

Fish and Wildlife Work Group Meeting Notes

Chair: Kevin Stauffer

August 27, 2019; 9:30 a.m. at La Crosse District Visitor Center, Onalaska, WI.

These meeting notes are intended to document notable discussions, decisions and tasks of the FWWG. Organization of notes generally corresponds to the meeting agenda.

Attachment List:

1. Agenda
2. [Main meeting PowerPoint presentation](#)
3. [Summary of Ranking/Screening exercise](#)
4. [Complete list of project ideas submitted by FWWG agencies](#)
5. [List of top 15 project ideas after initial ranking using HNA-II indicators.](#)

Attendance:

MNDNR – Kevin Stauffer, Dan Dieterman, Nick Schlessler, Neil Rude

WI DNR – Jordan Weeks

IADNR – Kirk Hansen, Karen Osterkamp

USACE – Angela Deen, Megan McGuire, Steve Clark, Randy Urich, Andy Meyer, Dan Reburn,
Elliot Stefanik

USFWS – Stephen Winter, Mary Stefanski, Sharonne Baylor, Rebecca Neeley, Wendy Woyczik, Tim Miller

UMRBA – Andrew Stephenson

UMESC – Jeff Houser, Nate De Jager, Jason Rohweder

Introduction (Stauffer) – [see slides 2-7](#) of Attachment 2.

Meeting Purpose and Goals

- Ultimately, the goal of this meeting was to reach agreement on 3 to 5 HREP ideas and assign collaborative teams to develop Fact Sheets.
- Develop screening/ranking criteria that utilizes HNA-II indicators and information, incorporates agency priorities, and can be used (or built upon) for future selection processes.
- Discuss agency priorities for restoration and seek consensus on projects for FY 21-25
- Above should be done following guidance from UMRR-CC and the PPT to work collaboratively, use a “structure decision making” process, and record discussions and decisions.

Timeline for FWWG HREP selection process.

- This meeting – Select projects for Fact Sheet development and assign teams
- September to December 2019 – Teams develop draft Fact Sheets
- December 3-4 – Team leads (or FWWG chair), present project overviews to RRF for endorsement of the selection process (note – this would begin the 30 day review/notice for RRF)
- January 2020 – hold a FWWG meeting to present, discuss, and finalize Fact Sheets
- February 2020 – submit Fact Sheets at the UMRR-CC quarterly meeting.

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Review of Fact Sheet Directions and HNA-II considerations

- Stauffer gave a quick review of the new Fact Sheet template and the requirement to include HNA-II information.

Screening and Ranking Criteria (McGuire)

Megan McGuire facilitated a discussion that is outlined in slides 9-13 of Attachment 2. This discussion was held prior to any specific project ideas being presented. The goal was to have a thoughtful discussion and get agencies perspectives on restoration priorities, how to incorporate HNA-II indicators in ranking projects and what other non-ecological criteria should be used in selecting projects.

After an overview from Megan, agency breakout groups discussed and answered questions on a spreadsheet (see slides 12 and 13 of Attachment 2). There were two sets of questions – one that addressed Ecological Rankings and the other was Combination Ranking. The latter got at preferences for the scale/distribution of projects, whether there should be novel/experimental projects, and if there should be a mix of projects across habitats. Agency input to these questions are found in Attachment 3. Each agency then reported back to the full group.

Agency report outs for questions on the Ecological Ranking tab, as follows:

- IA DNR recommended using all HNA-II indicators weighted equally and good with using ranking scale of -1 0 +1, but open to suggestions. Did not specify a percentage weight for HNA-II indicators. Thought that other ecological criteria should also be us (mussels, herps, AIS, land use, etc.).
- MN DNR recommended using all of the HNA-II indicators, but some should be weighted more heavily. A weighting might help identify places, pools, reaches, etc. where restoration needs are greater. Generally fine using the scale of -1 0 +1, but open to suggestions. Thought that about 75% of the ranking weight should be based on HNA-II indicators. Remainder being agency priorities, species of special concern, watershed/tributaries, and needs that are not easily be tied to HNA-II.
- WI DNR recommended using all HNA-II indicators weighted equally and good with using ranking scale of -1 0 +1, but open to suggestions. Thought that about 70% should be weighted on HNA-II indicators and the remainder for agency priorities and additional ecological criteria (land use, mussels, -
- USACE recommended using FWWG priority HNA-II indicators (instead of all). Weighting of those indicators should also be considered. Five priority indicators could be weighted to balance aquatic (3 indicators) and terrestrial (2 indicators) needs. Also suggested that the -1 0 +1 ranking for each indicator should be expanded to make it more meaningful and flexible. Maybe -3 to +3 scale. About 25% of weight should be for agency priorities, etc.
- USFWS recommended the FWWG priority indicators and possibly a few others. Felt that indicators should be weighted and prioritized, but did not specify a % weight that should be on HNA-II indicators. Agency priorities and resources of concern should be factored in.

Agency report outs for questions on the Combination Ranking tab were generally pretty consistent across agencies, so individual agency reports are not detailed here. (See Attachment 3)

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After full group discussion, the agencies generally agreed that our list of selected projects should consider the following:

- Prefer a mix of project sizes
- Prefer a geographic distribution
- Projects that require a policy change or considered experimental should be considered.
- A minimum of two “traditional” projects should be included this time.
- At least one project that was considered innovative
- Want projects to be flexible and opportunistic to allow synergy with other programs.
- Projects that may “push the envelope” on UMRR policies/authorities should be considered.
- Projects that minimize long term O&M are preferred.
- McGregor District will not have any projects in this round of HREP selection. This is because of the number of projects that are already in planning or implementation and workload issues for FWS and state staff in this river reach. *(Chair’s note – I’m not exactly sure this is the point of the meeting we decided this, but we did agree to this at various points in the meeting)*

Agency Restoration Priorities (Dieterman, Weeks, Hansen, Winter, Meier, Deen)

As a lead in to discussions on specific projects, each agency was asked to present their overall restoration priorities for the UMR. Summary points from each agency are listed below:

- MN DNR (Dieterman)
 - o What should be our restoration priorities? Post-LD? Pre-LD? Pre-settlement?
 - o System’s ability to function as a self-sustaining ecosystem
 - o Want to allow the river to provide the habitat under the management we are constrained to—levees, private land.
 - o High priorities—remove levees, address land use; sediment inputs into the system—watershed; hydrologic variability—restore processes.
 - o Ok with small scale projects but want to focus on new innovative approaches to address processes.
 - o Top projects: multiple pool-multiyear WLM (seasonal/annual hydrologic restoration); natural levee restoration; Lower Zumbro River floodplain connectivity; Trempealeau
- WI DNR (Weeks)
 - o Staff developed a very large list of needs.
 - o Poolwide/Multi-pool: Connectivity projects, bank stabilization, forestry, sedimentation, backwater alum treatments, HREP mechanical crew/repairs
 - o For specific project priorities: Lake Onalaska, Trempealeau Refuge, Merrick Park/Fountain City Bay, Mosiman/Probst, Lower Pool 6; Goose Island, Big Lake, Sam Gordy’s
- IA DNR (Hansen)
 - o There is need everywhere.
 - o Restore to where the river is going. New conditions—climate, flows. Natural processes are good, but not the same within the navigation system compared to pre lock and dam
 - o Island erosion is still a big issue.

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- Loss of floodplain forest a growing issue.
- Top project priorities - Large scale bankline stabilization. Sny Magill Bottoms—expand on what is already good, Upper Iowa River.

- USFWS (Winter)
 - Need to address agency priority resources of concern, which also address a lot of the HNA-II indicators.
 - High priority projects include Pool 4--Big Lake, Lower Pool 5/Weaver Bottoms, Trempealeau, Black River Bottoms, and Lake Onalaska.

- USACE (Meier, Deen)
 - Top priority project is the Pool 8 Poolwide Forestry – conceptual project and data presented by Andy M.
 - Program perspective (Deen)
 - Projects should be flexible, innovative and opportunistic.
 - Keep to 3-5 fact sheets to keep the projects fresh, applicable.
 - Mix of large and small projects would be ideal to stay flexible so one project doesn't eat up all the funding for multiple years.
 - Want to encourage experimental and innovative projects.
 - Be opportunistic to collaborate with other programs (e.g. channel maintenance).
 -

Review of Project List submitted by FWWG agencies (Stauffer)

Prior to the meeting, FWWG agencies were asked to submit their project ideas through their representative. A spreadsheet template was distributed for everyone to use. Project area polygons were also delineated using Google MyMaps.

- Project entries in the spreadsheet included:
 - Project title and short description
 - Agency and contact person
 - Pool number, river mile and Refuge district
 - HNA-II indicators with color coding (red, yellow, green) for selected Pool
 - Ranking of project for impact on each HNA-II indicator (1- for negative impact, 0 for no impact, and +1 for positive impact)
 - Estimate of project scale and cost

- A total of 86 project ideas were submitted and all of those are shown in [Attachment 4](#).
- Of those, 14 projects were either “Poolwide” or “multi-Pool”
- Project list was meant to be robust and no limitations were suggested at this part of the process.
- Overlap between agencies was expected.

Also prior to the meeting, Stauffer attempted to consolidate the list to group similar projects proposed by more than one agency or projects that were for multiple Pools. A more thorough summary of the project list is found Attachment 2, slides 16 to 23.

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After initial consolidation, the list was reduced to 66 project ideas. This was primarily because several agencies proposed the same project idea (e.g. three agencies proposed a project in Trempealeau NWR)

Project polygons that were entered into MyMaps were not used during the meeting, but are available here: https://drive.google.com/open?id=1BqjW1OFzcsRruttr_v4O5QwwBPEbf6fb&usp=sharing

Applying Ranking Criteria to List of Projects (McGuire, Stauffer)

Initially, the plan was to break into small groups to discuss ideas on how to apply ranking criteria discussed earlier in the meeting and have each group identify 5-10 project ideas they found most promising.

However, a suggestion was made to have a full group discussion and everyone agreed. From discussions earlier in the meeting – particularly from presentations from each agency on restoration priorities – it was somewhat obvious that a smaller group of projects was likely going to shake out from the larger list.

Nick Schlessler offer to modify the spreadsheet and apply some ranking formulas for the HNA-II indicator scores and priority projects from each agency. A number of iterations were attempted and it did help narrow the list somewhat, but still did not give clear separation among higher ranking projects.

From our earlier discussion on screening/ranking criteria, the group had agreed to put ~70-75% of ranking weight on the HNA-II indicators, whether that was the FWWG priority indicators (Diversity and Resiliency) or all indicators. We then used a simple rank order on the total number of indicators positively impacted to sort the larger list of projects. This exercise further narrowed the list to 15 projects (see Attachment 5).

There was an initial suggestion to use the top 5 from this list and see how those fit into the screening/ranking criteria discussed earlier in the day (address agency priorities, mix of sizes, geographic distribution, at least two traditional projects, at least one innovative project, etc.). As we discussed the list of projects, a number of decisions were made by group consensus. A summary of these decisions follows, but they are not necessarily in the order discussed at the meeting:

- The project that addressed the most HNA-II indicators was the “Seasonal/annual hydrologic restoration“ that would “Facilitate Pool or Reach-wide water level reductions during the growing season on either an annual basis or at frequent intervals to restore low water periodicity necessary to maintain critical floodplain features and components.” While the group was supportive of this project as an innovative idea, it would likely have some challenges in the normal HREP planning and implementation processes.
 - o After considerable discussion, the group decided the intent of this project could potentially be folded into the Lower Pool 5/Weaver Bottoms project. By doing this, the scope of the opportunistic water level management would be more limited and could be tied to objectives of a more traditional HREP.
- Two projects focusing on floodplain forest restoration ranked in the initial top five. There was strong support for both the Black River Bottoms and Pool 8 Forest Restoration projects and there was consensus that at least one of these projects moved forward. After considerable discussion,

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the group was not able to select one project over the other (both were very good). The idea of combining these two projects into one large one was also discussed.

- In the end, a decision was made to form a Fact Sheet team that would further evaluate these two projects and rely on their expertise to choose one of project areas or some combination of the two.
- There were also two similar projects proposed by MN and IA DNRs that focused on bankline/island stabilization and natural levee protection/restoration. The group agreed that these two project ideas could be merged into one Fact Sheet. This is a scalable effort that met two priorities of FWVG – a mix of project sizes and geographical distribution of restoration efforts. This HREP will also have the potential to work with other programs like channel maintenance.
- Three agencies (USFWS, MNDNR and WIDNR) independently proposed projects for the Trempealeau NWR. While the project ideas differed among the agencies, it was clear that this is an important area for restoration and management. Given the strong agency support and the potential for innovation, this project was kept in the top group.
- The Lower Pool 4/Big Lake project was proposed by two agencies (USFWS and WIDNR). This project has an existing Fact Sheet from the last HREP selection process, though it was not submitted for endorsement. Given the level of support for this project and the number of FWVG priority HNA-II indicators it addresses, it was also kept in the top group.

Final Selection of Projects (All)

Based on earlier discussions that identified FWVG restoration priorities and detailed discussions on individual projects, the group agreed to proceed with developing Fact Sheets for five HREPs. These five projects met the desired mix of projects discussed earlier in the meeting by 1) addressing priority HNA-II indicators, 2) having a mix of sizes, 3) are geographically distributed, 4) include new/innovative approaches, and 5) address agency priorities.

The FWVG voting members were asked for concurrence and following projects were approved for Fact Sheet development. A team leader was also assigned to each Fact Sheet.

Project	Proposed by	Fact Sheet Team Lead	Notes
La Crosse area Floodplain Forest	COE, WI DNR	Andy Meier	Team will consider options from Black R. Bottoms and/or Pool 8 proposals.
Weaver Bottoms/Lower Pool 5	FWS, MN DNR, WI DNR	Dan Dieterman	Existing fact sheet for this project – will need to be updated and include HNA-II
Trempealeau NWR	FWS, MN DNR, WI DNR	Tim Miller	Multiple ideas submitted – team will evaluate options.
Bank stabilization/natural levees	IA DNR, MN DNR	Kirk Hansen	Multi-pool proposal
Big Lake – Pool 4	FWS, WI DNR	Mary Stefanski	Existing fact sheet for this project – will need to be updated and include HNA-II

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Next Steps

Team leads will work with voting members from each agency to form a Fact Sheet Team for each project. It is expected that the fact sheets will be developed collaboratively and participants from each agency will be responsible for bringing their agencies perspective and expertise to each project.

Teams will work on draft Fact Sheets from September to December 2019. Chair will present our project development, ranking process, and project list to the River Resources forum on December 3-4. This will effectively start the 30 day notification period for the forum to take any official action or endorsement needed on the project list and/or ranking.

FWWG will schedule a meeting in mid-January 2020 and the draft Fact Sheets will be presented by the team leader for discussion/concurrence. Once FWWG has finalized and approved Fact Sheets, they will be forward to UMRR-CC for endorsement at the February quarterly meeting.

Action Items:

- 1) Chair will draft meeting notes, distribute them for comment, finalize, and have them posted them here: <http://www.mvp.usace.army.mil/Missions/Navigation/RiverResourcesForum.aspx>
- 2) Chair will attend December 3-4 River Resources Forum meeting.
- 3) Fact Sheet Teams will complete their respective drafts by late December or early January so they can be distributed to FWWG members prior to the next meeting.
- 4) Next meeting date was not selected, but we will look for a date in mid-January.

**FWWG Next Generation HREP Development and Selection Workshop
August 27, 2019**

Meeting Purpose: Select project ideas to be developed into HREP Factsheets

- Target: Reach agreement on 3-5 projects, per guidance

Pre-meeting tasks:

1. Enter restoration project ideas into FWWG HREP ideas spreadsheet (Due Aug 21)
 2. Complete MyMaps exercise (Due Aug 21, see 7/29 instructions)
 3. Agency Leads – prepare overview on top 3-5 project ideas (<15 min, PowerPoint optional)
 4. Watch the HNA-II webinar: <https://www.youtube.com/watch?v=nmX-B16ujCw&feature=youtu.be>
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AGENDA

- 9:00 – 9:30 Welcome/Introductions**
- Meeting Purpose & Goals of this Meeting
 - Timeline for FWWG HREP selection process
 - Review of Factsheet Directions and HNA-II considerations
- 9:30 – 10:30 Screening and Ranking Criteria**
- How should we use HNA-II indicators and ecological criteria to screen/rank restoration projects?
 - What other criteria should we consider – (e.g., a mix of sizes, locations/habitat types/conventional v innovative projects, etc.)
- 10:30 BREAK**
- 10:45 – 12:00 Each Agency presents restoration priorities**
- MN, WI, IA, USFWS, USACE (15 minutes each)
- 12:00 LUNCH** - order in, or bring your own
- 12:30 – 1:30 Review Full List of Projects**
- Break out groups: discuss synergies, new Ideas (use MyMap as needed)
- 1:30 – 2:30 Apply Ranking Criteria to List of Projects**
- Identify top projects to develop into Fact Sheets
- 2:30 BREAK**
- 2:45 – 3:15 Select Final Set of Projects**
- Select teams to develop Fact Sheets
 - Teams designate “champion” to lead drafting Fact Sheets
- 3:15 – 3:30 Discuss Next Steps / Adjourn**

Meeting Purpose

- Select project ideas to be developed into HREP Fact Sheets
 - Target - reach agreement on 3-5 projects
 - Assign collaborative teams to write Fact Sheets

Meeting Goals

1. Develop screening/ranking criteria that:
 - Utilizes HNA-II Indicators and information.
 - Incorporates Agency priorities.
 - Can be used (or built upon) for future processes.

Meeting Goals

2. Discuss agency priorities for restoration.

- Seek consensus on projects for FY21-25
 - FWWG Charter
 - Voting members
 - IA – Kirk Hansen
 - MN – Dan Dieterman
 - WI – Jordan Weeks
 - USFWS – Stephen Winter
 - USACE – Steve Clark

Meeting Goals

3. Follow HREP sequencing guidance from UMRR-CC and PPT

- Work collaboratively
- Use “structured decision making” process
- Record discussions and use decision logs
- Timeline

Timeline for Fact Sheet Selection

- **TODAY** – Select projects for Fact Sheet development & Assign Teams
 - - OR - Voting Members confirm Fact Sheets & priority order by early September
- **Sep-Dec** – Teams develop draft Fact Sheets.
- **Dec 3 & 4** – Teams present project overviews to RRF for endorsement (Begins 30 day notice)
- **Jan 2020 (date TBD) – Fact Sheets DUE**
 - Hold FWWG meeting to present, discuss, and finalize Fact Sheets
 - Submit for inclusion at February 2020 UMRR-CC meeting
- **Feb 26, 2020** – UMRR-CC approves Fact Sheets & new FWWG chair takes over 😊

New Fact Sheet Template

- Similar to previous
- New HNA-II details
- Support available
 - Science Support Team
 - GIS
 - etc.

Upper Mississippi River Restoration (UMRR) Program
Habitat Rehabilitation and Enhancement Project

Project Name
Pool, River, State(s), Corps District

Location

- General description (side channel, backwater lake, island(s), etc.)
- River mile reach, left or right descending bank; geomorphic reach
- Nearest town and distance
- Current land use/ownership (national wildlife refuge, state wildlife management area, Corps project land, private, etc.)

Existing resources

- General description of the existing habitats and conditions (vegetation communities, current velocities, dissolved oxygen, etc.), including how long it has been this way
- List primary plant communities, fish and wildlife species that are known to exist in the area (generic, when?), including any rare or unique habitats or species, and noxious or invasive species
- **Pool and cluster group from the HNA-II in which the project is located**
- **Current status of the HNA-II indicators for the pool and cluster**

Problem identification

- Describe changes in habitat conditions that have occurred including a description of monitoring that quantifies the changes
- Factors influencing these habitat changes
- Examples of the species/communities affected by the habitat changes
- Describe forecasted future habitat conditions without habitat protection or restoration

Project Goals

- Identify the area where different habitat types (and/or health) are desired
- Describe the desired future conditions for each type of habitat
- **Describe the primary HNA-II indicators likely to be impacted by the project**
- **Identify the HNA-II indicators that might be impacted by the project**
- **Describe how the project would be designed to improve and/or maintain the HNA-II indicators**
- **Compare/contrast to desired future conditions identified in the HNA-II for the project area**
- Identify the species and communities that would benefit from the project
- Describe the relationship(s) to system, reach, and pool needs (relate to pool plans, project sponsor management plans)

Ranking Criteria

Individual Ranking

- Driven by ecological criteria
 - HNA-II Indicators
 - Other agency ecological objectives

Combination Criteria

- Evaluate top projects as a set
 - Mix of sizes, locations, types, etc.

Capture Improvement Ideas for Future Selection Rounds

Improvement Ideas for Future Rounds of HREP Selection

- Project future condition of HNA-II indicators
- Discuss restoration philosophy/restoration needs
 - E.g. Keep green indicators green or move red toward orange
- Define success
 - Pool Plan type strategic plans to address indicators in each pool
- Rank pools/reaches based on HNA-II and/or other criteria
- Better include other agency objectives
- Collaborative idea brainstorming
- More time to discuss decisions internally
- Model impacts of projects on indicators (does it “move the needle”?)
- Overall more time for the process—cover steps over multiple meetings
 - E.g. One meeting on ranking criteria, one meeting on idea development, one meeting to confirm project ratings, etc. with time in between for internal agency discussions

Ranking Criteria Process

Step 1: Solicit preferences for each agency (9:30 am)

- Breakout groups by agency (20 min)
- Report back to group and document in spreadsheet (20 min total)

Step 2: Compare and discuss differences between agencies (10:10 am; 20 min)

- Magically find that we all agree! –or–
- Find a consensus ranking criteria –or–
- Try different versions of ranking in the afternoon

Step 3: Update project list and rate against the criteria (12:30 pm)

Step 4: Apply ranking system/s (1:30 pm)

- Review top ecological projects
- Consider as a combination

Individual Project Ranking: Ecological Criteria

	HNA-II Criteria						Other Ecological Criteria			
	Agency	All/Some?	If not all, which ones?	Weight Indicators?	If Yes to Weighting, Provide Details	Rating Method	Overall HNA-II Weight	Agency Objectives?	If Yes, Explain	Other Weight
IA DNR										
MN DNR										
WI DNR										
USACE										
USFWS										
<i>Default</i>	<i>All</i>		<i>No</i>			<i>-1, 0, +1</i>	<i>100</i>	<i>No</i>		<i>0</i>
<i>Answer Format</i>	<i>All</i>	<i>Narrative</i>	<i>Yes</i>	<i>Narrative</i>	<i>-1, 0, +1</i>	<i>%</i>	<i>Yes</i>	<i>Narrative</i>	<i>%</i>	
	<i>FWWG Priorities</i>		<i>No</i>			<i>Other</i>		<i>No</i>		
	<i>Other</i>		<i>Not Sure</i>							

Combination Criteria

Agency	Scale/Distribution		Experimental			Eco Mix?	Other Agency Objectives
	Require mix of sizes?	Require geographic distribution?	Allow policy change?	Encourage novel approach?	Min. Traditional?		
IA DNR							
MN DNR							
WI DNR							
USACE							
USFWS							
<i>Default</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>	<i>2</i>	<i>Yes</i>	
<i>Answer</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>0</i>	<i>Yes</i>	<i>Narrative</i>
<i>Format</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>1</i>	<i>No</i>	
	<i>Not Sure</i>	<i>Not Sure</i>	<i>Not Sure</i>	<i>Not Sure</i>	<i>2</i>	<i>Not Sure</i>	
					<i>3</i>		
					<i>4</i>		
					<i>5</i>		

Agency Presentations – Restoration Priorities

- MN – Dan Dieterman
- WI – Jordan Weeks
- IA – Kirk Hanson
- USFWS – Stephen Winter
- USACE – Andy Meier & Angela Deen

Review Full List of Projects → quick summary

	Total No. (unfiltered)	
Pool 3*	3	
Pool 4	6	
Pool 5	9	
Pool 5A	4	
Pool 6	8	
Pool 7	8	
Pool 8	8	
Pool 9	13	
Pool 10	13	
Multi-Pool	14	
Total	86	

* Includes one project in Lake St. Croix

Review Full List of Projects → quick summary

	Total No. (unfiltered)	After merge and separating Poolwide
Pool 3*	3	2
Pool 4	6	5
Pool 5	9	6
Pool 5A	4	4
Pool 6	8	4
Pool 7	8	4
Pool 8	8	5
Pool 9**	13	11
Pool 10**	13	11
Multi-Pool	14	14
Total	86	66

* Includes one project in Lake St. Croix

** Probably more overlap (Harpers, Winnesheik, etc.)

Review Full List of Projects → Kevin's Groupings

1. Sorted projects by Pool >>> looked for overlap

Example:

1. Lower Pool 5 / Weaver Bottoms (MN DNR)
2. Weaver Bottoms (WI DNR)
3. Lower Pool 5 / Weaver Bottoms (FWS)

- >>> combined to one entry in pool summary list

- Project concepts may differ, but had overlap
- Fact sheet team would work out the details

Review Full List of Projects → Kevin's Groupings

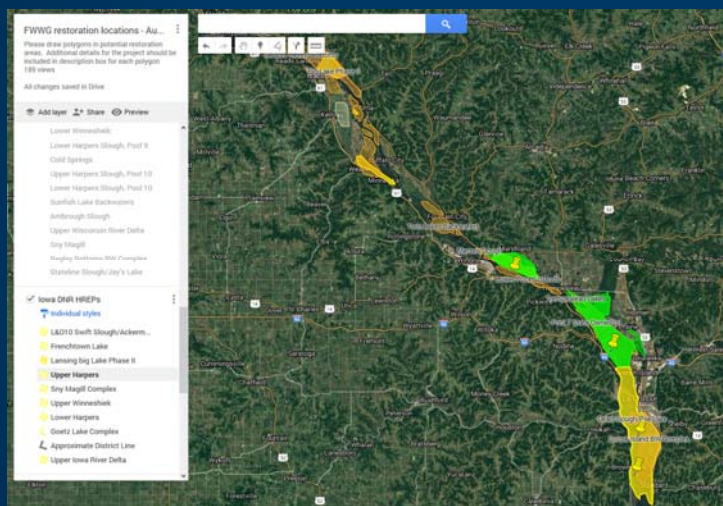
Pool by Pool Summary				Project impact on HNA-II Indicators: -1 Negative 0 No Impact +1 Positive														Project Scale	
Restoration Need / Project Name	Overlap	Brief Description	Primary Agency / Proposal	Agency Contact	Pool	Connectivity				Diversity and Redundancy				Controlling Variables				Acres	Miles
						% Time Chases < 1 hr	Acres of Low-flow < 1 ft	Acres of Low-flow > 1 ft	Open Water	Aq. Functional < 1 to 1	Aq. Functional > 1 to 2	Aq. Veg. < 1 to 1	Aq. Veg. > 1 to 1	Floodplain < 1 to 1	Floodplain > 1 to 1	Tailwater	Pond flux		
Finger Lakes		The Finger Lakes include six backwater lakes immediately below the dike at Lock and Dam 4. The area was the location of an HREP project completed in 1996 designed to improve off-channel habitat by introducing flow into several backwater lakes. The desired future for this area acknowledges that sedimentation will continue to affect many of the backwater areas and some side channels. Therefore, increasing the depth of the backwater lakes and of the depth diversity of some secondary and tertiary channels is proposed. There are also opportunities to make improvements to forestry resources. Desired future habitat conditions would (1) increase depth diversity in channels and backwaters, (2) maintain existing quality habitats, (3) manage floodplain forest for diversity and quality, and (4) manage river flows and connectivity to improve aquatic habitat.	WI DNR	Brian	5	0	0	0	0	1	1	1	1	1	0	0	0	Large	10-20
Lower Pool 5 / Weaver Bottoms	MN, FWS, FWS	MN-FWS narrative - Proposed project actions include main channel dredging to support annual drawdowns over a 10-year period, reduce and stabilize flows entering through MN-7, construct new islands and peninsula extensions, and dredge backwater sediments in two locations to provide and protect floodplain habitat and vegetation, reduce sedimentation and the impact of wind-generated wave action, and enhance bathymetric diversity.	FWS	Stefanski, Dieterman, Black	5	0	0	0	0	1	1	1	1	1	0	1	1	Large	10-20
Schmoker's and Clear lakes		This project would enhance 10-20 acres of floodplain forests by burying large stands of reed canary grass with fine-grained material. Trees would be planted on the covered areas. Borrow material for the forestry enhancement would be obtained by dredging 10-15 acres within Schmoker's and Clear Lakes. This dredging would provide deeper water and bathymetric diversity required for fisheries habitat improvements.	MN DNR	Dieterman	5	0	0	0	0	1	1	1	1	1	0	0	0	Small	<10M

Review Full List of Projects → Kevin's Groupings

Restoration Need / Project Name	TYPE	Brief Description	Primary Agency Proposed	Agency Contact
Trempealeau Refuge		This project would improve water quality, fish and wildlife habitat in the Trempealeau National Wildlife Refuge. This complex is the most impaired area within the FV/VG boundaries from a water quality standpoint. High phosphorus and severe cyanobacteria blooms are producing cyanotoxins (microcystin, anatoxin-a) resulting in ecosystem degradation and risk to the public and pets (e.g. small children, dogs). Severe blooms are blocking available light and resulting in so-called submerged vegetation coverage. Connecting into the complex from the Mississippi River would be restored to improve water quality and reduce the cyanobacteria/anatoxin threat. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Material from these actions would be utilized to address forestry and native terrestrial vegetation objectives in the area. Islands would be constructed to address wind-induced resuspension of sediment. This project would be crucial for Pools 5, which have limited functional habitat.	VIDNR	Shawn
Trempealeau NWR Reconnection		This project would install culvert(s) through the railroad dike that separates the main channel from lateral floodplain habitat located in the Trempealeau National Wildlife Refuge. Reconnection of this large lateral habitat area (~5000 acres) to the main channel will substantially improve the floodplain habitat availability to aquatic organisms that use both environments (e.g., fishes: Phelps et al., 2015; Fantala et al., 2016, and macroinvertebrates: Obolewski et al., 2016). Furthermore, reconnection of this habitat may improve benthic ecosystem processes, services, and/or function at both lateral and longitudinal scales (Fander et al. 2015; Fantala et al., 2015; Opperman et al., 2017).	MIN DNR	Rude
Trempealeau NWR #1		Water quality improvements - Water Quality: Improve aquatic plant beds, by reducing suspended and resuspension of sediments and Phosphorus. Possible ideas include: island construction in open pools, and controlled waterflow.	FVS	Stephanie Edeler
Trempealeau NWR #2		Multi-phased Project: Water level management: Ability to manage water levels to meet objectives in the CCP and HMP. Using infrastructure from the previous HREP increase the ability to gravity drain pools by increasing capacity on the outlets. This project includes construction of a bridge on the Trempealeau NWR entrance road to reconnect braided historic channel to the Trempealeau River Delta. Includes connecting the flood plain on Trempealeau River Delta at the BNSF Rail Bridge.	FVS	Stephanie Edeler

1. Trempealeau example:
2. 3 agencies identified this as a project area
3. Details/ideas may be different, but also some overlap
4. If chosen >>> Fact Sheet team collaboratively develops details.

MyMaps and UMR River Viewer



1. Some glitches, but polygons available, if helpful
2. Not able to fully utilize tools right now (HNA-II layers)
3. Can potentially use this in Fact Sheet development
4. Also to report out on our process and decisions.

Review Full List of Projects → BREAKOUT GROUPS

1. How can project ideas be grouped into themes?
 - Geography (pools)
 - Pool-wide
 - Non-traditional
2. Can any project ideas be combined?
3. Has today's discussion sparked any new ideas that aren't on that list?
4. Pick 5-10 ideas that your group finds most promising.

Apply Ranking Criteria to List of Projects

Identify top projects to develop into Fact Sheets

1. Ecological Criteria
2. Combination Criteria

Select Final Set of Projects

1. Establish Team Leader - to “champion” drafting Fact Sheet
 2. Select Team Members *(volunteers? Or Team Leader will coordinate later)*
 - States Involved
 - Refuge
 - USACE
- Team Roster Deadline: Sep 9 *(2 weeks from today)*

Plan B: Voting Members Coordinate

- **Early Sep** → * Voting Members confirm Fact Sheets & priority order
* Kevin coordinates on Team Leads & Members
- **Sep-Dec** – Teams develop draft Fact Sheets.
- **Dec 3 & 4** – Teams present project overviews to RRF for endorsement (Begins 30 day notice)
- **Jan 2020 (date TBD) – Fact Sheets DUE**
 - Hold FWVG meeting to present, discuss, and finalize Fact Sheets
 - Submit for inclusion at February 2020 UMRR-CC meeting
- **Feb 26, 2020** – UMRR-CC approves Fact Sheets & new FWVG chair takes over

Improvement Ideas for Future Rounds of HREP Selection

- Discuss restoration philosophy/restoration needs
 - E.g. Keep green indicators green or move red toward orange
- Rank pools/reaches based on HNA-II and/or other criteria
- More time to discuss and include other agency objectives
- Collaborative brainstorming to develop HREP ideas
- Give agencies more time to discuss decisions internally
- Overall more time for the process—cover steps over multiple meetings
 - E.g. One meeting on ranking criteria, one meeting on idea development, one meeting to confirm project ratings, etc. with time in between for internal agency discussions

Ecological Ranking

Agency	HNA-II Criteria						Other Ecological Criteria		
	All/Some?	If not all, which ones?	Weight Indicators?	If Yes to Weighting, Provide Details	Rating Method	Overall HNA-II Weight	Agency Objectives?	If Yes, Explain	Other Weight
IA DNR	All		No		-1, 0, +1	?	Yes	Flexibility, Emerging Issues, Mussels, Herps, AIS, Land use	?
MN DNR	All		Yes	TBD--greatest need	Other	? ~75%	Yes	AIS, certain locations--reaches, species of concern, landscape, tribes, fish passage	~25%?
WI DNR	All		No		-1, 0, +1	70%	Yes	AIS, water quality, T/E, land use, mussels, herps, wildlife, special habitats	30%
USACE	FWWG Priorities		Yes	Weight to balance aquatic and terrestrial.	Other	75%?	Yes	TBD	25%?
USFWS	Other	FWWG + few others	Yes	Weight/prioritize	-1, 0, +1	?	Yes	Priority resources of concern	?
<i>Default</i>	<i>All</i>		<i>No</i>		<i>-1, 0, +1</i>	<i>100</i>	<i>No</i>		<i>0</i>
<i>Answer Format</i>	<i>All</i>	<i>Narrative</i>	<i>Yes</i>	<i>Narrative</i>	<i>-1, 0, +1</i>	<i>%</i>	<i>Yes</i>	<i>Narrative</i>	<i>%</i>
	<i>FWWG Priorities</i>		<i>No</i>		<i>Other</i>		<i>No</i>		
	<i>Other</i>		<i>Not Sure</i>						

USACE: -3 to 3
 Nick: wider
 range of 0 to 10

Combination Ranking

	Scale/Distribution		Experimental				
Agency	Prefer mix of sizes?	Prefer geographic distribution?	Allow policy change?	Encourage novel approach?	Min. Traditional?	Eco Mix?	Other Agency Objectives
IA DNR	Yes	Yes	Yes	Yes	2	Not Sure	Flexibility, opportunities, synergy with other projects
MN DNR	Yes	Yes	Yes	Yes	2	Yes	Flexibility, mesh programs, shoreline erosion issues, PAA issues
WI DNR	Yes	Yes	Yes	Yes	2	Yes	TBD, sponsor availability
USACE	Yes	Yes	Yes	Yes	2	Yes	TBD
USFWS	Not Sure	Not Sure	Not Sure	Not Sure		Not Sure	McGregor workload, CCP and HMP sideboards, minimize O&M
<i>Default</i>	<i>No</i>	<i>No</i>	<i>Yes</i>	<i>Yes</i>	<i>2</i>	<i>Yes</i>	
<i>Answer Format</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>Yes</i>	<i>0</i>	<i>Yes</i>	<i>Narrative</i>
	<i>No</i>	<i>No</i>	<i>No</i>	<i>No</i>	<i>1</i>	<i>No</i>	
	<i>Not Sure</i>	<i>Not Sure</i>	<i>Not Sure</i>	<i>Not Sure</i>	<i>2</i>	<i>Not Sure</i>	
					<i>3</i>		
					<i>4</i>		
					<i>5</i>		

Restoration Need / Project Name		Brief Description		Primary Agency Proposing	Agency Contact	Pool	Appx. River Mile	Refuge District	Project impact on HNA-II Indicators: -1 Negative 0 No Impact +1 Positive									Project Scale		Existing Fact Sheet?	Added to MyMaps?	No. Priority Indicators	Total Indicators			
									Note: cell color indicates FWVG Indicator rank for POOL selected in Column E									Acreage	\$\$							
									Connectivity				Diversity and Redundancy											Controlling Variables		
									% Time Gates Open	Acres of Natural Area	Acres of Leveed Area	Open Water	Aq. Functional Class 1	Aq. Functional Class 2	Aq. Veg. Diversity	Floodplain Veg. Diversity	Floodplain Functional Class							Tailwater flux	Pool flux	Total Suspended Solids
Large Woody Debris	Lake St. Croix	WI DNR	Jeff	3															0	0						
North and Sturgeon	Island construction, shoreline stabilization, etc.	WI DNR	Jeff	3															0	0						
North and Sturgeon Lakes	Secure funding to implement project features that have already been designed	MN DNR	Stauffer	3				Winona	0	0	0	1	1	1	1	1	0	0	1	Medium	10-20 M	Yes	Yes	5	7	
Big Lake	FWS Narrative: This project would construct new islands and enhance/protect existing islands. Floodplain forest would be created or enhanced by constructing/enhancing/ protecting islands, increasing existing island elevations, planting trees, and using applicable forestry management techniques. Islands would be located to provide wave and wind fetch protection. Backwater dredging to obtain borrow material for islands and forestry enhancement would create bathymetric diversity within the project area.	WI DNR	Shawn	4				Winona	0	0	0	1	1	1	1	1	0	0	1	Large	10-20 M	Yes	Yes	5	7	
Chippewa Delta	Stabilization, connectivity, E/T, forestry	WI DNR	Jeff, Brenda	4																				0	0	
Deer Island	Backwater restoration	WI DNR	Jeff	4																				0	0	
Lower Pool 4	Peterson Lake, Robinson Lake, Beef Slough	WI DNR	Jeff	4																				0	0	
Pierce County Islands	This project would improve water quality, fish and wildlife habitat in the Pierce County Islands Complex. Actions would include building islands to reduce wind resuspension of sediment. Inflow into particular backwaters would be optimized to reduce backwater sedimentation, improve water quality and promote submersed aquatic vegetation establishment. Depth diversity would be improved in select areas to improve water quality, fish and wildlife habitat. Dredge spoils from depth diversity actions would be used to cover reed canary flats and promote forestry and native terrestrial vegetation objectives.	WI DNR	Jeff, Shawn	4				Winona	0	0	0	1	1	1	1	1	0	0	1	Large	10-20 M	Yes	No	5	7	
Big Lake	This project would construct new islands and enhance/protect existing islands. Floodplain forest would be created or enhanced by constructing/enhancing/ protecting islands, increasing existing island elevations, planting trees, and using applicable forestry management techniques. Islands would be located to provide wave and wind fetch protection. Backwater dredging to obtain borrow material for islands and forestry enhancement would create bathymetric diversity within the project area.	FWS	Mary Stefanski	4	757-760			Winona	0	0	0	0	1	1	1	1	0	0	1	Large	10-20 M	Yes	Yes	5	6	
Finger Lakes	The Finger Lakes include six backwater lakes immediately below the dike at Lock and Dam 4. The area was the location of an HREP project completed in 1996 designed to improve off-channel habitat by introducing flow into several backwater lakes. The desired future for this area acknowledges that sedimentation will continue to affect many of the backwater areas and some side channels. Therefore, increasing the depth of the backwater lakes and of the depth diversity of some secondary and tertiary channels is proposed. There are also opportunities to make improvements to forestry resources. Desired future habitat conditions would (1) increase depth diversity in channels and backwaters, (2) maintain existing quality habitats, (3) manage floodplain forest for diversity and quality, and (4) manage river flows and connectivity to improve aquatic habitat.	WI DNR	Brian	5	751-752.8			Winona	0	0	0	0	1	1	1	1	0	0	0	Large	10-20 M	YES		5	5	
Island 42	Island 42 is bounded by the main channel to the east and West Newton Chute to the west. Numerous backwater lakes, sloughs, and flowing channels dissect the area. Island 42 was the site of the first HREP project which involved dredging and flow reduction to increase quality off-channel habitat. The desired future for Island 42 identifies further increases in depth to offset the continuing effects of sedimentation in the backwater complex. The material may be used as topsoil for historic dredged material disposal sites, or other areas, that will then be planted to forest or prairie. Desired future habitat conditions would (1) increase depth diversity in channels and backwaters, (2) maintain existing quality habitats, (3) manage floodplain forest and prairie communities for diversity and quality, and (4) manage river flows and connectivity to improve aquatic habitat.	WI DNR	Brian	5	747.6-749.7			Winona	0	0	0	0	1	1	1	1	0	0	0	Large	10-20 M	YES		5	5	
Lower Pool 5 / Weaver Bottoms	Proposed project actions include main channel dredging to support annual drawdowns over a 10-year period, reduce and stabilize flows entering through MN-7, construct new islands and peninsula extensions, and dredge backwater sediments in two locations to provide and protect floodplain habitat and vegetation, reduce sedimentation and the impact of wind-generated wave action, and enhance bathymetric diversity.	MN DNR	Dieterman	5	739-747			Winona	0	0	0	1	1	1	0	0	0	1	0	Large	10-20 M	Yes	Yes	3	5	
Lower Zumbro River restoration	Partially remove levees and reconnect lower Zumbro R. to distributary channels to allow high flow events and associated sediments to flow through, disperse and settle on historic floodplain lands.	MN DNR	Dieterman	5				Winona	0	1	1	0	0	0	1	1	0	0	1	Medium	10-20 M	No	Yes	3	6	

		Project impact on HNA-II Indicators: -1 Negative 0 No Impact +1 Positive																							
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Restoration Need / Project Name	Brief Description	Primary Agency Proposing	Agency Contact	Pool	Appx. River Mile	Refuge District	Connectivity				Diversity and Redundancy					Controlling Variables			Project Scale		Existing Fact Sheet?	Added to MyMaps?	No. Priority Indicators	Total Indicators	
							% Time Gates Open	Acres of Natural Area	Acres of Leveed Area	Open Water	Aq. Functional Class 1	Aq. Functional Class 2	Aq. Veg. Diversity	Floodplain Veg. Diversity	Floodplain Functional Class	Tailwater flux	Pool flux	Total Suspended Solids	Acreage	\$\$					
Mosiman's Slough/Probst Lake	Backwater dredging would be performed to increase bathymetric diversity, combined with flow modifications, will result in improved water quality conditions year-round via reduced internal phosphorus loading, reduced sediment oxygen demand and reduced duckweed production. The proposed project would restore and maintain 3 protected offchannel lacustrine areas suitable for backwater fish communities within a combined area of over 40 acres if all forestry features were implemented. Forest diversity would be enhanced through planting, elevating islands, and forest management on existing and restored islands. Proposed features would increase the acreage and diversity of floodplain forest in at least 3 portions of the complex totaling over 40 acres.	WI DNR	Janvrin	5	746-750	Winona	0	0	0	0	1	1	0	1	1	0	0	1	Small	<10M	Yes	Yes	4	5	
Mosiman's/Probst	This project would improve water quality, fish and wildlife habitat in the Mosiman's/Probst Lake Complex. This complex of habitat has experienced severe degradation during recent high discharge years. Connectivity into both complexes would be optimized to improve water quality and reduce backwater sedimentation. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Material from depth diversity actions can be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives. This complex is highly utilized by the public for recreational purposes.	WI DNR	Shawn	5		Winona	0	0	0	0	1	1	0	1	1	0	0	1	Large	10-20 M	Yes		4	5	
Schmoker's and Clear lakes	This project would enhance 10-20 acres of floodplain forests by burying large stands of reed canary grass with fine-grained material. Trees would be planted on the covered areas. Borrow material for the forestry enhancement would be obtained by dredging 10-15 acres within Schmoker's and Clear Lakes. This dredging would provide deeper water and bathymetric diversity required for fisheries habitat improvements.	MN DNR	Dieterman	5	752	Winona	0	0	0	0	1	1	1	1	1	0	0	0	Small	<10M	Yes	Yes	5	5	
Weaver Bottoms	The Weaver Bottoms area is bordered by the main channel to the east and the Minnesota mainland to the north, west, and south. Historically, this 5,500+ acre complex was important for migrating waterfowl and overwintering fish. This use was due in large part to extensive beds of emergent and submergent vegetation. Since the late-1960s, Weaver Bottoms has degraded to a large, windswept lake. Past channel maintenance efforts to improve habitat have brought little success. Further measures to improve various habitats are warranted. Management actions for the Weaver Bottoms area are proposed to focus on restoring aquatic vegetation, deepening off-channel habitat, and making improvements to terrestrial habitat. Desired future habitat conditions would (1) increase depth diversity in channels and backwaters, (2) maintain existing quality habitats, (3) protect and restore islands, (4) manage floodplain forest communities for diversity and quality, and (5) manage river flows and connectivity to improve aquatic habitat.	WI DNR	Brian	5	741.8-747.5	Winona	0	0	0	1	1	1	0	0	0	1	0					3	5		
Lower Pool 5 / Weaver Bottoms	MN-FWS narrative - Proposed project actions include main channel dredging to support annual drawdowns over a 10-year period, reduce and stabilize flows entering through MN-7, construct new islands and peninsula extensions, and dredge backwater sediments in two locations to provide and protect floodplain habitat and vegetation, reduce sedimentation and the impact of wind-generated wave action, and enhance bathymetric diversity.	FWS	Mary Stefanski	5	739-747	Winona	0	0	0	0	1	1	1	1	1	0	1	1	Large	10-20 M	Yes	Yes	5	7	
Betsy Slough	This project would improve water quality, fish and wildlife habitat in the Betsy Slough Complex. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Material from depth diversity actions would be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives. This complex is within the Pool 5a closed area- so a project may be unpopular to partner agencies making execution difficult.	WI DNR	Shawn	5.1		Winona	0	0	0	0	1	1	1	1	1	0	0	1	Small	<10M	No	No	5	6	
Lake Sturgeon and Paddlefish spawning reefs	LD #5 is a significant barrier to large river fishes (Lake Sturgeon and Paddlefish) that exhibit a desire to migrate upstream from Pools 9 - 5A for spawning purposes. Construct a spawning reef for Lake Sturgeon and Paddlefish in the tailwaters of LD #5 to provide adequate spawning substrate when fish can not pass through the gates of LD #5.	MN DNR	Dieterman	5.1		Winona	1	0	0	0	0	0	0	0	0	0	0	0	Small	<10M	No	Yes	0	1	

		Project impact on HNA-II Indicators: -1 Negative 0 No Impact +1 Positive																						
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Merrick Park/Fountain City Bay	This project would improve water quality, fish and wildlife habitat in the Fountain City Bay/ Merrick State Park Complex. Connectivity into the complex would be optimized to improve water quality and reduce backwater sedimentation. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Pool 5a was identified in the DeJager Indicators Report (Fig 11) as being backwater depth limited. It is important to maintain and enhance backwater depth in Pool 5a due to the scarcity of deep, backwater habitat. Material from depth diversity actions can be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives.	WI DNR	Shawn	5.1		Winona	0	0	0	0	1	1	1	1	1	0	0	1	Medium	10-20 M	Yes	No	5	6
Twin Lake	same as merrick	WI DNR	Shawn, Jeff?	5.1																			0	0
Lower Pool 6	This project would improve water quality, fish and wildlife habitat in Lower Pool 6 (Blacksmith Slough/Johnson Island). This complex of habitat has experienced severe degradation during recent high discharge years. Connectivity into the complexes would be optimized to improve water quality and reduce backwater sedimentation. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Pool 6 was identified in the DeJager Indicators Report (Fig 11) as being backwater depth limited. It is important to maintain and enhance backwater depth in Pool 6 due to the scarcity of deep, backwater habitat. Material from depth diversity actions would be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives.	WI DNR	Jeff, Shawn	6		Winona	0	0	0	1	1	1	1	1	0	0	1	Large	10-20 M	Yes	No	5	7	
Mertes Slough	This project would improve water quality, fish and wildlife habitat in Mertes Slough. Connectivity into the complex would be optimized to improve water quality and reduce cyanobacteria problems. In addition to reconnecting Mertes Slough to UMR channel habitat- an alum treatment would be utilized to bind internal phosphorus that has accumulated over decades. WDNR data shows that mid-summer phosphorus spikes are contributing to the cyanobacteria problems in the complex. This action would be extremely cost effective and deliver good return on investment.	WI DNR	Shawn	6		Winona	0	0	1	0	1	1	1	0	0	0	1	Small	<10M	No	No	3	5	
Sam Gordy's	This project would improve water quality, fish and wildlife habitat in the Sam Gordy's Complex. This complex of has experienced severe water quality/habitat problems during recent years. Connectivity into the complex would be optimized to improve water quality and reduce backwater sedimentation. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Pool 6 was identified in the DeJager Indicators Report (Fig 11) as being backwater depth limited. It is important to maintain and enhance backwater depth in Pool 6 due to the scarcity of deep, backwater habitat. Material from depth diversity actions would be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives. This complex is highly utilized by the public for recreational purposes.	WI DNR	Shawn	6		Winona	0	0	0	0	1	1	1	1	0	0	1	Medium	10-20 M	Yes	No	5	6	
Trempealeau Refuge	This project would improve water quality, fish and wildlife habitat in the Trempealeau National Wildlife Refuge. This complex is the most impaired area within the FWFG boundaries from a water quality standpoint. High phosphorus and severe cyanobacteria blooms are producing cyanotoxins (microcystin, anatoxin-a) resulting ecosystem degradation and risk to the public and pets (e.g. small children, dogs). Severe blooms are blocking available light and resulting in scarce submersed vegetation coverage. Connectivity into the complex from the Mississippi River would be restored to improve water quality and reduce the cyanobacteria/cyanotoxin threat. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Material from these actions would be utilized to address forestry and native terrestrial vegetation objectives in the area. Islands would be constructed to address wind-induced resuspension of sediment. This project would be crucial for Pool 6, which has limited functional backwaters.	WI DNR	Shawn	6		La Crosse	0	0	1	1	1	1	1	1	0	0	1	Large	>20M	No	No	5	8	

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Trempeleau NWR Reconnection	This project would install culvert(s) through the railroad dike that separates the main channel from lateral/floodplain habitat located in the Trempeleau National Wildlife Refuge. Reconnection of this large lateral habitat area (>5000 acres) to the main channel will substantially improve the floodplain habitat availability to aquatic organisms that use both environments (e.g., fishes: Phelps et al., 2015; Rantala et al., 2016, and macroinvertebrates: Obolewski et al., 2016). Furthermore, reconnection of this habitat may improve riverine ecosystem processes, services, and/or function at both lateral and longitudinal scales (Pander et al. 2015; Rantala et al., 2015; Opperman et al., 2017).	MN DNR	Rude	6	718-725	Winona	0	1	1	0	1	1	1	1	1	0	0	1	Large	Unknown	No	Yes	5	8	
Trempeleau NWR #1	Water quality improvements. Water Quality: Improve aquatic plant beds, by reducing suspended and resuspension of sediments and Phosphorus. Possible ideas include: island construction in open pools, and controlled waterflow.	FWS	Stephanie Edeler	6	717.8-725.8	None	0	0	0	1	0	1	1	1	1	0	0	1	Large	<10M	no	yes	4	6	
Trempeleau NWR #2	Multi-phased Project: Water level management: Ability to manage water levels to meet objectives in the CCP and HMP. Using infrastructure from the previous HREP increase the ability to gravity drain pools by increasing capacity on the outlets. This project includes construction of a bridge on the Trempeleau NWR entrance road to reconnect braided historic channel to the Trempeleau River Delta. Includes connecting the flood plain on Trempeleau River Delta at the BNSF Rail Bridge.	FWS	Stephanie Edeler	6	717.8-725.8	None	0	1	0	0	1	1	1	1	1	0	0	1	Large	>20M	no	yes	5	7	
Pool 6 Invasives	Invasives: Pool 6 reach, includes vegetation inventory, mapping, treatment prescriptions, treatment. Species: black locust, buckthorn, honeysuckle, purple loosestrife, reed canary grass, leafy spurge and other species as they appear.	FWS	Stephanie Edeler/ Mary Stefanski	6	714.5- 728.5	Winona	0	0	0	0	0	0	0	1	0	0	0	0	Large	10-20 M	no	yes	1	1	
Black River Bottoms	Forestry, exotic species	WI DNR	Jeff	7																			0	0	
Lake Onalaska	This project would improve water quality, fish and wildlife habitat in Lake Onalaska. Lake Onalaska is the largest off-channel area in the FWWG and is in need of a second phase to address problems that persist. Connectivity in Lake Onalaska would be optimized to improve water quality and reduce backwater sedimentation, including the major sediment delivery slough, Sommer's Chute. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Material from depth diversity actions would be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives. Islands would be built to address lingering wind fetch and sediment resuspension issues. The islands will also contribute to overall diversity of habitat in Lake Onalaska.	WI DNR	Dave	7	705	La Crosse	0	0	0	1	1	1	1	1	1	0	0	1	Large	>20M	Yes	No	5	7	
Pigeon Island, Island 91, Abrams island	State owned, stabilization, island enhancement, depth diversity, forestry, connectivity. Would improve water quality by enhancing depth diversity. All these islands have experienced significant sedimentation along with shoreline erosion. Connectivity would be adjusted to reduce backwater sedimentation and water quality.	WI DNR	Dave	7	709.5	La Crosse	0	0	0	0	1	1	1	1	1	0	0	1	Medium	<10M	No	No	5	6	
Trempeleau Lakes	This project would improve water quality, fish and wildlife habitat in the Trempeleau Lakes Complex. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Material from depth diversity actions would be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives. An alum treatment would be employed to address internal phosphorus loading and the duckweed/filamentous algae mat problems that are associated with elevated phosphorus.	WI DNR	Dave, Shawn	7	712	La Crosse	0	0	0	0	1	1	1	1	1	0	0	1	Medium	10-20 M	No	No	5	6	
Black River Bottoms	Primary goal is to protect, enhance and restore quality floodplain forest and wet meadow habitat to support native wildlife, trust resources and ROC's. Accomplished by TSI prescriptions, RCG control, tree plantings, native regeneration treatments and forest inventory. Establish understanding hydrologic changes through evaluation. Potential sediment traps, dredging and depth diversity.	FWS	Tim Miller	7	708-712	La Crosse	0	0	0	1	1	1	1	1	1	0	0	1	Large	10-20 M	yes	yes	5	7	

Restoration Need / Project Name	Brief Description	Primary Agency Proposing	Agency Contact	Pool	Appx. River Mile	Refuge District	Project impact on HNA-II Indicators: -1 Negative 0 No Impact +1 Positive											Project Scale		Existing Fact Sheet?	Added to MyMaps?	No. Priority Indicators	Total Indicators	
							Connectivity				Diversity and Redundancy				Controlling Variables			Acreage	\$\$					
							% Time Gates Open	Acres of Natural Area	Acres of Leveed Area	Open Water	Aq. Functional Class 1	Aq. Functional Class 2	Aq. Veg. Diversity	Floodplain Veg. Diversity	Floodplain Functional Class	Tailwater flux	Pool flux							Total Suspended Solids
							Note: cell color indicates FWFG Indicator rank for POOL selected in Column E																	
Historic Winnesheik Islands (Jeff)	Islands, stabilization, wind fetch	WI DNR	Jeff	9																	0	0		
Lake Winnesheik	This project would improve water quality, fish and wildlife habitat in Lake Winnesheik. Pool 9 has one of the largest impounded areas on the UMR. While the impounded area of Pool 9 has remained vegetated in recent years, an additional project in lower Pool 9 is warranted to keep the pool in a vegetated state during difficult years. Islands would be built to address lingering wind fetch and sediment resuspension issues in lower Pool 9. The islands will also contribute to overall diversity of habitat. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Material from depth diversity actions would be used to cover reed canary flats and develop forestry/native terrestrial vegetation objectives.	WI DNR	ave, Shawn, Kurt, J	9		McGregor	0	0	0	1	1	1	1	1	0	0	1	Large	>20M	Yes	No	5	7	
Lansing Big Lake Phase II	Managed connectivity, forestry, side channel, and backwater restoration.	IA DNR	Hansen	9	667	McGregor	0	0	0	0	1	1	1	1	0	0	1	Medium	10-20 M	No	Yes	5	6	
Reno	May consider a second project	WI DNR	f, Shawn, Brenda, J	9																		0	0	
Upper Iowa River / Lansing Big Lake	The dechannelization project would look at the feasibility of cutting channels through the Upper Iowa levee system and restore the UI River into historic channels. The number and location of the cuts would be determined by this feasibility study. The feasibility study would also address what the added sediment (if any) would do to these complexes. The proposed island project would be an experimental UMRR project. The project would consist of the construction of three elongated donut type islands.	IA DNR	Hansen	9	663-668	La Crosse	0	0	0	0	1	1	0	1	1	0	0	0	Medium	<10M	Yes	No	4	4
Upper Iowa River Delta	Dechannelize Upper Iowa River Delta. Forestry, wetland, side channel, and backwater restoration.	IA DNR	Hansen	9	671	McGregor	0	0	1	0	1	1	1	1	0	0	1	Medium	10-20 M	Yes	Yes	5	7	
Upper Winneshiek	Island, side channel, and backwater restoration.	IA DNR	Hansen	9	660	McGregor	0	0	0	1	1	1	1	1	0	0	1	Large	>20M	No	Yes	5	7	
Waller's lakes and Bad Axe Delta	Bank stabilization, forestry, depth diversity conductivity	WI DNR	Jeff	9																		0	0	
Ambrough	Bank stabilization, forestry, reduce connectivity, depth diversity	WI DNR	Pat	10		McGregor																0	0	
Bagley	Bank Stabilization, forestry, depth diversity, fact sheet	WI DNR	Pat	10		McGregor																0	0	
Frenchtown Lake	Bankline stabilization and managed connectivity. Enhance island and forestry habitat with backwater dredge material. Improve water clarity and aquatic vegetation in the lake.	IA DNR	Hansen	10	619.5	McGregor	0	0	0	0	1	1	1	1	0	0	1	Small	<10M	No	Yes	5	6	
Goetz Lake Complex Pool 11	Armour shoreline to protect islands. Enhance forestry with material dredged from Meyers Lake/ Goetz Lake. Enhance degraded side channel habitat. Potential issue is that complex straddles district boundary. Could be packaged and phased with Swift Slough.	IA DNR	Hansen	10	614	McGregor	0	0	0	0	1	1	1	1	0	0	1	Small	<10M	No	Yes	5	6	
Lower Harpers Slough	Island and forestry enhancement. Side channel and backwater restoration.	IA DNR	Hansen	10	644	McGregor	0	0	0	0	1	1	1	1	0	0	1	Medium	10-20 M	No	Yes	5	6	
Lower Wisconsin River	Garnett Lake, grassy pond, up to east channel, bank stabilization, depth diversity, forestry	WI DNR	Pat	10		McGregor																0	0	
Sny Magil Complex	Bankline stabilization to protect islands and reduce flow into Methodist Lake. Forestry enhancement with dredged material. Side channel restoration.	IA DNR	Hansen	10	627	McGregor	0	0	0	0	1	1	1	1	0	0	1	Medium	10-20 M	No	Yes	5	6	
Sny Mcgil	Forestry, bank stabilization, depth diversity	WI DNR	Pat	10		McGregor																0	0	
State Line Slough	Bank Stabilization, forestry, depth diversity	WI DNR	Pat	10		McGregor																0	0	
Sunfish Lake	Depth diversity, bank stabilization and forestry	WI DNR	Pat	10		McGregor																0	0	
Swift Slough and Ackerman's Cut Pool 11	Armor eroding ldb shoreline and close off cuts breaking across the island into Swift Slough. Spawning habitat could be incorporated into shoreline armoring. Dredge cuts inside of Swift and Dead Slough backwaters/opening of Swift. Enhance forestry with dredge materials. Stabilize additional island dissection around Ackerman's Cut.	IA DNR	Hansen	10	615	McGregor	0	0	0	0	1	1	0	1	1	0	0	1	Small	<10M	No	Yes	4	5
Upper 10 - Harpers	Bank stabilization, forestry, depth diversity	WI DNR	Jeff, Pat	10		McGregor																0	0	
Upper Harpers Slough	Island and forestry enhancement. Side channel and backwater restoration. Side channel spawning habitat.	IA DNR	Hansen	10	647.5	McGregor	0	0	0	0	1	1	1	1	0	0	1	Medium	10-20 M	No	Yes	5	6	
Backwater Alum Treatments	The project would improve water quality, fish and wildlife habiat by addressing accumulated phosphorus in low connectivity backwaters. Internal phosphorus loading from 80 years of nutrient loading is fueling mats of duckweed and filamentous algae. The water column beneath these mats is overwhelmingly hypoxic. These hypoxic backwaters can constitute up to half of total backwater area in the summer months, resulting in degraded fish and wildlife habitat. The general public is increasingly concerned with this form of backwater degradation. A single treatment would last up to ten years. The Trempepealeu Lakes (Second, Third and Round) would be a good site to conduct the first treatment due to low connection to incoming main channel phosphorus sources.	WI DNR	Shawn	Multiple		All	0	0	0	0	1	1	1	0	0	0	1	Small	<10M	No	No	3	4	
Bankline and Island Restoration and Stabilization	Similar to previous bankline stabilization project. Identify critical areas to protect and restore.	IA DNR	Hansen	Multiple		All	0	0	0	0	1	1	1	1	0	0	1	Multi-Pool	Unknown	No	No	5	6	

Top 15 FWWG HREPs in rank order based on the number of HNA-II indicators that would be positively impacted.

Restoration Need / Project Name	Brief Description	Primary Agency Proposing	Agency Contact	Pool	No. Priority Indicators	Total Indicators	Weighted Score 1	Rank Score 1
Seasonal/annual hydrologic restoration	Facilitate Pool or Reach-wide water level reductions during the growing season on either an annual basis or at frequent intervals to restore low water periodicity necessary to maintain critical floodplain features and components.	MN DNR	Dieterman	Multiple	5	9	9.00	1.00
Natural levee restoration/protection	Natural riverine levees that protect floodplain forest habitat, interior wetlands and backwaters that have experienced erosion and dissection will be restored utilizing a combination of sand, silts and rock.	MN DNR	Dieterman, Hansen	Multiple	5	8	8.00	2.00
Pool 8 Poolwide Forest Restoration	The primary goal of this project is to protect, enhance and restore quality forest and other terrestrial habitats to support native wildlife, trust resources, and UMR Refuge ROC's. A primary focus area of this project will be the Root River/Lawrence Lake/Goose Island complex areas, where there is unique opportunity to connect extant but separate large tracts of floodplain and lowland forest and to enhance current forest. A secondary goal will be backwater restoration, which will be incorporated to improve water quality for native fish species and SAV growth for Refuge ROC's and habitats. The project will be adaptive in nature and will utilize the Floodplain Forest Prioritization Tool currently being developed by MVP La Crescent field office to identify highest priority sites for restoration. Activities will include RCG control, forest canopy management, tree planting, seeding of native woody and herbaceous vegetation and forest inventory. Hydrologic and depth/elevation modifications may also be incorporated to benefit both terrestrial and aquatic resources.	COE	Andy Meier	8	5	8	8.00	2.00
Trempeleau NWR	This project would install culvert(s) through the railroad dike that separates the main channel from lateral/floodplain habitat located in the Trempeleau National Wildlife Refuge. Reconnection of this large lateral habitat area (>5000 acres) to the main channel will substantially improve the floodplain habitat availability to aquatic organisms that use both environments (e.g., fishes: Phelps et al., 2015; Rantala et al., 2016, and macroinvertebrates: Obolewski et al., 2016). Furthermore, reconnection of this habitat may improve riverine ecosystem processes, services, and/or function at both lateral and longitudinal scales (Pander et al. 2015; Rantala et al., 2015; Opperman et al., 2017).	MN DNR	Rude, Giblin, Edeler	6	5	8	8.00	2.00
Black River Bottoms	Primary goal is to protect, enhance and restore quality floodplain forest and wet meadow habitat to support native wildlife, trust resources and ROC's. Accomplished by TSI prescriptions, RCG control, tree plantings, native regeneration treatments and forest inventory. Establish understanding hydrologic changes through evaluation. Potential sediment traps, dredging and depth diversity.	FWS	Miller, Janvrin	7	5	7	7.00	5.00
Lower Pool 5 / Weaver Bottoms	MN-FWS narrative - Proposed project actions include main channel dredging to support annual drawdowns over a 10-year period, reduce and stabilize flows entering through MN-7, construct new islands and peninsula extensions, and dredge backwater sediments in two locations to provide and protect floodplain habitat and vegetation, reduce sedimentation and the impact of wind-generated wave action, and enhance bathymetric diversity.	FWS	Stefanski, Dieterman, Brecka	5	5	7	7.00	5.00
Lower Pool 6	This project would improve water quality, fish and wildlife habitat in Lower Pool 6 (Blacksmith Slough/Johnson Island). This complex of habitat has experienced severe degradation during recent high discharge years. Connectivity into the complexes would be optimized to improve water quality and reduce backwater sedimentation. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Pool 6 was identified in the DeJager Indicators Report (Fig 11) as being backwater depth limited. It is important to maintain and enhance backwater depth in Pool 6 due to the scarcity of deep, backwater habitat. Material from depth diversity actions would be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives.	WI DNR	Jeff, Shawn	6	5	7	7.00	5.00
Bankline and Island Restoration and Stabilization	Similar to previous bankline stabilization project. Identify critical areas to protect and restore.	IA DNR	Hansen	Multiple	5	6	6.00	8.00
Big Lake	This project would construct new islands and enhance/protect existing islands. Floodplain forest would be created or enhanced by constructing/enhancing/ protecting islands, increasing existing island elevations, planting trees, and using applicable forestry management techniques. Islands would be located to provide wave and wind fetch protection. Backwater dredging to obtain borrow material for islands and forestry enhancement would create bathymetric diversity within the project area.	FWS	Stefanski, Giblin, Dieterman	4	5	6	6.00	8.00
Lake Onalaska Restoration and Stabilization	<ul style="list-style-type: none"> Protect, enhance and reconstruct barrier islands between the main channel and Lake Onalaska to protect the backwater from current and break up wind-fetch Develop and enhance flood plain forest species on barrier islands. Improve the water quality in Sailboat Club bay by creating depth diversity. Armor the northern tip of Bell island. Protect, reconstruct, construct and enhance the small islands near the Lake Onalaska shoreline and establish flood plain forest species. Improve backwater water quality by improving flows through dredging and island restoration near the Lake Onalaska shoreline. 	FWS	Groom, Heath	7	5	6	6.00	8.00
Merrick Park/Fountain City Bay	This project would improve water quality, fish and wildlife habitat in the Fountain City Bay/ Merrick State Park Complex. Connectivity into the complex would be optimized to improve water quality and reduce backwater sedimentation. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Pool 5a was identified in the DeJager Indicators Report (Fig 11) as being backwater depth limited. It is important to maintain and enhance backwater depth in Pool 5a due to the scarcity of deep, backwater habitat. Material from depth diversity actions can be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives.	WI DNR	Shawn	5.1	5	6	6.00	8.00

Top 15 FWWG HREPs in rank order based on the number of HNA-II indicators that would be positively impacted.

Restoration Need / Project Name	Brief Description	Primary Agency Proposing	Agency Contact	Pool	No. Priority Indicators	Total Indicators	Weighted Score 1	Rank Score 1
Sam Gordy's	This project would improve water quality, fish and wildlife habitat in the Sam Gordy's Complex. This complex of has experienced severe water quality/habitat problems during recent years. Connectivity into the complex would be optimized to improve water quality and reduce backwater sedimentation. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Pool 6 was identified in the DeJager Indicators Report (Fig 11) as being backwater depth limited. It is important to maintain and enhance backwater depth in Pool 6 due to the scarcity of deep, backwater habitat. Material from depth diversity actions would be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives. This complex is highly utilized by the public for recreational purposes.	WI DNR	Shawn	6	5	6	6.00	8.00
Lower Zumbro River restoration	Partially remove levees and reconnect lower Zumbro R. to distributary channels to allow high flow events and associated sediments to flow through, disperse and settle on historic floodplain lands.	MN DNR	Dieterman	5	3	6	6.00	8.00
Goose Island Complex	This project would improve water quality, fish and wildlife habitat in the Goose Island Complex. Connectivity in the complex would be optimized to improve water quality and reduce backwater sedimentation. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Material from depth diversity actions would be used to cover reed canary flats and develop forestry/native terrestrial vegetation objectives. This complex is highly utilized by the public for recreational purposes.	WI DNR	ve, Shawn, Kurt,	8	5	6	6.00	8.00
Mosiman's/Probst	This project would improve water quality, fish and wildlife habitat in the Mosiman's/Probst Lake Complex. This complex of habitat has experienced severe degradation during recent high discharge years. Connectivity into both complexes would be optimized to improve water quality and reduce backwater sedimentation. Depth diversity actions would be utilized to improve water quality, fish and wildlife habitat. Material from depth diversity actions can be used to cover reed canary flats and develop forestry and native terrestrial vegetation objectives. This complex is highly utilized by the public for recreational purposes.	WI DNR	Giblin, Janvrin	5	4	5	5.00	15.00