Discovery Report

Trempealeau Watershed, HUC 07040005

Buffalo County, Jackson County, Trempealeau County

City of Arcadia, City of Blair, Village of Hixton, City of Independence, Village of Pigeon Falls, Village of Taylor, City of Whitehall
Wisconsin

October, 2026

FEMA

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I. Study Information

The Federal Emergency Management Agency's (FEMA's) Risk Mapping, Assessment, and Planning (Risk MAP) program helps communities identify and assess their flood risk. Through Risk MAP, FEMA provides information to enhance local Hazard Mitigation Plans (HMPs), improve community outreach, and increase local resilience to floods. Discovery is the process of gathering local knowledge and data for analysis with the goal of initiating a hazard risk assessment and promoting risk discussions within the watershed.

The Discovery process for the Trempealeau River Watershed began with a kickoff meeting on August 15, 2024. The Discovery meeting occurred on July 29, 2026. Details on meetings and stakeholder involvement can be found in the *Discovery Outreach and Engagement Strategy,* community input can be found in the *Summary of Community Risks Identified*, and outcomes can be found in the *Recommendations for Future Risk MAP Project Scope*.

II. Project Area Community List

The Discovery project for the Trempealeau River Watershed includes 7 communities in Buffalo, Jackson, and Trempealeau Counties. While all communities may be under consideration for a revised FEMA Flood Insurance Study (FIS) and Flood Insurance Rate Map (FIRM), not all communities will receive them. In this report, current conditions and flood concerns are summarized geographically by county. Community-specific concerns and information will be added to the report after the Discovery meeting if desired and applicable.

Project Area Community List

Buffalo County

- Unincorporated Areas of Buffalo County

Jackson County

- Unincorporated Areas of Jackson County
- Village of Hixton
- Village of Taylor

Trempealeau County

- Unincorporated Areas of Trempealeau County
- City of Arcadia
- City of Blair
- City of Independence
- City of Whitehall
- Village of Pigeon Falls

III. Terms and Acronyms

CAC: Community Assistance Contact
CAV: Community Assistance Visit
CFR: Code of Federal Regulations
CID: Community Identification Number
CIS: Community Information System
CLOMA: Conditional Letter of Map Amendment
CLOMR: Conditional Letter of Map Revision
CNMS: Coordinated Needs Management Strategy
CRS: Community Rating System
DNR: Department of Natural Resources
DR: Disaster Declaration Number (alphabetic designation or precursor for)
EM: Emergency Disaster Declaration
FEMA: Federal Emergency Management Agency
FIRM: Flood Insurance Rate Map
FIS: Flood Insurance Study
FMA: Flood Mitigation Assistance
GIS: Geographic Information System
HMA: Hazard Mitigation Assistance
HMGP: Hazard Mitigation Grant Program
HMP: Hazard Mitigation Plan
HUC: Hydrologic Unit Code
LiDAR: Light Detection and Ranging
LOMA: Letter of Map Amendment
LOMR: Letter of Map Revision
LOMR-F: Letter of Map Revision Based on Fill
LOMR-VZ: Letter of Map Revision V Zone
MIP: Mapping Information Platform
NRCS: Natural Resources Conservation Service
NCDC: National Climatic Data Center
OHWM: Ordinary High-Water Mark
NOAA: National Oceanic and Atmospheric Administration
NWS: National Weather Service
PDM: Pre-Disaster Mitigation
PMR: Physical Map Revision
Risk MAP: Risk Mapping, Assessment, and Planning
RL: Repetitive Loss
SHFA: Special Flood Hazard Area
SRL: Severe Repetitive Loss
SWCD: Soil and Water Conservation District
TRW: Trempealeau River Watershed
USACE: United States Army Corps of Engineers
USDA: United States Department of Agriculture
USGS: United States Geological Survey

IV. Glossary of Terms

Please note: The Federal Emergency Management Agency (FEMA) is the source for the following terms and definitions, unless cited otherwise.

1-Percent-Annual-Chance Flood: The flood that has a 1-percent chance of being equaled or exceeded in any given year. This is the regulatory standard also referred to as the "100-year flood" or "base flood." The base flood is the national standard used by the National Flood Insurance Program (NFIP) and all Federal agencies for the purposes of requiring the purchase of flood insurance and regulating new development.

0.2-Percent-Annual-Chance Flood: A flood that has a 0.2-percent chance of being equaled or exceeded in any given year (also known as a 500-year flood).

Approximate Study: Areas subject to inundation by the 1-percent-annual-chance flood event, generally determined using approximate methodologies. Because detailed hydraulic analyses have not been performed, no Base Flood Elevations (BFEs) or flood depths are shown. Mandatory flood insurance purchase requirements and floodplain management standards apply. An approximate study is represented on a FIRM as a Zone A.

Community Assistance Contacts (CACs): A telephone call or brief visit to an NFIP community for the purpose of establishing or reestablishing contact to determine if any program-related problems exist and to offer assistance.

Community Assistance Visits (CAVs): A visit to a community by a FEMA staff member or staff of a State agency on behalf of FEMA that serves the dual purpose of providing technical assistance to the community and ensuring that the community is adequately enforcing its floodplain management regulations.

Community Rating System (CRS): A voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Flood insurance premium rates in participating communities are discounted to reflect the reduced flood risk resulting from the community actions.

Conditional Letter of Map Revision (CLOMR): A CLOMR is a letter from FEMA that comments on a proposed project that would, upon construction, affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the Special Flood Hazard Area (SFHA). The letter does not revise an effective NFIP map; it indicates whether the project, if built as proposed, would be recognized by FEMA. FEMA charges a fee for processing a CLOMR to recover the costs associated with the review.

Conditional Letter of Map Revision Based on Fill (CLOMR-F): A CLOMR-F is FEMA's comment on a proposed project that will be elevated by fill. This process is not for submitting proposed development that would affect the hydrologic or hydraulic characteristics of a flooding source and thus result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA. The letter does not revise an effective NFIP map, but indicates whether the project, if built as proposed, would be recognized by FEMA.

Coordinated Needs Management Strategy (CNMS): The CNMS application is FEMA's inventory of flood hazard studies and flood hazard mapping needs for areas where a flood hazard study is needed. CNMS is beneficial for community officials and FEMA staff in analyzing and depicting flood hazards to enhance understanding of flood risk and make informed decisions on community planning and flood mitigation.

Dam: An artificial barrier that has the ability to impound water, wastewater, or any liquid-borne material, for the purpose of storage or control of water (Federal Energy Regulatory Commission). The New York State Department of Environmental Conservation (NYSDEC) uses a classification scale of A to D to assign hazard potential to each of the dam structures contained within the inventory, while dams without a hazard code assignment are considered Class 0 or unclassified hazard potential. The hazard classifications for dams are assigned based on the particular physical characteristics of a dam and its location, may be assigned irrespective of the size of the dam, as appropriate, and are as follows:

- Class A or low hazard dam. A dam failure is unlikely to result in damage to anything more than isolated or unoccupied buildings, undeveloped lands, minor roads such as town or county roads; is unlikely to result in the interruption of important utilities, including water supply, sewage treatment, fuel, power, cable, or telephone infrastructure; and/or is otherwise unlikely to pose the threat of personal injury, substantial economic loss, or substantial environmental damage.

- Class B or intermediate hazard dam. A dam failure may result in damage to isolated homes, main highways, and minor railroads; may result in the interruption of important utilities, including water supply, sewage treatment, fuel, power, cable, or telephone infrastructure; and/or is otherwise likely to pose the threat of personal injury and/or substantial economic loss or substantial environmental damage. Loss of human life is not expected.

- Class C or high hazard dam. A dam failure may result in widespread or serious damage to home(s); damage to main highways, industrial or commercial buildings, railroads, and/or important utilities, including water supply, sewage treatment, fuel, power, cable, or telephone infrastructure; or substantial environmental damage; such that the loss of human life or widespread substantial economic loss is likely.

- Class D or negligible or no hazard dam. A dam that has been breached or removed, or has failed or otherwise no longer materially impounds waters, or a dam that was planned but never constructed. Class D dams are considered to be defunct dams posing negligible or no hazard. The department may retain pertinent records regarding such dams.

Disaster Declaration: The President can declare a major disaster for any natural event that is determined to have caused damage of such severity that it is beyond the combined capabilities of State and local governments to respond. A Major Disaster Declaration provides a wide range of Federal assistance programs for individuals and public infrastructure, including funds for both emergency and permanent work.

Detailed Study: A flood hazard mapping study done using hydrologic and hydraulic methods that produce BFEs, floodways, and other pertinent flood data. Detailed study areas are shown on the FIRM as Zones AE, AH, AO, AR, A99, A1-A30, and in coastal areas as Zones V, VE, and V1-30.

Flood Insurance Rate Map (FIRM): The official map of a community on which FEMA has delineated both the SFHAs and the risk premium zones applicable to the community.

Flood Insurance Study (FIS): A compilation and presentation of flood risk data for specific watercourses, lakes, and coastal flood hazard areas within a community. When a flood study is completed for the NFIP, the information and maps are assembled into an FIS report. The FIS report contains detailed flood elevation data in flood profiles and data tables.

Flood Mitigation Assistance (FMA): The FMA program provides funds for projects to reduce or eliminate risk of flood damage to buildings that are insured under the NFIP on an annual basis. There are three types of FMA grants available, which include (1) planning grants, (2) project grants, and (3) management cost grants.

Hazard Mitigation Assistance (HMA): FEMA's HMA grant programs, which include the Hazard Mitigation Grant Program (HMGP), Pre-Disaster Mitigation (PDM), and FMA, provide funding for eligible mitigation activities that reduce disaster losses and protect life and property from future disaster damages.

Hazard Mitigation Grant Program (HMGP): The HMGP provides grants to States or Tribes and local governments (as sub-grantees) to implement long-term hazard mitigation measures after a Major Disaster Declaration.

Hydrologic Unit Code (HUC): The U.S. Geological Survey (USGS) divides and subdivides the area of the United States into successively smaller hydrologic units that are classified into four levels: regions, sub-regions, accounting units, and cataloging units. The hydrologic units are arranged or nested within each other, from the largest geographic area (regions) to the smallest geographic area (cataloging units). Each hydrologic unit is identified by a unique HUC consisting of two to eight digits based on the four levels of classification in the hydrologic unit system. (USGS)

Ice Jams: An ice jam may be defined as an accumulation of ice in a river, stream, or other flooding source that reduces the cross-sectional area available to carry the flow and increases the water-surface elevation. Ice usually accumulates at a natural or manmade obstruction or a relatively sudden change in slope, alignment, or cross-section shape or depth. Ice jams are common in locations where the channel slope changes from relatively steep to mild and where a tributary stream enters a large river.

Light Detection and Ranging (LiDAR): LiDAR is a remote sensing method that uses light in the form of a pulsed laser to measure ranges (variable distances) to the Earth. These light pulses—combined with other data recorded by the airborne system—generate precise, three-dimensional information about the shape of the Earth and its surface characteristics. LiDAR systems allow scientists and mapping professionals to examine both natural and manmade environments with accuracy, precision, and flexibility. (NOAA)

Letter of Map Amendment (LOMA): A LOMA is an official amendment, by letter, to an effective NFIP map. A LOMA establishes a property's location in relation to the SFHA. LOMAs are usually issued because a property has been inadvertently identified as being in the floodplain but is actually on natural high ground above the BFE or out as shown on the FIRM. Because a LOMA officially amends the effective NFIP map, it is a public record that the community must maintain. Any LOMA should be noted on the community's master flood map and filed by panel number in an accessible location.

Letter of Map Change (LOMC): LOMC is a general term used to refer to the several types of revisions and amendments to FEMA maps that can be accomplished by letter. They include LOMAs, Letters of Map Revision (LOMRs), and Letters of Map Revision Based on Fill (LOMR-Fs).

Letter of Map Revision (LOMR): A LOMR is FEMA's modification to an effective FIRM or portion of the FIRM. LOMRs are generally based on the implementation of physical measures that affect the hydrologic or hydraulic characteristics of a flooding source and, thus, result in the modification of the existing regulatory floodway, the effective BFEs, or the SFHA. The LOMR officially revises the FIRM and sometimes the FIS report.
Letter of Map Revision Based on Fill (LOMR-F): A LOMR-F is a FEMA letter amending the effective FIRM for an existing structure or parcel of land that has been elevated by fill.

Levee/Floodwall: A manmade structure designed to contain or control the flow of water. Levees and floodwalls are constructed from earth, compacted soil, or artificial materials, such as concrete or steel. To protect against erosion and scouring, earthen levees can be covered with grass and gravel or hard surfaces like stone, asphalt, or concrete.

Mitigation: Any action taken to eliminate or reduce the long-term risk to life and property from natural and technological hazards, including, but not limited to, flooding. Flood mitigation measures include elevation, floodproofing, relocation, demolition, or any combination thereof.

Multi-Frequency Depth Grids: This Flood Risk Product helps communities better understand their flood hazard risk beyond the 1-percent-annual-chance floodplain and provides information useful for developing a Benefit-Cost Analysis by producing grids for the 10-percent (10-year depth), 4-percent (25-year depth), 2-percent (50-year depth), 1-percent (100-year depth), and 0.2-percent-annual-chance (500-year depth) flood events. These grids will be used to create additional analyses that depict the percent-annual chance of flooding and the percent chance of flooding over a 30-year span in the floodplain.

Pre-Disaster Mitigation (PDM): The PDM grant program provides funds for hazard mitigation planning and projects on an annual basis. The PDM program was enacted to reduce overall risk to people and structures, while simultaneously reducing reliance on Federal funding in the event of a disaster.

Repetitive Loss (RL) property: An RL property is any insurable building for which two or more claims of more than $1,000 were paid by the NFIP within any rolling 10-year period since 1978. An RL property may or may not be currently insured by the NFIP.

Risk Mapping, Assessment, and Planning (Risk MAP) program: The FEMA Risk MAP program provides communities with flood risk information and tools to support mitigation planning and risk reduction actions.

Severe Repetitive Loss (SRL) property: An SRL property is a single family property (consisting of one to four residences) covered by flood insurance underwritten by the NFIP and has incurred flood-related damage for which four or more separate claim payments have been paid with the amount of each claim payment exceeding $5,000 and with a cumulative amount of such claim payments exceeding $20,000; or for which at least two separate claim payments have been made with the cumulative amount of such claims exceeding the market value of the property.

Special Flood Hazard Area (SFHA): SFHAs are high-risk areas subject to inundation by the base (1-percent-annual-chance) flood; they are also referred to as 1-percent-annual-chance floodplains, base floodplains, or 100-year floodplains.

Water-Surface Elevation Grids: When appropriated, this non-regulatory Flood Risk Product is produced during the Flood Risk Review phase to complement the 1-percent-annual-chance floodplains designated on the FIRMs making the calculated WSEL results more readily available. The WSEL Grid is prepared for the 1-percent-annual-chance storm event and may be produced for a range of other flood events. Using a Geographic Information System (GIS), community officials can easily generate an estimated BFE for interested residents and land developers, and to make critical floodplain management and mitigation decisions.

V. Executive Summary

In 2023, FEMA funded a Risk MAP Discovery project for the Trempealeau River Watershed (TRW), which consists of 3 counties and 7 communities. Through the Discovery process, FEMA will be able to obtain key insights and data that will lead to greater community resiliency. Stakeholders in the watershed will help FEMA to identify and review existing natural hazard information to prioritize natural hazard information needs for making mitigation decisions. Communities will help to identify critical infrastructure and resources that could be impacted during a natural hazard event.

Comprising significant input from local stakeholders, the TRW Discovery Report describes historical flood risk, existing flood-related data, and local needs concerning FEMA FIS reports and FIRMs. During the outreach process—which involved a kickoff meeting and discussion-based Discovery Meetings—emphasis was placed on opportunities for stakeholders to provide comments, concerns, input for future mapping projects, and ideas for mitigation activities.

The Discovery project was informed by data and resources available at the watershed and county level, as well as local insights from stakeholders at the community level. Using community mapping needs and data collected through the engagement process, as well as additional detailed analysis, a recommended scope of work for the Trempealeau River Watershed was developed. Data collected from community stakeholders can be found in the County Overview sections and the Summary of Community Risks Identified section.

Upon completion of the Risk MAP Discovery phase, FEMA will initiate further data development, prioritize areas for restudy, and begin the process to update maps within the watershed, pending available funding.

VI. Discovery Overview

The Discovery process is the second phase in FEMA's Risk MAP Project lifecycle (Figure 1). It kicks off with an investigation of existing terrain, flood hazard data, and flood risk data for development of an initial Discovery map (Figure 1). Further data is gathered through stakeholder coordination and is used to refine the map and scope of the Risk MAP project. As a Cooperating Technical Partner, the Wisconsin Department of Natural Resources (WDNR) led the Discovery process for the Trempealeau Watershed. In coordination with FEMA and Wisconsin Emergency Management (WEM), the WDNR gathered data and identified stakeholders. Community officials, Land Information Officers, Emergency Managers, Tribal Officers, State Agencies, and Federal Agencies were identified as stakeholders and invited to participate in the Discovery process.

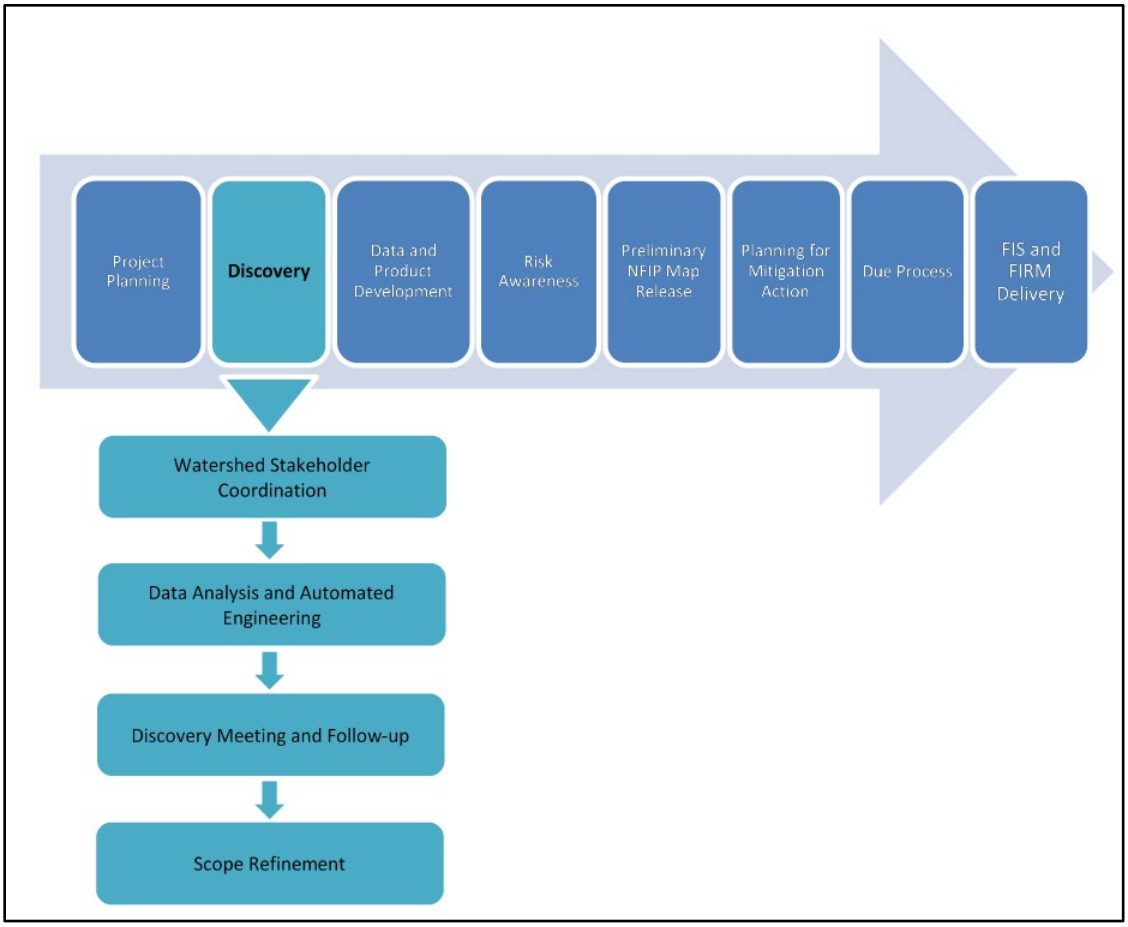


Figure 1. Risk MAP Project Life Cycle

VII. Discovery Outreach and Engagement Strategy

In the Trempealeau River Watershed, the Discovery phase of Risk MAP had four major components: (1) Identify stakeholders, (2) gather information from participating communities, (3) support one in-person and virtual Discovery meeting to gather additional information, (4) conduct post-meeting follow-up and engagement.

i. Stakeholder Identification

Initial stakeholders identified were county chairpersons, village presidents, mayors, clerks, and zoning administrators. The invitation sent out to stakeholders informed them that the invitation can be forwarded to local officials or relevant staff who may be interested. Others that have joined the Discovery process have been GIS staff, emergency management, planners, & other local officials.

ii. Pre-Meeting Information Exchange

As a Pre-Discovery meeting engagement, Wisconsin DNR held a kick-off meeting on August 15, 2024. A formal presentation was given to 16 stakeholders and with questions the meeting lasted an hour. The WI-DNR presented an overview of the Discovery process including the partnership with FEMA, goals, deliverables, and timeline. The WI-DNR also gave a brief outline of the Trempealeau Watershed and why it was chosen by FEMA for Discovery. The presentation transitioned into specifics about the upcoming Discovery Meeting. The goal was to let the stakeholders know who will attend, the agenda, and what type of data to bring to the meeting. The call was then open for questions and discussion from stakeholders.

iii. Discovery Meeting

The Discovery Meeting was held on July 29, 2026, in Whitehall, WI at the Trempealeau County Courthouse. The meeting was also streamed virtually through Zoom and recorded. The meeting recording and presentation were shared after the meeting on WI-DNR's RiskMAP webpage. Scanned sign-in sheets from in-person attendees can be seen in Appendix A.

The meeting was held from 1:00 – 3:00 pm and began with a formal presentation which covered the RiskMAP program, Discovery phase, engineering methods, and the National Flood Insurance Program. After the presentation, group discussion began before smaller breakout sessions where attendees worked on filling out comment forms and marking up the Discovery maps.

The counties and municipalities within the Trempealeau River Watershed were all invited to attend the Discovery Meeting. There was significant attendance at the Discovery Meeting. Three WI-DNR staff attended in-person, with others online including the State NFIP Coordinator Sarah Galster who presented on the NFIP. FEMA attendees also were available online. There were 24 total attendees from communities within the Trempealeau River Watershed.

VIII. Watershed Characteristics and Geography

The Trempealeau River Watershed is located in Western Wisconsin and drains 729 square miles, including portions of Buffalo, Jackson, and Trempealeau Counties. The watershed is dominated by Grassland (37%) and agricultural land use (22%), forests (19%), wetlands (13%), urban/developed areas (6%), and other uses (3%) making up the rest. The basin is entirely within the Driftless Area of Wisconsin and therefore has relatively steep slopes and rapid runoff.

The main stem of the Trempealeau River flows 81 miles across the 55-mile-long watershed. The headwaters are in Jackson County, and it flows southwest to the confluence with the Mississippi River in lower Trempealeau County. There are several main tributaries to the main stem Trempealeau, including: Elk Creek, Pigeon Creek, and Tamarack Creek.

The Watershed has an extensive flood history. Spring floods from snowmelt, moderate precipitation, and ice jams cause road closures and washouts. In the summer, flash flooding spawned by heavy rain and steep terrain has led to evacuations and mudslides. Significant flooding events in 2017 resulted in Federal Disaster Declarations for all three counties in the Trempealeau Watershed. In Buffalo County, four flooding related Federal Disaster Declarations have been declared since 1969, Jackson County has had three since 1990, and Trempealeau County has also had three since 1965. Because of history and more recent record floods, there have been several mitigation actions and flood control projects within the watershed. This includes flood-retardation structures, culvert replacements, homeowner buyouts, relocations, and structure elevation.

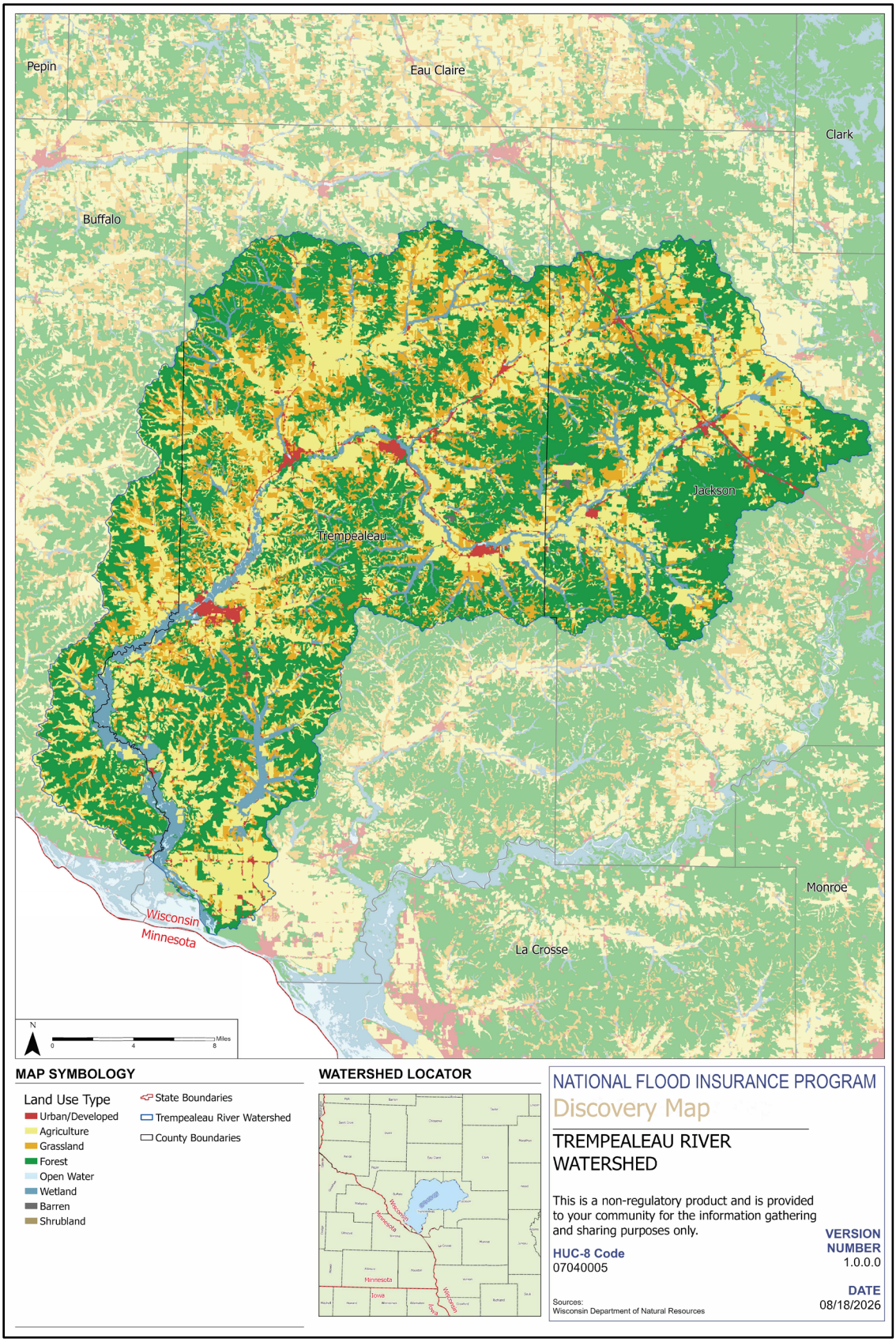

Pepin
Eau Claire
Clark
Buffalo
Jackson
Trempealeau
Monroe
La Crosse
Wisconsin
Minnesota
N
0
4
8
Miles
MAP SYMBOLOGY
Land Use Type
Urban/Developed
Agriculture
Grassland
Forest
Open Water
Wetland
Barren
Shrubland
State Boundaries
Trempealeau River Watershed
County Boundaries
WATERSHED LOCATOR
NATIONAL FLOOD INSURANCE PROGRAM
Discovery Map
TREMPEALEAU RIVER WATERSHED
This is a non-regulatory product and is provided to your community for the information gathering and sharing purposes only.
HUC-8 Code
07040005
VERSION NUMBER
1.0.0.0
DATE
08/18/2026
Sources:
Wisconsin Department of Natural Resources

Figure 2. Watershed Location and Land Use

Dams

According to the Wisconsin Department of Natural Resources Dams database, there are 121 dams within the Trempealeau Watershed. A dam is classified by its size and hazard. A *Large* dam has a structural height of over 6 feet and impounds 50 acre-feet or a structural height of 25 feet or more and impounds more than 15-acre-feet. Every *Large* dam is given a hazard rating based on the potential for loss of life or property damage should the dam fail. A dam is assigned a rating of *High* hazard when its failure would possibly put lives at risk. A *Significant* hazard when failure would likely not cause loss of life, but would cause economic loss, environmental damage, or disruption of lifeline facilities. There are 16 *Large* dams in the Trempealeau watershed and 3 of those have a rating of *High* or *Significant* hazard. Locations of these dams can be seen on the discovery map.

Watershed Boundaries

Watershed boundaries are classified based on hydrologic unit codes (HUC). The TRW is a HUC 8 class with the number 07040005. The numbers are arranged by scale, with the first two numbers representing the region, and the following two numbers each representing the sub-regions, accounting units, and cataloging units, respectively. The TRW shares boundaries with:

- Buffalo-Whitewater Watershed 07040003
- Black Watershed 07040007
- La Crosse-Pine Watershed 07040006

IX. Watershed Disaster Declarations

In response to disasters, FEMA can issue disaster declarations for Major Disasters (DRs) and Emergency Declarations (EMs).

The President can declare a disaster in Wisconsin after the Governor submits a request for any natural event, fire, flood, or explosion in which the severity of damage is determined to exceed the combined response capabilities of State and local governments. A wide range of Federal assistance programs for individual and public infrastructure can be provided after such a declaration is made, including funds for both emergency and permanent work. Emergency Declarations can be declared by the President after the Governor submits a request for any occasion or instance when the President determines Federal assistance is needed to supplement State and local government efforts in providing emergency services, up to $5 million dollars.

As of October 2026, there have been a total of 45 FEMA disaster declarations in the TRW dating back to 1965. The number of declarations informed the need for this Discovery effort. The timeline below (Figure 3) shows the 10 most recent flooding declarations in more detail, while the table (Table 1) summarizes all declarations within the watershed (FEMA 2026, Disaster Declarations Summary).

Table 1. FEMA Disaster Declarations for the TRW

Incident Type	Number of Disaster Declarations	Declaration Date
Buffalo County		
Severe Storm	6	1975, 1978, 1993, 1998, 2010, 2017
Flooding	5	1969, 1973, 1992, 2001, 2026
Tornado	1	1965
Hurricane	1	2005
Drought	1	1976
Biological*	2	2020
Jackson County		
Severe Storm	6	1993, 1998, 2000, 2004, 2010, 2017
Flooding	4	1992, 2001, 2016, 2026
Tornado	-	-
Hurricane	1	2005
Drought	1	1976

Table 1. FEMA Disaster Declarations for the TRW *(continued)*

Incident Type	Number of Disaster Declarations	Declaration Date
Jackson County *(continued)*		
Biological*	2	2020
Trempealeau County		
Severe Storm	7	1975, 1978, 1993, 1998, 2004, 2010, 2017
Flooding	3	1969, 1992, 2001
Tornado	1	1965
Hurricane	1	2005
Drought	1	1976
Biological*	1	2020

*Covid-19 Pandemic

Figure 3. Ten Most Recent FEMA Flood Disaster Declarations in the TRW

2026	DR-4923-WI / SEVERE STORMS, TORNADOES, AND FLOODING Buffalo and Jackson County
2017	DR-4343-WI / Severe Storms and Flooding SEVERE STORMS, STRAIGHT-LINE WINDS, FLOODING, LANDSLIDES, AND MUDSLIDES Buffalo, Jackson, Trempealeau County
2016	DR-4288-WI / Flooding SEVERE STORMS, FLOODING, AND MUDSLIDES Jackson County
2010	DR-1944-WI / Severe Storm SEVERE STORMS AND FLOODING Buffalo, Jackson, Trempealeau County
2004	DR-1526-WI / Severe Storm SEVERE STORMS AND FLOODING Jackson and Trempealeau County
2001	DR-1369-WI / Flood FLOODING, SEVERE STORMS AND TORNADOES Buffalo, Jackson, Trempealeau County
1998	DR-1236-WI / Severe Storm SEVERE STORMS,STRAIGH LINE WINDS, TORNADOES, RAIN, AND FLOODING Buffalo, Jackson and Trempealeau County
1993	DR-994-WI / Severe Storm SEVERE STORMS, TORNADOES & FLOODING Buffalo, Jackson, and Trempealeau County
1992	DR-964-WI / Flood SEVERE STORMS & FLOODING Buffalo, Jackson, and Trempealeau County
1978	DR-559-WI / Severe Storm SEVERE STORMS, FLOODING, HAIL & TORNADOES Buffalo, Trempealeau County

X. Buffalo County Overview

COUNTY POPULATION: 13,317 (U.S. CENSUS BUREAU 2020)	**PERSONS PER SQUARE MILE:** 19 (U.S. CENSUS BUREAU 2020)	**LAND USE:** 1. Forest 2. Agriculture 3. Grassland (WI DNR 2025)
PERCENTAGE OF COUNTY IS FARMLAND: 27% (WI DNR 2025)	**TOP INDUSTRIES:** 1. EDUCATION & HEALTH 2. MANUFACTURING 3. RETAIL TRADE (U.S. CENSUS BUREAU)	**PRESIDENTIAL DISASTER DECLARATIONS SINCE 1965:** 15 (FEMA 2025)

Overview

Buffalo County is bordered by Trempealeau, Pepin, Eau Claire Counties in Wisconsin, and Wabasha and Winona Counties Minnesota. Buffalo County has a total area of 676 square miles. The Mississippi River forms the southern boundary of the county. The total population is 13,317. Close to 11% of the county is in the TRW. The remaining 72% is in the 07040003 HUC8 watershed, and 17% in the 07050005 HUC8 watershed. The County seat is the City of Alma, with a population of 9,488. The county is largely forested and rural, with agriculture accounting for 27% of the land use. There is higher population density in the City of Mondovi and the City of Buffalo City where commercial and industrial activity are concentrated. There are 8,390 acres of water in the county, along with 58 dams including 11 large dams and 1 that have a significant hazard rating.

Presidential disaster declarations for Buffalo County occurred most recently following severe storms, tornadoes, and flooding in 2026. The flooding event in 2026 was caused by severe thunderstorms and flash flooding.

Planning

Buffalo County has the following resources for land use planning and flood resiliency:

- Buffalo County Comprehensive Land Use Plan (2013-2033)
- Buffalo County Multi-Hazards Mitigation Plan (2022-2026)
- City of Alma Comprehensive Land Use Plan (2017)
- City of Buffalo City Comprehensive Plan (2020)
- Fountain City Comprehensive Plan (2023)
- City of Mondovi Comprehensive Plan (2008-2028)
- Village of Cochrane Land Use Plan (2013)

Common Flooding Concerns

Many of Buffalo County's flooding concerns lie outside of the Trempealeau River Watershed. Primarily on the Mississippi River, Buffalo River, and Chippewa River. Riverine flooding is a high threat in Buffalo County.

As for flooding concerns within the Trempealeau River Watershed for Buffalo County, those are due to the Trempealeau River which makes up the boundary between Buffalo and Trempealeau Counties. Flood events on the Trempealeau River are generally predictable, however areas along the river are vulnerable to flash flooding in the event of a dam failure (HMP, 2022).

During the Discovery meeting, flooding concerns in the Town of Dodge were mentioned. The Town lies along the Trempealeau/Buffalo County boundary and experiences frequent flooding due to the Trempealeau River. This portion of the Trempealeau River is currently mapped as a Zone A, upgrading the detail to a Zone AE would be greatly beneficial for this Township and both Buffalo and Trempealeau County.

No tributaries to the Trempealeau River are currently mapped within Buffalo County. There are many valleys with agriculture that drain into the Trempealeau River Valley. Those include Bohris Valley, Botana Valley, Doelle Valley, Piper Valley, Latch Valley, Lewis Valley, and Swinns Valley. The mapping of these Tributaries would be helpful to greater comprehend the threat of flooding in the TRW portion of Buffalo County. Additionally, the presence of mapping could help communities gain funding for flood mitigation projects in the future.

Flooding Concerns Shared During Discovery Meeting

As mentioned above, Lewis Valley is currently unmapped. Trempealeau County staff mentioned concerns with Lewis Valley Creek, which extends upstream into Buffalo County. More details on this comment can be found in Trempealeau County's 'Flooding Concerns During Discovery Meeting' section.

Common Mitigation Concerns

From County 2022 HMP:

- There is one repetitive loss structure within Buffalo County, located in the City of Fountain City, which is not within the Trempealeau River Watershed.
- Some mitigation ideas include:
    - Raising or increasing culvert size on roads that flood in early spring which cut off residents or emergency response vehicles
    - Updating ordinances regarding building construction
    - Additional flood warning systems
    - Promotion of Flood insurance through a community seminar with federal and state officials
    - Inspection and identification of Civilian Conservation Corp dam/dike/detention projects within the county
    - Continual program to investigate voluntary floodplain property buyouts via survey to property owners in the floodplain
- Due to climate change, it is expected that Buffalo County will experience more precipitation with more severe precipitation events.

Mitigation Concerns Shared During Discovery Meeting

No comments.

XI. Jackson County Overview

COUNTY POPULATION: 21,145 (U.S. CENSUS BUREAU 2020)	**PERSONS PER SQUARE MILE:** 21.4 (U.S. CENSUS BUREAU 2020)	**LAND USE:** 1. Forest 2. Agriculture 3. Wetland (WI DNR 2025)
ACRES OF COUNTY FARMLAND: 248,342 (JACKSON COUNTY 2023)	**TOP INDUSTRIES:** 1. MANUFACTURING 2. EDUCATION & HEALTH 3. RETAIL TRADE (U.S. CENSUS BUREAU)	**PRESIDENTIAL DISASTER DECLARATIONS SINCE 1976:** 13 (FEMA 2025)

Overview

Jackson County is bordered by Trempealeau, Eau Claire, La Crosse, Clark, Monroe, Wood, and Juneau Counties. Jackson County has a total area of 1,000 square miles. The County's total population is 21,145. Close to 20% of the county is in the TRW. The remaining 65% is in the 07040007 HUC8 watershed, 8% is in the 07070003 HUC8 watershed, 5% is in the 07040003 HUC8 watershed, and 2% is in the 07050006 HUC8 watershed. The County seat is the City of Black River Falls, with a population of 3,514. The county is largely forested and rural, with agriculture accounting for 16% of the land use. There are 248,342 acres of farmland. There is higher population density in the City of Black River Falls where commercial and industrial activity is concentrated. There are 667 miles of streams in the county, along with 213 dams including 38 large dams and 4 that have a high/significant hazard rating.

Presidential disaster declarations for Jackson County occurred most recently following severe storms, tornadoes, and flooding in 2026. The flooding event in 2026 was caused by severe thunderstorms and flash flooding.

Planning

Jackson County has the following resources for land use planning and flood resiliency:

- Jackson County Comprehensive Plan (2023-2043)
- Jackson County Land and Water Resource Management Plan (2022)
- Black/Buffalo/Trempealeau River Basin – Water Quality Management Plan (2002)
- City of Black River Falls Comprehensive Plan (2025-2045)
- Jackson County Multi-Hazards Mitigation Plan (2020-2024)

Common Flooding Concerns

From County 2020 HMP:

- Increased demand for housing along Jackson County's waterfronts has increased flooding vulnerability
- Flooding has increased dramatically in Jackson County in the last decade, with approximately 1.72 floods per year
- 31 reported riverine/flash flooding events in the 2010s
- Jackson County has a total of 97 parcels on which structures are located within the FEMA 100-year flood
    - The Village of Hixton accounts for over half of those parcels (59)
- Due to climate change, it is expected that Jackson County will experience more precipitation with more severe precipitation events

From County 2020 HMP – *Dams*:

- Dams were overtopped in 2010 due to excessive rainfall
- Due to the large number of cranberry bogs, which utilize dams to control water levels, the probability of dam failure in Jackson County is high
    - However, the location of these dams is rural, making probability for the loss of life or structures low
    - Road closures with the resulting loss of access and emergency response to areas are the major concern from dam failures
- Beaver Creek Dam within the TRW has a high hazard rating

Flooding Concerns Shared During Discovery Meeting

No comments.

Common Mitigation Concerns

From County 2020 HMP:

- There are six repetitive loss structures in Jackson County, all of them within the City of Black River Falls, which is outside of the Trempealeau River Watershed
- Below are projected damages during a 100-year flood event within the TRW :
  - Village of Hixton- $491,758
    - Includes the Village of Hixton's Village Hall which is located within the 100-year floodplain
    - Efforts to floodproof structures within the floodplain are ongoing
  - Trempealeau River – from West County line to Village of Hixton, $1,540
- In the County there are 17 commercial structures within the floodplain, accounting for an assessed value of $1,441,900
- An extensive list of Flood Hazard Mitigation ideas can be found on page 3-18 of the Jackson County HMP
- Several culverts are being improved/replaced throughout the county. The Village of Taylor also has plans to improve and upgrade culverts

Mitigation Concerns Shared During Discovery Meeting

No comments.

XII. Trempealeau County Overview

COUNTY POPULATION: 30,760 (U.S. CENSUS BUREAU 2020)	**PERSONS PER SQUARE MILE:** 42 (U.S. CENSUS BUREAU 2020)	**LAND USE:** 1. Forest 2. Agriculture 3. Grassland (WI DNR 2025)
PERCENTAGE OF COUNTY IS FARMLAND: 31% (WI DNR 2025)	**TOP INDUSTRIES:** 1. MANUFACTURING 2. EDUCATION & HEALTH 3. RETAIL TRADE (U.S. CENSUS BUREAU)	**PRESIDENTIAL DISASTER DECLARATIONS SINCE 1965:** 13 (FEMA 2025)

Overview

Trempealeau County is bordered by Buffalo, Jackson, Eau Claire, La Crosse Counties in Wisconsin, and Winona County in Minnesota. Trempealeau County has a total area of 742 square miles. The Mississippi River forms the southern boundary of the county. The total population is 30,760. Close to 61% of the county is in the TRW. The remaining 21% is in the 07040007 HUC8 watershed, 16% is in the 07040003 HUC8 watershed, and 2% is in the 07040006 HUC8 watershed . The County seat is the City of Whitehall with a population of 1,645. The county is largely forested and rural, with agriculture accounting for 31% of the land use. There is higher population density in the Cities of Arcadia, Independence and Whitehall where commercial and industrial activity are concentrated. There are 114 dams including 15 large dams and 6 that have a significant/high hazard rating.

Presidential disaster declarations for Trempealeau County occurred most recently following severe storms, straight-line winds, flooding, landslides, and mudslides in 2017. The flooding event in 2017 was caused by severe thunderstorms and flash flooding.

Planning

Trempealeau County has the following resources for land use planning and flood resiliency:

- Trempealeau County Hazard Mitigation Plan (2024-2028)
- City of Arcadia Comprehensive Plan (2015)
- City of Blair Comprehensive Plan (2009)

Common Flooding Concerns

From County 2024 HMP:

- Trends show an increasing number of flash flood events per year. From 2000 to 2023 there was an average of 3.3 flash flood events per year
- Flooding is considered a high risk within the county
- Increased demand for housing along Wisconsin's waterfronts increases flooding vulnerability
- Due to climate change, it is expected that Trempealeau County will experience more precipitation with more severe precipitation events
- There are 230 parcels located within the 100-year floodplain in the County

Trempealeau River flooding with river backing up from Trempealeau River Bay/Delta backflow to the Tamarack Creek north of HWY 35. Requested analysis of the Bay area and sediment deposits resulting in back flow during highwater events up to and into the Tamarack Creek area. See Appendix E for correspondence on this topic.

Flooding Concerns Shared During Discovery Meeting

Trempealeau River:

- Five repetitive loss structures along the Trempealeau River, accounting for 13 claims totaling $78,330 (FEMA NFIP Repetitive Loss Aggregated as of 2023)
- Common flooding within:
    - 4-Seasons Park, City of Independence
    - Colonel Larson Park, City of Whitehall
    - Perrot State Park
    - Pietreck Park Camping and RV
    - Riverside Park, City of Blair
    - Schultz Park, City of Arcadia
    - Trempealeau National Wildlife Refuge
- City of Arcadia significant flooding in 2010, 2017, and 2025
- Flooding from the City of Blair to the Town of Dodge is roughly a 24-hour delay

    - Communities work together to slow the flow downstream as much as possible
- Only outlet for the Trempealeau River to flow into the Mississippi River is through the BNSF Railway bridge; common backwater issues occur here. See Appendix E for correspondence on these backwater/sediment issues.
- Town of Dodge, just south of bridge on county line, south of County Highway P is typically the worst place for flooding
    - Population of 394
    - WI-DNR's Regional Water Management Engineer (WME) also mentioned receiving flooding complaints from this region. He also noted that the previous WME also had flooding complaints from this area.
    - WI-DNR's WME also supported upgrading the study type here to a detailed Zone AE.

Tamarack Creek:

- One repetitive loss structure on Tamarack Creek with two claims totaling $122,530 (FEMA NFIP Repetitive Loss Aggregated as of 2023)
- Homes affected by 2017 flooding
- Agriculture to marshland reclamation on 80 acres just south of German Coulee Creek
- March 2019 flooding
- Rock put in creek bed years back
- Town of Trempealeau: Unintentional Dams have been noted on a risk assessment plan throughout the County

Little Tamarack Creek:

- Area 500' east of the watershed boundary, was brought up by several county staff
- Frequent overtopping on Little Tamarack Road, Trim Road, and Nichols Lane; See Appendix D for photos

Lewis Valley Creek:

- An unmapped tributary to the Trempealeau River within Trempealeau County and the TRW
- When heavy rain falls, the creek is washing its banks toward the road (near Lewis Valley Road and Lorch Ln intersection) and will be in danger of taking out the road
- Commentor notes efforts have been made to mitigate this area through grant funding, but the lack of FEMA floodplain here has made it difficult to do so

Common Mitigation Concerns

A substantial list of suggested and ongoing mitigation projects throughout the county starts on page 129 of the HMP, most commonly upgrading or replacing culverts throughout the county.

There are a total of 14 repetitive loss properties in Trempealeau County, accounting for a total of $300,239 in repetitive loss payments. Of those fourteen, only one was insured (FEMA Community Information System, 2026).

Mitigation Concerns Shared During Discovery Meeting

Bugle Lake Dam in the City of Independence has a new operation, inspection, and maintenance plan for the dam. It is a high hazard rating dam. It was last inspected by WI-DNR on June 17, 2025. Maintenance work was completed on July 29, 2025. It is scheduled to be inspected again in 2027. Due to its critical *High* hazard rating and upstream location to the City of Independence, this dam should continue to be monitored.

There are 9 repetitive loss structures within Trempealeau County due to riverine flooding (HMP, 2024). Of those within the Trempealeau River Watershed, two are located in the City of Blair, one in the City of Arcadia, and one in the Town of Burnside.

Flood mitigation is needed for Little Tamarack Creek, as mentioned above. Potential to upgrade culverts this this area.

See comment above about Lewis Valley Creek.

XIII. Available Watershed Data Collection

For Discovery, data is collected to get a better understanding of risk in a community and inform recommendations for potential Risk MAP projects. Existing tabular and spatial data was collected for the Trempealeau Watershed from multiple sources and displayed on the Discovery Map, Discovery Report, and/or in the Geodatabase. A list of the data collected, sources, and deliverable is listed in Table 2.

Table 2. Discovery Data for the Trempealeau River Watershed

DATA	SOURCE	DELIVERABLE
Community and County Boundaries	Wisconsin Legislative Technology Services Bureau	Discovery Map Geodatabase
Coordinated Needs Management Strategy (CNMS)	FEMA Region V	Discovery Map Geodatabase
DAM Information	Wisconsin DNR Dams Inventory	Discovery Map Geodatabase
Discovery Comment Points	Wisconsin DNR	Discovery map
Discovery Comment Polygons	Wisconsin DNR	Discovery map
Effective SFHA	FEMA NFHL	Discovery Map
FEMA Repetitive Loss 5K Hexagons	FEMA	Discovery map
Flood Insurance Claims	FEMA Community Information System (CIS)	Discovery Report
Hazard Mitigation Plan Status	Wisconsin Emergency Management	Discovery Report
Ice Jams	U.S. Army Corp of Engineers - Ice Jam Database	Discovery Map
Last CAC Date	FEMA CIS	Discovery Report
Last CAV Date	FEMA CIS	Discovery Report
Letters of Map Change	FEMA	Discovery Map
Major and Minor Roads	Wisconsin DNR	Discovery Map Geodatabase
NFIP Participation	FEMA CIS	Discovery Report
NFIP Repetitive Loss	FEMA CIS	Discovery Report
Population Data	U.S. Census (2020)	Discovery Report
Repetitive Loss Data	FEMA CIS	Discovery Report
Stream Gages	USGS National Hydrography Dataset	Discovery Map Discovery Report

Table 2. Discovery Data for the Trempealeau River Watershed *(continued)*

DATA	SOURCE	DELIVERABLE
Streams and Rivers	FEMA NFHL	Discovery Map Geodatabase
Watershed Boundaries	USGS National Hydrography Dataset	Discovery Map Geodatabase

XIV. Data for Flood Risk MAP Products

i. LiDAR Data

Buffalo, Jackson, and Trempealeau Counties LiDAR all meet FEMA's vertical accuracy threshold (FEMA SID #43) for high specification level and are suitable to be used for detailed studies.

Table 3. LiDAR Acquisition Dates

Community	Date Acquired	Quality Level	Relative Vertical Accuracy (meters)
Buffalo County	2023	QL1	0.013
Jackson County	2022	QL1	0.014
Trempealeau County	2022	QL1	0.013

ii. USGS Gages

The project team identified USGS stream gages within the watershed. The locations are shown on the Discovery Map and a summary is listed in Table 4.

Table 4. USGS Stream Gages

GAGE NUMBER	DESCRIPTION
05379187	Pine Creek at Taylor Road Near Taylor, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05379187
05379288	Bruce Valley Creek Near Pleasantville, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05379288
05379305	Elk Creek Near Independence, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05379305
05379400	Trempealeau River at Arcadia, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05379400
05379430	Trout Run at County Trunk Highway J Near Arcadia, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05379430
05379465	Bohris Valley Creek @ Brandhorst Road Near Dodge, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05379465
05379472	Bohris Valley Creek at County Highway P Near Dodge, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05379472
05379500	Trempealeau River at Dodge, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05379500

Table 4. USGS Stream Gages *(continued)*

GAGE NUMBER	DESCRIPTION
05379530	Pine Creek at Whistler Pass Road Near Dodge, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05379530
05380000	Trempealeau River Near Trempealeau, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=05380000
053793305	Traverse Valley Creek N. Trib. NR Independence, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=053793305
053793306	Traverse Valley Creek S. Trib. NR Independence, WI https://nwis.waterdata.usgs.gov/nwis/inventory/?site_no=053793306

XV. Other Available Data and Information

i. Community Rating System (CRS)

The Community Rating System is a voluntary incentive program that recognizes and encourages community floodplain management activities that exceed the minimum NFIP requirements. Currently, none of the communities within the Trempealeau Watershed participate in CRS.

ii. FEMA Coordinated Needs Management Strategy (CNMS)

There are 284 miles of mapped streams in the Trempealeau Watershed with Special Flood Hazard Areas (SFHA) shown on FEMA Digital Flood Insurance Rate Maps (DFIRM). The majority of SFHA are approximate studies (Zone A), with detail studies (Zone AE) accounting for 62 stream miles. FEMA's Coordinated Needs Management System (CNMS) database (https://msc.fema.gov/cnms/Default.aspx) categorizes flood studies by validation status. The designations reflect an evaluation of the study since the date the FIRM took effect. The evaluation considers land use changes, new/removed bridges or culverts, and accounts for recent flood events captured by gage data. A Valid status indicates the study meets FEMA's current FIRM mapping standards including using up-to–date engineering methodology and no significant changes since the effective date. When a study does not meet the standards, it is given an Unverified status. According to the database, 103 study miles are Valid, and 211 study miles are Unverified.

As of October 2026, CNMS has ended, however FEMA Region 5 and WI-DNR continue to maintain and update a R5 Tracking Database used for regional project planning and tracking.

iii. Levees

There are two non-accredited Levees in the City of Arcadia along the Trempealeau River. Currently, the City of Arcadia is working with the St. Paul District of the US Army Corps of Engineers on the design and layout of a levee along the Trempealeau River and Turton Creek. The four reaches of this project include levees, floodwalls, channel modifications, closure structures, a bridge, relocations and/or buyouts, engineered high ground, and railway modifications. Construction work for this project is anticipated to be advertised in November 2026.

iv. Demographics

Populations are listed by community in Table 5. Figure 4 illustrates the population of incorporated communities across the study area.

Table 5. NFIP Participation Status and Population

COUNTY	CID	COMMUNITY	POPULATION (2020)	NFIP Status
BUFFALO	555547	Buffalo County	13,317	PARTICIPATING
JACKSON	550187	Hixton (Village)	456	PARTICIPATING
	550583	Jackson County	21,145	PARTICIPATING
	550190	Taylor (Village)	484	PARTICIPATING
TREMPEALEAU	550439	Arcadia (City)	3,737	PARTICIPATING
	550440	Blair (City)	1,325	PARTICIPATING
	550444	Independence (City)	1,498	PARTICIPATING
	550446	Pigeon Falls (Village)	381	PARTICIPATING
	555585	Trempealeau County	30,760	PARTICIPATING
	550449	Whitehall (City)	1,645	PARTICIPATING

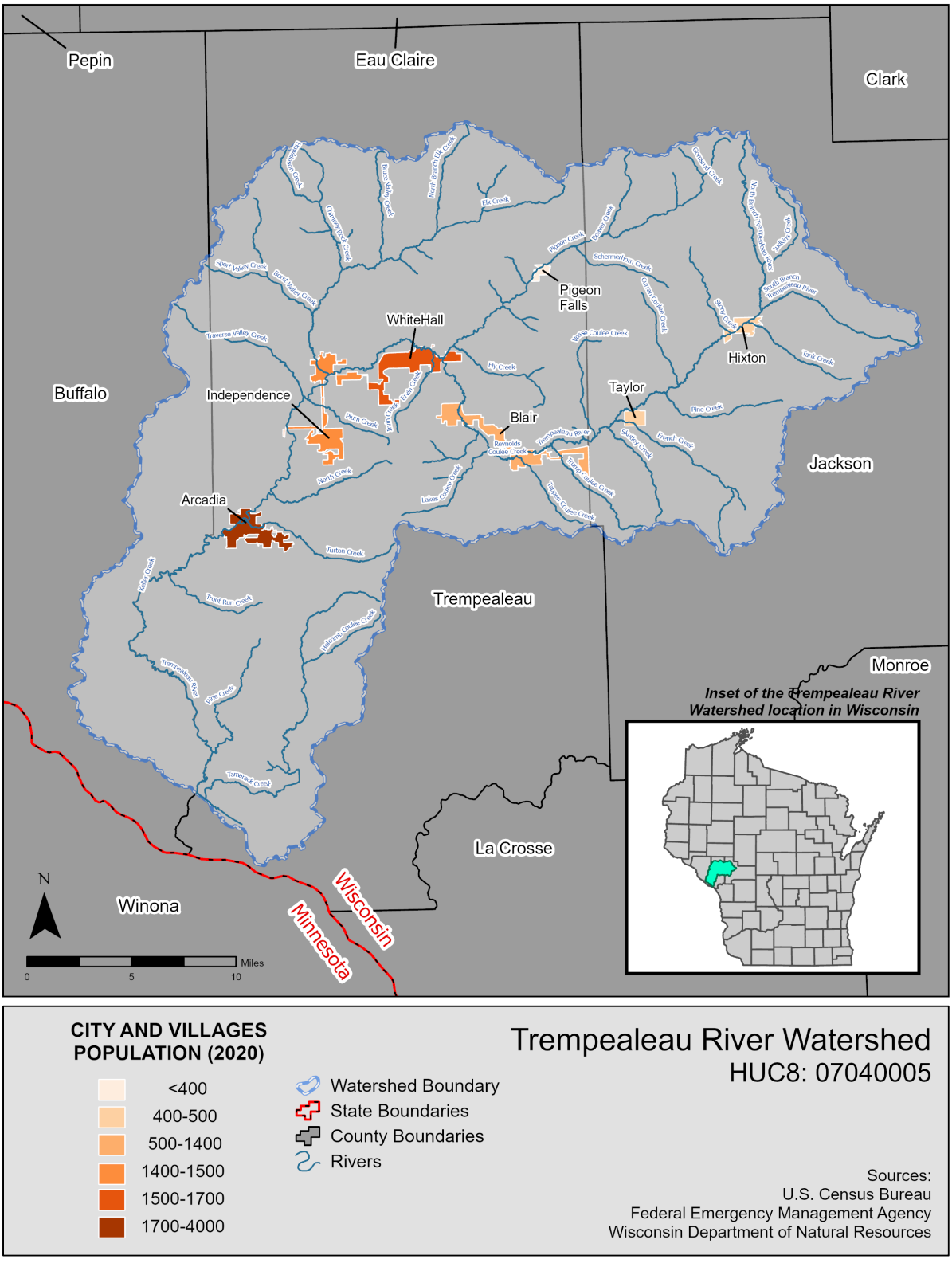


Figure 4. Trempealeau River Watershed Population Map

v. Floodplain Management/Community Assistance Visits

The WDNR State NFIP Coordinator initiates and conducts Community Assistance Visits (CAVs) and Community Assistants Contacts (CACs) as part of the floodplain management program. A CAV consists of reviewing local permitting, evaluation a community's floodplain ordinance, and field tour to assess recent activity within the regulatory floodplain. The NFIP coordinator meets with local officials to discuss the program, potential violations, training opportunities, and recent flood events. A CAC is a less extensive contact between the community and the State NFIP Coordinator. The CAC can be a phone call or brief visit intended to establish or re-establish contact with the community. The purpose is to identify any existing problems and offer assistance if necessary. The most recent CAVs and CACs for NFIP participating communities within the study area are listed in Table 6.

Table 6. Recent CAV/CACs in the Trempealeau River Watershed

County	Community	CAV Opened	CAV Closed	CAC
Buffalo	Buffalo County	07/21/1994	12/04/2027	06/03/2021
Jackson	Jackson County	N/A	N/A	02/25/2015
	Hixton (Village)	N/A	N/A	06/16/1992
	Taylor (Village)	09/09/1991	12/05/2007	09/09/1991
Trempealeau	Trempealeau County	08/22/2001	05/01/2014	06/01/2021
	Arcadia (City)	N/A	N/A	02/16/2023
	Blair (City)	N/A	N/A	N/A
	Independence (City)	N/A	N/A	N/A
	Pigeon Falls (Village)	N/A	N/A	09/30/1993
	Whitehall (City)	N/A	N/A	N/A

vi. Regulatory Mapping

The Trempealeau Watershed communities have all had recent countywide maps as part of FEMA's Map Modernization program or Risk MAP. Although the maps are in digital format, they do not necessarily reflect newer hydrologic or hydraulic study information. The maps display both detailed and approximated studies with varying study dates. The countywide DFIRMs are the most recent mapping activity, and the effective dates are listed in Table 7.

Table 7. Digital Flood Insurance Rate Maps Status

County	Status	Effective Date
Buffalo	Effective	5/3/2010
Jackson	Effective	9/29/2017
Trempealeau	Effective	4/4/2011

vii. Flood Insurance Policies and Payouts

FEMA's Community Information System (CIS) keeps track of current flood insurance policies for each NFIP participating community. For these communities within the Trempealeau Watershed, there has been more than $2.7 million paid out towards flood loss claims since 1971 and more $0.5 million toward repetitive loss properties. Table 8 summarizes the flood insurance characteristics for all participating communities within the study area.

Table 8. Summary of Flood Insurance by Community

Community	Policies in Force	Policies in A-Zone	Total Premium	Total Coverage	Total Claims	Total Paid Flood Loss	Rep Loss	Total Paid Rep Loss
Arcadia (City)	29	0	$43,052	$4,925,000	40	$1,401,347	2	$14,989
Blair (City)	1	0	$999	$78,000	11	$36,111	9	$34,632
Buffalo County	6	1	$3,654	$1,543,000	19	$335,342	1	$2,680
Hixton (Village)	4	0	$6,433	$301,000	4	$7,214	0	N/A
Independence (City)	1	0	$909	$175,000	5	$6,326	0	N/A
Jackson County	14	1	$13,685	$3,268,000	20	$377,424	4	$153,609
Pigeon Falls (Village)	1	0	$636	$228,000	0	N/A	0	N/A
Taylor (Village)	0	N/A	N/A	N/A	1	$0	0	N/A
Trempealeau County	10	5	$11,305	$1,782,000	51	$599,177	14	$300,239
Whitehall (City)	0	N/A	N/A	N/A	1	$113	0	N/A
Total:	**66**	**7**	**$80,673**	**$12,300,000**	**152**	**$2,763,054**	**30**	**$506,149**

XVI. Risk MAP Needs and Recommendations

The project team has reviewed all the data collected, including data from the Discovery Meetings, and has narrowed the scope of the Trempealeau Rock Watershed Risk MAP project. This section includes recommendations for floodplain studies and potential mitigation activities.

i. Floodplain Studies

While DFIRMs have been produced for all the counties in the watershed, there are still study and mapping needs. Using September 2026 CNMS data and stakeholder input, the Wisconsin DNR has identified areas where a revised or new study is recommended. The goal is to identify those streams where the communities' flood risk management efforts will most benefit from updated engineering analyses. We have categorized the recommendations by priority level. The final scope of the RiskMAP project moving forward will depend on available funding and resources. High- and low-priority recommendations have been added to the Post-Meeting Discovery Map (Appendix F).

As mentioned in Section XV ii., FEMA's CNMS database program has ended. However, FEMA Region 5 and WI-DNR continue to maintain and update the Region 5 Tracking Database used for regional planning and tracking. While we used September 2026 CNMS data in our decision making and the tables below, other factors like community comments were our priority when determining potential project scope. If funded for a RiskMAP project in the future, the mapping partner should continue to review the Region 5 Tracking Database.

High Priority

It is recommended that all Unverified detailed studies (Zone AE) in the watershed be revised. These studies and their applicable study lengths are listed in Table 9. All Revised AE studies will require new survey.

Table 9. Mapping Needs, Revised AE Zones

Flooding Source	Study Length (Miles)	CNMS Status	Study Type
Elk Creek	1.06	Unverified	AE w/ floodway
Ervin Creek	0.78	Unverified	AE w/ floodway
Reynolds Coulee Creek	0.46	Unverified	AE w/ floodway
Tappen Coulee Creek	0.64	Unverified	AE w/ floodway
Trempealeau River	35.20	Unverified	AE w/ floodway
Turton Creek	1.31	Unverified	AE w/ floodway

Total: 39.45 miles

Tamarack Creek:

Tamarack Creek is currently mapped as a Zone A and was the basis of five community comments received. One repetitive loss property is located along Tamarack Creek. The County has made efforts to mitigate flooding severity here by adding rock in the creek bed. Tamarack Creek at its confluence with the Trempealeau River sees common backwater and road overtopping. Unintentional dams along the creek also contribute to flooding. Flooding occurred most recently in 2017 and 2019.

Upgrading a portion of Tamarack Creek to a Zone AE would provide the County and residents with improved flood insurance maps to navigate zoning, insurance requirements, and mitigation projects. If funding allows, this update would be greatly beneficial. If unable to upgrade this to a Zone AE, we suggest still revising the Tamarack Creek Zone A (19.41 miles).

Specifically, we suggest upgrading the most downstream 8 miles of the Creek to a Zone AE, then the revising the remaining 11.41 miles of Zone A.

Trempealeau River:

The downstream segment of Trempealeau River, which is currently mapped as Zone A, was the basis of four community flooding concern comments we received. Repetitive flooding, losses, and road overtopping is common here.

Upgrading portions of this stream to a Zone AE would provide the County and residents with improved flood insurance maps to navigate zoning, insurance requirements, and mitigation projects. If funding allows, these updates would be greatly beneficial. If unable to upgrade these areas to a Zone AE, we suggest still revising the Zone A portion of Trempealeau River.

Specifically, we propose updating two segments of the Trempealeau River to a detailed Zone AE:

(1) Near the Town of Dodge: Approximately 3,000 feet upstream of County Road P to approximately 3,500 feet downstream of County Road P.
   - Three community comments referencing repeated flooding in the Town of Dodge, where 78 structures are currently within the Zone A floodplain. Additionally, WI-DNR's regional Water Management Engineer noted frequent flooding in this region.

(2) At State Road 35-54 to approximately 2.2 miles upstream of State Road 35-54
   - Community comment references Trempealeau River flooding with water backing up from Trempealeau River Bay/Delta back flow to Tamarack Creek.
   - Sediment deposits are the cause of backflow during highwater events and road overtopping.

Table 10. Mapping Needs, New AE Zone

Flooding Source	Study Length (Miles)
Tamarack Creek	8.00
Trempealeau River (1)	1.24
Trempealeau River (2)	2.20

Total: 11.43 miles

It is recommended that CNMS-Valid Trempealeau River detailed study (Zone AE) be redelineated on new LiDAR. Study milage can be seen in Table 11. Specifically, for the portion of the detailed study beginning at XS A to approximately 1,800 feet downstream of State Road 121.

Table 11. Mapping Needs, Redelineated AE Zones

Flooding Source	Study Length (Miles)	CNMS Status	Study Type
Trempealeau River	17.65	Valid	AE

Total: 17.65 miles

It is also highly recommended to revise all unverified Zone A studies in the Trempealeau River Watershed.

Additionally, Litte Tamarack Creek, which falls just outside of the watershed, was of high concern at the Discovery meeting. Frequent flooding and road overtopping occurs on Little Tamarack Creek, see photos in Appendix D. We suggest revising this Zone A as well. Its downstream limit of study should be extended to include the area covered in comment polygon #7.

Table 12. Mapping Needs, Revised A Zones

Flooding Source	Study Length (Miles)	CNMS Status
Beaver Creek	3.29	Unverified
Borst Valley Creek	4.26	Unverified
Bruce Valley Creek	2.43	Unverified
Chimney Rock Creek	6.54	Unverified
Chimney Rock Creek Tributary 1	1.31	Unverified
Curran Coulee Creek	3.29	Unverified
Elk Creek	18.93	Unverified
Elk Creek Tributary 1	1.17	Unverified
Elk Creek Tributary 2	3.13	Unverified
Elk Creek Tributary 2.1	0.71	Unverified
Ellingson Creek	1.86	Unverified
Ervin Creek	2.36	Unverified
Fitch Coulee	2.21	Unverified
Fitch Coulee Creek Tributary	0.80	Unverified
Fly Creek	5.99	Unverified
French Creek	10.52	Unverified
Fuller Coulee	1.97	Unverified
Gomsrud Creek	1.21	Unverified
Hawkinson Creek	1.50	Unverified
Holcomb Coulee Creek	1.68	Unverified
Insteness Valley Creek	1.66	Unverified
Judkins Creek	1.31	Unverified
Lakes Coulee Creek	4.67	Unverified
Lakes Coulee Creek Tributary	1.32	Unverified
Little Tamarack Creek	3.80	Unverified
Moe Coulee	1.54	Unverified
North Branch Elk Creek	1.96	Unverified
North Branch Trempealeau River	8.01	Unverified
North Creek	7.16	Unverified
Pigeon Creek	20.36	Unverified

Table 12. Mapping Needs, Revised A Zones *(continued)*

Flooding Source	Study Length (Miles)	CNMS Status
Pine Creek	5.06	Unverified
Plum Creek	5.25	Unverified
Schermerhorn Creek	2.43	Unverified
Skutley Creek	4.38	Unverified
Sleepy Valley Creek	1.34	Unverified
South Branch Trempealeau River	6.45	Unverified
Sport Valley Creek	0.55	Unverified
Stony Creek	3.49	Unverified
Tamarack Creek	11.41	Unverified
Tamarack Creek Tributary	1.26	Unverified
Tank Creek	5.07	Unverified
Tappen Coulee Creek	1.78	Unverified
Traverse Valley Creek	5.41	Unverified
Trempealeau River	21.05	Unverified
Trump Coulee Creek	3.06	Unverified
Turi Coulee	0.84	Unverified
Vosse Coulee Creek	3.17	Unverified
Welch Coulee	3.63	Unverified
Unnamed Zone A	0.44	Unverified

Total: 213.02 miles

The project team has also identified new Zone A mapping needs for the Trempealeau River Watershed. This recommendation is based on input received during the Discovery meeting and subsequent comments.

Lewis Valley Creek is currently unmapped. Comment #6 and Appendix B detail concerns about frequent flooding and overtopping of the road. There is danger of flooding washing out the road, and as it is not currently mapped, it is difficult to receive mitigation funding to fix it. We suggest mapping it as a new Zone A from its confluence with the Trempealeau River to 7 miles upstream.

Table 13. Mapping Needs, New A Zone

Flooding Source	Study Length (Miles)
Lewis Valley Creek	7.00

Total: 7.00 miles

Low Priority

Additional mapping needs include those streams listed in Table 14. Reasonings for their mapping needs are as follows.

Pigeon Creek:

Pigeon Creek through the Village of Pigeon Falls is currently mapped as a Zone A. Upgrading the detail of the Village's portion of Pigeon Creek to a Zone AE would provide the Village and its residents with improved flood insurance maps to navigate zoning, insurance requirements, and mitigation projects. If funding allows, this update would be greatly beneficial to the Village and its residents. If unable to upgrade this to a Zone AE, we suggest still revising the Zone A portion of Pigeon Creek.

Turton Creek:

Turton Creek is currently mapped as a detailed study up until the City of Arcadia's old municipal boundary, upstream from there it is unmapped. Studying the upstream portion of Turton Creek as a Zone A would be beneficial to the County and the City of Arcadia. Additionally, the unmapped portion of Turton Creek shows significant development including farms, a golf course, and other industry.

New Zone A Tributaries to the Trempealeau River:

If funding allows, studying several currently unmapped tributaries to the Trempealeau River as Zone A would be beneficial for both Buffalo and Trempealeau Counties and their residents. Specifically, studying seven unmapped tributaries downstream of the City of Arcadia.

As previously detailed in Table 10, flooding in this area south of the City of Arcadia and near the Town of Dodge is frequent and worsening. Studying these unmapped tributaries as Zone A would produce a better full-scope picture of flooding risk in the Trempealeau Watershed. Additionally, comment point #2 denotes that some buffer zones in this area have become more agricultural, potentially changing how water moves though these tributaries.

Table 14. Mapping Needs, Low Priority

Flooding Source	Study Length (Miles)	CNMS Status	Effective Study Type	Desired Study Type
Pigeon Creek (Village of Pigeon Falls)	1.3	Invalid	A	AE
Bohris Valley Creek	5.00	N/A	Not mapped	A
Botana Valley Creek	5.70	N/A	Not mapped	A
Doelle Valley Creek	5.00	N/A	Not mapped	A
Latch Valley Creek	4.40	N/A	Not mapped	A
Pine Creek	11.30	N/A	Not mapped	A
Piper Valley Creek	4.60	N/A	Not mapped	A
Swinns Valley Creek	8.40	N/A	Not mapped	A
Trout Run Creek	5.80	N/A	Not mapped	A
Turton Creek (*unmapped portion*)	8.80	N/A	Not mapped	A

Total: 60.30 miles

ii. Mitigation Projects

At the Discovery meeting, stakeholders were asked to identify locations which might benefit from a flood mitigation project. Mitigation interest includes inundated roads, slope stabilization, at-risk residential homes, and dam management. Table 15 summarizes the mitigation needs identified by the stakeholders at the meeting and through the Counties' Hazard Mitigation Plans. The associated locations have also been added to the Post-Meeting Discovery Map (Appendix F) and full comments are available in Appendix B and C.

Table 15. Stakeholder Identified Mitigation Needs

Location	Discovery Map ID	Subjects	Mitigation Interest Comment
Bugle Lake Dam	1	Dam Management	The city has an operation, inspection, and maintenance plan for the dam. Due to its critical *High* hazard rating and upstream location to the City of Independence, this dam should continue to be monitored.
Towns of Arcadia and Dodge	2	Mitigation	Fields that used to be buffer zones have become more agricultural
Town of Dodge	3	Repetitive Flooding	Just south of the bridge on the county line and south of County P is usually the worst place for flooding
Trempealeau National Wildlife Refuge	4	Repetitive Flooding	Repetitive flooding at the Trempealeau National Wildlife Refuge
Trempealeau River at BNSF Railway	5	Repetitive flooding	Only outlet for the Trempealeau River is to flow under the railway, common backwater issues here.
Lewis Valley Road and Lorch Lane	6	Overtopped road	Heavy rains in the Lewis Valley Creek is washing its banks toward the road and will be in danger of taking out the road. Not currently mapped as floodplain, which makes receiving mitigation funding difficult.

Table 15. Stakeholder Identified Mitigation Needs *(continued)*

Location	Discovery Map ID	Subjects	Mitigation Interest Comment
Little Tamarack Creek	7	Overtopped roads	Frequent overtopping of roads, more details in Appendix B and D
Trempealeau County near Tamarack Creek	8	Dam Management	Unintentional dams have been noted on a risk assessment plan through the County
Trempealeau County	9	Mitigation	Somewhere in here is an ag to marshland reclamation on 80ish acres just south of German Coulee Creek
Tamarack Creek	10	Repetitive flooding	2019 March Flooding
Tamarack Creek	11	Mitigation	Rock put in creek bed years back
Tamarack Creek	12	At risk residential homes/Repetitive flooding	2017 flooding affected homes
Riverside Park, City of Blair	13	Repetitive flooding	Area of flooding concern
Colonel Larson Park, City of Whitehall	14	Repetitive flooding	Area of flooding concern
4-Seasons Park, City of Independence	15	Repetitive flooding	Area of flooding concern
Pietreck Park Camping and RV, Trempealeau County Unincorporated Areas	16	Repetitive flooding	Area of flooding concern
Schultz Park, City of Arcadia	17	Repetitive flooding	Area of flooding concern
Town of Dodge	18	Repetitive flooding	Repetitive Flooding, 394 Township Population
Perrot State Park, Trempealeau County Unincorporated Areas	19	Repetitive flooding	Area of flooding concern
City of Arcadia	20	At risk residential homes/Repetitive flooding	Significant flooding in 2010, 2017, and 2025
State Road 35-54, Trempealeau River and Tamarack Creek	21	Overtopped road/Repetitive flooding	Trempealeau River flooding with river backing up from Trempealeau River Bay/Delta back flow to Tamarack Creek. Sediment deposits resulting in backflow during highwater events.

Table 15. Stakeholder Identified Mitigation Needs *(continued)*

Location	Discovery Map ID	Subjects	Mitigation Interest Comment
City of Blair/Town of Dodge	22	Repetitive Flooding	City of Blair to Town of Dodge is roughly a 24-hour travel time. Efforts are made to slow the flow.

iii. Non-Regulatory Products

Non-regulatory flood risk products provide information to communicate a more complete flood risk in their community. The datasets are meant to go beyond the simple identification of the flood hazards and inform actions that can be taken to reduce flood risk.

The Flood Risk Database includes:

- Water surface elevation grids (raster, multi-frequency intervals)
- Depth grids (raster, multi-frequency intervals)
- Percent annual chance grid (raster)
- Percent 30-year chance grid (raster)
- Changes since last FIRM (shapefile)
- Areas of mitigation interest (shapefile)

Depth grids are a non-regulatory product which will not only show where flooding can happen, but also how deep the water will get and how that depth will affect economic losses.

The project team recommends creating non-regulatory products in the Trempealeau Watershed for all Revised and new AE and A Zones at multi-frequency intervals. The grids can be used by stakeholders to assess impacts of the flooding for different flood types and plan for mitigation.

XVII. Appendix

Appendix A: Discovery Meeting Sign in Sheets

Appendix B: Comment Forms

Appendix C: Commented Discovery Maps

Appendix D: Trempealeau County Emergency Management Materials

Appendix E: Trempealeau River and Tamarack Creek Flooding Concerns

Appendix F: Post Meeting Discovery Map