



**US Army Corps
of Engineers**®
St. Paul District

Mitigation Monitoring Report Template
USACE St. Paul District
April 2024 Version 1



Sponsors for compensatory mitigation banks and in-lieu fee sites are required to demonstrate in their monitoring reports whether sites are meeting performance standards or on a trajectory to meeting performance standards. Sponsors must collect accurate and complete data and report that data in their monitoring reports to support their assessment of site conditions relative to the required performance standards.

While sponsors do not have to follow this outline precisely, or present data in tables exactly as illustrated here, the U.S. Army Corps of Engineers St Paul District (Corps) has developed these suggestions in coordination with agencies on the Interagency Review Team (IRT) to aid sponsors in preparing and submitting complete monitoring reports. IRT members will be able to effectively review reports that are prepared by sponsors who implement these suggestions. Efficient agency review of monitoring reports will result in more timely decisions on credit release requests, to include decisions to release credits when warranted or decisions to not release credits and instead provide direction on measures that sponsors should take before submitting another request for a credit release. The Corps will update this template as needed in coordination with IRT members and based on any feedback we receive from sponsors.

The Corps Project Manager (PM) will conduct site inspections, typically during the growing season, to field verify the monitoring and performance documentation before making a decision on credit releases. If sponsors expect to request a credit release following monitoring during the growing season, they should consider submitting as much data as possible before the growing season ends and they should request the Corps complete a site inspection before end of the growing season; then, they must submit complete monitoring reports by the due date (usually December 31st or January 31st).

A. Title Page (1 page)

B. Project Overview (1-2 pages): Provide the following:

1. Compensation site name:
2. Corps File Number:
3. County/State/LGU (in Minnesota):
4. RIBITS Bank Number:
5. Name and contact information of sponsor:
6. Name and contact information of agent:
7. Date construction of mitigation bank was completed (including seeding):
8. Year of monitoring (calendar year AND number of full growing seasons since construction):
9. Start and end dates of growing season:
10. Describe how you determined start date and end date of growing season:
11. Short project summary paragraph:
12. Short paragraph describing whether performance standards are being met:
13. Clearly state whether this report includes a credit release request:

C. Monitoring Results (1-3 pages): Include a summary of monitoring methods (e.g., timed meander, plots, step-plot, etc.), monitoring dates, and the persons involved. Most importantly, summarize whether the compensatory mitigation project site is successfully achieving the required performance standards, or trending towards success. To help expedite the review process, the sponsor should include tables (see attached examples of potential table formats) to compare the performance standards from the mitigation plan, MBI or PRM mitigation plan, to the conditions of the developing mitigation site. The tables should include all the approved performance standards from the mitigation plan, a description of the observed conditions, and information concluding whether those performance standards were met during all monitoring years. The summary table (see Example 1) should clearly identify (e.g., use of highlighting) performance standards that are not met and illustrate the difference between mitigation site conditions and required performance standards. No matter the format used, the sponsor must provide monitoring data for the required performance standards that is accurate and complete, and not simply state the performance standard was met. For example:

Acceptable: Well 1 met the wet meadow hydrology performance standard (>28 days) for 37 days (April 14 – May 21).

Not acceptable: Well 1 met the wet meadow hydrology performance standard for >28 days.

Acceptable: Within the wet meadow community, 43 native species were observed, meeting the species richness performance standard of >25 species.

Not acceptable: The wet meadow community met the species richness performance standard of >25 species.

D. Performance Standards from MBI (1-2 pages): Provide the approved performance standards from the MBI.

E. Credit Release Table from MBI (1 page): Provide the approved credit release table from the MBI. Identify which credits have been released by the Corps to date and which have been released by the State to date (if different).

F. Management Activities (1 page): Describe all past management activities and planned future management. Include in a table details of management activities completed since the previous monitoring report. Include maps identifying the locations of management activities. For sites or areas onsite where performance standards are not being met or require additional maintenance or adaptive management beyond that projected in the MBI, sponsors should summarize their proposed maintenance and adaptive management activities here.

G. Maps (2-3 pages): Provide (minimally) one map to show the location of the compensatory mitigation site with enough detail for IRT members to locate the site for a site visit (e.g., site location map in the approved MBI). Include map(s) from the approved MBI that show planned community types and sampling locations. Then, to compare planned conditions and monitoring to actual conditions and monitoring, provide map(s) that include actual wetland and upland community types, transect locations, sampling data points, photograph locations with orientation, and any other features required for monitoring and documenting site conditions. If practical, provide a map that overlays actual conditions and monitoring locations with planned conditions and monitoring locations.

- H. Antecedent Precipitation (1 pages):** Provide precipitation graphs for the monitoring year. Identify whether the antecedent precipitation for the growing season was normal, wetter than normal, or drier than normal.
- I. Hydrographs (one page for every well):** Include separate hydrographs for all wells. Explain any missing well data in the *Monitoring Results* section. Hydrographs should include water elevation, ground elevation, 1 foot below ground elevation (for certain community types), bottom of well, the intended vegetation community the well represents, and start/end of growing season. Include precipitation data on each hydrograph. Also, include data from any approved reference well on each hydrograph if using reference well data to support the credit release request. Ensure all dates on hydrographs are legible, as reviewers must be able to easily tell the exact dates associated with the water level shown. See the example hydrograph attached to this document.
- J. Well Construction Logs (page for every well):** Include well logs for all wells as these help interpret anomalies in hydrology monitoring data.
- K. Vegetation Summary Data:** Provide summary data to substantiate the success and/or potential challenges associated with the compensatory mitigation project.
- L. Photos:** Provide photo documentation to support the findings and recommendations referenced in the monitoring report and to assist the Corps in assessing whether the compensatory mitigation project is successful for the monitoring period. Ensure photos fit on standard 8.5" X 11", are dated, and clearly labeled with the direction from which the photo was taken. Identify locations of photos on the appropriate maps.

Example 1: Hydrology Performance Standard and Vegetation Interim 1 Table Using Performance Standard Template:

Appendix C- Performance Standards				
	Performance Standard (PS)	PS Met (Y/N)	Comparison of Monitoring Data to Performance Standards	
Hydrology Performance Standards (30% Release of Credits)	Each performance standard met for two growing seasons			
	Wet Meadow	Hydrology shall consist of a water table at or within 12 inches of the surface for the required duration (28 consecutive days or two periods of 14 or more consecutive days) during the growing season. Inundation shall not occur (unless there are site-specific conditions) except at the start of the growing season and following the 10-year, 24-hour (or greater) precipitation events. An exception can be made for sites with hummocky microtopography – hollows between hummocks can have standing water depths of up to 6 inches for extended duration.	Y	Monitoring of water levels conducted from April-October 2020 and 2021 demonstrates that wetland hydrology performance standard has been met on the site during normal conditions. All wet meadow areas had water within 12 inches of the surface from early April when monitoring began to mid-June. Well 1: 65 days (April 12-June 17) in 2021 and 63 days (April 10 - June 13) in 2022. Well 2: 70 days (April 12-June 22) in 2021 and 65 days (April 10 - June 15) in 2022.
	Shallow Marsh/Deep Marsh	Hydrology shall consist of a water table at the surface, to inundation to the outlet elevation (1134 ft) for a minimum of 56 consecutive days (or two periods of 28 days, or four periods of 14 consecutive days), during the growing season.	Y	Shallow marsh areas (bottom elevation 1132.5-1133) were inundated from the beginning of monitoring early April to late June in 2021 and 2022. Well 3: 70 Days (April 12 - June 22) in 2021 and 75 days (April 10 - June 25) in 2022. Well 4: 73 Days (April 12 - June 25) in 2021 and 78 days (April 10 - June 28) in 2022.
Vegetation Interim Standard 1 (IS1) (20% release credits)	Each performance standard met for a minimum of two consecutive growing seasons			
	Wet Meadow	50% or more relative cover by natives composed of at least 5 species	N	Did not meet in 2021, but met in 2022: 15 native species making up 40% relative cover in 2021 and 23 native species observed making up 70% of relative cover in 2021 .
		Invasive, non-native species not to exceed 50% relative cover	N	Did not meet in 2021, but met in 2022: Non-native species was 60% in 2021 and 30% in 2022.
		50% or more relative cover by hydrophytes	Y	Hydrophytic species comprise >75% relative cover of community in 2021 and >80% 2022.
		Bare ground not to exceed 20% absolute cover	Y	Bare ground was 5% of absolute cover in 2021 and 2022.
	Shallow Marsh/Deep Marsh	40% relative cover by natives composed of at least 3 species	N	Did not meet in 2021, but met in 2022: 10 native species observed making up 30% of relative cover in 2021. 18 native species making up 60% of relative cover in 2022.
		Invasive, exotic species not to exceed 60% relative cover	N	Did not meet in 2021, but met in 2022: Invasive species make up 70% of relative cover in 2021, and 40% in 2022.
		50% or more relative cover by hydrophytes	Y	Hydrophytic species comprise >90% relative cover of community in 2021 and 2022.
		Open water not to exceed 40% absolute cover	Y	Open water was 40% absolute cover in 2021 and 35% in 2022.
	Upland Buffer (Prairie)	50% relative cover by natives composed of at least 6 species	N	Did not meet in 2021, but met in 2022. 5 native species observed making up 40% relative cover in 2021 and 17 native species making up 60% relative cover in 2022.
		Invasive, exotic species not to exceed 50% relative cover	N	Did not meet in 2021, but met in 2022. Non-native species making up 60% relative cover in 2021 and less than 40% in 2022.
Bare ground not to exceed 30% absolute cover		Y	Bare ground less than 20% of absolute cover in both 2021 and less than 10% in 2022.	

Example 2: Hydrology Performance Standard Table to illustrate one growing season of data:

Template:

Community Type and Performance Standard	Well ID	Observed Inundation	Standard Met (Y/N)	Observed Water Table Within 12"	Standard Met (Y/N)
Wet Meadow PS	Well ID #	Consecutive # of days PS met	Y or N	Consecutive # of days PS met	Y or N
	Well ID #	Consecutive # of days PS met	Y or N	Consecutive # of days PS met	Y or N
	Well ID #	Consecutive # of days PS met	Y or N	Consecutive # of days PS met	Y or N
Shallow Marsh PS	Well ID #	Consecutive # of days PS met	Y or N	Consecutive # of days PS met	Y or N
	Well ID #	Consecutive # of days PS met	Y or N	Consecutive # of days PS met	Y or N
	Well ID #	Consecutive # of days PS met	Y or N	Consecutive # of days PS met	Y or N
Deep Marsh PS	Well ID #	Consecutive # of days PS met	Y or N	Consecutive # of days PS met	Y or N
	Well ID #	Consecutive # of days PS met	Y or N	Consecutive # of days PS met	Y or N

Example:

Community Type and Performance Standard	Well ID	Consecutive Number of Days Inundation Observed.	Standard Met (Y/N)	Consecutive Number of Days Water Table Within 12" Observed	Standard Met (Y/N)
<p>Wet Meadow - Hydrology shall consist of a water table 12 inches or less below the soil surface for a minimum of 28 consecutive days, during the growing season under normal and wetter than normal hydrological conditions (per Sprecher and Warne 2000). Inundation during the growing season shall not occur except: (1) at the start of the growing season (due to snowmelt/precipitation); and (2) following the 10-year, 24-hour – or greater – precipitation events. Depth of inundation during the growing season shall be 6 inches or less with duration of less than 14 consecutive days. An exception can be made for sites with hummocky microtopography – hollows between hummocks can have standing water depths up to 6 inches for extended duration.</p>	Well 1	0	Y	45 days (April 20 - June 3)	Y
	Well 2	0	Y	27 days (April 20 - May 16), 17 days (September 1- Sept. 16)	Y
	Well 3	7 days (April 20-26)	Y	30 days (April 20 - May 19)	Y
<p>Shallow Marsh - Hydrology shall consist of inundation up to 6 inches in depth for at least 28 consecutive days during the growing season under normal and wetter than normal hydrological conditions. During the growing season, inundation up to 18 inches in depth following the 2 Year, 24-hour-or greater-precipitation events is permissible provided that the duration does not exceed 28 consecutive days (i.e., water depth drops from 18 inches to 6 inches within 28 days).</p>	Well 4	45 days (April 20 - June 3)	Y	N/A	N/A
	Well 5	20 days (April 20 - May 9)	N	N/A	N/A
	Well 6	45 days (April 20 - June 3)	Y	N/A	N/A
<p>Deep Marsh - Inundation 12 inches to 36 inches in depth throughout the growing season with the exception of drought conditions.</p>	Well 7	45 days (April 20 - June 3)	N	N/A	N/A
	Well 8	Logger malfunction	N	N/A	N/A

Example 3: Hydrology Performance Standard Tables, to compare two or more growing seasons of data:

Template:

Community Type	Well ID	Year						Year					
		Inundation			Within 12"			Inundation			Within 12"		
		PS	O	M	PS	O	M	PS	O	M	PS	O	M
Wet Meadow	Well ID #		# of days	Y or N		# of days	Y or N		# of days	Y or N		# of days	Y or N
	Well ID #		# of days	Y or N		# of days	Y or N		# of days	Y or N		# of days	Y or N
	Well ID #		# of days	Y or N		# of days	Y or N		# of days	Y or N		# of days	Y or N
Shallow Marsh	Well ID #		# of days	Y or N		# of days	Y or N		# of days	Y or N		# of days	Y or N
	Well ID #		# of days	Y or N		# of days	Y or N		# of days	Y or N		# of days	Y or N
	Well ID #		# of days	Y or N		# of days	Y or N		# of days	Y or N		# of days	Y or N
Deep Marsh	Well ID #		# of days	Y or N		# of days	Y or N		# of days	Y or N		# of days	Y or N
	Well ID #		# of days	Y or N		# of days	Y or N		# of days	Y or N		# of days	Y or N

Example:

Community Type	Well ID	2022 Year 1						2023 Year 2					
		Inundation			Within 12"			Inundation			Within 12"		
		PS	O	M	PS	O	M	PS	O	M	PS	O	M
Wet Meadow	Well 1	<14	0	Y	>28	32	Y	<14	0	Y	>28	32	Y
	Well 2	<14	2	Y	>28	35	Y	<14	0	Y	>28	35	Y
	Well 3	<14	0	Y	>28	27	N	<14	0	Y	>28	36	Y
Shallow Marsh	Well 4	>28	35	Y	N/A	N/A	Y	>28	36	Y	N/A	N/A	Y
	Well 5	>28	36	Y	N/A	N/A	Y	>28	45	Y	N/A	N/A	Y
	Well 6	>28	34	Y	N/A	N/A	Y	>28	38	Y	N/A	N/A	Y
Deep Marsh	Well 7	GS	GS	Y	N/A	N/A	Y	GS	GS	Y	N/A	N/A	Y
	Well 8	GS	GS	Y	N/A	N/A	Y	GS	GS	Y	N/A	N/A	Y

PS = Performance Standard

O = Observed number of days PS was met

M = Met, is the PS met?

GS = Growing Season

Example 4: Vegetation Performance Standard Table to Illustrate One Growing Season of Data:

Vegetation Interim Standard 1 (IS1) (20% release credits)	Wetland Community	Performance Standard (PS) - must met for a minimum of two growing seasons	PS Met (Y/N)	Supporting Data
	Wet Meadow	50% or more relative cover by natives composed of at least 5 species	Y	23 native species observed making up 70% of relative cover in 2022 and 37 native species making up 86% relative cover in 2023.
		Invasive, non-native species not to exceed 50% relative cover	Y	Non-native species was 25% in 2022 and 14% in 2023.
		50% or more relative cover by hydrophytes	Y	Hydrophytic species comprise >75% relative cover of community in 2022 and >80% 2023.
		Bare ground not to exceed 20% absolute cover	Y	Bare ground was 5% of absolute cover in 2022 and 2023.
	Shallow Marsh	40% relative cover by natives composed of at least 3 species	Y	17 native species observed making up 72% of relative cover in 2022. 18 native species making up 75% of relative cover in 2023.
		Invasive, exotic species not to exceed 60% relative cover	Y	Invasive species make up 25% of relative cover in 2022 and 2023.
		50% or more relative cover by hydrophytes	Y	Hydrophytic species comprise >90% relative cover of community in 2022 and 2023.
		Open water not to exceed 40% absolute cover	Y	Open water was 40% absolute cover in 2022 and 35% in 2023.
	Upland Buffer	50% relative cover by natives composed of at least 6 species	Y	23 native species observed making up 85% relative cover in 2022 and 34 native species making up 89% relative cover in 2023.
		Invasive, exotic species not to exceed 50% relative cover	Y	Non-native species making up less than 20% relative cover in 2022 and less than 15% in 2023.
		Bare ground not to exceed 30% absolute cover	Y	Bare ground less than 10% of absolute cover in both 2022 and less than 7% in 2023.

Example 5: Vegetation Performance Standard Tables, to compare two or more growing seasons of data:

Template:

		Vegetation Monitoring															
Wetland Community	Performance Standards from MBI	Year			Year			Year			Year			Year			
		PS	O	M	PS	O	M	PS	O	M	PS	O	M	PS	O	M	
Wet Meadow	PS 1																
	PS 2																
	PS 3																
	PS 4																
Shallow Marsh	PS 1																
	PS 2																
	PS 3																
	PS 4																
Deep Marsh	PS 1																
	PS 2																
	PS 3																
	PS 4																
Buffer	PS 1																
	PS 2																
	PS 3																

Example:

		Vegetation Monitoring Example														
Wetland Community	Performance Standards from MBI	2019 - Year 1			2020 - Year 2			2021 - Year 3			2022 - Year 4			2023 - Year 5		
		Veg 1	O	M	Veg 1	O	M	Veg 2	O	M	Veg 2	O	M	F Veg	O	M
Wet Meadow	% cover by NNI	50	52	Y	50	60	Y	70	75	N	70	79	Y	80	85	Y
	% cover hydrophytes	50	52	Y	50	60	Y	65	70	Y	65	75	Y	75	80	Y
	% bare ground	5	4.5	Y	5	4	Y	3	3	Y	3	2	Y	1	0.5	Y
	Species Richness	10	9	N	10	17	Y	15	18	Y	15	24	Y	25	30	Y
Shallow Marsh	% cover by NNI	50	53	Y	50	55	Y	60	55	N	60	65	Y	70	75	Y
	% cover hydrophytes	50	53	Y	50	60	Y	70	70	Y	70	75	Y	80	80	Y
	% open water	30	28	Y	30	22	Y	20	20	Y	20	15	Y	10	10	Y
	Species Richness	3	4	Y	3	8	Y	10	12	Y	10	12	Y	15	16	Y
Deep Marsh	% cover by NNI	50	55	Y	50	55	Y	60	55	N	60	65	Y	70	75	Y
	% cover hydrophytes	50	55	Y	50	60	Y	80	85	Y	80	90	Y	95	95	Y
	% open water	50	40	Y	50	40	Y	40	35	Y	40	32	Y	30	25	Y
	Species Richness	1	2	Y	1	3	Y	3	5	Y	3	5	Y	6	7	Y
Buffer	% cover by NNI	50	55	Y	50	60	Y	70	75	N	70	80	Y	80	90	Y
	% bare ground	5	4	Y	5	3.5	Y	3	2.5	Y	3	2	Y	1	0.5	Y
	Species Richness	5	12	Y	5	13	Y	15	16	Y	15	20	Y	24	23	N

PS = Performance Standard

O = Observed

M = Met, is the PS met

Veg 1 = Interim 1 Veg Performance Standard

Veg 2 = Interim 2 Veg Performance Standard

F Veg = Final Veg Performance Standard

Hydrographs should include the following to ensure accurate reporting and to help with efficient agency review of monitoring results:

1. Well name, which makes it easy to find well location on accompanying maps.
2. Basin wetland community type, which helps the reviewer know what performance standard applies to the well data.
3. Basin name, which is needed to determine which basin the well is monitoring and compare hydrographs.
4. Clear description of days when performance standard was met (NOTE that the scale on many hydrographs makes it hard to determine the dates when performance standards were met. Call out the time period in which the well was meeting the performance standard on the hydrograph, accompanying table, or within the *Monitoring Results* section.)
5. Water elevation (taken from the data logger).
6. Ground elevation.
7. 1-foot below ground elevation for relevant wetland community types and associated performance standards, e.g., fresh wet meadow.
8. Depth of bottom of well.
9. Start of growing season. Note, all hydrology performance standards stipulate that the performance standard must be met during the growing season. Most hydrology performance standards are met at the beginning of the growing season, the start of the growing season must be identified in the report and included on all hydrographs.
10. End of growing season.
11. Precipitation data.
12. Reference well data, if using reference well data to support the credit release request.
13. Ensure dates are clear and legible.

The following hydrograph is an example hydrograph containing the information described above (see pdf).

