWSRF⊕, DWSIRS⊕, DWSRF⊕, EI⊕, EJG2G★, FMA⊕, GTA, STRLF⊕, TTA, WFPO⊕, WIFIA, WPD⊕, WS-CWM★⊕, WS-EWRP⊕, WTB⊕, PPRF, RSP★, LSWRP⊕, SSP⊕, ECWA, WWDPP⊕	319⊕, EI⊕, EJCPS★, EJG2G★, EJSG★, EQIP, FMA⊕, GTA, TTA, WPD⊕, WS-CWM★⊕, WS-DRP⊕, WS-EWRP⊕, WS-SSWEP⊕, WS-WEE⊕, WS-WMS⊕, WGF, RSP★, SSP⊕, ECWA	319⊕, CWSRF⊕, DWSIRS⊕, DWSRF⊕, EI⊕, EJG2G★, FMA⊕, GTA, PAS⊕, STRLF⊕, WIFIA, WPD⊕, WS-CWM★⊕, WS-DRP⊕, WS-EWRP⊕, WS-SSWEP⊕, WS-WEE⊕, WS-WMS⊕, WTB⊕, RSP★, LSWRP⊕, SSP⊕, ECWA, WWDPP⊕	319⊕, EI⊕, EJG2G★, FMA⊕, GTA, PAS⊕, STRLF⊕, WS-CWM★⊕	319⊕, CWSRF⊕, DWSIRS⊕, DWSRF⊕, EI⊕, EJG2G★, EJSG★, EQIP, FMA⊕, GTA, PAS⊕, STRLF⊕, WFPO⊕, WIFIA, WPD⊕, WS-CWM★⊕, WS-DRP⊕, WS-EWRP⊕, WS-SSWEP⊕, WS-WEE⊕, WS-WMS⊕, WTB⊕, PPRF, RSP★, LSWRP⊕, SSP⊕, ECWA, WWDPP⊕
Wildfire Risk Reduction		HMGP⊕, RSP★	HMGP⊕	CWDG⊕, EJG2G★, HMGP⊕, SFA⊕, RSP★	CWDG⊕, EJG2G★, HMGP⊕, RSP★	CWDG⊕, EJG2G★, HMGP⊕, RSP★	EJG2G★, HMGP⊕	CWDG⊕, EJG2G★, HMGP⊕, SFA⊕, RSP★

ACRONYM LIST

319⊕ = Clean Water Act Nonpoint Source Grant (Section 319(h) Grants)
5S★⊕ = Five Star and Urban Waters Restoration Grant Program
AER⊕ = Aquatic Ecosystem Restoration (Section 206)
BAG⊕ = Brownfields Assessment Grants
BCG⊕ = Brownfields Cleanup Grants
BMG⊕ = Brownfields Multipurpose Grants
BRIC⊕ = Building Resilient Infrastructure and Communities Program
BRIC-DTA = BRIC Sub-Program: Direct Technical Assistance
BRLF = Brownfields Revolving Loan Fund Grants
CDBG = Community Development Block Grant Program
CDBG-DR = Community Development Block Grant – Disaster Recovery Program
CDBG-MIT = Community Development Block Grant – Mitigation Program
CFG⊕ = Community Forestry Program
CIG⊕ = Conservation Innovation Grants
CWDG⊕ = Community Wildfire Defense Grant Program for At-Risk Communities
CWSRF⊕ = Clean Water State Revolving Fund
DWSIRS⊕ = Drinking Water System Infrastructure Resiliency and Sustainability Grant
DWSRF⊕ = Drinking Water State Revolving Fund
ECP⊕ = Emergency Conservation Program
ECWA = Emergency Community Water Assistance Grants
EFRP⊕ = Emergency Forest Restoration Program
EI⊕ = Environmental Infrastructure Program
EJCPS★ = Environmental Justice Collaborative Problem-Solving Cooperative Agreement Program
EJG2G★ = Environmental Justice Government-to-Government Program
EJSG★ = Environmental Justice Small Grants Program
EJTCGM = Environmental Justice Thriving Communities Grantmaking Program
EQIP = Environmental Quality Incentives Program
EWP⊕ = Emergency Watershed Protection Program
FMA⊕ = Flood Mitigation Assistance Grant
FPMS⊕ = Flood Plain Management Services Program
GTA = Groundwork USA Technical Assistance
HMGP⊕ = Hazard Mitigation Grant Program
HSPG = Healthy Soil Program Grant
IPPG⊕ = Invasive Plant Program Grant
LSWRP⊕ = Large-Scale Water Recycling Program
LWCF⊕ = Land and Water Conservation Fund – State and Local Assistance Program
NAWCA⊕ = North American Wetlands Conservation Act Small Grants Program
NCRRR⊕ = National Culvert Removal, Replacement & Restoration Grants
NFWF★⊕ = NFWF America the Beautiful Challenge
OLDCC⊕ = Office of Local Defense Community Cooperation Military Installation Resilience Program
P2-EJC = Pollution Prevention Grant: Environmental Justice in Communities
P2-EJSSP = Pollution Prevention Grant: Environmental Justice Through Safer and More Sustainable Products
PAS⊕ = Planning Assistance to States and Tribes Program
PMIE⊕ = Project Modifications for Improvement of the Environment (Section 1135)
PMREF⊕ = Permanent Measures to Reduce Emergency Flood Fighting Needs for Communities Subject to Repetitive Flooding (Section 119)
PPRF = Public Project Revolving Fund
RCPP⊕ = Regional Conservation Partnership Program
REDC = Pilot Programs for Rural and Economically Disadvantaged Communities (Sections 118(b) and 118(c))
REPI⊕ = Readiness and Environmental Protection Integration Challenge
RIDF = Recycling and Illegal Dumping Fund
RSP★ = River Stewardship Program
SFA⊕ = State Fire Assistance Program
SFRM⊕ = Small Flood Risk Management Projects (Section 205)
SRP = Sustainable Rivers Program
SSP⊕ = Small Storage Program
SURP = Superfund Redevelopment Program
STRLF⊕ = Safeguarding Tomorrow Revolving Loan Fund Program
SWFGF = Solid Waste Facility Grant Fund
SWG⊕ = State Wildlife Grants
TCRG = Tribal Climate Resilience Grants – Annual Awards Program
TTA = Training and Technical Assistance for Rural, Small, and Tribal Wastewater Systems
UCFP⊕ = Urban and Community Forestry Program
WCPP⊕ = Wildlife Crossings Pilot Program
WFPO⊕ = Watershed and Flood Prevention Operations Program
WGF = Wallace Genetic Foundation
WIFIA = Water Infrastructure Finance and Innovation Act
WPD⊕ = Wetland Program Development Grants
WRE⊕ = Wetland Reserve Easements
WS-AERP★⊕ = WaterSMART Grant - Aquatic Ecosystem Restoration Projects
WS-AS⊕ = WaterSMART Grant - Applied Science Grants
WS-CWM★⊕ = WaterSMART Grant - Cooperative Watershed Management Program
WS-DCP⊕ = WaterSMART Grant - Drought Contingency Planning
WS-DERA = WaterSMART Grant - Drought Emergency Response Actions
WS-DRP⊕ = WaterSMART Grant - Drought Resiliency Projects
WS-EWRP⊕ = WaterSMART Grant - Environmental Water Resources Projects
WS-SSWEP⊕ = WaterSMART Grant - Small-Scale Water Efficiency Projects
WS-Title XVI⊕ = WaterSMART Grant - Title XVI Authorized Projects
WS-WEE⊕ = WaterSMART Grant - Water and Energy Efficiency
WS-WIIN⊕ = WaterSMART Grant - Title XVI WIIN Act Water Reclamation and Reuse Projects
WS-WMS⊕ = WaterSMART Grant - Water Marketing Strategy Grants
WTB⊕ = Water Trust Board Water Project Fund
WWDPP⊕ = Water & Waste Disposal Predevelopment Planning Grants

APPLICATION DUE DATES

First Quarter (Jan-Mar)	Second Quarter (Apr-Jun)	Third Quarter (Jul-Sep)	Fourth Quarter (Oct-Dec)	All Year	Unknown
5S★⊕	CIG⊕	REPI⊕	BAG⊕	CDBG	EQIP
BRIC⊕	EJCPS★	RSP★	BMG⊕	CDBG-DR	OLDCC⊕
BRIC-DTA	EJG2G★	TCRG	BRLF	CDBG-MIT	WS-Title XVI⊕
CFG⊕	EJSG★	TTA	CWDG⊕	CWSRF⊕	WS-WIIN⊕
EWP⊕	EJTCGM	WCPP⊕	LWCF⊕	DWSIRS⊕	BCG⊕
FMA⊕	HSPG	WS-WEE⊕	NAWCA⊕	DWSRF⊕	AER⊕
LSWRP⊕	NFWF★⊕	WS-WMS⊕	RCPP⊕	ECP⊕	319⊕
NCRRR⊕	P2-EJC	WTB⊕	SSP⊕	ECWA	REDC
RIDF	P2-EJSSP			EFRP⊕	PMIE⊕
SWG⊕	STRLF⊕			EI⊕	SFRM⊕
UCFP⊕	SWFGF			FPMS⊕	SRP
WPD⊕	WS-AERP★⊕			GTA	WGF
WS-CWM★⊕	WS-AS⊕			HMGP⊕	
	WS-DCP⊕			IPPG⊕	
	WS-DRP⊕			PAS⊕	
	WS-EWRP⊕			PMREF⊕	
	WS-SSWEP⊕			PPRF	
				SFA⊕	
				SURP	
				WFPO⊕	
				WIFIA	
				WRE⊕	
				WS-DERA	
				WWDPP⊕	

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

SAMC Memo to EC – Recs for Mgmt of Vegetated Islands Bars [read-ahead]

Middle Rio Grande Endangered Species Collaborative Program

Est. 2000

DATE: March 30, 2023

TO: The Middle Rio Grande Endangered Species Collaborative Program (MRGESCP) Executive Committee (EC)

FROM: The MRGESCP Science and Adaptive Management Committee (SAMC)

RE: Recommendations from October 2022 MRGESCP Workshop on Management of Vegetated Islands and Bank-attached Bars

Following the October 2022 Workshop on Management of Vegetated Islands and Bank-attached Bars, the SAMC reviewed problem statements, objectives and strategies developed during the breakout sessions, and identified key findings from the workshop. This memo summarizes those findings and recommends to the EC next steps for the MRGESCP regarding this important topic.

First, although the focus of the breakout sessions was management of vegetated islands and bars, participants quickly realized that this management has many implications and requires the balancing of three primary management priorities within the MRG: water delivery, flood control, and ecosystem management. The critical question became: *How do we balance these priorities through collaboration and partnerships in the face of a dynamic river system?*

Importantly, bars and islands are not replacements for the floodplain. Although bars and islands might create habitat for certain species under certain conditions and generate ecosystem services, they also affect important water conveyance and sediment transport processes in the channel. Formulation of a conceptual model is suggested for the vegetated island/bar phenomenon in the Middle Rio Grande. This model should account for spatial and temporal successional changes on islands and bars, as well as potential trade-offs regarding habitat formation/loss for different species. The model will help to characterize trends and conditions, which in turn help to identify management alternatives (e.g., maintaining a mosaic of different habitats within a reach) and potential impacts associated with each.

Finally, a more comprehensive and common understanding of the workshop topic is needed. To address this need, workshop breakout groups proposed strategies for tool development (i.e., maps and models), defining technical terms and relationships relating to this topic, and a summary report to develop consensus among stakeholders. Groups also identified research, planning and management needs, particularly all relevant data sets that are currently available, as well as data gaps. A designated team (or additional workshop) was suggested to carry these efforts forward.

The SAMC, therefore, recommends the following next steps in support of collaborative planning and management of vegetated islands and bars in the Middle Rio Grande:

- Develop common definitions for relevant technical terms relating to vegetated islands and bars
- Identify currently available, relevant data sets and data gaps
- Summarize in a report the research, planning and management efforts and needs regarding management of vegetated islands and bank-attached bars.
- Develop a conceptual model representing the ecosystem functions and physical river conditions of interest and develop management goals around these (e.g., ideal conceptual river cross sections and profiles, functional wetlands).

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

List of Program Portal Data Sets 2023 [read-ahead]

Name	Update Frequency	Layer on Interactive Map?	Source	Notes
RGSM Population Monitoring	Annual	Yes	ASIR	
RGSM Rescue	Annual	Currently: No, future?	USFWS	
RiverEyes	Annual	Yes (two layers)	USBR	Data also available at: https://reyes.gsanalysis.com/
Habitat Restoration Map (RioRestore)	Annual?	Yes	NMISC	
Hink and Ohmart Vegetation Map	N/A	Yes	USBR	
River Miles	Every 10 years	Yes	USBR	
Augmentation	N/A	Currently: No, future?	USBR	
BioPark Egg Collection	N/A	N/A	BioParks	
ABCWUA Egg Collection	N/A	N/A	ABCWUA	
Fish Use/Floodplain habitat	N/A	N/A	NMISC	
FLO geo	N/A	N/A	USBR	
LiDAR imagery	N/A	N/A	USBR	
Bird Data/Avian Community Monitoring (SWFL/YBCU surveys and monitoring)	N/A	N/A	USACE	
Groundwater Monitoring	N/A	N/A	USACE	
Climate Change Data	N/A	N/A	USACE	

Link to full Meeting Materials List

Science and Adaptive Management Committee Meeting
August 21, 2023

See the following meeting material on the page below:

Information & Data Quality Ad Hoc Group Charge [read-ahead]

Middle Rio Grande Endangered Species Collaborative Program (MRGESCP)
Information and Data Quality Standards Hybrid Ad Hoc Group
DRAFT Charge

Note: Due to this charge's relationship to both MRGESCP administrative and science practices, this group will be a hybrid Administrative/Science and Technical Ad Hoc Group. Therefore, the charge and final deliverables must be approved by both the Executive Committee (EC) and the Science and Adaptive Management Committee (SAMC).

Approved by the SAMC on *August 26, 2022.*
Approved by the EC on *September 8, 2022*.
Approved by the Information and Data Quality Standards Hybrid Ad Hoc Group on *February 9, 2023.*
Revised for the SAMC on *June 8, 2023.*

Revised Ad Hoc Group Charge
The Information and Data Quality Standards Hybrid Ad Hoc Group will develop a form template that summarizes data QA/QC and management practices for each signatory project entered into the SAMIS, and will develop language for a data disclaimer for the Program Portal.

Membership

A. Criteria for membership

- An understanding of the Information Quality Act (IQA) and other federal and state regulations/policies regarding data management and information quality assurance/quality control (QA/QC).
- An understanding of good data management practices.
- Experience with, or future interest in, providing scientific information to the MRGESCP in order to inform recommendations to natural resource management agencies.
- Experience with, or future interest in, posting scientific data and reports onto the Program Portal.

B. Member List

- *Matt Wunder, Co-Lead*
- *Ara Winter, Co-Lead*
- Mick Porter, U.S. Army Corps of Engineers
- Kenneth Richard, U.S. Bureau of Reclamation
- Shannon Weld, N.M. Interstate Stream Commission
- Ara Winter, Bosque Ecosystem Monitoring Program
- Matt Wunder, N.M. Department of Game and Fish

Background
The initial charge of the Information and Data Quality Standards Hybrid Ad Hoc Group was to investigate the feasibility, utility, and necessity of applying Information Quality Act (IQA) [1] standards to the MRGESCP. On March 27, 2023, the Ad Hoc Group determined that developing IQA-

[1] The Information Quality Act (IQA) or Data Quality Act (DQA) (Section 515 of Public Law 106-554) directs the Office of Management and Budget (OMB) to issue government-wide guidelines that "provide policy and procedural guidance to federal agencies for ensuring and maximizing the quality, objectivity, utility, and integrity of information (including statistical information) disseminated by Federal agencies."

compliant standards to the MRGESCP was not a feasible task since IQA standards vary by organization and signatories must comply with their own agency standards, or the standards of relevant funding agencies.

However, the Ad Hoc Group saw value in documenting data management practices for each project uploaded to the SAMIS. This documentation would give SAMIS users additional information about how data are collected, stored, and managed for individual projects, and could provide a snapshot of IQA standards that are being met by a project.

Tasks and Deliverables

Task One Description

Create a form template for information on data management for projects uploaded into the SAMIS.

Objective of Task One

To document data management practices for individual projects within the SAMIS to support external data use.

Deliverable(s):

1. Form template compatible with the SAMIS for users to fill out when uploading data.
2. Document with definitions and justifications for each field included in the template.

Task Two Description

Develop a data disclaimer for the Program Portal.

Objective of Task Two

To develop a data disclaimer to protect the MRGESCP, signatories, agencies that fund project contracts, and project contractors, from liability relating to decisions supported by data and other information served on the Program Portal.

Deliverable(s):

Draft disclaimer language for SAMC and EC review to put on the Program Portal.

Timeline and Reporting Scheduling

Task	Subtask	Deliverable	To Be Completed By
Create a form template for information on data management for projects uploaded into the SAMIS.	Identify appropriate fields to include in the template in order to provide a snapshot of data management practices for a project.	Template with fields and associated document with definitions and justifications for each field.	July 2023
	Revise the template to ensure usability within the SAMIS	Revised template	July 2023
Draft a data disclaimer for the Program Portal.		Draft disclaimer language for SAMC and EC review to put on the Program Portal.	August 2023 SAMC